

AN INVESTIGATION INTO THE FUNCTIONAL
PROBLEMS AND EDUCATIONAL REQUIREMENTS
OF A MILITARY RESEARCH AND DEVELOPMENT
ORGANIZATION: A CASE STUDY OF THE STUDIES
AND REQUIREMENTS DIVISION, MARINE CORPS
DEVELOPMENT CENTER, QUANTICO, VIRGINIA.

William Richard Smith

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by

William Richard Smith

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June 1971

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An Investigation into the Functional Problems and Educational
Requirements of a Military Research and Development Organization:

A Case Study of the Studies and Requirements Division,
Marine Corps Development Center, Quantico, Virginia

by

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Captain, United States Marine Corps
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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
June 1971

ABSTRACT

A clinical investigation was conducted in the Studies and Requirements Division, Marine Corps Development Center, Quantico, Virginia to assess the potential value of an educational program that had been proposed previously as a solution to the problems of the Division. The analysis proceeded along four dimensions: (1) a personal human dimension, (2) a formal organizational dimension, (3) a social system dimension and (4) a technological dimension.

A leading theorist's work was utilized in each analysis as a guide in identifying the variables that functioned in the Division to prevent it from attaining a desired degree of effectiveness. The proposed educational program was then related to the problems found in order to assess its potential value.

It was found that the problems stem from the relations among elements of the total situation. A balanced solution is proposed which incorporates the educational program as a necessary sub-set of a larger correctional effort. The larger effort recommended includes a form of organizational development program.

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ACKNOWLEDGMENT

"Nor do I hold with those who regard it as a presumption if a man of low and humble condition dare to discuss and settle the concerns of princes; because, just as those who draw landscapes place themselves below in the plain to contemplate the nature of the mountains and of lofty places, and in order to contemplate the plains place themselves high upon the mountains, even so to understand the nature of the people it needs to be a prince, and to understand that of princes it needs to be of the people."

Niccolo Machiavelli
to the Magnificent Lorenzo Di Pietro De' Medici
The Prince, Dedication
1513, A.D.

This effort is not undertaken in order to settle the concerns of "princes". It is undertaken to systematically delineate the organization and activities of a cooperative venture within the United States Marine Corps. That venture is the Studies and Requirements Division, Marine Corps Development Center, Quantico, Virginia. It is important to note that the author is a U. S. Marine of relatively "low and humble condition", who is unable to offer even the forty-four years of life's experiences that was a part of Machiavelli's gift to the Medici.

What he can offer will be somewhat of a measure of the general education he has received from the United States Naval Postgraduate School, Monterey, California, in the field of Management. It will be much more a measure of the author and thus the success of this pen is of more than passing interest to him.

This thesis could never have been conceived without the instruction, concern and friendship of Professor Melvin J. Steckler of the Naval

Postgraduate School Faculty. He has been the guiding light throughout its generation. His thoughts have been borrowed with unabashed repetitiveness and hopefully with at least a minimum of recognizable integrity. I am forever in his debt.

Many others have been of assistance. Colonel William P. Mitchell, USMC, the Chief of the Studies and Requirements Division, without whose courage, attention and consent this thesis would be absent.

Lieutenant Colonel John Gould is another contributor to these pages. Without the cooperation and aid of the above mentioned individuals as well as the help of the officers and men of the Studies and Requirements Division, no such work would now be read.

I. INTRODUCTION

A. THE PROBLEM

How does one transfer the effort, the potential, the hopes and the dreams of organizational design into reality? How does one secure from people work contributions of a unique nature for which few or no precedents exist and for which the individuals involved are largely unprepared? How does one turn operators into planners?

The Studies and Requirements Division of the Marine Corps Development Center, Quantico, Virginia was established in April of 1969. That organization's purpose requires combining several diverse disciplines of knowledge with field experience into an integrated research and development effort for future Marine Corps operations. The task of managing and executing studies in time frames of up to twenty years into the future is no easy one. It could be facilitated by diverting large outflows of funds to create a heavily civilian staffed organization of the now popular "think-tank" variety. The economics of today's military appropriations precludes such an approach.

The leaders of this activity are left with the assets at hand. These assets mostly consist of some seventy Marine Corps officers in the ranks of Lieutenant Colonel and Major. How do they reorient these individuals to work in a foreign field, and do it quickly, effectively, efficiently and without destroying their motivation?

B. A DESCRIPTION OF THE ORGANIZATION

In this first section we will describe the work of the Studies and Requirements Division (S&R), the Marine Corps Research and Development Community in general, and the organization, functions and responsibilities of S&R in particular.

1. The Work

The main product of the Studies and Requirements Division is Marine Corps Studies. The division itself defines a study as follows:

A study is a critical examination or investigation of a subject which: (1) analyzes the projected capabilities of alternative Marine Corps force levels and systems as these relate to current and or projected military roles and missions in support of national policies and objectives, (2) utilizes the techniques of operations research and systems analysis, (3) produces a document embodying the results of the examination in quantitative terms, and (4) provides the Commandant of the Marine Corps (CMC) with an analytical rationale by which he may select the most efficient and effective means of accomplishing the mission of the Marine Corps.¹

The categories of studies include: manpower and personnel, concepts and plans, operations and force structures, logistics, science and technology, and management. As mentioned above these studies are accomplished by conceiving the various categories and interrelations for time periods of up to twenty years into the future.

2. Project Officers

Prior to the inception of the Studies and Requirements Division the Marine Corps R&D effort had mainly been limited to the testing and

¹Studies and Requirements Division, Research Development and Studies Handbook, produced internally at S&R, April, 1971, p. I-1. Cited hereafter as RD&S Handbook.

evaluation of equipment already developed. This was due to many factors, among which were: the relatively small size of the Corps, scarcity of funds, and the overlap of Army and Marine Corps functions. This hardware oriented approach was basically a passive one. The Marine Corps was a buyer, not a developer.

The 1969 reorganization of the Marine Corps Development Center at Quantico recreated missions and functions that had been in abeyance for many years. Quantico had once been the center of concept development for such tactics and techniques as; amphibious operations, close air support and the vertical envelopment. This work had been abandoned in the 1950's.²

Obviously the planning of organization, doctrine, tactics and techniques for periods of up through the long range (20 years) calls for a number of unique abilities on the part of those who are called upon to do it. At S&R these individuals are entitled "project officers". It is the contributions of the project officers that have raised for us the problems that have been noted at the division. This is not to say that they are in anyway remiss. For the most part, they enter the division with no special educational qualifications. Yet, the work is of such complexity that special education appears to be required.

In the project officer we find our basic unit of analysis. Some typical questions addressed by project officers are:

²See U. S. Marine Corps, A Study of the Marine Corps R&D Program, Vol. II, produced by Management Technology, Inc., July 1967.

- a. Should the Marine Corps buy a Light Observation Helicopter?
- b. Is a drone needed? What missions? Tradeoffs?
- c. How much air mobility is required in the midrange period? (Midrange describes periods of up to ten years into the future.)
- d. What is a reasonable air defense capability for the midrange?
- e. When should each proposed new weapon system be introduced for maximum force effectiveness?
- f. How far can the Seaborne Mobile Logistics System be implemented in the midrange period? What impact will it have on operations?
- g. How can midrange objectives be effectively dovetailed with long range goals?
- h. What are the most likely missions and tasks for the Marine Corps in the midrange period? The long-range?

In more general terms the project officer is attempting to accomplish the following tasks:

- i. Clarify and select long-range concepts and mid-range objectives.
- j. Identify capabilities and deficiencies in systems.
- k. Determine options in systems acquisitions and system changes to meet roles and missions.
- l. Establish priorities of major projects.
- m. Determine constraints and risks.
- n. Force Plan

The project officer must integrate his previous military experience in the form of judgment with a total systems approach to a

specific area that will lead to optimum level options of balanced forces in order that the Marine Corps will be able to meet its assigned roles in the future. In a single sentence, our project officers are attempting to provide the Corps with a data bank for decision making.

3. An Example of the Problem.

An example of the problem experienced by the executives of the S&R Division as it relates to the project officer might be helpful here for gaining a clearer understanding of it.

A midrange project officer is given the task of reviewing artillery requirements in low-intensity conflict ten years from now. At first he identifies all the possible and probable requirements of artillery as projected in various planning documents already in existence. After a multitude of man-hours, he concludes that there is a need for a light artillery capability for firing effectively for up to ranges of fifty miles. He reviews the current investigations of Army analysts and Department of Defense contractors and identifies various options in the hardware field. He may further initiate a trade off analysis or cost-effectiveness analysis to determine a recommended set of systems on a priority basis.

Such a study may take months of difficult, time-consuming work. The point is that this project officer has not considered the entire range of possibilities. He has not linked up all the assets in the future Marine Corps inventory and applied them to his analysis. He has concentrated on solving the problem from the field of fire

support only. While this is a simple example, and is used to make a point only, we can see that the range could be attained from a series of schemes. The mobility of the system could have been analyzed. Helicopters or ground transportation could be utilized to displace the artillery system rapidly to new positions where the same objective could be realized.

The expertise needed for a project should now be coming into focus. Aside from his military specialty the project officer needs an understanding of systems engineering and analysis. He comes into immediate contact with Department of Defense contractors and, therefore, an understanding of American industrial organization and contract administration would be useful. Cost effectiveness and trade-off analysis are functions that he must assume. The requirement of generating various options and mixes calls for at least a basic understanding of operations research. Finally, a way of thinking that transcends the boundaries of all disciplines and integrates them into a whole is required.

The executives of S&R have made it clear that they do not expect their officers to become experts in all these fields. Specialists are available at the Development Center who can provide the knowledge needed. However, they must be able to communicate with these specialists on a variety of problems concerning their work, and therefore need some understanding of the disciplines.

Another problem area evolves from the fact that over the years the Marine Corps has developed a unique body of operators of which our project officers are representative. These are men who can tackle a problem with the assets at hand and push through to the desired conclusion. This operating orientation has been instilled in Marines in the form of leadership and command. At the Studies and Requirements Division, the methods used by the commander have to be set aside in favor of those used by the planner or researcher. This is the transition that must be accomplished to solve the problems of the division.

4. The Organization

Let us start here with a short description of the Marine Corps R&D Organization external to the Studies and Requirements Division and then concentrate on S&R exclusively. We shall rely on a number of sources for this section. They are: The Marine Corps Research, Development, Test and Evaluation Manual, (NAVMC 2635) of 2 December 1970); the Marine Corps' Development Center's Standing Operating Procedure of April 1971; plus the already cited RD&S Handbook and the Management Technology Study. We do not intend to cover this organization in depth, but only desire to leave the uninformed reader with a picture of the general place in which the S&R Division sets in relation to the overall Corps' R&D complex.

a. External Organization

(1) Statutory Authority. The National Security Act of 1947 sets forth the following assignment of functions for the Corps which are directly related to R&D:

(a) To develop in coordination with the U. S. Army and U. S. Air Force, those phases of amphibious operations pertaining to the tactics, techniques and equipment used by landing forces.

(b) To be responsible, in accordance with integrated joint mobilization plans, for the expansion of peacetime components of the Marine Corps so as to meet the needs of war.

As do many of the laws of Congress, the National Security Act is left to a great deal of interpretation. We can see that the Marine Corps has direct Research and Development responsibility for only the amphibious (landing force) aspects thereof. But, where do these aspects start, where do they end? These are but two of the implications that had to be considered in the constructing of a Marine R&D effort. There are presently two major organizations in the Corps primarily concerned with R&D. They are: Headquarters Marine Corps (HQMC), and the Marine Corps Development and Education Command (MCDEC).

(2) Headquarters Marine Corps (HQMC). Unlike the Army and Air Force, there is no major R&D command per se in the Marine Corps. All R&D activities are centralized in and controlled from HQMC. Within HQMC the Office of the Deputy Chief of Staff (DC/S) Research Development and Studies (RD&S) is the only staff element whose primary mission is directly related to accomplishing the

Corps' R&D Program. Certain R&D responsibilities and functions are explicitly assigned other staff elements and organizations, however, the DC/S for RD&S is the primary HQMC section with which the S&R Division deals.

In carrying out his mission of assisting the Chief of Staff of the Marine Corps, in the various staff functions dealing with R&D, the DC/S (RD&S) integrates and directs the Headquarters staff, the Marine Corps Development Center (of which S&R is one of seven divisions) and other field activities in these areas. Specifically, the office is tasked with the following functions:

- (a) Formulate policies for the total Marine Corps aviation and ground R&D and studies programs.
- (b) Prepare and execute Corps portions of the Department of the Navy R&D budget and programs.
- (c) Provide scientific assistance, operations research, cost effectiveness and systems analysis support to HQMC staff.

The office of the DC/S (RD&S) is organized as shown in figure I-1, page 16.

The following sub-units of the office perform the following functions:

"a. Scientific Advisor: Serves as the principal consultant and advisor to DC/S (RD&S) and to other general and special staff divisions for scientific matters and with respect to studies and analysis. His primary purpose is to provide scientific and analytic judgment, guidance and recommendations to insure the effectiveness of the R&D and studies program.

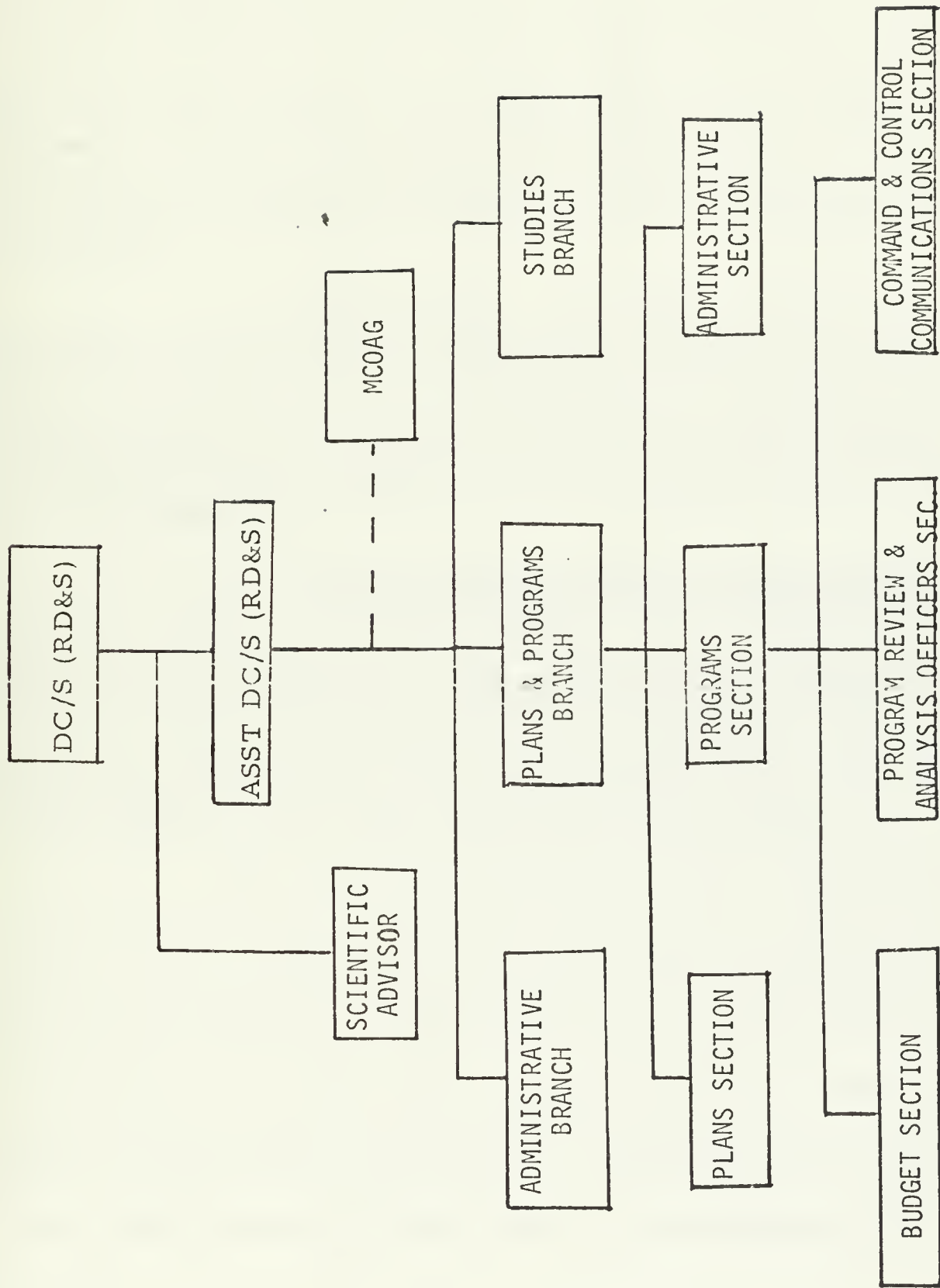


Figure I-1

b. Plans and Programs Branch. As a whole, coordinates the staff actions required to prepare the RTD&E program and budget, and to document, substantiate and execute the latter two. The Plans Section has specific cognizance over the staffing and preparation of the Section XI (R&D) to the Marine Medium Range Objectives Plan, Marine Corps requirements documents, Marine Corps comments on inputs to the other Services' requirements documents and Marine Corps participation in R&D requirements briefings presented to the scientific, technological and industrial communities. The Programs section supervises all actions required to formulate and execute the Marine Corps R&D program. ...

c. Studies Branch. Coordinates all major Marine Corps studies and monitors the studies of the other services, government agencies and the services of friendly nations which have implications for or are of interest to the Marine Corps. This branch coordinates the HQMC staff in the development of a five year studies program and in the formulation and functioning of advisory committees for each study which is undertaken....:

d. Marine Corps Operations Analysis Group (MCOAG). The MCOAG conducts operations research, systems analyses and cost effectiveness studies for the Marine Corps..... A detachment of the MCOAG is located at Quantico, Virginia to support the Marine Corps Development Center with operations research assistance both in conducting studies and in evaluation of new weapons, equipment and tactics. MCOAG field representatives provide operations analysis assistance to the Fleet Marine Forces in the Atlantic and Pacific Fleets."³

We can already see from the above, that the Office of the DC/S (RD&S) at HQMC has an extremely close association with the work of the S&R Division. It is also important to note that this office has the control over a much larger portion of the Marine Corps budget allowance for R&D than does the entire Development Center at Quantico.⁴ The many other elements of HQMC become involved with the S&R

³U. S. Marine Corps; Research Development, Test and Evaluation Manual (NAVMC 2635), 2 December 1970, pp. 6-1 & 6-2.

⁴From an orientation briefing held at the Development Center for incoming personnel in April 1971.

Division through the sponsoring of studies. For any single study, the staff agency that sponsors it from HQMC appears to be the influential external agency outside the division itself. This influence is manifested in the person of a HQMC project officer from the sponsoring staff section.

(3) Marine Corps Development and Education Command (MCDEC). MCDEC comprises three elements: The Marine Corps Base at Quantico, the Marine Corps Education Center, and the Marine Corps Development Center. The Development Center is the organizational element manned for R&D functions. The Deputy for Development to the Commanding General, MCDEC is the Director of the Development Center which is the area of our interest and to which we now turn.

(4) Marine Corps Development Center. As mentioned above, the organization and manning of the Development Center tended to reflect a hardware orientation. The birth of the Studies and Requirements Division in April 1969 was an effort to expand the capabilities of the Center for developing concepts, doctrine, tactics, techniques and organizational structures, in order that they be in balance with the equipment evaluation capability.

The mission of the Center is to:

1. To perform research, development, test and evaluation functions, including war gaming, in order to:
 - a. Develop doctrine, tactics, techniques and equipment for employment of Marine Corps forces.
 - b. Develop doctrine, tactics, techniques and equipment used by landing forces in amphibious operations.

- c. Support Marine Corps requirements for long-range planning by identifying required study areas and by initiating and conducting study of such areas in coordination with other governmental and civilian contract study agencies, as appropriate, on a priority which generally weighs long-range importance ahead of short-range urgency.⁵

The Center is organized into a Headquarters and seven Divisions as shown in Figure I-2, page 20. All the Divisions are hardware oriented with the exception of the Operations and Services Division which is analogous to a headquarters section; the Organization, Doctrine, Tactics and Techniques Division; and the subject of our investigation, the Studies and Requirements Division. The Organization, Doctrine, Tactics and Techniques Division utilizes after-action reports and other information sources to update Marine Corps publications in these areas. The Hardware Divisions are generally involved in the testing and evaluation of equipment. The important result that came out of the investigation was that each Division was fundamentally introverted from the perspective of the S&R Project Officers. Their dealings with the personnel of the other Divisions was extremely limited. Many expressed complete ignorance as to the operations and/or product of many of the other Divisions. We shall now move on to the internal organization of the S&R Division.

⁵Marine Corps Development Center, Standing Operating Procedure (SOP), Development Center Order P5000.1 Dated 13 April 1971.

ORGANIZATION OF THE MARINE CORPS DEVELOPMENT CENTER

FIGURE I-2

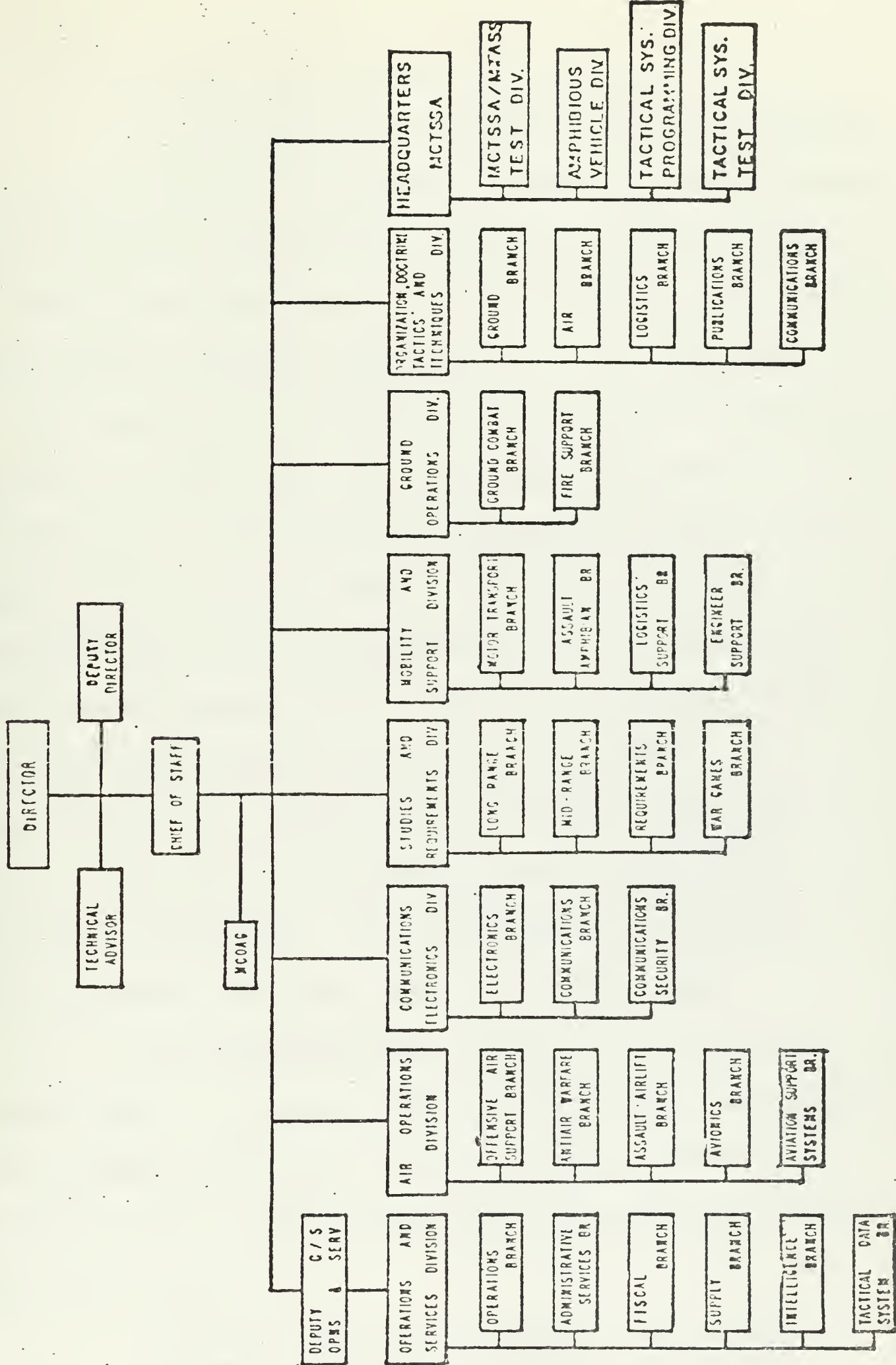


Figure I-2

b. Internal Organization of the S&R Division.

Prior to delineating the functional structure of the Division, let us inspect the Marine concept of the R&D process. The total process is oriented toward a long range concept which is a projection of world conditions as they are expected to be 25 years in the future. This projection constitutes the Marine Long Range Study. From this study a long range plan is produced which depicts the desired Marine Corps posture up through that time. These are the base documents for the entire R&D effort, theoretically. The midrange cycle refers to a time period of up to ten years in the future. The planning documents addressing this period act as a bridge between what is and what the long range documents propose. In other words, there should be an orderly progression toward long range goals through the auspices of a mid-range planning paper. Because of the time element involved these efforts are primarily directed at materials and techniques whose feasibility is already known. It is in this midrange area that the greatest emphasis in men, time and money is given at S&R.

The organizational chart depicting the S&R Division is shown as Figure I-3, on page 22. The following extract of the already cited RD&S Handbook describes the official functions of the Division. We shall be comparing these elements with the results of the investigation in later chapters.

Functions: Within the five functional areas of combat, (Mobility; Fire Support; Intelligence; Logistics; and Command, Control and Communications). The S&R Division provides direct support to force planning by

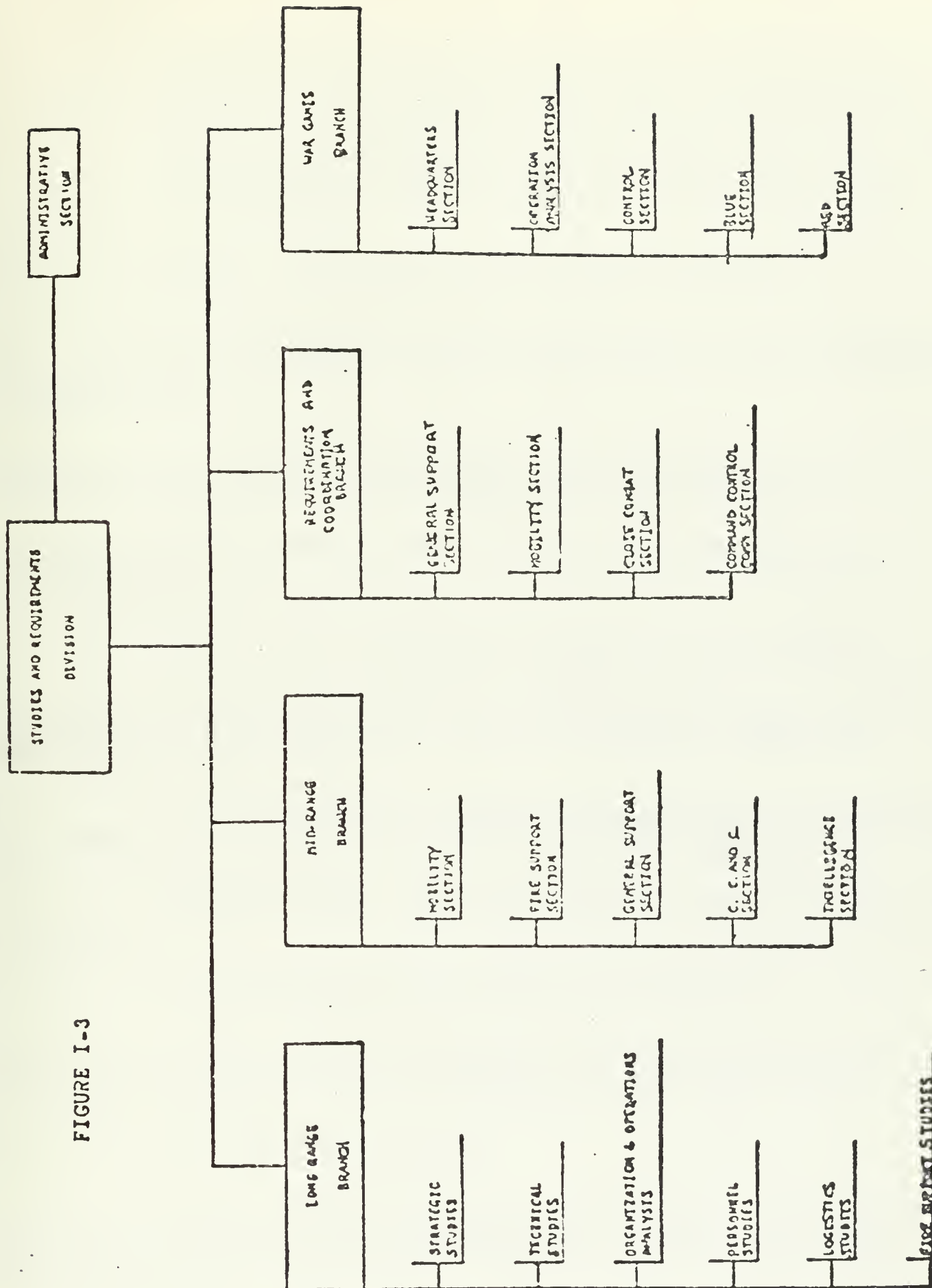


FIGURE I-3

Figure I-3

means of baseline (derivative) studies that address long-range concept formulation, mid-range operational objectives, and determination of requirements documents. The Division also supplies war gaming support to the derivative study program, which represents both Navy and Marine Corps needs.

Tasks. The S&R Division is tasked as follows:

- a. Consonant with national strategy for the use of military force, to formulate advanced concepts for the long range period in all functional areas
- b. To develop mid-range operational objectives in all functional areas by means of derivative and supporting studies.
- c. To identify force structure and system capabilities and deficiencies.
- d. To provide operational analysis in force planning.
- e. To provide objective methodology for the war gaming of landing force operations and to conduct war games in support of derivative studies as required
- f. To prepare and coordinate requirements documentation to be used as primary guidance in the acquisition of equipment.

Responsibilities. The responsibilities of the branches are as follows:

- a. Headquarters and Administrative Section.

- (1) To provide support to the Chief, S&R Division in the direction, supervision, and operation of all the Branches

- b. Long Range Branch.

- (1) To project likely requirements for Marine Corps forces for the long range period through study of trends in the global political environment, and analysis of likely avenues of future technological achievements.

- (2) To refine and extend long range concepts and, as appropriate, to develop new concepts through derivative studies

(3) To conduct the periodic update of . . . the Marine Long Range Study

c. Mid-Range Branch

(1) To determine R&D planning objectives to meet established roles and missions for the landing force during the mid-range period. To maintain mid-range objectives in correspondence or convergence with long range objectives.

(2) To conduct derivative studies in all functional areas

(3) To conduct special studies reflective of all functional areas, as required to meet short-range (0-5 years) force planning.

(4) To provide operational analysis in force planning to meet the needs of the landing force, primarily in the low and mid-intensity conflict environments.

d. Requirements and Coordination Branch

(1) To effect overall management of Marine Corps requirements documentation

(2) To effect continuous review of other Services' requirement documents and publications, and to recommend adoption or substitution as appropriate

(3) To effect continuous review and cognizance for the R&D Planning Objectives Section (PART XII) of MMROP; and to recommend changes thereto

(4) To effect continuous review and cognizance for the Marine Corps requirements publication "SEARCH", to correlate it with MMROP (Marine Mid-Range Objectives Plan)

e. War Games Branch

(1) To develop an objective methodology for continuous use in the war gaming of landing force operations.

(2) To maintain a capability to conduct a major developmental game, and concurrently to maintain a capability to evaluate a contingency plan without disrupting the level of effort applied to either task.

Our description of the organization is now complete.

C. THE INVESTIGATION

1. Introduction

The investigation with which this thesis is concerned was instigated at the behest of the present Chief of the S&R Division, Colonel William P. Mitchell, who first perceived the problem as described in the opening of the chapter. The investigator spent three weeks at S&R during which time he interviewed numerous officers both in and out of the Division and observed its operations.

2. Methodology

This is an investigation of a clinical nature. By this, we mean that the client organization (S&R) was visited and initially observed as a total entity. Following this, an attempt was made to diagnose the origins of the problem experienced by analytically interpreting certain subsystems of process in the Division that appeared to contain elements of the problem. The data needed was generated by means of in-depth interviews with one-fourth of the seventy officers assigned to the Division. No statistical surveys were made before, during, or after the investigation. No member of the Division is referred to personally, with the exception of the Chief, Colonel Mitchell; therefore, the reader must rely on the integrity of the writer for the validity of his information.

Whole ranges of opinions, attitudes and answers were displayed at S&R. However, certain trends became discernible after a short period. These trends became the basis for further research and compose the bulk of the material presented and used here.

D. PROPOSED SOLUTION

Initially it was believed by the Chief of the Division and a group of professors at the Naval Postgraduate School in Monterey, with whom the Chief had consulted, that an education program designed to enhance the technical proficiency of the project officers might suffice to solve the problem. The program was envisioned as a short course of approximately five weeks duration that would be presented by professional university level teachers a few hours a day at the Division. The course was to be organized around the following disciplines:

1. Organizational Theory and Practice.
2. Systems Analysis/Systems Engineering.
3. Managerial Accounting.
4. Industrial Organization/Procurement & Contract Administration.
5. Operations Analysis.

This investigation was undertaken to discover if the proposed solution would be beneficial in solving the problem at S&R.

Our choice then was to either remain isolated in the area of these technical or procedural disciplines or to cover the entire range of problems that face organizations in general. We chose the latter course. But in order even to commence a frame of reference or model of some sort was needed. Let us turn to that model now.

E. THE MODEL

The four main chapters of this thesis exploit the concept of multi-dimensionality in human behavior. Here, this term means conceiving human behavior as a totality, responsive as a system of behavior to

four dimensions of process meaningful in four frames of reference.

The dimensions and their associated frames of reference are:

1. The personal dimension, in which the individual conceives himself.
2. A technological dimension, in which he conceives the nature of systematic knowledge.
3. An organizational dimension, in which he conceives task and purpose.
4. A social dimension, in which he conceives his relations with others.

The ordering of these dimensions is not significant, they coexist simultaneously.

A model diagram depicting this system is represented by Figure I-4.⁶ The key to utilizing this multi-dimensional way of thinking lies in accumulating enough experience to develop a conscious realization of the mutual dependence of these dimensions of human behavior. For example, what benefits would follow from an educational program of a technical nature for project officers if they did not accept the purpose of the organization to begin with (e. g., the technological dimension in relation to the organizational dimension)?

F. THE THESIS

During and after the investigation, behavior in the Division was viewed consciously along each dimension as described in the model.

In the body of this paper we relate what was found to the work of a

⁶The model on page 28 and the way of thinking that it represents are attributable to Professor M. J. Stecker, of the United States Naval Postgraduate School Faculty.

A MULTIDIMENSIONAL VIEW OF
HUMAN BEHAVIOR

Each Frame of Reference Entails:

1. An Empirical Referent
2. A Way of Thinking
3. A Body of Knowledge
4. A System of Values
5. A Course of Action

For Example

1. Organization charts and job descriptions
2. Effectiveness and efficiency of action
3. Decentralization and budgetary control
4. Production and mission accomplishment
5. Assign a committee to study the problem

Organizational
Space



Technological
Space



HUMAN
BEHAVIOR



Social
Space

For Example

1. Machines & technical designs
2. Natural events & the scientific method
3. $\frac{PV}{T} = \frac{PV}{T}$
4. Prediction and control
5. Redesign the system or check the calculations

For Example

1. Groups & larger social structures
2. Social cohesion & social control
3. Group norms
4. Congruence & openness
5. Undertake conflict resolution

Personal
Space



For Example

1. Human individuals
2. Personalities, motives & learning
3. Need hierarchy
4. Human growth and development
5. Accept the negative feelings being expressed

Figure I-4

major theorist, again along each dimension. The work of the theorists allows us to identify various intervening variables that partially, or fully, blocked the Division from fulfilling the expectations of the Chief of the Division. This analysis is carried out in four separate chapters.

In the final chapter we examine the interrelationships of the variables in conjunction with the benefits the described educational program could offer. The conclusion offered is that to concentrate on one dimension, which was the basis of the original proposed solution, would not be enough. In a single sentence our thesis is:

That the problems of the Division arise less from deficiencies along any one dimension of organizational process than from the difficulties arising from the mutual dependence of all dimensions in fulfilling the organization's purpose.

If by the time the reader finishes the last page of this introduction and understands the applicability of its words to the Studies and Requirements Division, Marine Corps Development Center, Quantico, Virginia, then we feel we will have succeeded in establishing the problem under study. In the next five chapters we will disclose the evidence gathered to support this argument presented as the conclusion of this thesis.

II. THE PERSONAL DIMENSION

A. THE PURPOSE

The purpose of this chapter is to view the Studies and Requirements Division from the perspective of the project officer at a personal level. How does it feel to be a project officer at Studies and Requirements? How do project officers perceive themselves? From what do they gain satisfaction?

The human dimension has been thrust into the forefront of organizational analysis in recent years. Historically it had been vastly overshadowed by the concerns of science and technology in a rapidly changing world. The field today in America's corporate structure, as well as to a lesser extent, the military community, is receiving a great deal of attention. A human potential movement is gaining strength as it emanates from such centers as the National Training Laboratory at Bethel, Maine and the Esalen Institute at Big Sur, California. The great majority of the "Fortune- 300" have experimented with various approaches to what is often called human relations. Such terms as group dynamics, T-Groups, Encounter Groups and Sensitivity Training have become common not only at the personnel departments of these institutions but also at the highest levels of executive functioning.

The purpose of all these activities is to reinstate the preeminence of "man" in all human endeavor, including work. The average American

spends forty hours per week at work. By adding in lunch, commutation, getting ready for the job, keying down after it, etc., we can see that his life is to a great extent a function of his work. Should the organization, the machine profits, or even victory be entities or goals that cause the sacrifice of human dignity? Can these entities and goals be enhanced if human worth is put to the forefront? These are the questions that behavioral scientists and human relations aspirants are studying today in ever increasing numbers.

In this chapter, we will devote these initial pages to the delineating of one of the more prominent theorists major contributions to the field of the personal dimension. We shall then attempt to correlate his findings with the findings of this investigation as they pertain to the personal situation of the project officer. Our objective will be to illuminate the intervening variables which beset the situation at the Studies and Requirements Division thus preventing the project officer from attaining the peak performance indicated in the ideal of the theorist. We shall support the primary theorist with the writings of others in the field of human relations at specified points.

A word of caution is necessary at this early stage in the development of our thesis. We have already stated that it is our belief that the problems of the division and, in fact, many organizations in and out of government, stem from the fact that a balanced approach to the multi-dimensional nature of human behavior is not taken. In this chapter, as in the next three, we are viewing problems from one

dimension only. Situations will be diagnosed more than once, however, the dimension, or frame of reference will be different in each case. It may be difficult for the reader to accept this approach. Our problem is that we have a great deal to say, but cannot say it all until we've constructed our entire framework.

The onus here is on the reader. He must bear with us to the bitter end if he expects this work to bear fruit. To skip to the end and expect to understand what is said there without fully understanding the foregoing would be analogous to a builder constructing the roof before the frame. It can be done, but the end result looks a bit silly. At the same time, a grave danger lies in reading any one of the four main chapters without reading the others. If this is done it will seem that a solution to a multi-dimensional problem may be obtained through working with one dimension to the exclusion of the others. This will lead to what Fritz J. Roethlisberger has called "cultism."⁶

Cultism is an especially nasty business in the area of human relations. It has been offered as the answer to why many well meaning human relations experiments have met with unmitigating failure.⁷

⁶F. J. Roethlisberger, Training for Human Relations, (Boston: Harvard University, 1954), See Chapter VIII "Learning in a Multi-dimensional World", pp. 115-142.

⁷See Hand and Slocum, Human Relations Training for Middle Management: "A Field Experiment", Academy of Management Journal, (January 1971).

Cultism occurs when one consideration in a set of multi-dimensional considerations is held up to the disregard and detriment of considerations in the other dimensional areas. One can imagine the employer stating; "To hell with profits, as long as my employees are happy." This would be fine if the employer had inexhaustible reserves to keep from going bankrupt, but unfortunately we seldom see that situation. Life is a complex process just as man is a complex animal. The multi-dimensional approach to the problems at Studies and Requirements Division is not the easiest way to analyze its difficulties, but it is the underlying assumption of this thesis that such is the best way to solve them.

B. ABRAHAM MASLOW: THE HIERARCHY OF NEEDS

The principal theorist to which we shall turn for assistance in aiding our effort along the personal dimension is Abraham Maslow, a late Professor of Psychology at Brandeis University. A list of his contributions and the works of certain other writers in the human relations field which support this portion of the paper follows:

<u>Theorist</u>	<u>Major Works</u>
Abraham Maslow:	<u>Motivation and Personality</u> (New York: Harper & Row, 1951). <u>Eupsychian Management</u> (Homewood, Ill: R. D. Irwin, 1965).
Chris Argyis:	<u>Personality and Organization</u> (New York: Harper & Row, 1954). <u>Integrating the Individual and the Organization</u> (New York: John Wiley & Sons, 1964).

Theorist

Major Works

Philip Selznik:	<u>Leadership in Administration</u> , (Evanston: Row Peterson & Co., 1957).
Douglas McGregor:	<u>The Human Side of the Enterprise</u> , (New York: McGraw-Hill Book Co. 1960).
Rensis Likert:	<u>New Patterns of Management</u> , (New York: McGraw-Hill Book Co., 1961).

"The only happy people I know are the ones who are working well at something they consider important."⁸ We should keep in mind the terms, "Working well", and "important" throughout this discourse.

Let us as simply as possible consider some points of Dr. Maslow's theories, especially as they concern what he has entitled, the "hierarchy of needs" in his work.

Motivation and Personality

All behavior is motivated with the exception of reflexes. By motivated, we mean that an act is worthwhile and by that we mean that the results of the act reduce some kind of need that the actor possesses. What are these needs? Professor Maslow has identified five of them. Listed in order of priority, from lowest to highest, they are as follows:

1. Physiological Needs
2. Safety Needs
3. Social Needs
4. Esteem Needs
5. Self-Actualization Needs

⁸Abraham H. Maslow, Eupsychian Management, (Homewood, Illinois, Richard D. Irwin, Inc., 1965). p. 6.

The physiological needs are basically survival needs; they have a biochemical basis in the organism. If these needs are not satisfied the organism dies. Specifically these needs are the needs for water, food, oxygen, sleep; the need to maintain a certain chemical balance with the environment.

The safety needs have no physical basis but are very pressing. As the term suggests, what we have here is the need for physical safety and security. And, to the extent that economic security is relevant, we can include that also. A non-hazardous work place and the need to have a feeling of security against an uncertain job future also would come under safety needs.

Social needs may be identified as love needs or affiliative needs. This is the need to belong, the need to be a member of some group. After all, man is a finite organism living in an infinite universe. He needs something to transcend his own solitude and he achieves this by joining groups, entering into social relationships with other people.

Esteem needs, or ego needs, are related to the term self or self-concept. If you wish, one can think of the self as being a very large bundle of assertions and propositions which a person holds true about himself. Most people gain esteem from the manner in which other people hold them in view. For instance, one could say, "I am a competent project officer." To be able to say this infers that the individual has a certain degree of self esteem which has been reinforced by the esteem granted him by others.

Literally, of course, there must be hundreds of thousands of these propositions linked together in a complex matrix of some sort which forms the self concept of the individual.

Human behavior, says Professor Maslow, can be viewed as an attempt on a person's part to elicit from his experiences with the world around him evidence, feedback, data, which will verify his self concept. The esteem gained by the verification of his self concept is a function of that experience. In other words, if one's self-concept is low, the need will be low to verify his self concept at a higher level and therefore the actions to fulfill that need will be minimal. If, for example, a project officer believes he is incompetent, his work will probably be unsatisfactory, because the effort he puts into it will be relatively low, i. e., the need to prove that he is competent is weak. This thought is an important one. It is the basis for one of the main ideas that Douglas McGregor put forth in his classic work, The Human Side of the Enterprise.

At the top of the hierarchy of needs we find the self actualization needs. Self actualization is an extremely difficult concept to explain. We can say that this need develops out of the esteem needs. It is a need to become more of what one experiences himself as capable of becoming. That is, to realize one's potentialities to the utmost - to grow, to develop, to improve one's human self.

C. THE MEANING OF THE HIERARCHY

Maslow asserts that all men have the described needs at divergent stages of development. The strength of one need is a function of how well satisfied other simultaneously existing needs are. More fundamentally, the need at any one level will not become salient and dominant until the needs at all subordinate levels are reasonably satisfied. In other words, we do not find people attempting to self actualize while they are starving to death.

This means that while all men are capable of displaying these needs, they do not all display them in equal intensity at any given time. This is important to note especially for top management who often confuse their own needs with the needs of subordinates. If they attempt to satisfy their subordinates with rewards that they themselves desire, very often an incongruence of behavior will result.

D. ANALYSIS

1. Purpose

In this section, let us begin to correlate the set of human needs as described by our theorist - Maslow - with what the investigation uncovered at the Studies and Requirements Division. Here, we will analyze three sub-areas that are meant neither to be collectively exhaustive nor mutually exclusive, but will allow us a limitation on this endeavour. The areas are:

- a. Selection of Personnel and Assignment of Work.
- b. The Work Itself.
- c. The Professional Climate.

Let us review our purpose here. We are in the personal dimension. Our basic unit of investigation is the Project Officer of the Studies and Requirements Division. We want to try to understand what the above areas mean to him and thus how these areas affect his work. We shall do this by seeing how these areas affect the need hierarchy of the "average project officer".

2. Selection of Personnel and Work Assignment

a. External Assignment

All Marine Officers at S&R are assigned to the division by the Headquarters at the Development Center. In turn, they are assigned to the Center by the Headquarters, Marine Corps Development and Education Command, and were, in turn, assigned to that Command by their ultimate assignors, their career monitors at Headquarters Marine Corps. This is the same, basic, decentralized method of assignment utilized throughout the Marine Corps.

A few exceptions to this rule are found in twenty-four billets at the Development Center requiring some form of advanced education beyond the baccalaureate level. These billets are designated as Special Education Program (SEP) billets. Four of them are assigned to the Studies and Requirements Division.⁹ They are:

⁹Marine Corps Development and Education Command, Development Center, Command Directory, Command Directory, (March, 1971)

Billet

Special Education

Deputy for Studies
Long Range Branch, Organization
& Operations Analyst
War Games Branch, Operations Analyst
War Games Branch, Operations Analyst

Operations Analysis
Defense Systems Analyst
Operations Analysis
Operations Analysis

Individuals qualifying for the SEP requirements of these billets are assigned by Headquarters Marine Corps. However, assignments within the division are made by the Division Chief.¹⁰ This means that final assignment of specially educated personnel is not made beyond the division level. This then is the basic policy of assignment for all division members. What does this mean in relation to Maslow's theory?

The most relevant need here appears to be the esteem need. We all have need of status. To be assigned to a position in the Marines by its highest headquarters brings a great deal of status. For example, let us assume that the Corps has an existing need for a project officer in the management of the study of some highly complex weapons system for the midrange period. An individual, let us say you, a Marine Lieutenant Colonel, receives orders from Headquarters Marine Corps to report to the Studies and Requirements Division as that project officer.

In Maslow's terminology these orders would represent feedback that verify your self concept. Such feedback will increase your stature as the office which makes the assignment rises in

¹⁰Development Center, Standing Operating Procedure, op. cit.

importance also. In our example, it was the highest office in the Corps which assigned you. As we have seen already, this is not in fact the case.

The case as follows is much more likely to occur. You receive orders to the Marine Corps Development and Education Command. When you arrive at Quantico, you are assigned to the Development Center. (During this investigation there were 216 officers at the Center.)¹⁰ From the Center, you are assigned to S&R, where you are told by the Division Chief that you are going to the Mid-Range Branch. The Head of the branch then, or in conjunction with the Chief, assigns your final billet and with that billet comes the project or projects that you will be expected to manage.

Many project officers do not find the latter policy, which is the one in effect, very satisfying. To change this procedure would take an overhaul of Marine personnel assignment policies that lies far outside the boundaries of this thesis. The effects of those policies, however, lie very much within our limits. Let it suffice to say that practically all the officers interviewed see no selectivity in the assignment of project officers and that the nature of the work calls for selectivity. This combination of the work itself and the lack of selectivity in assignments creates an intervening variable of the first order. It stems from an idea that all officers should be available for

¹⁰Development Center, Command Directory, op. cit.

virtually any assignment. It is a factor that has long been a military enigma.¹¹

b. Internal Assignment

We have already seen that expectations play an important role in the reaction of individuals to need fulfillment. Since the HQMC policy is anticipated by the potential project officer, this factor appears to be less significant in the Corps than it normally would be. This decentralized approach to personnel assignment has benefits for the substrates of management in that a great deal of power goes with it. This power as far as our project officer is concerned lies with the Division Chief and the Branch Heads. The project officers interviewed held high expectations concerning need fulfillment in the assignment practices at this level. These expectations were rarely met as the following comments made by project officers will attest:

"We are not assigned a project, we are assigned an empty desk and chair."

"It takes a minimum of six months to even begin to understand what you are supposed to do, a lot of guys never do."

"When I arrived here, I was given a chair, a desk, and told to read some boring publications. A few days later I was assigned my first project."

¹¹See Selznik, Janowitz, et al., The Adaption of Complex Organizations to Changing Demands, A report submitted to Director of Defense Research & Engineering by the Research Group in Psychology and the Social Sciences, (Smithsonian Institution, 1962).

These are a few statements that reflect the internal assignment policies of S&R as the project officers view them. They are directly related to Maslow's esteem needs in that they are all stating that; "No one bothered to verify my self concept". "No one wanted to know how I felt about my assignment."

The project officers at S&R are all Majors and Lieutenant Colonels. They have an average of fifteen years in the Marine Corps and consider their past positions to be ones of relative autonomy. Their training and experience has emitted a much greater significance to the operator than to the planner, researcher or staff officer. Very few of them have had prior experience in research and development. None have had experience in the process of managing studies. They arrive extremely vulnerable. According to Maslow's theory, the present practice of assignment is dysfunctional for need satisfaction at the HQMC level, but worse at the Division level. It is one that fails to be responsive to any personal needs whatsoever. It is one that fails to take account of the personal dimension.

The assignment of work runs parallel with the assignment of personnel. The interest in every study on the part of the project officer is assumed to be inherently high by the managers of the division. The manner in which the officers receive their assignment is a topic in the next section.

3. The Work

Project officers, without exception, perceive their work at S&R to be both important and interesting. At the same time there is much that is dis-functional in their efforts, for they all agreed that it was extremely frustrating. None of those interviewed stated that they would like a future tour with S&R, nor would they care to be associated with any part of the Marine Corps R&D Community.

How do project officers feel about their work, about their capabilities to perform and the realization of those capabilities on the part of their supervisors? What needs, in accordance with Maslow's Theory, are filled by managing studies for the U. S. Marines? The ideal would be a working environment where self-actualization could be realized. The environment at S&R was found by this investigator to be somewhere between the level of fulfilling safety needs and social needs. Again, it should be pointed out that the personal dimension has not been recognized as existing by most organizations. Still S&R appears to be filling a much lower range of needs than it is capable of.

The work of the project officer cannot be put into a vacuum. It must be analyzed in relation to the other factors of the personal dimension as well as with the factors of the other dimensions. As we can see this work is rather creative in its extent.

The creative or innovative type work necessary for the solution to S&R's problem is a function of the selection process already reviewed. It is also a function of the environment or professional climate. In other

words, if we can't select them, perhaps we can groom them. How does the climate effect the project officer?

4. The Professional Climate

The work within the Division is unique work in that every project calls for innovation of a distinct nature. This is quite unlike the climate that most project officers are accustomed to. This climate includes the mundane work and the revolutions through which that work must be processed that on the surface generates the frustrations so clearly rampant throughout the division. Those interviewed referred to the complete lack of indoctrination procedures and the administrative procedures of the Center as the source of their frustration. In conjunction with this, many perceived a lack of substantive comments about their work from their superiors. Superiors' comments were limited to criticism on grammar, format and style; and the amount of time spent on this at successive levels of management was considered excessive. As one officer put it, "They put someone in the job who knows nothing about it, tell him to do it, but not how to do it, and then complain about format of the final product, because they know less about substance than we do."

Comments such as this can be found at many other places besides the Marine Corps. It is possible that they depict the situation as it is. On the other hand, they could totally or, more realistically, partially describe a defense mechanism on the part of individuals who

frustrated about their own inabilities in the daily work that they are required to perform.

In line with Maslow's need theory, these complaints could display a realization, conscious or unconscious, that the highest of the need hierarchy - self - actualization and esteem needs are blocked for up to one year by the conscious recognition that project officers are at quite a loss in their jobs. Many displayed the attitude that it was not their fault, but the fault of the system. The system is ridiculed especially by the newer officers.

The threat that this type of work presents, or more accurately, the inability to understand and perform the work and thus fulfill one's needs at the esteem level and above, are very real at S&R. Chris Argyris, Professor of Industrial Administration at Yale University, has this to say on the subject.

Generally speaking, there are at least two ways to reduce feelings of threat. One is to change the self, so that it becomes congruent with whatever is causing the difficulty. This involves 'accepting' the fact one is 'wrong'. It involves admitting the limitations associated with the difficulty and a willingness to change the self so that the difficulty will not rise again. The second approach is to defend the self by somehow denying or distorting (consciously or unconsciously) what is threatening and clinging to the present self concept. This behavior is called a defense reaction

Defense mechanisms are therefore developed to be used any time that the self feels threatened. All individuals have a set of defenses. This set of defenses is not to be viewed as necessarily being bad or good. It is best to view them as simply the individual's way of defending himself from threat.

The four most frequently threatening experiences are anxiety, conflict, frustration and failure.¹²

Since frustration has been identified by the S&R project officers themselves, it might be well to quote the professor on this experience also.

"Frustration. Coupled with, and perhaps a special case of, conflict, is the problem of not being able to overcome some barrier in order to arrive at some goal. If the goal is not reached the person will become emotional, uneasy, antagonistic - he will show signs of being frustrated. The person under frustration does release emotions, whether he shows these emotions in his observable behavior or not. These emotions act like a sleeping pill, so to speak, on the person's whole personality (especially his abilities) and reduce his efficiency.

For example, prior to frustration the person's efficiency is said to equal ten, under frustration it is usually reduced, (e.g., to five) without the person's realizing it (i.e., unconsciously). The person therefore cannot figure out what is wrong with himself This worry only increases the emotional imbalance, which increases the action of the emotions on the efficiency of the personality, and down goes the efficiency some more . . . The thing that makes frustration most destructive is that a person may not know why he is less efficient.

. . . Every person has developed his own tolerance against frustration . . . The individual's ability to withstand frustration is known as frustration tolerance. The higher the frustration tolerance, up to a point, the more adaptive life will be. We emphasize 'up to a point' because a person who never becomes frustrated, no matter how difficult the situation, is not necessarily a healthy person.¹³

¹²C. Argyris, Personality and Organization, (New York: Harper & Row, 1957), pp. 36-37.

¹³Ibid, p. 40.

The very nature of the work at S&R may well be the barrier which causes project officer frustration. Certainly the inability to do a job that is obviously expected by one's superiors constitutes a threat to one's self concept which can easily surface; the first of Maslow's psychological needs - the safety need. This could be applied to the area of promotions for the project officer. At the least this frustration could be correlated with the inordinate length of time it takes to become accustomed to managing Marine Corps Studies.

The problem of indoctrination has recently been recognized by the Center. Oral briefings are now being given to incoming personnel and SOP's and Handbooks are being published. While this can be helpful to the project officers administratively, it will do nothing for the area of innovation.

Management at the Center must make an analysis of their own attitudes toward innovation. Does the Division and Center really want creative ideas, are they able to adapt to change, are they seriously interested? The initial key to creativity is in the command's attitude toward it. It must be evidenced constantly.

"Putting out brush fires" is a necessary chore, but it is not a creative one. It breeds attitudes of urgency, restriction and rigidity. True creativity on the other hand involves risks that do not appear in fighting brush fires.

A few of the approaches leading to a climate of innovation are listed below:^{14, 15, 16}

- a. An open-door policy
- b. A "Freedom to fail" attitude
- c. Work assignments that are interesting and challenging, with mobility in the organization
- d. A Creativity Training Program
- e. The Small Group Method (Team Method)

Mason (1960) states that many executives have heard of the open door policy and think that they practice it. In reality, the door might be open, but the mind is closed. All levels of management must not only be available and approachable with new ideas, but must also actively elicit them.

"Freedom to fail" is also required. Ideas, good or bad, lead or should lead to other ideas and these may provide the answer. A problem here for S&R is that one idea, good or bad, rarely leads to another because there are discontinuities in the communication's network.

A creative training program is more a necessity than a luxury at S&R. In industry the selection process takes care of much of this

See the following for further amplification on innovation

¹⁴J. G. Mason, How to Be A More Creative Executive, (New York: McGraw-Hill, 1960).

¹⁵F. Randall, "Stimulate Your Executives to Think Creatively", Harvard Business Review, July-August 1955, pp. 121-128.

¹⁶M. Stein, Creativity and the Individual, (Boston: Free Press, 1960).

problem, but not so at the Development Center. The purpose of this kind of training is not only to enhance the individual's output, but to make him more receptive to the ideas of others. Thus, the individual not only will understand the innovative process, but will help establish the creative climate by being receptive.

The small group or team method has rapidly overtaken the lone wolf approach to creativity in most R&D organizations. Large groups have proven inadequate, for in them the individual can lose his identity and then not assert his ideas.¹⁷ Small groups of the "think tank" variety, a la The RAND Corporation and the Hudson Institute correct this imbalance. This approach is totally absent at Studies and Requirements. It returns as a topic in later chapters.

E. SUMMARY

What has this investigation uncovered thus far? What points can we delineate as most important to the construct of our thesis? In one sentence we can state that for S&R response to the personal dimension does not exist in the areas covered.

Initially we set out the scheme of a theorist - Abraham H. Maslow - and then clinically correlated the situation at S&R with the theory. We have seen the following:

¹⁷See Milton and Green, The Group vs the Individual in Research, A technical paper submitted to the Operations Research Office, Department of the Army, July 1960.

- a. There is no organized selection of personnel at S&R.
- b. Assignments are considered to be more of a function of where an officer sits than his interests or abilities.
- c. The work at S&R is considered to be unique; but it presently takes an inordinate amount of time to understand the work.
- d. The majority of project officers feel frustrated.
- e. The frustration probably emanates from an inability to perform adequately.
- f. An innovative climate is necessary, but absent.
- g. The personal dimension is not explicitly recognized in formal policy.

The above commentary is offered in the way of a summary for this chapter. We shall offer some recommendations in the concluding chapter of this thesis when our total case has been constructed.

III. THE ORGANIZATIONAL DIMENSION

A. THE THEORY

1. Introduction

On July 15, 1938, a distinguished gentleman in South Orange, New Jersey, lay down his pen after completing a work that has had a marked influence on the approach this paper has taken. That man was Chester I. Barnard, a relatively unheralded senior executive of the American Telephone and Telegraph Company. His book was titled, The Functions of the Executive,¹⁸ and it is to the essence of his work that we now turn for a source of theory in reviewing the organizational dimension of the Studies and Requirements Division.

We shall follow the same path laid down in the last chapter. A synopsis of Barnard's theory will be presented and followed by a set of clinically observed variables that caused problems for the division in attaining its goals of effectiveness. The danger of cultism remains with us here as it did in our discussion of the personal dimension. We must be aware of it.

The Functions of the Executive is a hallmark in organizational theory. It can be stated that very few, if any, theorists on the subject

¹⁸C. I. Barnard, The Functions of the Executive, (Cambridge: Harvard Press, 1938).

have not been influenced by Barnard's work. This is doubly potent, for the book is exceedingly difficult. Any synopsis of it will lack a great deal, yet any valid synopsis of it, no matter how lacking, will be of value.

Barnard presented his theory as a statement of totality. It was this sense of wholeness that made the book so unique in 1938, and this same sense explains the continuing demand for it in 1971. His approach was scientific. He had the capacity to reason in compound systems of thought without losing his analytical grip. He derided other theorists for viewing organizations in pieces. He was also alarmed at the relative dearth of work in the field. For the field of organizational theory, Chester Barnard clearly isolated the subject of organization for the first time.

No mention of Barnard can be made that does not bring to mind his famous definition of formal organization. On page 73 of the 30th Anniversary edition of the text we can find the following statement:

It is the central hypothesis of this book that the most useful concept for the analysis of experience of cooperative systems is embodied in the definition of a formal organization as a system of consciously coordinated activities or forces of two or more persons.

This cooperation must be conscious, deliberate and purposeful. What Barnard has done with this definition is to provide us with a working dictum that is universally applicable. He has done so in the simplest of terms and by so doing has not only isolated a complex

phenomena for precise analysis but has contributed immensely to the science of living together.

Is it not true that relatively few formal organizations have survived the test of time? Why is consciously coordinated activity so difficult? What functions can be improved and refined in order to enhance the chance for survival? On page 6 of the book Barnard states:

The survival of an organization depends upon the maintenance of an equilibrium of complex character in a continuously fluctuating environment of physical, biological, and social materials, elements and forces, which calls for readjustment of processes internal to the organization. We shall be concerned with the nature of the external conditions to which adjustment must be made, but the center of our interest is the process by which it is accomplished.

The functions of the executive with which the last part of this treatise is concerned are those of control, management, supervision, administration in formal organization.

Readjustments in the internal process of an organization are the focus of Barnard's theory, for these are the functions of the executive. On a lower level of abstraction he describes the process more specifically as creating, maintaining and facilitating in organizations:

- a. The willingness to cooperate
- b. The ability to communicate
- c. The existence and acceptance of purpose.

The ability to do these three things, according to Barnard, does not come easily. It calls for the concrete synthesis of opposing forces of the thought and emotions of human beings.

For our purposes here, it is necessary to understand that organizations are dynamic creations that require the internal adjustments of Barnard, which takes into account the interrelationship of the adjustments. The implications of the functions of the executive in this paper's terms are multi-dimensional. For example, an organizational change can and often does induce important effects in the social life of the cooperators. The esteem of individuals can be affected and the technical processes they had used in carrying out their work might no longer be feasible. These multiple effects must be understood and ironed out if the organization is to survive.

The processes of this organizational life are worthy of more comment, for they are the essential elements of analysis that we will utilize later on in this chapter to review the Studies and Requirements Division in light of Barnard's thesis.

2. Willingness to Cooperate

How does the executive elicit a willingness to cooperate? It is often assumed that one's mere membership in an organization is reflective of a desire to cooperate. Willingness for Barnard constitutes the surrender of control of personal conduct. This is accomplished by a whole range or degrees of commitment. We can produce a scale from intense willingness to apathy to intense unwillingness. Barnard believes that the "preponderance of persons in a modern society lies on the negative side".¹⁹

¹⁹Ibid, p. .

Another factor concerning willingness is the impossibility for any individual to exhibit it in constant degrees. The author states on page 85, "It is necessarily intermittent and fluctuating." Willingness is controlled by the satisfactions of needs or the dissatisfaction of needs in relation to the expectations of the individual. "Organizations depend upon the motives of individuals and the inducements that satisfy them."²⁰

3. Purpose

On page 86 Barnard states, "A purpose does not incite cooperative activity unless it is accepted by those whose efforts will constitute the organization." A belief in that purpose on the part of the contributors is helpful, but acceptance is essential. Attaining this acceptance and belief in the purpose of an organization on the part of subordinates is far more difficult an executive function than is commonly believed. The individual executive often gets caught up in a whirlwind of sub-activities and often assumes too much in this area.

4. Communications

It should be obvious from the above that the dynamics of inculcating a sense of common purpose throughout an organization is communications. A purpose must be known before it is common, and to be known it must be communicated. Verbal communications are the most usual method here. A more difficult means is what Barnard calls "observational feeling", which calls for a great deal of skill.

²⁰Ibid., p. .

Barnard states that:

The techniques of communications are an important part of any organization and are the preeminent problems of many. The absence of a suitable technique of communications would eliminate the possibility of adapting some purposes as a basis for organization. Communications techniques shape the form of the internal economy of organization. ²¹

5. The Concepts of Effectiveness and Efficiency

Organizational effectiveness and organizational efficiency are terms of measurement used by Barnard to assess organizational health. Effectiveness is the accomplishment of recognizable objectives of the organization. If the organization is not effective it will not survive. The problem for most is the degree of effectiveness. This is a function of the degree of accomplishment, which in turn rests on the essential elements of analysis as a whole: willingness to cooperate, purpose and communications.

Efficiency is quite a bit more difficult to grasp. It relates to the satisfactions of individual motives. It is the resultant of the efficiencies of the individuals furnishing the constituent efforts, that is, as viewed by them.

If an individual finds his motives are being satisfied by what he does, he continues his cooperative effort; otherwise he will decrease that effort or cut it off altogether. Thus the inducements offered will be the maintainer of the equilibrium that the organization cherishes.

²¹Ibid, p. .

"It is efficiency in this sense and not the efficiency of material productiveness which maintains the vitality of organizations."²²

Barnard is careful to show that the offering of economic inducements to promote efficiency is not always vital. There are more important inducements to man of a non-economic nature. Such things as pride in craftsmanship, maintaining a character of personnel that is an attractive condition of employment and prestige are a few of the important contributions to organizational efficiency.

6. Informal Organization

Barnard coined the term "informal organization," which has now become a byword in the discipline. He states on page 115:

By informal organization I mean the aggregate of the personal contacts and interactions and the associated groupings of people that ... have no joint or common purpose but from which arises a joint or common result.

Informal organizations are rather indefinite and structureless but they have two important classes of effect: (a) they establish certain attitudes, understandings, customs, habits, institutions, and (b) they create the conditions under which formal organization may rise.

To explain the power of informal organization which is usually social in nature Barnard states the following in a footnote on page 148:

²²Ibid, p. .

²³Ibid, p. .

... One of my valued correspondents, an army officer of long experience in active service, writes to the effect that I do not relatively emphasize this social incentive sufficiently. Speaking of comradeship he says: 'I was impressed somewhat to my innocent surprise, during 1918, by the influence of this factor. I came out of the war with the definite impression that it was perhaps the strongest constructive moral factor, stronger than patriotism, and in many cases stronger than religion.'

The social need of belonging is the basis for informal organization, and which in turn, is essential to the operation of every formal organization. Many executives are completely unaware of the widespread influences, attitudes and agitations within their organizations. This is important since these informal units act as lines of communication, maintainers of cohesiveness and maintainers of personal integrity.

Barnard's issue for executives is the point of how consciously they carry out their functions. In a single phrase their function is the coordination of action in a balanced fashion. For an organization to be effective and efficient no less is required.

B. THE ANALYSIS

1. Introduction

It is now our task to relate the results of the investigation to the body of our theory. To do that we shall take the essential elements of analysis and attempt to discover the intervening variables. To find if S&R has developed a "highly developed system of consciously coordinated activities" we shall inspect the factors discussed in this order:

- a. Informal Organization
- b. Formal Organization
- c. Purpose
- d. Communications
- e. Willingness to Cooperate
- f. Effectiveness and Efficiency

2. Informal Organization

We can recall that Barnard states that informal organizations create the conditions under which formal organizations may rise. This is true of the Studies and Requirements Division.

Through correspondence²⁴ and vocal communications the present Chief of the Division advocated the conceptualization of a Marine Corps counterpart to the Army's Combat Development Command (CDC). These communications created an attitude (informal organization) that was supportive of that idea. It was discovered during the investigation that relatively few officers at S&R were acquainted with these facts. If they were, not only would the power of an informal organization be more appreciated, but the sense of purpose so visible in the correspondence of the founder could be offered to the present members. We shall discuss the latter further in the section on "Purpose".

The informal organization described thus far is one before the fact. What informal organization is found in the division today? This investigator found three distinct levels of informal organization.

²⁴This information was gathered from the personal letter file of Colonel William P. Mitchell. Some twenty letters were in the file, spanning a period from early 1966 to late 1968.

These correlate with the three main branches of the Division: the long range branch, the midrange branch and the requirements and coordination branch.

The midrange branch was the focus of attention for a large portion of this investigation, since twenty-four of thirty seven ongoing projects were a function of that branch at that time. This is also the largest sub-division within S&R having more than twice the number of officers than any other branch. The basic attitude displayed was that midrange was the working branch. There were few interactions between the members of this branch and others outside it. This seemed true of the entire Division. While the observation was cursory, it appeared that there was little cohesiveness here, perhaps because even within the branch there is little interaction.

The long range branch had twelve officers and constituted the second largest sub-division of S&R. The attitude expressed here was one of superior distinction or status. One individual interviewed consistently referred to the branch as "the panel". This is an historical reference to the fact that the branch was incorporated into S&R at the Division's conception, but prior to that it had been a separate organization in the Development Center known as the Long Range Panel. At least a few members of it still consider it a separate entity.

The Requirements and Coordination Branch consisted of eleven officers during the investigation. The primary attitude here was that this was the most overworked and most misunderstood of any

unit. The investigator found very few outside the branch who knew what its complete title was - it is referred to as the Requirements Branch; and few had any understanding of their function.

The informal organizations of the Division are very weak. Informal organizations are communications links. They act as a bond promoting internal cohesiveness and allow the individual to retain a degree of personal integrity in an impersonable formal organization. They were found to exist in only skeletal fashion at S&R.

3. Formal Organization

The formal organization has been defined by Barnard as the consciously coordinated activities of two or more people. The system set up to carry out those activities at S&R has been delineated in Chapter I.

The main point is that the investigation uncovered a lack of awareness on the part of those interviewed as to what that system was outside their own sections and branches. Few had even seen an organizational chart of their own branch, much less that of another one. While each branch is somewhat organized around the five functions of combat, only one officer could state that he had counterparts in other branches. Within the branches the integration of the five functions for any one study was left up to the branch chief as there seemed to be no interaction between the officers responsible for those areas on any single project.

4. Purpose.

The purposeful activities of a formal organization are the reason for its existence. These purposes can be found in Chapter I of this thesis. A more poignant description of purpose lies in the written communications of the Chief of the Division which were already cited. In a nutshell, these documents state that the purpose of the Division would be to keep pace with other services, particularly the Army in the fields of combat development. Combat development here refers to concepts, doctrines, tactics and techniques or in R&D lingo - software. These areas would be covered in an integrated studies system that would require projections into the future of from two - twenty years and the technical statements of those projections in the form of requirements documents.

It was felt that this capability was urgently needed. Up to this time, the greater portion of Marine R&D was allotted to the testing of already developed equipment. A studies program was in existence, but its efforts were splintered due to the lack of a single manager. The McNamara Planning Programming and Budgeting System (PPBS) with its emphasis on cost effectiveness was demanding complete and intricate justification for the expenditures of development funds. It was the Chief's opinion that without an integrated studies program a danger would arise for the Marine Corps. This danger would be the Corps forced acceptance of Army decisions which would

create Marine forces so similar to the Army in equipment, doctrine and concepts that the very existence of the Corps would be in jeopardy.

How does all this meld with Barnard's theory? The Chief of S&R convinced enough people in the upper echelons of the Marine Corps that his outlook was correct. From our investigation, it appears that few people at the other end of the spectrum, including many of his own project officers, share that concern. Barnard states that a purpose must be accepted by those engaged in the functioning of an organization before cooperative effort can ensue. It appears that there are those who understand their immediate purpose in writing or managing a specific study, but the wider organizational purpose is either unaccepted or unknown. There is little heed paid to common purpose at S&R.

5. Communications

The present state of affairs at S&R in which relatively few accept the organizational purpose and only the Chief appears enthusiastic about it will continue until this same sense is communicated to all officers.

At the present time, it appears that the communications process concerning organizational purpose has been aimed exclusively up the chain of command but never down. The evidence for this comes from observational feeling as well as the interviews themselves. The manner in which some studies are discussed are examples here. The

manner is contemptuous and the contempt is often supported by such statements as:

- a. "Who is the Marine Corps trying to kid? "
- b. "We (USMC) are too small to be doing this kind of thing".
- c. "The Marine Corps will never buy a major weapons system unless the Army does; look at the Stoner system. These civilian R&D outfits are just taking taking us for a ride. "
- d. "This whole thing is ridiculous. The Army has 6000 men doing the same job. Why don't we just test their gear and buy what we want. "
- e. "Every time the Marine Corps buys a system on its own it ends up in disaster. Look at the Ontos and the Mighty Mite. "
- f. "We should be only involved in amphibious tractor development and requiring salt water proofing on desired Army equipment. "
- g. "This place is analagous to a corner grocery store trying to do a supermarket business. It will never make it. "

While many of the comments made by members of the Divison and Marine Corps R&D Community stem from a possible performance inability as already discussed in the last chapter, they all indicate a lack of acceptance of organizational purpose. Further evidence shows that little or no effort has been attempted to inculcate a cohesive sense of purpose in the minds of S&R members. The techniques of communication must be addressed in the solution to the problems of the Division. As great a problem lies in the area of cross-communication which shall be a topic in the next chapter.

6. Willingness to Cooperate

Willingness to cooperate is basically a topic covered previously in the chapter on the personal dimension. The inducements that satisfy the motives of individuals can be divided into economic and non-economic motives. The non-economic motives cover the entire range of human dimensionality as discussed in that chapter.

Project Officers at S&R consider the Director of the Development Center's signature on their work as one of the satisfactions they receive. This is rather impersonal to say the least, however. The importance and interest of the work also engenders cooperation. Barriers to cooperation include such things as status, recognition, lack of communication, and lack of cohesiveness and communion among fellow officers.

Most project officers feel that they are tasked with demeaning jobs such as checking safes and windows on regularly assigned bases; making all their own arrangements for temporary additional duty; being forced to use sign out boards and writing memorandums for the record.

7. Effectiveness and Efficiency

The effectiveness and the efficiency of the Studies and Requirements Division seems to be hampered by the following points:

- a. The division executives do not appreciate the implications of informal organization.
- b. Informal organization, within the division, is weak and splintered.

- c. The formal organization is not understood outside the individual's own branch.
- d. Members do not accept the purpose of the formal organization.
- e. Little or insufficient effort has been made to communicate the purpose.
- f. Members do not perceive that their motives are being satisfied and thus are relatively unwilling to cooperate.

Since S&R is producing studies, it is not effectiveness but the degree of effectiveness that is the problem. This is another way of saying that the studies themselves must be improved. The organizational deficiencies that hinder the competence of S&R studies are the result of present executive processes and not the formal structure itself.

Efficiency, as we have seen, refers to the capacity of organizational life to create personal satisfaction. It is an input to and an output from the accomplishment of the work at hand. At Studies and Requirements the efficiency of organizational action is low. This is because the work requires systematic applications of knowledge which is unknown; the potential for self-actualization is blocked; and esteem and recognition for accomplishing highly effective studies is not rendered.

One can see from the above that in order to promote an effective and efficient organization, executive action must consciously address all dimensions of human behavior. While we have desired to limit this chapter to the organizational dimension alone, the work of Chester I. Barnard has forced us to recognize this point early. In

the next two chapters we will elaborate two other dimensions of organizational behavior not yet discussed in this paper.

IV. THE SOCIAL DIMENSION

A. THE THEORY

1. Introduction

Let us first dispel any tendency on the part of the reader to believe that the social dimension is limited to cocktail parties, luncheons or golf. It is not. It is a basic premise of the multi-dimensional theory adopted in this paper that wherever mankind congregates in purposeful activity all four dimensions, including the social exist.

Our primary theorist for the social dimension will be Professor George C. Homans, presently Chairman of the Department of Sociology at Harvard University. Professor Homan's credentials should be especially meaningful to those of us in the Naval Service. He spent World War II in the U. S. Navy. For four and one half years he commanded a series of small ships in antisubmarine warfare and convoy duties.²⁰ Many of the experiences he had during those years have been woven into the works he has set down since that time.

One of those works, and the primary reference for this chapter is a book written by him and published in 1950. That book is The Human Group.

²⁰See George C. Homans, "The Small Warship", American Sociological Review, Volume 11, 1946, p. 295.

2. The Human Group

Americans are taught adequate ways of thinking about technology and organization; they are not taught adequate ways of thinking about social systems. A leader cannot examine the whole situation inside and outside his group unless he has a method for taking up each element of the situation in order and in its relations to the other elements. It is not enough to have a mystic sense of the whole; nor is it enough to have intuitive 'social skills' that, all too easily, lead up a dead-end street to the 'big time operator'. What is needed is explicit, conscious intellectual understanding, and this is what a book like ours aims to produce. Even this is not enough, but by all that is holy in the human spirit, without this the rest is dust and ashes.²¹

The Human Group is a work that presents a theory that allows us to understand a social system in an explicit, conscious and intellectual style. It is not a set of rules, but a method for analyzing a social situation.

In his theory, Mr. Homans utilizes a conceptual scheme of three interdependent elements of behavior; activity, interaction and sentiment, as they relate to the external objective of group survival and the internal objective of group solidarity.

Mankind is a unity in the sense that men the world over placed in the same situations, or as a psychologist might say in the same 'fields', will behave in the same way - and we must include as a part of the field the traditions handed down in a society from past generations... But our theory is that if we applied the same kind of analysis to all the societies of men, we should find that they were different because they possessed in different degrees characteristics that are present in all.²²

²¹George C. Homans, The Human Group, (New York: Harcourt, Brace & World Inc., 1950), p. 435.

²²Ibid, p. 191.

Homan's thesis is highly potent and applicable to our work here. He tested his conceptual scheme by applying it to sociological studies done on five diverse groups that included:

- a. A work group in the Western Electric Company.
- b. A street gang in a large urban center.
- c. A family of South Sea islanders.
- d. A New England village.
- e. A group of engineers in an electrical equipment company.

He demonstrated that men do react much the same under a given set of conditions. From this, he postulated a series of hypotheses about social life that should be applicable universally. An example of such a hypothesis follows:

A decrease in the interactions between members of a group and outsiders, accompanied by an increase in the strength of their negative sentiments toward outsiders will increase the frequency of interaction and the strength of positive sentiments among the members of the group and vice versa.²³

A more simple example is this:

The more frequently persons interact with one another, the stronger their sentiments of friendship for one another are apt to be.²⁴

What we shall attempt in our analysis is a delineation of the elements of behavior expressed by the members of the Studies and Requirements Division and their relation to one another. We shall then sketch those aspects of the elements that are blocking the division from

²³Ibid, p. 116.

²⁴Ibid, p. 133.

attaining a necessary degree of interpersonal competence. But, first, let us describe the theory in more detail.

The unit of analysis utilized by Homans was the small group. He believed that the group as such was a microcosm of society. The group is defined by the interactions of its members. If a body of people do not interact, then in Homans' terms they do not constitute a group. In studying a group the total situation must be kept in mind, for as Homans states, the behavior of members of a group is analogous to a symphony - it may and probably will have its discords. These discords could come from anywhere and be caused by any number of things. In order to maintain a complex system in equilibrium it is necessary to anticipate those discords or at least act on them when discovered.

The language of Homans is not impossible for the lay man to follow, but it is different. To aid us in interpretation, a few of the applicable terms used in his work are defined below.

- a. External System: Group behavior that enables the group to survive in its environment.
- b. Internal System: Group behavior that is an expression of the sentiments toward one another developed by the members of the group in the course of their life together.
- c. Group Norm: An idea in the minds of the members of the group that can be put into the forms of a statement specifying what the members should do under given circumstances.
- d. Equilibrium: A social system is in equilibrium and control is effective when the state of the elements that enter the system and of the mutual relationships between them is such that any small change in one of the elements will be followed by changes in the other

elements tending to reduce the amount of that change. In other words, when any change is followed by a tendency of the system to return to its original state.

From this short sketch of the conceptual scheme for analyzing the human group, let us move into our analysis.

B. THE ANALYSIS

1. Introduction

The Studies and Requirements Division may be thought of as a social system. Homans defines a social system in terms of its elements of behavior: the activities, interactions and sentiments of group members, together with the mutual relations of these elements with one another. It would seem appropriate then to commence our analysis by listing the elements of behavior as they apply to S&R. In this effort, we shall quickly become intimidated by sheer numbers and thus will concentrate exclusively on the project officers. To add to our self imposed parameters we shall limit our listing to those elements performed in completing a study. We have already noted that no two studies are exactly alike, therefore, we will be forced to generalize a bit.

2. Official Responsibilities of the Project Officer

Paragraph 5b of Chapter IV of the previously cited RD&S Handbook lists these activities and interactions for project officers:

- (1) The Development Center project officer is responsible for planning and executing a given study. He is directly responsible to his branch or division head and is responsive to the HQMC or DEVCEN Advisory Committees.

- (2) The DEVCEN project officer is responsible for the conduct of a study effort. Normally he has the responsibilities enumerated in subparagraph 5c.

c. Project Officer Responsibilities

- (1) Marine Corps In-House Studies. For those studies conducted in-house, the project officer will:
 - (a) Serve as leader of the study group
 - (b) Provide for the development of assumptions, threat, scenario, and approach; and for the procurement of planning factors and other study inputs as appropriate. Initiate action to obtain approval of the Advisory Committee for the above.
 - (c) Direct the preparation of the study plan. Initiate action to obtain study plan approval by the Advisory Committee.
 - (d) Supervise the execution of the study, including assignment of tasks to study personnel; the preparation of the study report; and the compilation of the distribution list for the report.
 - (e) Prepare and deliver presentations and briefings of the study as required.
 - (f) When contractor assistance is employed, monitor the work of the contractor and ensure that timely contractor inputs to the study are accomplished.
 - (g) Prepare and submit study progress reports.

3. Observed Behavior

The above represent the officially required behavior of project officers. A more detailed list of the observed procedure made during the investigation follows.

a. Activities

- (1) Receive and review study directive.
- (2) Contact individuals mentioned in the directive.
- (3) Request clarification of study directive; if required.
- (4) Prepare Project Budget Estimate.
- (5) Prepare a Study Plan.
- (6) Review applicable publications and studies.
- (7) Submit requirements for contractor assistance.
- (8) Commence Study.
- (9) Check on input and output from external sources.
- (10) Prepare progress reports.
- (11) Submit first draft.
- (12) Manage final editing.
- (13) Submit final draft.

b. Interactions

- (1) Discuss project with branch head, Division Chief and interested senior officers at DEVCEN.
- (2) Discuss project with others mentioned in Study Directive in a supporting role.
- (3) Discuss project with HQMC project officer.
- (4) Discuss budget estimate with Division budget officer.
- (5) Discuss requirements for assistance with external agencies.
- (6) Discuss progress with supporting personnel.
- (7) Discuss timeliness with superiors.
- (8) Brief superiors and committees.

c. Sentiments

- (1) The Study Directive takes an inordinate period of time to get to the project officer after arrival at the DEVCEN reflecting an overabundance of do-nothing managers.
- (2) The manner in which the project is received from superiors is important.

- (3) The degree of interest exhibited by superiors is important.
- (4) It is better to rely on vocal answers than to await correspondence.
- (5) It is assumed that the project officer has the expertise to do the job.
- (6) It is assumed that the project officer knows who to go to for assistance.
- (7) It is assumed that all research materials are available and that the project officer knows how to get them.
- (8) The project officer's time is wasted by petty requirements.
- (9) The project officer's status is low.
- (10) Too much is expected of project officers.
- (11) The studies are important, interesting, but the work is frustrating.
- (12) R&D work is not Marine Corps work.

4. Discrepancies and Additional Comments

There are a number of discrepancies between the activities and interactions as observed and as officially stated:

- a. The designated responsibilities stipulate that the project officer will act as leader of the study group. This is misleading. While a study group may be constituted there is no group effort per se. The supporters do their work alone as does the project officer.

- b. An advisory committee is formed at HQMC for each major study. It consists of representatives from sections that have an interest in the project. It does not enter the picture until progress reports are made and the final study submitted. It does little advising with the exception of the representative from the section that originated the study. This individual is entitled the HQMC project officer.

A separate advisory committee is constituted at the DEVCEN.

The results of the investigation show that little utility is derived from this committee due to its relative inactivity until the study is completed.

5. External System

For the Studies and Requirements Division, survival derives from the combination of motives (sentiments), and communications (interactions) that go into making a Marine Corps Study (activity). In other words, the members of the S&R must meet the plans or purpose of the Division, and they must be adequately motivated to do so. Otherwise the Division will not survive.

Homans states that the sentiments that enter the external system are those a man brings to a group from the other groups in society of which he is a member. We have already stated that the project officers enter the division as Majors and Lieutenant Colonels with an average of fifteen years in the Corps.

Many of the positions previously held by these men called for leadership, aggressiveness and accomplishment. Such phrases as,

"Be a leader of men", "The Corps builds men", "First to fight", etc., are the prime recruiting slogans that the Corps has used for years. Many of those interviewed expressed sentiments that were similar as to why they joined the Marines in the first place. Before entering S&R their motivation was reinforced by the elan that exists in the Marines and the respect provided them by subordinates.

In most of their previous positions they made or participated in a wide range of decisions. This was true whether they were fighter pilots, tank officers, logistics staff officers, maintenance officers, advisors, personnel officers, military instructors or military policemen. By decisions, we mean they initiated action to which others responded.

Upon their arrival at S&R most of them became restricted to one or two projects. This is a form of specialization.

Homans states that, "an increasing specialization of activities will bring about a decrease in the range of interaction of a person concerned with any one of these activities and will limit the field in which he can originate interaction."²⁵ In turn specialization creates growth in group size and this will tend to increase the number of positions between the top leader and the ordinary member.

This basic reduction of interaction from what the members of S&R are accustomed to prior to their arrival and what they must become

²⁵Ibid, p. 406.

accustomed to while there, presents a serious dilemma for the project officer. The satisfactions that he had received as a leader, as a decision maker, have been largely removed. He probably will never see the results of a single study. At the same time the nature of the work calls for innovative skills, deep reflection and an unusual ability that does not come easily for most, never for many. This means that greater motivation is required for far less satisfaction.

6. Internal System

Recall that Homans defined the internal system as group behavior that is an expression of the sentiments toward one another developed by the members of the group in the course of their life together. In other words, this is the behavior -- activities, sentiments and interactions -- developed on the job but not dictated by it. This is very close to Barnard's "informal organization".

We found that interactions necessitated for the purpose of producing studies (External System) are almost non-existent within the division itself. A sentiment that was often expressed during the investigation was that there was a lack of social cohesiveness. This is not surprising. Homans states:

"If the interactions between members of a group are frequent, in the external system, sentiments of liking will grow up between them, and these sentiments will lead to further interactions, over and above the interactions of the external system."²⁶

²⁶Ibid, p. 112.

This does not occur at S&R, which explains the weakness of the informal organization. Homans also states the following:

"As the range of a man's interaction declines, as he interacts less often with the leaders of his group, and as the field in which he exercises authority becomes more limited his social rank will decline."²⁷

We could just as well substitute the terms of Maslow - esteem and self-esteem, here for social rank. We can see from this that according to Homans theory the position of project officer in the internal system of S&R calls for a lowering of social rank.

7. Group Norms

Homans definition of group norms has already been provided. We can sum it up in three words - normally expected behavior.

Homans states that to understand any expression of opinion we must look at three factors: situation, sentiment and norm. The situation an individual finds himself in will create certain sentiments. These sentiments in turn, will be influenced by group norms. Often the norm is more powerful than the sentiment. An example is the high school student who realizes drug misuse is personally harmful but who condescends to that misuse due to social pressure.

A few group norms as expressed at S&R are as follows:

- a. Do your own thing as a project officer.
- b. Do not interact with others, in the course of your work, unless so directed.

²⁷Ibid, p. 407.

- c. Do not expect either help or reward at S&R.
- d. Complain about mismanagement, but never to the managers.
- e. The project officer will become "the expert".
- f. Act like you know what you are doing.
- g. You won't like working here and you'll be glad to leave.

C. SUMMARY

What does all this mean? In Homans terms there is significant social conflict growing in the division. Much of the social conflict stems from the lowering of social rank as perceived by project officers assigned the division and some of it stems from the recognized divergence of group norms from operational reality.

Equally important is the lack of social cohesiveness. By limiting interactions in the external system (job related activities) feelings of friendliness toward fellow officers are not enhanced. On top of this, the officer is placed in an extremely threatened position by the difficulties of the tasks he must perform.

One way to overcome some of these problems is to create a true inter-branch team for each project rather than isolating project officers as is now the case. Douglas McGregor provides us with a word of warning on the team concept.

"Often 'teams' are not teams at all, but collections of individual relations with the boss, in which each individual is vying with every other for power, prestige, recognition and personal autonomy. Under such conditions, unity of purpose is a myth."

Through real teamwork, growing out of genuine social cohesions many of the problems described in this chapter could be solved.

The following main points have been made:

- a. Assignment to S&R means a lowering of social rank.
- b. Project officers do not interact frequently in the division's external system and therefore, a viable internal system does not develop.
- c. Project officers conceive of their interactions with superiors as stumbling blocks.
- d. Group norms are not consistent with operational reality, and this is perceived by the project officers.
- e. Due to a. and d. an incipient social conflict has developed in the division.

V. THE TECHNOLOGICAL DIMENSION

A. THE THEORY

1. Introduction

"The term technology refers to all disciplines designed to achieve controlled changes in natural relationships by means of procedures that are scientifically based."²⁸ Science, on the other hand, has an explanatory and descriptive purpose. The object of these explanations and descriptions is understanding of nature itself.

2. The Practice of Science and the Science of Practice

Ernest Greenwood in his short treatise entitled, "The Science of Practice and the Practice of Science", calls for an integration of the efforts of scientists and technologists or perhaps what we could call theorists and practitioners. It is this work and its thesis that we will utilize in this chapter on the technological dimension.

Greenwood's work discusses the relationship between science and technology as they are manifested in sociology and social work. For our purposes we shall use the general ideas he develops as they are applicable to the work of the Studies and Requirements Division.

The disciplines called for in managing a formal study for the Marines have their bases in science. It is Greenwood's thesis that the

²⁸Ernest Greenwood, "The Practice of Science and the Science of Practice", in Bennis, ed., The Planning of Change, (New York: Holt, Rinehart and Winston, 1961), p. 74.

theorists involved in such disciplines should collaborate with those involved in the practical use of them. This is rarely done. Scientists or theorists, whichever is preferred, generally go their own way, which is often to an end of the spectrum of life opposite that of the practitioner. The same can be said in reverse. The only ties between the theorist and the practitioner seem to be a few written words placed down on paper for posterity. How more beneficial for all of us would it be if they would interact together? Greenwood believes that the results of their cooperative behavior would help us far more quickly and effectively than is now the case.

Greenwood states that the world is too complex to be properly observed by any one discipline, so that a division of labor is needed. The resultant knowledge gained by specializing in a distinct science is immense, but this knowledge is gained at a cost, and that cost is experienced in the difficulty of attempting to reintegrate the disciplines in an effort to understand the world as a totality. This division has been accomplished by scientist of both physical and social phenomena.

Technologists are characterized by the manner in which they apply knowledge to specific problems. Technologists, then, are those practitioners attempting to control situations, while the scientists are those theorists attempting to explain and describe them.

The system of thought which describes and explains situations is called a theory. Greenwood states that the function of all science is to construct theories about the what, the how, and the why of the

natural world. Greenwood utilizes Durkheim's Suicide: A Study in Sociology as an impeccable model of theory construction, and demonstrates how a theory is built.

First Durkheim listed the available facts on suicide such as:

- a. Countries with high literacy rates have higher suicide rates than countries with low literacy.
- b. Christians have higher suicide rates than Jews.
- c. The unmarried have higher suicide rates than the married.
- d. The divorced have higher suicide rates than the married.
- e. The childless married have a higher suicide rate than the married with children.

After listing this data and much more, Durkheim asked:

What common thread runs through these facts? He then looked into each fact and speculated on propositions that would explain this phenomenon. The common thread he found was a well integrated group which holds its members together by means of strong bonds. In a single sentence he postulates his theory as

"Suicide is a function of the degree of group integration which provides the psychic support to group members for handling acute stress."

The above is a simplistic model of theory construction, but should aid us in understanding the manner in which theories are built, as well as provide us with some further insights into the problems under discussion in the previous chapter on social organization.

Technology, or theory put into practice, on the other hand, consists of principles prescribing ways of controlling nature. This is another way of defining problem solving. Greenwood states that practitioners have the following characteristics:

- a. They are action-oriented. They desire to resolve problems by applying knowledge in a practical manner.
- b. The practitioner is individual focused. At any one moment he is engrossed in the particular problem before him.
- c. The practitioner is artistic. This derives from the necessity of utilizing skill in problem solving.
- d. The practitioner utilizes intuition. This derives from the fact that theory cannot be applied to every specific problem, but must be generalized. The transfer of general knowledge to particular problems calls for intuition.

Greenwood sees two personalities that can be of help in the unification of theory and practice. These are those scientists who are applied-oriented and those practitioners who are theory-oriented.

"The practice setting offers to the scientist a laboratory with live situations and potentials for experimentation. It opens up to him new sources of data contributing toward the corroboration and extension of scientific theory."²⁹

The benefits for the practitioner, on the other hand, will be elicited from less intuitive skills and more cognitive understanding.

"Understanding, in turn, consists of description and explanation, which is the function of science. Therefore, practice theory must ultimately rest on scientific theory."³⁰

²⁹Ibid, p. 81.

³⁰Ibid, p. 82.

Greenwood sums up his thoughts by stating that some institutional readjustments will have to be made before his proposed integration can take place. Isolated theorists and isolated practitioners have done marvelous work by themselves. Together they can do even better, but before this happens the rewards for this marriage will have to be great enough to overcome many years of inertia.

B. THE ANALYSIS

1. Introduction

It would be presumptuous to believe that the Studies and Requirements Division has already integrated the fields of theory and practice as advocated by Ernest Greenwood. Greenwood, of course, is speaking on a higher level of abstraction than is applicable to the situation at Quantico. It is our job here to close that gap.

Greenwood's analysis of specialization and the problems of reintegrating the knowledge gained from this process is analogous to the difficulty of the artillery project officer that we introduced in Chapter I. In that case, the specialist was unable to view his project from outside his area of expertise. The result was a study in fire support that did not address the mobility of fire support. Thus, at a different level of abstraction we can see that Greenwood is observing the same phenomena that we are.

We do not see the theoretical or scientific role as defined by Greenwood to be applicable directly to the Studies and Requirements

Division. Greenwood stressed the relation between science and technology. We are more concerned with the relations between technology and operations. We see the project officer in the role of operator and the specialist to whom they must turn for advice in the role of technologist or technical specialist. These two groups are distinct forms of practitioners, and it is a union of the two ways of thinking employed by these two groups that must be made.

The integration must be accomplished both between the technologist and operator and among the operators and technicians themselves. An education program in such technical fields as systems analysis, operations analysis, financial analysis, and accounting could be the prime mover in initiating the collaboration of the technologist and the operator. An organizational development program could be helpful in producing a union of the efforts of the project officers representing varied specialties and time frames.

2. Studies

The methodology of studies calls for a number of varied disciplines. Technical knowledge of the subject is required, as are economic analysis, systems analysis and often procurement and contracting. The average project officer, before assignment to S&R is an operator at gut level, and it is rather difficult to envision him employing systematic knowledge in the tradition of applied science the minute he enters the door of Studies and Requirements. Yet, the work calls for much reasoning in the abstract. The ability to think in the terms

described in Chapter I does not come easily. It rests a great deal on the theoretical.

Early in our argument, we saw that the initial statement of the problem could be put into the form of the question: How do we turn operators into planners? With many qualifications, it might also be stated this way: How do we turn practitioners into theorists? According to Greenwood, one does not. To gain the desired result, one must integrate the inputs of theorist and practitioners by a collaborative effort on their part. The same could be said of operators and technologists.

This approach leaves us with a need to discover more about the disciplines required to produce the desired type of Marine study. We have already seen that the project officers are relatively isolated at S&R, especially within it. According to Greenwood, an institutional reorientation is required to break that isolation.

The required disciplines, as we realize, have already been included in the proposed educational solution to our problem. Those disciplines are:

- a. Organization: Theory and Practice
- b. Systems Analysis
- c. Accounting
- d. Industrial Organization/Procurement & Contract
- e. Operations Analysis

Organizations and the need for detailed study of it have already been alluded to in Chapter III. Before inspecting the other four disciplines let us inspect how the technical competence of our project

officers is utilized. This will be an exercise in the mutual dependence of the dimensions also.

3. People and Assignments

Much of the discussion here is related to what we have already seen in Chapter II. An added light to it was discovered in the following quote made in 1950 by a then Marine Captain at Northwestern University.

"If an employer is to solve the problem of putting the 'right man on the right job', that employer needs two kinds of information. First, he must have information about the man who is being considered for the job and second, he must have information about the requirements of the job to be filled. While this may seem altogether too obvious, it was not until comparatively recent times that employers recognized the fact that both the man and the job must be given consideration if an efficient organization is to be attained."³¹

In this extract written twenty-one years ago, we see evidence of the dependence of the three dimensions mentioned - personal (man), technological (job), and organizational. It is no accident that we have used this quote, because the writer is today the Commanding General of the Development Center.

Greenwood is writing for a civilian audience who have chosen their fields to some extent, at least. This is not true of most project officers at S&R. This divergence must be kept in mind and everything possible done to alleviate the lot of the project officer.

³¹ Lawrence Fontaine Snoddy, Unpublished Manuscript, A Survey of the Duties Assigned to Enlisted Marines Serving with NROTC Units, A thesis in partial fulfillment for the Master of Arts degree Evanston, Illinois, June, 1950, Northwestern University.

4. Systems Analysis

An introductory word on the systems analysis approach should be beneficial for many readers. Systems analysis has evolved out of Operations Research techniques which were utilized with great effect by the Allies during World War II. Mathematicians and statistical analysts as well as physical scientists were predominant and still are in operations research. In systems analysis a wide variety of professional skills is indispensable. It is the interdisciplinary character of this work which above all else distinguishes it from operations analysis.

The concept of systems analysis is difficult to define precisely. The term "system" generally came into use to denote an effort to be more comprehensive than the traditional operations analysis study. Systems analysis, as it is referred to at such Defense oriented R&D organizations as the RAND Corporation for example, seeks to consider more than the use of a particular weapon in a single operational context, and generally attempts to take into account all the relevant factors affecting a complex problem under investigation.³²

A "system", then, means a new weapons system, for example, and all the interrelated economic and strategic considerations associated with its development. The systems study must take great care to define the parameters of the subject it proposes to analyze. Realistic assumptions and definite relevant variables are vital for a useful study. The

³²See B. Smith, The RAND Corporation, (Cambridge: Harvard University Press, 1966).

object of the study is to identify various feasible alternatives under conditions of great uncertainty. It can be rigorously mathematical or more concerned with qualitative factors that affect decision making.

As in any discipline, systems analysis has its own language. The investigation conducted for this thesis turned up a general appreciation for that linguistic system at S&R, but little for the substantive meaning of systems analysis, especially of a mathematical orientation. In planning Marine Corps organization, doctrine, tactics and techniques into the mid and long range time frames it would appear that systems analysis would have to be applied in some form to produce a useful study. Unlike RAND, S&R does not have a wide range of interdisciplinary scientists locally available. (The work of such men is sometimes contracted for at centers like the Stanford Research Institute.) This is hardly conducive to the melding of theory and practice a la Greenwood. Within S&R's own asset, however, are a wide range of interdisciplinary practitioners. At this writing, they are isolated, yet the work calls for a systems approach. Greenwood is correct in expressing concern for an institutional reorientation, for that is what seems to be needed at S&R just to get its practitioners together.

5. Accounting

Accounting concerns the collecting, summarizing, analyzing and reporting of business data. It does not enter the work of our project officers. The Division has a budget officer who acts as the specialist when the need arises. Responsibilities here are limited to the budgeting

of the study only. No study reviewed during the investigation caused the project officer himself to account for implementation costs. Cost benefit analysis does appear somewhat common, although external support is called on to perform it.

The budgeting of a study is an important task in itself. The Program Budget Estimate mentioned earlier is the tool utilized to perform this function. Study project objectives must be translated into statements of research tasks for internal and external contractor support. Accounting is presently a secondary problem, but only because there are so many others of higher priority.

6. Industrial Organization

Managing Marine Corps studies can involve some interaction with industrial organizations. These companies will usually be of the DOD contractor type such as Martin-Marietta. In this relationship, an understanding of procurement and contract administration would be useful. The statement was made during the investigation that most project officers do not even read the contracts that involve their work. This could be alleviated by a closer understanding - an explanation and description of industrial organizations, particularly those involved with R&D work.

7. Operations Analysis

Operations analysis has already been mentioned in the systems analysis section. It can be defined as a procedure which studies all aspects affecting an operation in order to achieve maximum economic

benefits. For every text on the subject, one can find another definition, but the one above is as representative as any.

S&R's use of Operations Analysis techniques is limited. For assistance, the project officer is referred to a section of the Marine Corps Operations Analysis Group (MCOAG). At the time of the investigation this section was extremely small and limited. They had but five members at Quantico, although aid could be received from their parent organization. All S&R studies are supposed to utilize Operations Analysis techniques. However, understanding, even when to use or who to go to for this important tool was often absent at S&R.

C. SUMMARY

None of the project officers at S&R is expected to be an expert in any of the disciplines mentioned here, although some are. What we can isolate from Greenwood is that if operators (our project officers) would understand technical applications of scientific theory, even superficially, a better result would be produced.

Results at S&R are studies. We have seen that the technical disciplines of systems analysis, accounting, operations analysis, and industrial organization are utilized in various degrees in their production. These disciplines, in conjunction with the technical experience of the officers, provide the basis for the scientific approach that should be taken in executing a study.

D. CONCLUSIONS

We have seen in this chapter that:

- a. An interdisciplinary approach to studies is required.
- b. That one theorist believes that practitioners and theorists should collaborate.
- c. That at S&R there is no collaboration of anyone.
- d. That project officers are basically practitioners who have been confined in the past to operations, but who must think in abstract terms at S&R.

We can now see a dual problem at S&R. One problem stems from the technical inexperience of the project officers and the second problem stems from the inability to integrate the work of project officers sufficiently.

In the first problem area, we can identify the S&R Project Officers as operators and the technical specialists available as technologists. These specialists include: the Marine Corps Operations Analysis Group, internal and external civilian contractors and, in general, all technical assets available to the Division. The project officers must be able to communicate with and utilize the assets to produce effective studies. How can this be done without providing project officers an understanding of what these specialists can do? It cannot! At present, it takes six months to one year (and sometimes it never occurs), before the project officer comes to understand the technical assistance available to him. This is too long a period. An educational program to hasten this process is required.

The second problem is a sub-set of a larger organizational dilemma. The dilemma is addressed in the statement of thesis, as well as the paper as an entire entity.

The more immediate area of concern is the problem of an integration of the efforts of the project officers. This would not appear to be a problem for a military unit. If a senior desires a subordinate to work together, he so orders, and so it is, and can be in most military units. However, the Studies and Requirements Division is a very unusual military unit. The work there calls for a personal commitment of a very different nature than is required at an infantry battalion or fighter squadron. Creativity and innovative thought processes cannot be ordered. A different approach to management is required at S&R.

It follows that the managers of S&R are as much a part of the overall problem as the deficiencies they have observed in their project officers. This, as is true of the case of the project officers, is no fault of their own. It is the resultant of a different mix of multi-dimensionality than they have before experienced. Therefore, as an educational program is required for the project officers, so too is one required for the managers. This can be identified as an organizational development program.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. TOWARD TOTALITY

1. Introduction

The road we have chosen in this paper has been lengthy and complex. To investigate the coordinated activities of a large number of individuals in a newly formed unit, requiring intricate combinations of knowledge and experience has necessarily made it so. To accomplish such a task a systematic method to incorporate the entire range of human behavior in order to provide some feasible options for progress is demanded. That framework, for us, has been the multi-dimensional model which exhausts all aspects of life into recognizable sub-sets. Had not this model been available, this thesis would have been likewise.

In this our final chapter, we shall attempt to sum up our analysis and state the conclusions and recommendations that follow from it. In so doing, we shall attempt to tie together the four dimensions we have addressed. For if nothing else has been learned by the writer, a great deal has been established in his thinking about the mutual dependence of the several dimensions of behavior in an organizational system.

We have attempted to be neither excessively subjective, nor excessively objective in this work. As a U. S. Marine investigating

a U. S. Marine unit we realize that we are a part of the problem we perceive. We welcome that realization.

Our solution in the abstract involves all of us in growing and changing as persons, both alone and as members of groups. To grow, to change, we must become aware of, and integrate within our own thinking, the ideas, views and values of others. This is no easy task, yet ours is no easy problem. The complexity of the individual magnifies exponentially as those individuals come together to work, to study, to play - to be. The solution calls for a systematic way of thinking that will account for the wholeness of human behavior.

Max Weber in his renowned work, The Theory of Social and Economic Organization, stated that the bureaucratic organization has advanced because of its technical superiority. Ideally this system eliminates from official business love, hatred, and all purely personal, irrational and emotional elements which escape calculation. It is plain to us today that the ideal is only attained on paper. To attempt to remove from life that which is immovable is not only an approach that is fruitless, it may be an approach that leads to disaster. It is an approach we have consciously avoided in these pages.

2. Thesis

In utilizing the multi-dimensional model, we have also been provided with our thesis. It might be worthwhile to restate that argument again here.

Thesis: That the problems of the Division arise less from deficiencies along any one dimension of organizational process than from the difficulties arising from the mutual dependence of all dimensions in fulfilling the organization's purpose.

It follows that solutions to these problems will meet with either partial success or failure, unless the implications of each problem are considered in light of all the dimensions. Our proposed solution must therefore entail a dynamic balancing of emphasis on all the dimensions in order to maintain equilibrium.

In seeking to reach this balance, much flexibility of thought is required. No one can state that the personal dimension, for example, should be emphasized at a specific level for a specific amount of time. This means that mistakes will be made. Let us accept these mistakes as necessary and be willing to live with them.

B. CONCLUSIONS

1. Introduction

Let us now review the results of the investigation along each dimension and thus weld them together. We must keep in mind throughout this summary the contributions that an educational program can offer and that no two people will receive the same degree of satisfaction or competence from any effort.

Much of the overall problem found in the Division can be stated in the following terms:

- a. Along the personal dimension - a frustration of esteem needs
- b. Along the social dimension - a diminution of social rank
- c. Along the organizational dimension - an impaired willingness to cooperate
- d. Along the technological dimension - a practitioner in a theorists role.

These seemed to be the intervening variables in obstructing effective actions within the Division. Let us consider each in turn.

2. The Personal Dimension

The personal dimension at S&R, as in most organizations, was not given sufficient attention. We have seen in our section on selection and assignment that the personal viewpoints of those concerned are not elicited in most cases. We have also seen that the nature of the work is such that an individual's views concerning creativity and innovation are important. At the same time, the expectations of Marine officers, in general, do not include a presumption that their personal views will be considered important.

We have also seen that the military believe that any officer can fill virtually any assignment. This combination of the work, individual expectations, and organizational assumptions, creates a barrier that leads to frustration. Most officers assigned to the Division have neither the background nor desire to do the work at S&R. This gives rise to a set of defense mechanisms such as the condemnation of the administrative minutiae that is considered rampant at the Development Center.

Recall that the individual responds to all dimensions simultaneously and that all the dimensions are interrelated. From the personal level, the most inherent disfunction at S&R is the difficulty of fulfilling the esteem needs of individual project officers. It follows that the primary goal for the executives of S&R, from this personal frame of reference, is to provide an atmosphere in which attaining esteem will be facilitated.

That atmosphere may be constructed from the following:

- (a) Recognizing individual merit and desires.
- (b) Facilitating interaction among all division members.
- (c) Providing the technical guidance for improving studies.
- (d) Inculcating all personnel with the organization's purpose.

It can be seen from this that the dimensions are related.

Along the personal dimension, the goal is to fulfill the esteem need. To satisfy this need, a project officer must be capable of producing an efficient study (technological dimension), in an organization whose purpose he accepts (organizational dimension) and whose personnel recognize and accept him (social dimension). To attempt to provide esteem without alleviating the problems in the technological, organizational and social frames of reference is in a word, impossible.

An educational program can be helpful in solving the problem from the perspective of technical expertise, but this in itself is not enough. To be technically proficient at producing studies in an organization which does not reward individual merit, and which no one believes in, and whose personnel do not interact together on functional problems

does not lead to the degree of esteem called for at S&R. This does not mean an educational process of some kind is not required, for it is. It does mean that an educational solution cannot stand alone.

3, The Social Dimension

The social dimension within S&R itself was, as we have implied, relatively undeveloped. We saw in our earlier discussion of the organizational dimension in Chapter III that informal organization is a powerful phenomena that can create cohesiveness. In our consideration of personal space we saw the importance of the esteem need; obviously it would be difficult to satisfy without interaction. Even in technological space we see a need for the interaction of two types of thinkers.

We have seen that for at least the first six months the incoming project officer found his social rank lowered. He no longer made frequent decisions, nor did he interact frequently. At the same time, the norms of the group he worked with did not relate to the initial capabilities of the individual. These two factors lead to what George Homans has called social conflict.

The arrested development of the social dimension in any organization whose people value it highly can cause high degrees of individual stress. It must be considered with the same care given to personal considerations.

Social rank of project officers at S&R can be enhanced through executive functioning that:

- a. Facilitates participation of project officers on assignments.
- b. Facilitates interaction among members of the Division.
- c. Closes the gap between group norms and reality.

Again, we must recognize the interdependence of the dimensions.

Increased interaction will lead to a rise in social rank for those who produce effective studies. We know that a study must address all five functional areas of combat and that each project officer is a specialist in one area. Interaction can be increased by a team member input from each functional area on each study. However, unless the individual project officer is technically proficient and exhibits this proficiency to those supporting his study, his social rank will not rise.

This is an example of the mutual dependence of the social and technological dimensions. The Division executives cannot guarantee that every project officer's social rank will be enhanced, but only provide the avenues along which this is possible. The rest is up to the project officer himself.

An educational program will partially supply in varying degrees, the technical proficiency needed to increase social rank. It is our opinion that to effectively demonstrate how the increased technical superiority can be utilized and to provide a receptive atmosphere for such an educational aid, an organizational development program is required.

4. The Organizational Dimension

The organizational dimension at Studies and Requirements was not denied in any way, but not enough was done to nurture it.

The functions of the executive need to be consciously exercised, the more consciously the better. They were not at S&R. If the personnel do not accept an organization's purpose, their commitment to the work itself will only be superficial at best. Morale (a traditional name for willingness to cooperate) will be low and there will be no reward for cross-communications.

It is implicitly assumed at S&R that individuals, upon entering the division, will agree with its purpose, will willingly cooperate and will automatically be entered into the stream of communications. Our investigation found that this is not so. In fact, the reverse pattern was more in evidence.

An educational program aimed at increasing the technical proficiency of project officers is not as applicable here, as a program aimed at the executive level of the division. For purposes of delineation, we will now divorce such a program from the technical one described above and entitle it the organizational development program.

As mentioned, our audience for this program will be the executives of the Division. These are the Division Chief, the Deputy Division Chief, Branch Heads and Assistant Branch Heads. Such a program's primary aim would be to provide a working milieu, in which the multi-dimensional scheme used here could be described, discussed and put into action.

5. The Technological Dimension

Concern with the technological dimension, and the belief that placing more emphasis on it held the solution to the problem in the Division, generated this study to begin with. We can recall that it was a search for tools and techniques that established the feasibility of an educational program of some kind.

We conclude that this is an important factor in the life of the Division, but does not constitute a sufficient basis for a solution to the problem. We have noted that one theorist believes a collaboration between practitioners and theorists is a universally useful step. We have abstracted this principle and applied it to the Division in the form of a union between technologists and operators. We have identified most project officers as operators. We can further identify those who would provide an education program as technologists.

The nature of the daily work at S&R requires the application of a number of disciplines of knowledge. At minimum, it calls for the ability of knowing when to call for the assistance of specialists, and how to communicate with them once they are called. The inability to do the work of the Division was one of the prime sources of divergence between group norms and experienced reality, which added to the growing social conflict in the division. This inability was also the barrier which caused frustrations for the individual and created the defense mechanisms that added to the barrier. It may well be that

this was the principal reason why there was such a lack of interaction in the external system of the Division.

By bringing together the operators of the Division and the specialists available to it, the production of effective studies will have a far higher probability. An education program can provide the common ground for this union. The educators in the role of experienced technical specialists can offer broad, general systems of thinking that will aid in recognizing the need for applying specific technical expertise to any project. The technical education program from the project officer's perspective, in conjunction with an organizational development program from the executives' perspective, is a way to promote balanced approach to organizational effectiveness and organizational efficiency.

C. RECOMMENDATIONS

1. General Recommendations

Our recommendations must necessarily be limited. We shall try to offer them with some semblance of priority but must point out the danger of priorities in our multi-dimensional scheme. Our general conclusion is:

That the solution to the problems of S&R requires an awareness of the multidimensional milieu in which organization members function; and second, an effective program for bringing all dimensions of behavior into balance.

If we have been successful in describing the four dimensional scheme used in this study, and if we have been successful in depicting

the division in terms of it, our work could end here. We recognize, however, that this is an assumption that should not be made since thinking along multiple dimensions of process is a complex process, if not a radical one. In recognition of this difficulty we shall endeavor to list only some specific and, what we believe may be, feasible recommendations for action.

2. Recommendations for An Education Program

We have already seen the utility of an education program from the perspective of each dimension. This utility is high but in itself is not enough. We shall address what else is required in the next section.

Four of the applied disciplines recommended are basically technical in nature. That is, they could enhance the procedural analysis that goes into the development of Marine Corps Studies. These disciplines are:

- a. Systems Analysis
- b. Industrial Organization/Procurement & Contract Administration
- c. Operations Analysis
- d. Managerial Accounting

These have been listed in the order of priority that we feel will be most beneficial. We have omitted the fifth subject - organizational theory and practice - in the belief that it is worthy of separate emphasis. We will not discuss the individual disciplines here, but will state their collective contribution to the work of S&R.

One of the primary problems of the individual at S&R was found to be the work itself. Besides the tools named, the work must

have an innovative sense that is inborn or bred through the creation of an atmosphere that rewards it.

The effects of an education program should be useful, but only if that program is offered to the right people at the right time in the right atmosphere. Accordingly, the executives at S&R will have to gauge such variables carefully before proceeding. In general, our recommendation is that an educational program should be presented, organized around the disciplines presented above.

3. Recommendations for An Organizational Development Program

The discipline of Organizational Theory and Practice has its own special meaning for a solution to the division's problems. Rather than being thought as an input to Studies Processes, per se, it is thought to be more appropriate as an internal input that can address the general recommendation of this thesis, and lead as well to the creation of an atmosphere of innovation. This input has been entitled, The Organizational Development Program. The dissemination of organizational purpose and the acceptance of it cannot be taught; it must actually be experienced. How is this accomplished?

To obtain progress in these areas, an educational program cannot be directed solely at those who produce the Studies. It will take a certain amount of executive action to complement intellectual exercises involved in solving the multiple progression of ideas in a complex study. Accordingly, the following specific recommendations are offered:

- a. That a program in Organizational Development be initiated at S&R prior to the educational program, and be completed well in advance of it.
- b. That a continuing consulting arrangement be set up with a competent organizational specialist.
- c. That organizational purpose be promulgated and proselyted until accepted by the members of S&R.
- d. That newly assigned officers be thoroughly oriented to their work; that they be given in-depth interviews prior to placement; that they be given one week prior to placement to allow time to become acquainted with all aspects of the Division's work; that their positions be clarified; and that they be guided in this process by a single officer sponsor.
- e. That an atmosphere of creativity be engendered through formal programs of social training.
- f. That the formal organization be promulgated and discussed in small group sessions.
- g. That a selective process be established for the assignment of individuals to studies and that proposed project officers participate in this process.
- h. That the communications process be stressed with special emphasis on cross-communications.
- i. That informal organization be recognized as a healthy and natural phenomena that can aid the work process.
- j. That a higher degree of status be granted project officers.
- k. That more frequent interaction within the division be supported; that steps be taken to include the formation of study teams, composed of an inter-branch membership.
- l. That frequent small group briefings be established within the division to enhance division cohesion.

4. Graduate Education Recommendations

Much of the discussion covered earlier on selection of personnel and on the subject of graduate education is actually beyond the realm of control of the managers of S&R. Yet, if a recognition and demand for graduate-level skills does not start at S&R, where will it start?

There are over 70 officer billets in the division, yet there are but 4 billets requiring graduate school training. There are over 200 officer billets at the Development Center, yet, only 24 of these billets require graduate training. Of all these billets, not a single one calls for a general management education.

Postgraduate school education does not guarantee that outstanding studies will be produced. It does mean, however, a higher probability that they will be better than without such education. It might be noted that the general management curriculum at the Naval Postgraduate School covers all the disciplines in the previously recommended educational solution. Moreover the operations research/systems analysis graduates can offer a more intricate mathematical approach to these areas. They, in conjunction with, graduates of the physical sciences can be beneficial to the management of studies. Our final recommendation is therefore, that an analysis be made of the requirements for graduate school education at S&R, with special attention given to the general management student.

D. A FINAL WORD

We have viewed the Studies and Requirements Division from a four dimensional framework. In so doing, we have touched on several

intervening variables that seem to block the organization's effectiveness. It seems apparent to us that these variables are no more or no less numerous than in most other organizations. The main reason for this may be that the S&R Division shares with most organizations the difficulty of addressing its own multi-dimensional nature.

What lies in the future for the Studies and Requirements Division is the potential it has for breaking through the constraints of unintentional neglect in the handling of some of its key variables. This is the syndrome of one-dimensional logic caused by an accustomed way of thinking about organizational problems.

It is possible that with this breakthrough the Studies and Requirements Division can become a model organization, emulated by the entire Marine Corps. The division is in an enviable position. It is neither old nor new, but stands on the threshold of progress; ready to move forward in a rapidly growing and increasingly complex, multi-dimensional world.

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DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author) Naval Postgraduate School Monterey, California 93940		2a. REPORT SECURITY CLASSIFICATION Unclassified	
		2b. GROUP	
3. REPORT TITLE An Investigation into the Functional Problems and Educational Requirements of a Military Research and Development Organization: A Case Study of the Studies and Requirements Division, Marine Corps Development Center, Quantico, Virginia			
4. DESCRIPTIVE NOTES (Type of report and, inclusive dates) Master's Thesis; June 1971			
5. AUTHOR(S) (First name, middle initial, last name) William Richard Smith			
6. REPORT DATE June 1971		7a. TOTAL NO. OF PAGES 116	7b. NO. OF REFS 39
8a. CONTRACT OR GRANT NO.		9a. ORIGINATOR'S REPORT NUMBER(S)	
b. PROJECT NO.			
c.		9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)	
d.			
10. DISTRIBUTION STATEMENT Approved for public release; distribution unlimited.			
11. SUPPLEMENTARY NOTES		12. SPONSORING MILITARY ACTIVITY Naval Postgraduate School Monterey, California 93940	
13. ABSTRACT A clinical investigation was conducted into the Studies and Requirements Division, Marine Corps Development Center, Quantico, Virginia, to assess the potential value of an educational program that had been proposed previously as a solution to the problems of the Division. The analysis proceeded along four dimensions: (1) a personal human dimension, (2) a formal organizational dimension (3) a social system dimension and (4) a technological dimension. A leading theorist's work was utilized in each analysis as a guide in identifying the variables that functioned in the Division to prevent it from attaining a desired degree of effectiveness. The proposed educational program was then related to the problems found in order to assess its potential value. It was found that the problems stem from the relations among elements of the total situation. A balanced solution is proposed which incorporates the educational program as a necessary sub-set of a larger correctional effort. The larger effort recommended includes a form of organizational development program.			

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KEY WORDS

Marine Corps Development Center

Educational requirements; research and development organization of

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