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DEFENSE SYSTEMS MANAGEMENT COLLEGE

STUDY TITLE: The Program Manager's Authority in the Acquisition Environment- An Evaluation

STUDY PROJECT GOALS: The project goal was to determine if the formal authority of the program manager as outlined in DODD 5000.1 actually exists at the program office. To what extent must the program manager rely on informal authority? Is there sufficient authority to get the job done?

STUDY REPORT ABSTRACT: This study was undertaken to reconcile a perceived dichotomy. Department of Defense Policy specifies a program manager with sufficient authority to get the job done. Individuals serving as program managers present a situation where that authority is lacking.

The study seeks to resolve that dichotomy by evaluating the authority granted the program manager by charter and the acquisition environment within the framework of Department of Defense Policy and basic management theory.

The analysis revealed that the program manager has sufficient authority in dealing with the lateral agencies of the department but that he has only limited influence on the vertical structure. This limitation is not inconsistent with theory or policy. However, the program manager should not be held accountable for the result of the actions imposed by higher echelons of the department.

The study highlights a perception common in informal discussion in the acquisition community. It is a baseline for further study to define the future direction to be taken in the management of the acquisition process. The present situation makes it very difficult to fix responsibility for the results of an acquisition program and has led to concern among program managers.

SUBJECT DESCRIPTORS: Management Analysis, Management Control, Management Improvements, Systems Manager, Systems Management.

NAME, RANK, SERVICE	CLASS	DATE
Lippencott, George E. Maj USAF	PMC 76-2	4 November 1976

DEFENSE SYSTEMS MANAGEMENT COLLEGE

PROGRAM MANAGEMENT COURSE

INDIVIDUAL STUDY PROGRAM

THE PROGRAM MANAGER'S AUTHORITY IN THE ACQUISITION ENVIRONMENT- AN EVALUATION

STUDY PROJECT REPORT
PMC 76-2

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THE PROGRAM MANAGER'S AUTHORITY IN THE ACQUISITION ENVIRONMENT AN EVALUATION

Study Project Report

Individual Study Program

Defense Systems Management College

Program Management Course

Class 76-2

by

George E. Lippencott
Major USAF

November 1976

Study Project Advisor
Mr. William H. Cullin

This study project report represents the views, conclusions and recommendations of the author and does not necessarily reflect the official opinion of the Defense Systems Management College or the Department of Defense.

EXECUTIVE SUMMARY

This study was undertaken to resolve the dichotomy between the level of authority of program managers in the acquisition process as implied by policy and the level of authority portrayed by many of the individuals presently filling that role.

If the dichotomy truly exists then the basic premise of program management is not being met within the Department of Defense. Instead of a manager guiding the program through the development process we have a whipping boy taking responsibility for the actions of numerous other groups. Without an ability to clearly fix responsibility for the progress of a system we invite continued problems and further criticism.

To attempt to clarify the issue this study examines the basic theory of program management in order to develop a framework within which the authority available to the program manager can be evaluated. Department of Defense Policy is then reviewed to determine consistency.

The findings reveal that the department's policy is consistent with the basic theory. The implementation of the policy is consistent with the intent. The result, however leads something to be desired. The charters issued to the program managers that grant their authority are not definite. The scope of his authority is in general vague. Despite this the program manager does have sufficient influence to manage the day to day operation

of the program. In attempting to reconcile the constraints imposed by the vertical chain of authority with the progress of the program we find a real problem. The program manager must serve many masters in this arena ranging from intermediate staff members to staff members of some Congressional Committees. These groups are all able to impact the program but under present policy they frequently escape responsibility for the result. Theory and Department of Defense Policy recognize the need for constraints from above but responsibility for the impact of those constraints should rest with the initiator and not with the program manager.

There is a true dichotomy between the program managers authority and responsibility as established by policy and the level of authority found in the acquisition environment. This dichotomy causes concern to the program managers and can lead to the loss of responsibility for acquisition program progress. Since many of the constraints that breed this dichotomy originate within the Office of the Secretary of Defense or at higher levels the question should be resolved as to whether the program manager can ever truly be responsible for his program or whether the environment must be recognized and responsibility fixed at the level where program impacts originate.

TABLE OF CONTENTS

EXECUTIVE SUMMARY ii

Section

I. INTRODUCTION 1

Purpose and Goals 1
Organization and Approach 2
Limitations and Scope 3

II. THE CONCEPT 5

The Use of the Program Management Concept 5
Authority 6
The Program Manager's Authority 7
Summary 8

III. AUTHORITY IN THE DEPARTMENT OF DEFENSE 9

Policy 9
Implementation 12
Summary 17

IV. THE ENVIRONMENT 20

Introduction 20
The Performers 20
The Directors 21
The Influencers 22
Summary 23

V. RECONCILIATION 24

Formal Authority 24
Informal Authority 26
Constraints on the Program Manager's Authority 27
The Problem 30

VI. SUMMARY 32

Conclusions 32
Recommendations 33

APPENDIX A: SELECTED PROGRAM CHARTERS 34

BIBLIOGRAPHY 70

SECTION I

INTRODUCTION

Purpose and Goals

Throughout the course work at the Defense Systems Management College the implied importance attached to the role of the program manager in major weapons systems acquisition has been impressive. Early in the course of the program, discussions revealed that these individuals, in accordance with policy established by the Office of the Secretary of Defense, were to be granted written authority to manage major system acquisitions amounting to many billions of dollars.

As is the case with many subjects, it was not long before a contrary view was expressed. This view originated with the many program managers who shared their thoughts with the students at the college. They spoke of numerous instances where they were seemingly powerless as major disruptive changes were imposed on their program.

The dichotomy on this issue concerned me as it is imagined it would any potential member of the systems acquisition team. Were the program managers correct in assessing the situation or were they expecting a level of authority and control over the program never intended in their position? Is the program manager really in charge of his program? Does he have sufficient authority to get the job done as implied in Department of Defense

Directive 5000.1? How heavily must the program manager rely on informal authority to fulfill his responsibilities? In order to resolve these questions this study was undertaken.

Organization and Approach

Initially it was believed that structured interviews of participants in the systems acquisition process would provide the major portion of the data required. However, as the research progressed it became apparent that considerable data on the subject was available from the numerous studies made on various other aspects of the acquisition process. There was also a concern that the prospect of being cited in a written report might constrain the comments that would be made. Reluctantly, it was decided not to employ interviews, except as uncited background material, and to confine the effort to the written record available. In this manner the dissemination of the final study would not become a matter of concern.

In seeking a solution to the dichotomy confronting us it was decided to approach the problem by first establishing the basic theory of program management. The second section in the study identifies the authority that various experts in management theory believe should be available to the manager. The next step was to examine the chain of authority within the Department of Defense from the Office of the Secretary to the individual program manager. The third section of the study traces this line

through regulation and policy statement to a sample of the charters issued to the various programs. In the fourth section the environment of Defense Systems Acquisition is examined to ascertain if there are truly uncontrolled impacts on the program manager as cited by those managers who visited the college. In reconciling any such impacts with the authority indicated as necessary by theory and the authority provided by Department of Defense Policy it should be possible to resolve the original questions. In section five we make these comparisons and seek to understand the results. If the program manager is granted necessary authority but fails out of ineptitude or uncertainty to use it then we will have an answer. If, on the other hand, the establishment of a single focal point for a program has resulted in the identification of a whipping boy we will also have an answer. With an answer in hand we can then put forward possible solutions to the perceived dichotomy.

Limitations and Scope

It must be recognized that it would not be possible to review all of the hundreds of charters issued by the three services to their program managers. Time would not allow a thorough analysis of these charters to draw conclusions by type of program, phase of program, size of program or other similar elements. The four to five charters obtained from each service were focused on programs of substantial size although not all are in the major

category. It was felt that to hold the size of the program relatively constant would make the results more meaningful. Further, it was felt that any restrictions imposed on managers of substantial size programs would most certainly be felt by managers of smaller programs. An attempt was made, however, to obtain charters for similar type developments among the three services.

The Department of the Air Force does not issue a document identified as a charter. They do issue a document called a Program Management Directive (PMD) which when supplemented by an Air Force Systems Command Form 56, AFSC Program Direction, serves a similar function. This medium was, therefore, used when reviewing Air Force programs.

There was no intention to attempt to explain why the program manager does or does not have sufficient authority. The questions undertaken in this study are confined to whether he has the authority. If the reader desires to explore further he will find fertile fields awaiting.

SECTION II

THE CONCEPT

The Use of the Program Management Concept

The concept of program management has been employed within the Department of Defense or in defense related work for many years. Few cannot recall the famous Manhattan Project that developed the first nuclear weapon during World War II. Inherent in the selection of this type of approach to the development of a major defense system is a recognition of a number of key characteristics possessed by the project.

These characteristics consist of the following: the undertaking is critical to the nation because of the value of the resources to be committed or because of the criticality of the desired outcome, the undertaking is multifarious and complex and not within the purview of any standing organization and the undertaking is of finite duration and urgent priority. (10:19).

When a program organization is established it is important that the relationship of that organization to the existing structure be clarified. The exact level and scope of the authority and responsibility of the manager of the organization must be clearly communicated to all agencies with which he is expected to interact. (7:53).

Authority

Webster's Dictionary defines authority as "power to influence or command thought, opinion or behavior."(31:32). Authority can be further clarified by the establishment of several classes. Formal authority is based on the perception of official position; the legal right to influence or command. (4:55). Informal authority is based on less specific concepts of power. Reward or punishment power implies an ability to influence indirectly actions that will be perceived by those who are impacted as favorable or unfavorable. (8:17). Referent power stems from a perception of common identity; an engineer is more easily influenced by another engineer than by a sales representative. (8:20). Expert power results from knowledge or information. If one is better informed or more knowledgable one is more apt to be able to influence the actions of others on a particular subject. (8:18).

Formal authority is, therefore, the type of authority that establishes the relationships of a program office within the formal structure of its parent organization. Informal authority is composed of forms of manipulative power used to employ existing formal authority, to clarify uncertain areas of authority or to establish additional authority. These latter undertakings are not, however, elements of any formal grant of authority from a superior.

The Program Manager's Authority

What type of formal authority is required by a program manager to accomplish program objectives? In managing any activity the basic functions performed by the manager are generally accepted to include planning, organizing, implementing and controlling. (2:7)(4:16)(5:6). It would, therefore, appear that the manager requires as a minimum sufficient authority to accomplish these tasks in a manner designed to produce the best product possible within the broad guidelines of the organization's objectives.

The above listed functions are very general. The following list further expands on the authority required by the program manager to include specific functions. (10:21)

(1) Product Definition
(2) Task and Fund Control
(3) Scheduling
(4) Project Status
(5) Problem Identification and Solution
(6) Project Change Control
(7) Contractor Control
(8) Customer Relations

This list is of course not all inclusive. Other sources have slightly different lists. However, the list does serve to narrow our focus. Implied within the above is control over the program office team. It is not meant, however, that total control over these areas rests with the program manager but that within the broad constraints imposed by his parent organization he is in charge.

Summary

It is the program manager's responsibility to quantify a need into realistic performance requirements, to determine the best way to obtain the desired results, to develop a cost and schedule balanced with the objectives and to put together a team to deliver. To fulfill these responsibilities he needs full authority for the technical, financial and personnel management of the program. To put it in the words of Mr. Kelly Johnson of the now famous Lockheed "Skunk Works" that developed the SR-71, "The Program Manager must be delegated almost complete authority for all aspects of his program." (11:19).

SECTION III

AUTHORITY IN THE DEPARTMENT OF DEFENSE

Policy

During the latter portions of the last decade the Department of Defense was grappling with a serious problem in the management of the acquisition of defense material. Study after study had identified deficiencies in the process that had resulted in significant growth in cost or in ineffective performance. (1:25).

In response to numerous recommendations the then Deputy Secretary of Defense, Hon. David Packard, issued a memorandum for the service secretaries, on 28 May 1970, entitled "Policy Guidance on Major Weapons Systems Acquisition". The following paragraphs from the memorandum reflect the secretary's thoughts on the authority of the program manager. (15:6).

> " We have been considering, within the department, for over a year, ways by which we can improve acquisition programs for major weapons systems.... and it is now appropriate to move ahead in a concerted effort to firmly establish additional new policies and to implement them...
>
> Management
>
> Management in the services will be improved only to the extent that capable people with the right kind of experience and training are designated to manage these major programs-in fact all programs. In order to be effective program managers must be given adequate authority to make decisions on major questions relating to the program both in the conceptual development stage and in the full scale development stage.... The overall structure of the program management function in all services needs to be considered. Changes must be made to minimize the numerous layers of authority

between the program manager and the Service Secretary.
The entire management problem needs to be addressed under the simple guidelines: put more capable people into program management, give them the responsibility and the authority(underscoring in the original) and keep them there long enough to get the job done right."

On 13 July 1971, Department of Defense Directive 5000.1 entitled " Acquisition of Major Defense Systems" was issued. The following are excerpts from that documents section on Policy. (15:8)

"Mode of Operation: Sucessful development, production and deployment of major defense systems are primarily dependent upon competent people, rational priorities and clearly defined responsibilities. Responsibility and authority for major defense systems will be decentralized to the maximum extent consistent with the urgency and importance of each program. The development and production of a major defense system will be managed by a single individual (program manager) who shall have a charter which provides sufficient authority to accomplish recognized program objectives. Layers of authority between the program manager and his component head shall be a minimum..."

Each service has in turn issued regulations to implement the guidance from the Office of the Secretary of Defense. Army Regulation 70-17, 16 June 1975, entitled "Project Management" stipulates as follows: (21:2-1)

" He (the program manager) will exercise full line authority, as defined in his charter, over the planning, organization, direction and control of the approved project. He will also exercise authority over the allocation and utilization of all resources authorized for the execution of the approved project."

The Army Regulation expands on the above to identify some eighteen specific areas of authority which include control over in house work accomplished with program funds, tasking of those

agencies within the program manager's charter authority when such action is dictated, correction of all technical deficiencies and the execution of trade-offs within prescribed limits. (21:2-2).

Secretary of the Navy Instruction (SECNAVINST) 5000.1,dated 13 March 1971, entitled " Systems Acquisition in the Department of the Navy" lists five specific areas in which authority should be granted the program manager. Included is the authority to make necessary technical and business decisions on all matters within the scope of the program charter; the authority to control all resources authorized, allocated for obligation and approved in the budget and Five Year Defense Program; the authority to establish work tasks and schedules and to approve cost estimates and authority to handle administrative and personnel evaluation matters. (23:2).

Air Force Regulation 800-2, dated 16 March 1972, entitled "Program Management" directs the implementing command to delegate maximum authority and responsibility to the program manager. (28:2). Under responsibilities of the program manager are included making technical and business management decisions within the approved program; establishing the need, scope, cost and schedule for program efforts; the assessment of the impact of change and the organization, planning, directing and controlling of the program. (28:2).

Implementation

The next step, and the last, in the chain of authority from the Secretary of Defense to the program manager is the individual program charter. In reviewing the charters, which are tailored to each program, certain general aspects should be considered: at what level does the program manager report, what specific authority is granted the program manager, are the boundaries between the program office's responsibilities and those of outside agencies clearly defined, at what level is the program charter originated and how well does the charter comply with the requirements of Department of Defense Directive 5000.1 and implementing service regulations? In the following paragraphs we will consider these aspects for each of the charters reviewed.

Department of the Army Charters selected for review included The Surface to Air Missile Development System (Patriot), The Improved Light Anti-tank/Assault Weapon (Viper), The Mechanized Infantry Combat Vehicle (MICVS) and the M110E2 8" Self-propelled Howitzer. The "Patriot" and "MICVS" project managers report to the commander of the Development and Readiness Command (34, 35:1) while the project manager for the "Viper" reports to the commander of the Missile Command (33:1) and the product manager for the M110E2 reports to the commander of the Armament Command. (32:1).

Each manager was granted the full line authority of the

official to whom he reported for the centralized management of his program. (32,33,34,35:1). Each was assigned responsibility for the tasks listed in Army Regulation 70-17. Such tasks included planning, directing and controlling the allocation of resources; achieving the technical performance objectives of the project and trade-offs within specified bands.

The charter for each program also contained a list of interfaces that the project/product office maintained with other agencies. In some cases specific responsibilities assigned to the other agencies were established. For example:" U.S. Army Harry Diamond Laboratory- Work on a task basis for the project manager in evaluating fuze design, performance and cost."(33:5).

Army Charters were signed by the Secretary of the Army. (21:2-3). They reflected close adherence to the mandates of DODD 5000.1 and AR 70-17. In some cases the charters quoted word for word from the Army Regulation. There was considerable tailoring of the charters in defining the supporting organizations and the specific tasking in that area clearly established responsibility. There was little tailoring of matters dealing with authority or responsibility in the technical, financial, schedule, or personnel areas. In these areas the wording of the regulation was either repeated or no reference to the area was made at all.

The Department of the Navy Charters selected for review included The Strategic Systems Project (PM 1), The Trident Project

(PM 2), The Anti-ship Missile Defense Project (PM 20) and The Sonar Project (PMS 302). Each charter very clearly established the level to which the program manager reported. All of the selected projects were Chief of Naval Material Designated Projects and reported at that level (24,25,26:1) except the Sonar Project which reported to the Chief of the Naval Sea Systems Command. (27:1).

Each charter specifically listed the authority and responsibility of the program manager. The charter for the Sonar Project simply repeated the elements of authority from SECNAVINST 5000.1. (27:1). The charter for the Trident Project was confined to just referencing the instruction when discussing the project manager's authority.(25:2). The charter for the Strategic Systems Project expanded upon the specific authority of SECNAVINST 5000.1 to include supporting the justification of Navy Strategic Forces inputs into the planning and budgeting process. It also authorized the project manager to insure that other agencies adequately budgeted to support his program. He was, however, specifically constrained from making changes to schedule or performance requirements levied by higher authority. (24:2). The Anti-ship Missile Defense Project Manager was granted authority,in addition to that specified in SECNAVINST 5000.1,to specify and direct efforts of the Naval Material Command in order to insure that proper plans, programs and schedules were developed and incorporated into overall plans for system acquisition. (26:2).

Each charter reviewed contained a number of detailed clarifications of relationships with other agencies. These clarifications were of the nature of identification of boundaries between projects and agencies. For example,the following appears in the Trident Charter. (25:5). " Nothing in this charter shall detract in any way from the responsibilities of the Director, Strategic Systems Project...." Supporting organizations were also encouraged to be responsive to the project manager to the full extent of resources assigned for that purpose. (25:5).

Department of the Navy Charters were issued as instructions published at the level of the chartering authority who was the commander to whom the project manager reported.(23:1). In general Navy Charters reflected a level of authority consistent with that specified in DODD 5000.1 and SECNAVINST 5000.1. There was considerable tailoring in the financial details. However, there was little expansion or tailoring in the schedule, technical or personnel areas beyond the authority specified in the Secretary's Instruction.

Department of the Air Force programs selected for review included "The Space Shuttle" Program, The Advanced ICBM Technology Program (M-X), The Improved AGM-45 (SHRIKE) and the International Freedom Fighter (F-5E). The Headquarters United States Air Force Program Management Directive and the Air Force System Command Program Direction (Form 56) reviewed for each program included

many of the items found in the charters issued by the other services. (30:8).There was not, however, any indication within the PMD or Form 56 of the level at which the program manager reported.

Each PMD contained a section titled " Program Direction" that levied responsibilities upon the subordinate commands of the Air Force for the development of the system. (30:7). In general the command selected to do the development was the Air Force Systems Command. This command added the Form 56 to the PMD to provide any command clarifications prior to forwarding the package to a product division. (29:1). The program office would operate subordinate to the product division and would ultimately receive the total package with instructions to implement the direction. As a result of this process there was no specific listing of the program manager's authority except as developed through the chain of command. For example the PMD for the F5E contains the following. (37:10).

> "Management authority and responsibility is vested in the System Program Director (SPD) or the program manager to meet cost, schedule and performance objectives. Limits of the SPD's authority are as identified in applicable regulations, in Development Concept Paper 80 as revised and as specified in the SPD's presentation to the Defense Systems Acquisition Review Council (DSARC) meeting on 17 November 1970."

Clarifications of interface boundaries and tasking of other agencies to support AFSC were included in each PMD. For example,

the following appears in the F5E charter. (37:7). " Operations: Tactical Air Command is the designated using command and as such will provide appropriate operations input upon request of the SPD."

Department of the Air Force Program Management Directives are originated at Headquarters USAF staff level. (30:3). There was little to reflect in any PMD reviewed that the authority established in DODD 5000.1 and AFR 800-2 was being passed on to the program manager. However, the approach taken by the Air Force does ultimately lead to the responsibility being levied on the program manager who is granted his authority through the chain of command.

Summary

To facilitate the reader copies of portions of the charters reviewed are included in Appendix I. In figure I the reader will find a tabular display of the various elements of the charters that have been reviewed above (page 18). The charters of both the Army and the Navy clearly established the reporting level of the program manager in the charter. The Air Force allows this to be determined through the chain of command. The Air Force PMDs did not specifically spell out the authority of the program manager but tasked the next lower level in the chain of command and allowed the normal functioning of that chain to establish the manager's authority. The other two services did specifically establish the program manager's authority in the charter, however

Figure I: Service Charter Summary

SERVICE	ARMY	NAVY	AIR FORCE
REPORTING LEVEL ESTABLISHED	YES	YES	NO [1]
AUTHORITY CLEARLY ESTABLISHED	NO [2]	NO [3]	NO [1]
INTERFACES & BOUNDARIES ESTABLISHED	YES	YES	YES
ORIGINATING LEVEL	ARMY SEC.	NOTE 4	AF STAFF
COMPLIES with DODD 5000.1	YES	YES	YES [5]

NOTE 1 The Air Force Program Management Directive tasks the next level in the development hierarchy. There are no details associated with the program office.

NOTE 2 Army charters grant the full line authority of a senior member of the R&D hierarchy. Few specifics are provided.

NOTE 3 Little specifics outside of the financial area.

NOTE 4 Navy issues the charter as an Instruction.

NOTE 5 When coupled with AFR 800-2.

the authority listed was in general a repeat of the authority granted by regulation with little specific tailoring by program. All documents went into considerable detail in defining interfaces and assigning responsibility across the different functional organizations of the service. All charters were originated at a senior level of the respective service. However, the fact that the Army Charters were signed by the Secretary of the Army certainly added credence. Webster's Dictionary (31:81) defines a charter as " a written grant of specific rights made by a government to a person." In that context all services provide a charter to the program managers granting some level of authority. The sufficiency of that authority must now be examined.

SECTION IV

THE ENVIRONMENT

Introduction

Having reviewed the chain of formal delegation of authority it is appropriate that we now examine how the program manager fulfills his responsibilities in the acquisition environment. For purposes of this study we have broken that environment into thirds; those who work closely with the program manager in accomplishment of the task, the performers; those who provide the objectives, goals and boundaries, the directors and those who can impact the direction of the program from outside, the influencers.

The Performers

In the first catagory would be placed the contractor, the program office and supporting functional organizations. The program manager's relations with the contractor are governed by the contract and the contract is in turn governed by the Armed Services Procurement Regulations and by numerous other regulations and directives. (1:123). These documents are outside the program manager's influence. The program office operates within the constraints of its parent service. Flowing therefrom are numerous regulations on manpower utilization, travel, training and other areas that constrain the program manager's flexi-

bility. These regulations are particularly constraining in his dealing with civilian members of the program manager's team. (12: 16)(16:1). The program manager's relationship with the functional organizations can take many forms. Under some circumstances he functions as a customer, paying for a product or service, in other cases formal agreements are reached specifying a certain task to be accomplished by the functional team. The functional team is responsive in its own right to higher headquarters and must exist within the service pressures, absorbing its share of reductions and changes. Such impacts may be passed on to the program manager's program despite any and all arrangements and he is constrained in attempting to avoid such impacts. (14:4).

The Directors

Our second major group, the directors , is represented by the organizations between the program manager and his ultimate source of authority, the Congress. Each organization theoretically consists of the responsible commander in the line of authority. However, the complexities of military organizations today have led to the growth of large staffs to support these commanders. These staffs review the resource requirements of each program and make recommendations. They also participate in the day to day operation of the program providing information flow along the vertical channel and offering and providing assistance and guidance to the program office. (1:58). The staffs in the office

of the Secretary of Defense and at the service headquarters are charged with a yearly effort to spread scarce resources beyond any hope of accomplishment. They are constantly searching for resources to shift and can seriously impact a program when they do so. (14:5). Finally, the Congress, under pressure to insure responsible expenditures, has become increasingly involved in the details of program operation to the extent of providing detailed direction. (3:129). These groups have life or death impact on a program and, therefore, require considerable effort on the part of the program manager, serving as an advocate for his program, (3:178) in responding to their needs. His ability to influence these groups, however, is marginal.

The Influencers

The final third, the influencers, is a multi-faceted group composed of the user, the independent test agencies, other disciplines, and advocates for other programs. The user establishes the basic requirements for the program. He can be an ally at times but he can be a source of major pressure for better technical performance contrary to the program manager's objectives. (14:28)(3:102). The independent test agencies are outside the influence of the program manager by definition. (10:3). Their objective is to demonstrate operational suitability and in doing so they can seriously impact a balanced program. (13:22). The group identified as other disciplines are those advocates who

seek special handling of a certain element of a program. Through regulation they impose requirements that the program manager must implement on his program despite possible adverse impact. (1:65). Advocates for other programs are outside the program managers control and probably even his awareness. However, their pressure contributes to misinformation and confusiom that can lead to the directors taking actions that severely impact the program.

Summary

This, then, is the environment in which the program manager attempts to meet his responsibilities. Contained therein are many agencies and groups that can and do impact the program without his approval. If the program manager were truly granted sufficient authority to get the job done as outlined in DODD 5000.1 then could so many sources of outside program impact be able to work their will on the program? Let us attempt to reconcile the environment with the program manager's stated authority.

SECTION V

RECONCILIATION

Formal Authority

In our examination of the formal authority that should be granted the program manager we discovered that authority over the planning, organization, implementation and control of the project within defined boundaries is the level of authority that should be available. When we expanded our review we noted that it was the policy of the Department of Defense that the program manager be granted sufficient authority to get the job done.

The word sufficient is defined in Webster's Dictionary to mean " as much as is needed, enough."(31:471). It would, therefore, appear that the objective of the policy of the Department of Defense is to provide the program manager with written authority via a charter to plan, organize, implement,and control within limits the program he is charged with managing.

In reviewing the documents used by the three services to establish this authority we noted that each grants some level of authority. The Department of the Army grants the full line authority of the commander of the Development and Readiness Command or one of his major subordinate commanders for the centralized management of the program. The Department of the Navy grants authority to make budget, technical, and business de-

cisions within constraints. The Department of the Air Force grants authority to organize, plan, direct and control the program by regulation.

In examining the authority granted the Army Program Manager the definition of centralized management is key. AR 70-17 defines centralized management as " the concept of using a single designated management authority."(21:A-1). The meaning of the full line authority of a commander for the concept of using a single designated management authority is not clear particularly when no additional clarification is provided in the charter. The authority granted to the Navy Program Manager does at least place him in charge of the approved project funds. However, the exact scope of his authority on technical, schedule or personnel matters is not clearly established as it relates to other Navy activities. The term "authority to organize, plan, direct and control the program" as used by the Air Force also lacks clear definition.

It is apparent that the written documents issued by the services to the program manager, while establishing authority, do not clearly define the scope of that authority. The program managers have the authority to get the job done but how that authority relates to the contractor, the functional organizations, the various staff levels or any other source of program impact is in general left to conjecture or at least to some other form of resolution. Webster's Dictionary (31:186) defines formal as "according to fixed rules, done or made in explicit, definite

form." It is quite apparent that there is nothing explicit or definite about the authority granted the program manager. Such findings have been previously documented in other sources. (3:177)(8:16)(17:50). Many of the visiting program managers also reported this fact.

Informal Authority

If the program manager lacks the formal authority to do the job how does he get it done? Are there other influence factors available to him to meet his responsibilities?

One source available is an appeal to the program manager's chartering authority. This type of informal authority has been previously identified as reward and punishment power. The ability to influence a senior policy maker to motivate another agency to provide support is crucial. The very ability to influence the policy maker generally makes it unnecessary to exercise that ability.

Another option stems from the unique aspects of the military program manager's rank. Besides being a source of formal authority in the line it also opens doors to contemporaries as a form of referent power. Through the exercise of this power recalcitrant supporting organizations can be influenced.

The informal authority available to the program manager appears quite substantial. The implied threat of appealing to a senior policy maker or the coercion inherent in the "Old Boy" network can get a great deal accomplished. Through the exercise of these types, and others, of informal authority the program

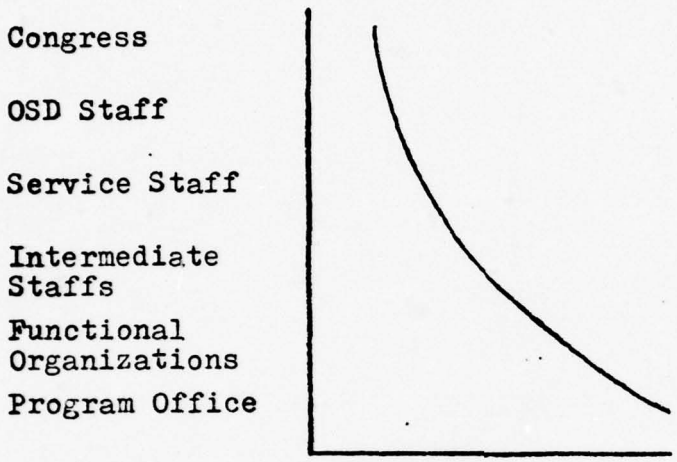
manager can minimize program impacts resulting from horizontally situated groups. It is, however, in dealing with the vertical chain, the directors, that the greatest potential threat to the program managers authority develops. (14:39)(17:55)(1:191).

In this environment informal authority is also very important. However, the exercise of reward or punishment power is less effective in this arena as many of the elements of the group are also directly associated with the chartering authority and are not susceptible to the threat. Referent power is also considerably less effective in the vertical chain. With this group knowledge and information plays an important role. The program manager, alone, possesses the broad grasp of the details of the program and the implications of various potential changes. His expert power is perhaps his only method of influence with many members of the vertical hierarchy. Figures two through five reflect a graphical summary of the sources of influence available to the program manager at the various levels between his program office and the Congress. These graphs are conceptual in nature and are not intended to reflect precise estimates of the magnitude of the influence.

Constraints on the Program Manager's Authority

A diminishment in the influence of the program manager in the vertical structure of the Department of Defense should not be unexpected or unacceptable. The services remain military

Figure 2

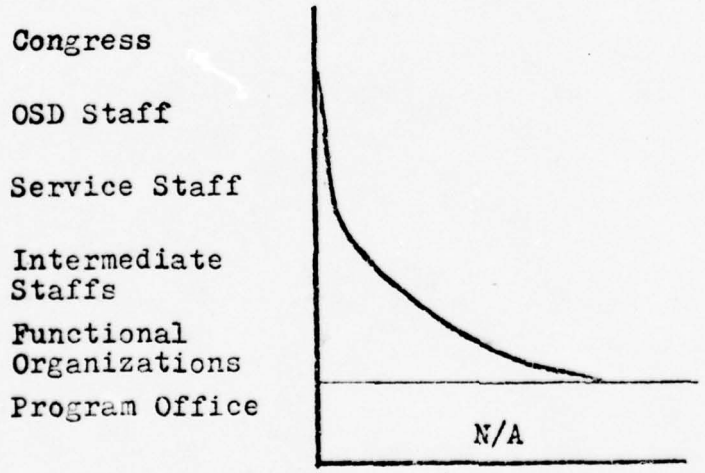


All Sources

Figure 3

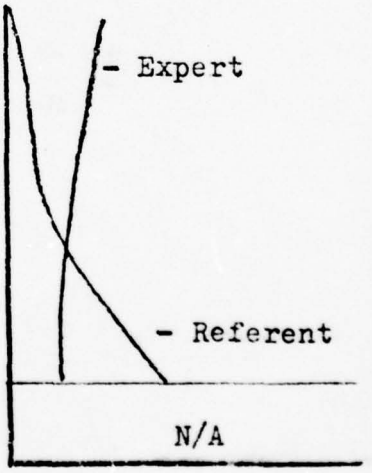
Formal

Figure 4



Reward and Punishment

Figure 5



Expert and Referent

organizations with a hierarchical structure. Each sucessive layer must be responsive to the layer above. Somewhere the conflicting demands of acquisition programs, operational readiness and other organizational needs must be resolved. It is this resolution that leads to the boundaries that are imposed on a program and within which the program manager must operate. The Defense Systems Acquisition Review Council and the Decision Coordinating Paper are means of establishing those boundaries. (19:1). The promulgation of regulations and instructions are other means to accomplish the same ends. It must be accepted that it is the intention of the Secretary of Defense that these constraints be established as they are issued in his name or over his signature.

It would appear, therefore, that the authority available to the program manager in the Department of Defense System Acquisition process is consistent with theory. The program manager is able to exercise financial, technical and personnel management through the medium of planning, organizing, implementing and controlling his program within constraints imposed by his superiors. Why then are the program managers visiting the college expressing a view contrary to the above conclusion? What is the underlying cause of their observations?

The Problem

To be charged with the responsibility to deliver a major weapons system within cost, schedule and performance constraints and then be confronted with changes in funding levels, objectives or delivery dates is certainly a cause for concern. To further be required to implement new regulations specifing special and costly treatment of elements of the program can only serve to heighten that concern. To be held accountable for the impact of those changes will quickly change concern to frustration. If individual reward is perceived as tied to the success or failure of the program then threats to the program quickly become personal. This appears to be the position most program managers that visited the college perceive they occupy. Other sources have also identified this concern among Department of Defense program managers. (3:427).

Herein appears to be the crux of the problem. The program managers perceive themselves as the focal point for the program and they are in general viewed to be in that role by many others. They are held responsible for the success or failure of the program yet others make changes that can impact the outcome while not sharing the responsibility. This view was expressed in one form or another by almost all of the program managers that visited the college. References to this problem were also discovered in the literature. (3:178).

The resolution of this problem is a starting point for another study. Should the level of authority implied in DODD 5000.1 be clarified to fit the actual environment or should an attempt be made to fit the environment to the dictates of the directive? The answer to this question is not simple. It might be noted that reductions in the number of staff levels between the program office and the service secretary has been a frequent recommendation of groups studying problems in defense systems acquisition. (1:58). This would certainly help in the latter approach. However, it must be remembered that many of the regulations and other policy guidance impacting the program manager originates within the Office of the Secretary of Defense. Recognition of this fact would imply that DODD 5000.1 should be fitted to the actual environment and the program manager relieved of the responsibility for impacts outside his sphere of influence. He who would resolve this issue needs the wisdom of Solomon.

SECTION VI

SUMMARY

Conclusions

Program managers within the Department of Defense do not in general possess the formal authority necessary to manage their assigned programs. They do possess, through informal means, sufficient power to coordinate the day to day activities of the program among the lateral elements of the department. They possess only limited influence in exercising financial, technical or personnel management in relation to the considerable power spectrum between themselves and the service secretaries. Such a lack of authority in dealing with the vertical structure of the department is not necessarily inappropriate. The imposition of constraints within which a program manager will operate is inherent in the employment of a program organization.

The uncertainty that leads to the perception on the part of the program managers that they will be held responsible for program outcomes regardless of the impact of constraints imposed by higher echelons must be clarified. It is appropriate to establish boundaries for the program but to hold the program manager responsible for undesirable outcomes resulting from those constraints is inconsistent with good personnel management. The responsibility for the results of program constraints must rest with the authority that established the constraint.

Recommendations

A study should be conducted to reaffirm the level of authority to be granted the program manager. Consideration should be given to whether an effort to enforce DODD 5000.1 as it is presently written should be undertaken. As an alternative consideration should be given to recognizing the actual environment and relieving the program manager from responsibilities for impacts cutside his sphere of influence. This study could be undertaken piecemeal through the Individual Study Program at the Defense Systems Management College or by other means.

The use of informal authority and the strategies involved should be made a matter of emphasis in any training program directed at members of the program office. As such, the Values and Interpersonal Strategies in Management program at DSMC should be expanded to provide feedback to the students on their ability to influence informally the groups they interact with particularly the groups in the Systems X course.

APPENDIX I

PROJECT MANAGER CHARTER

IMPROVED LIGHT ANTITANK/ASSAULT WEAPON (ILAW)

ROCKET SYSTEM

I. DESIGNATION OF PROJECT MANAGER

Colonel Hubert W. Lacquement is designated Department of the Army Project Manager for the Improved Light Antitank/Assault Weapon System effective this date. Colonel Lacquement assumed Project responsibilities effective 25 August 1975. The Project Manager reports to the Commanding General, US Army Missile Command (MICOM). This is the initial Project Manager Charter for ILAW. It will be reviewed annually on its anniversary date by the Project Manager to ensure currency and adequacy.

II. MISSION

The Project Manager is responsible for project management of the ILAW System and ancillary equipment in accordance with DOD Directives 5000.1, AR 1000-1, AR 70-1, AR 70-17, AMCR 11-16, and other pertinent regulations.

III. AUTHORITY AND RESPONSIBILITY

The Project Manager has been delegated the full line authority of the Commanding General, US Army Materiel Command (AMC), as delegated to the Commanding General, MICOM, for centralized management of the ILAW project, and is responsible for:

A. Planning, directing, and controlling the allocation and utilization of all resources authorized for execution of the approved program.

B. Assuring adequate development, product assurance, initial procurement, production, distribution, and integrated logistic support of the ILAW to accomplish project objectives.

C. Achieving the technical performance objectives of the project, as stated in the requirements documents, on schedule and at the lowest practicable cost. Cost parameters shall be established which consider the cost of acquisition and ownership; discrete cost elements (e.g., unit production cost, operating and support cost) shall be translated into "design to" requirements. Traceability of estimates and costing factors, including those for economic escalation, shall be maintained.

D. Practicable trade-offs between system capability, cost and schedule within the bands of performance of the materiel requirements documents. Trade-off decision will give full consideration to the effect on system support effectiveness and integrated logistics support resource elements.

E. Assuring that planning is accomplished and that, except as otherwise directed, the execution of the project conforms to the plan, including implementation by the organizations responsible for the complementary functions of integrated logistic support, product assurance and operational testing, and activation or deployment of the systems and related equipment.

F. Assuring appropriate utilization of the AMC corporate and commodity laboratories as well as other government and private industrial facilities in the solution of project technical problems. The Project Manager has complete freedom of selection of source of technical support within the guidelines of DOD and DA procurement policies and procedures.

G. Assuring that foreign sales customers are not provided information and/or sensitive technology not specifically approved for release by the appropriate Army authorities and included in the approved FMS cases. Engineering change proposals and product improvement programs involving ECCM devices or other sensitive components to reduce system countermeasure vulnerability are to be specifically approved by the appropriate Army authorities prior to disclosure to or discussion with foreign sales customers.

H. Assuring that all major decisions are supported by a comprehensive Decision Risk Analysis (DRA).

Paragraph VIII.B. identifies offices and organizations within AMC which are responsible to the Project Manager for the execution of specifically assigned project tasks, and other participating organizations which support the Project Manager in accordance with DOD and DA directives and regulations.

VIII. INTERFACES AND PARTICIPATING ORGANIZATIONS

A. Interfaces:

1. Office of the Secretary of Defense

2. National Security Agency

3. Defense Supply Agency

4. Department of the Army

5. Department of the Navy (US Marine Corps)

6. Other US Military Commands, as applicable

7. Foreign Governments as required

B. Participating Organizations:

1. US Army Training and Doctrine Command:

a. Participate in: program reviews; preparation, revision, and update of development plan; development of training requirements; Requirements Control Boards; development of training device requirements; Test Integration Working Group (TIWG); operational tests; guidance regarding changes to materiel development trade-offs; and request for proposal (RFP) reviews involving advanced development (AD), engineering development (ED), and producibility, engineering and planning (PEP) contracts.

b. Develop: deployment doctrine; employment concepts; Field Manuals (FM); Basis of Issue (BOI); Cost and Operational Effectiveness Analysis (COEA), and Tables of Organization and Equipment (TOE).

c. Perform operator and maintenance personnel training.

2. US Army Electronics Command:

Provide interface support for adaptation of ECOM developed common support items such as Night Vision equipment and Laser Range Finders.

3. US Army Missile Command:

Provide functional and administrative support, including cost analysis and ADP support.

4. US Army Armament Command:

a. Provide mission support on warhead sections.

b. Provide facilities support for production as required.

c. Provide support in maintaining cognizance of field stocks through the worldwide ammunition reporting system (WARS).

d. Provide Explosive Ordnance Disposal Support.

5. US Army Harry Diamond Laboratories:

Work on a task basis for the Project Manager in evaluating fuze design, performance and cost.

6. US Army Test and Evaluation Command:

Conduct governmental development tests deemed necessary by the Project Manager, provide technical evaluation of all development tests, prepare detailed test plans as required, and assist and advise in the preparation of development test requirements, methods, and procedures for other than government testing.

7. US Army Ballistic Research Laboratories:

Work on a task basis for the Project Manager in determining threat vulnerability, warhead effectiveness, and weapon system vulnerability.

8. US Army Human Engineering Laboratory:

Provide assessment of human factors associated with the ILAW system and elements.

9. US Army Logistics Evaluation Agency:

Participate in review of RDTE efforts for logistical implications and the adequacy of integrated logistic support planning.

10. US Army Materiel Systems Analysis Activity:

a. Prepare the Independent Evaluation Plan, design necessary development tests, participate in the Test Integration Working Group (TIWG), and conduct independent evaluations in accordance with the Single Integrated Development Test Policy.

b. Conduct weapon system effectiveness studies and trade-off analyses as tasked by the Project Manager through Director of Plans and Analysis, AMCPA-S, Headquarters, AMC.

11. Defense Contract Administration Services:

Performs Contract Administration.

12. US Army Operational Test and Evaluation Agency:

Program and conduct operational test and evaluation of assigned project systems; participate in the Test Integration Working Group (TIWG).

PROJECT MANAGER CHARTER
SURFACE TO AIR MISSILE DEVELOPMENT SYSTEM
(SAM-D)

I. DESIGNATION OF PROJECT MANAGER

Brigadier General Charles F. Means was designated Department of the Army Project Manager for SAM-D effective 10 September 1973. The Project Manager reports directly to the Commanding General, US Army Materiel Command (AMC). This charter supersedes the SAM-D Charter approved by the Honorable Robert F. Froehlke, Secretary of the Army, on 4 November 1971 and will be reviewed annually, on its anniversary date, by the Project Manager to assure currency and adequacy.

II. MISSION

The Project Manager is responsible for project management of the SAM-D System in accordance with DOD Directive 5000.1, AR 1000-1, AR 70-17, AMCR 11-16, and other pertinent regulations. The SAM-D System will provide the primary air defense of the Army in the field and will also provide defense for vital military bases. SAM-D defenses will be complemented by short-range, low-altitude, forward-area air defense weapons and will be integrated with the US Air Force in the overall air defense of the theater of operations. For planning purposes, SAM-D could complement SAFEGUARD and provide defense of key military targets and urban/industrial complexes in the Continental United States. The SAM-D System will provide a replacement for NIKE HERCULES and Improved HAWK, and the advanced features of SAM-D will provide an increased capability against saturation attacks, electronic countermeasures, and maneuvering targets.

III. AUTHORITY AND RESPONSIBILITY

The Project Manager has been delegated the full line authority for centralized management of the SAM-D project, and is responsible for:

A. Planning, directing, and controlling the allocation and utilization of all resources authorized for execution of the approved project.

B. The development, product assurance, initial procurement, production, distribution, and integrated logistic support to accomplish project objectives.

C. Achieving the technical performance objectives of the project, as stated in the requirements documents, on schedule and at the lowest practicable cost. Cost parameters shall be established which consider the cost of acquisition and ownership; discrete cost elements (e.g., unit production cost, operating and support cost) shall be translated into "design to" requirements. Traceability of estimates and costing factors, including those for economic escalation, shall be maintained.

D. Practical trade-offs between system capability, cost and schedule within the bands of performance of the materiel requirements documents. Trade-off decision will give full consideration to the effect on system support effectiveness and integrated logistics support resource elements.

E. Assuring that planning is accomplished and that, except as otherwise directed, the execution of the project conforms to the plan, including implementation by the organizations responsible for the complementary functions of integrated logistic support, product assurance and operational testing, and activation or deployment of the system and its related equipment.

F. Appropriate utilization of the AMC corporate and commodity laboratories as well as other government and private industrial facilities in the solution of project technical problems. The Project Manager has complete freedom of selection of source of technical support within the bounds of existing DOD and DA regulations and directives.

G. Utilizing Decision Risk Analysis (DRA) as a tool for supporting major decisions where the applicability of such analysis is appropriate.

Paragraph VIII.B., identifies offices and organizations within AMC which are responsible to the Project Manager for the execution of specifically assigned project tasks, and other participating organizations which support the Project Manager in accordance with DOD and DA directives and regulations.

VIII. INTERFACE AND PARTICIPATING ORGANIZATIONS

A. Interface Organizations:

1. Office of the Secretary of Defense
2. National Security Agency
3. Atomic Energy Commission
4. Defense Supply Agency
5. Department of the Army
6. Department of the Navy
7. Department of the Air Force
8. US Army Forces Command
9. Ballistic Missile Defense Program Manager
10. Overseas Commands
11. Foreign Governments, as required
12. Joint Army SAM-D/Navy AEGIS Technical Interchange Group

B. Participating Organizations:

1. US Army Training and Doctrine Command:

Supports the Project Manager as prescribed by Army Regulations and Department of the Army Directives, i.e., operator and maintenance training, Required Operational Capability (ROC) and basis of issue.

2. Defense Nuclear Agency:

Supports the Project Manager as required by existing agreements between the AEC and DOD.

3. US Army Communications Command:

Supports the Project Office in the procurement of specialized security equipment for the missile system.

4. US Army Corps of Engineers:

Provides support in the construction of new test facilities and site preparation.

5. US Army Electronics Command:

Supports the Project Office and the contractor on development problems associated with communications and radar and the Electronic Warfare Laboratory (EWL) conducts electronic countermeasure (ECM) susceptibility studies and provides for ECM environment during field testing.

6. US Army Troop Support Command:

Responsible for the development and procurement of electrical power generation and environmental control equipment.

7. US Army Missile Command:

Provides functional and administrative support.

8. US Army Armament Command:

Responsible for the design, fabrication, evaluation, and GFE delivery of high explosive and nuclear munitions and collective protection equipment.

9. US Army Tank-Automotive Command:

Responsible for development and procurement support of SAM-D vehicles.

10. US Army Test and Evaluation Command:

Conducts project development tests and evaluation and provides support to contractors and the Project Office at test ranges and the SAM-D Vulnerability Studies Office is responsible for evaluation of vulnerability and effectiveness of weapon systems to combined electronic and tactical countermeasures.

11. US Army Ballistic Research Laboratories:

Work on a task basis for the Project Manager in determining threat vulnerability and warhead effectiveness.

12. US Army Human Engineering Laboratories:

Provides technical assistance in achieving the optimum man/machine interface.

13. US Army Operational Test and Evaluation Agency

Provides project operational test and evaluation.

14. Project Manager, Army Tactical Data Systems (ARTADS)

Provides intra-Army, inter-service, and inter-national compatibility and interoperability requirements to the SAM-D Project Manager for implementation in the SAM-D System. Provides technical assistance and support as requested by the SAM-D Project Manager in the requirements implementation in accordance with the PM SAM-D/PM ARTADS, Memorandum of Understanding dated 3 August 1972, and any subsequent revisions thereto.

15. Harry Diamond Laboratories:

Responsible for design, development and procurement support for SAM-D fuzes, fuze test sets and electromagnetic pulse (EMP) vulnerability.

16. Project Manager, Training Devices:

Responsible for development, procurement and test of SAM-D training devices.

17. DOD Electromagnetic Compatibility Analysis Center:

Conducts electromagnetic compatibility analyses.

18. US Army Logistics Evaluation Agency:

Participates in review of RDTE efforts for logistical implications and the adequacy of integrated logistic support planning.

19. US Army Materiel Systems Analysis Agency:

Weapon system effectiveness studies and trade-off analyses.

20. Defense Contract Administration Services:

Provides on-site contract administration.

21. US Army Aviation Supply Office:

Provides support for aircraft used in the SAM-D test program.

22. Contractors:

Project research and development, production end items, and contractor provided services.

PROJECT MANAGER CHARTER

MECHANIZED INFANTRY COMBAT VEHICLE SYSTEMS (MICVS)

I. DESIGNATION OF PROJECT MANAGER

Brigadier General Stan R. Sheridan was designated the Department of the Army Project Manager for the Mechanized Infantry Combat Vehicle Systems (MICVS) effective 14 July 1975. The Project Manager reports to the Commanding General, US Army Materiel Development and Readiness Command (DARCOM). This charter supersedes the MICV Charter dated 5 February 1974 and the Vehicle Rapid Fire Weapon System (VRFWS) Charter dated 31 October 1974, both approved by the Honorable Howard H. Callaway, Secretary of the Army. It will be reviewed annually on its anniversary date by the Project Manager to assure currency and adequacy.

II. MISSION

The Project Manager is responsible for project management of the Mechanized Infantry Combat Vehicle Systems (MICVS) in accordance with DOD Directive 5000.1, AR 1000-1, AR 70-17, DARCOM-R 11-16, and other pertinent regulations. MICV Systems include the MICV and other MICV derivatives such as MICV/Armored Cavalry Vehicle (ACV), Mechanized Anti-Tank Vehicle (MATV), Mechanized Utility Vehicle (MUV), etc. as well as the MICV Firing Port Weapon, the 25mm cannon to be used as main armament and its associated ammunition, the XM714 Fuze Series for all applications, and the Interim 20mm Main Gun System.

III. AUTHORITY AND RESPONSIBILITY

The Project Manager has been delegated the full line authority of the Commanding General, DARCOM, for centralized management of the MICVS project, and is responsible for:

A. Planning, directing, and controlling the allocation and utilization of all resources authorized for execution of the approved project.

B. Accomplishing the development, product assurance, initial procurement, operational testing, production, distribution, activation or deployment, and integrated logistic support to accomplish project objectives.

C. Achieving the technical performance objectives of the project, as stated in the requirements documents, on schedule and at the lowest practicable cost. Cost parameters will be established which consider the cost of acquisition and ownership. Traceability of estimates and costing factors, including those for economic escalation, will be maintained.

D. Determining and accomplishing practical trade-offs between capability, cost and schedule within the bands of performance of the materiel requirements documents. Trade-off decisions will give full consideration to the effect on system support effectiveness and integrated logistic support resource elements.

E. Assuring appropriate use of the DARCOM corporate and commodity laboratories as well as other government and private industrial facilities in the solution of project technical problems. The Project Manager has complete freedom of selection of source of technical support within the guidelines of DOD and DA procurement policies and procedures.

F. Assuring that foreign sales customers are not provided information and/or sensitive technology not specifically approved for release by the appropriate Army authorities and included in the approved FMS cases. Engineering change proposals and product improvement programs involving ECCM devices or other sensitive components to reduce system countermeasure vulnerability are to be specifically approved by the appropriate Army authorities prior to disclosure to or discussion with foreign sales customers.

Paragraph IX. B. identifies offices and organizations within DARCOM which are responsible to the Project Manager for the execution of specifically assigned project tasks and other participating organizations which support the Project Manager in accordance with DOD and DA directives and regulations.

PRODUCT MANAGER CHARTER

HOWITZER, SELF-PROPELLED, 8-INCH, M110E2 WEAPON SYSTEM

US ARMY MATERIEL COMMAND

I. DESIGNATION OF PRODUCT MANAGER

Lieutenant Colonel Benjamin A. Huggin is designated US Army Materiel Command (AMC) Product Manager for the Howitzer, Self-propelled, 8 Inch, M110E2 Weapon System and related ammunition, effective 3 June 1975. The Product Manager reports directly to the Commanding General, US Army Armament Command (ARMCOM). This charter will be reviewed annually on its anniversary date by the Product Manager to insure currency and adequacy.

II. MISSION

To product manage the Howitzer 8-Inch M110E2 Weapon System and assigned related ammunition and components in accordance with DOD Directive 5000.1, AR 1000-1, AR 70-17, AMCR 11-16, and other pertinent regulations.

III. AUTHORITY AND RESPONSIBILITY

The Product Manager is delegated the full line authority of the Commanding General, US Army Materiel Command (AMC) as delegated to the Commanding General, ARMCOM for the centralized management of the Howitzer 8-Inch M110E2 Weapon System and related ammunition and components, and is responsible for:

A. Planning, directing and controlling the allocation and utilization of all resources authorized for execution of the approved program.

B. Achieving the technical performance objectives of the project on schedule and at the lowest practicable cost.

C. Practical trade-offs between system capability, cost and schedule within the bands of performance of the requirements document. Trade-off decision will give full consideration to the effect on system support effectiveness and integrated logistics support resource elements.

D. Assuring that planning is integrated and accomplished and that, except as otherwise directed, the execution of the project conforms to the plan including implementation by the organizations responsible for the complementary functions of research, development, evaluation, initial procurement, production, integrated logistic support, product assurance and operational testing, and activation or deployment of the system and its related equipment.

E. Assuring that all major decisions are supported by a comprehensive Decision Risk Analysis (DRA).

F. Appropriate utilization of the AMC corporate and commodity laboratories as well as other government and private industrial facilities in the solution of project technical problems. The Product Manager has complete freedom of selection of source of technical support within the bounds of existing DOD and DA regulations and directives.

Paragraph VII.B. of this charter identifies offices and organizations within AMC which are responsible to the Product Manager for execution of specifically assigned tasks and other participating organizations which support the Product Manager in accordance with DOD and DA regulations and directives.

CHARTER FOR THE STRATEGIC SYSTEMS PROJECT (SSP) MANAGER CNM DESIGNATED PROJECT

1. Authority and Responsibilities

a. The Chief of Naval Material is responsible for meeting the material support needs of the Operating Forces of the Navy; planning the utilization of resources to meet these needs; providing the Chief of Naval Operations with timely and adequate technical and economic data concerning the feasibility of meeting the needs of the Operating Forces; furnishing timely advice concerning training and technical requirements essential for the operation and maintenance by naval personnel of new equipments under development; and, as appropriate, providing the Operating Forces with timely guidance on the operations, repair, and maintenance of all equipment and weapons or weapon systems. To meet these responsibilities the Chief of Naval Material delegates to the Strategic Systems Project Manager, as it relates to matters within the scope of this Charter, the authority to specify and direct (within programmed resources) the efforts of Systems Commands and activities of the Naval Material Command in order to:

(1) Insure that these efforts are properly developed and integrated into plans, programs and schedules.

(2) Incorporate these efforts into the over-all Strategic Systems Project financial plan.

(3) Exercise continuing technical, management and financial control.

b. The Project Manager shall support Navy Strategic Weapon Systems requirements, provide technical support for justification of Navy Strategic Force inputs to the planning and budgeting processes, including inputs to the Joint Strategic Objective Plan (JSOP) and Program Objectives (POs), and manage assigned Navy Strategic Programs.

c. The Project Manager shall budget and administer all funds allocated to the Strategic Systems Project Office as required for implementation of the project; shall insure that adequate funds are budgeted by other Navy agencies for support of the project; and shall develop, justify and maintain a comprehensive Strategic Systems Project Office budget for consideration by the Chief of Naval Operations in the preparation of the Navy budget request.

d. The Project Manager shall have the authority and responsibility to implement all provisions of reference (c).

e. In addition, the Project Manager shall:

(1) Insure that appropriate standardization methods for components and equipments required for fleet and shore support are employed in compliance with the policy stated in NAVMATINST 4120.97.

(2) Insure compliance with the proposal evaluation and source selection policies prescribed in DOD Directive 4105.62 and NAVMATINST 4200.35A.

(3) Insure that all correspondence or instructions to contractors affecting the terms or conditions of contracts are in writing and signed by the appropriate Contracting Officer.

(4) Insure compliance with the provisions of the Navy Programming Manual.

f. The authority of the Project Manager shall not include:

(1) Deviations from established Department of the Navy policy and procedures applicable to "designated projects" (including policies and procedures issued by OSD, SECNAV, CNO and CNM).

(2) Final approval of the Project Master Plan and Technical Development Plans and changes thereto.

(3) Final approval of Advance Procurement Plans.

(4) Changes to the schedules established by higher authority for delivery and operational use.

(5) Changes degrading mission performance or altering operational characteristics specified by higher authority.

(6) Authority to act as Contracting Officer in the execution of contracts or changes thereto.

CHARTER FOR THE TRIDENT PROJECT MANAGER (PM2)

CNM DESIGNATED PROJECT

1. System Description. TRIDENT is a long term U. S. Navy program, undertaken in accordance with DCP 67, for the modernization and orderly replacement of presently deployed submarine ballistic missile systems (POLARIS and POSEIDON). These systems are a key element of the nation's nuclear deterrent.

a. The TRIDENT Submarine - This is a new third generation nuclear powered submarine. The TRIDENT submarine will run quieter and be able to stay at sea longer than the present submarines. It will have greater firepower, be less detectable, have greater survivability, and will not be dependent on bases in foreign countries.

b. The TRIDENT Missile - The TRIDENT I Missile is a new, long range missile with a payload made up of multiple independently-targetable re-entry vehicles (MIRV). Development of a larger TRIDENT II Missile is planned for installation in TRIDENT submarines as a successor to the TRIDENT I Missile.

c. TRIDENT Logistic Support - Increased operational and maintenance requirements on the TRIDENT Submarine in the form of extended patrols, shorter refit turn around time, a greater number of years between overhauls, and shorter overhauls as compared to current Fleet Ballistic Missile (FBM) submarines, has required the development of logistic design parameters and maintenance concepts which will allow these demands to be realized in a cost effective manner by means of improved force availability. The focal point for the continuing logistic support of the operational TRIDENT System will be Naval Submarine Base, Bangor (SUBASE BANGOR). It will provide support in the form of submarine refit, crew training, missile processing, and site operations and personnel support for military personnel and dependents.

2. Scope of the Project. The TRIDENT System Project consists of the management, direction, control, and integration of all effort within the Naval Material Command involved in the development, acquisition, production, test and evaluation, support and operation of:

a. The TRIDENT System funded under Program Element (P.E.) 11228N.

b. Research and Development efforts funded under P.E. 63314N, P.E. 63360N, P.E. 64307N, P.E. 64363N, and P.E. 64560N.

c. The SUBASE BANGOR, its TRIDENT related tenant activities and other TRIDENT-supporting shore facility planning and design efforts funded under P.E. 91211N.

d. The Linear Chair Project effort funded under P.E. 11221N and P.E. 63588N.

e. The 6" Acoustic Counteremeasure Device funded under P.E. 11221N.

3. Authorities. The specific authority listed in SECNAVINST 5000.1, enclosure (3), paragraph I.A.2.a., is delegated to the Project Manager (PM2).

4. Limitation of Authority. The authority of the Project Manager (PM2) is constrained as specified in SECNAVINST 5000.1, enclosure (3), paragraphs I.A.2.b. and c.

5. Responsibilities

a. The responsibilities of the Project Manager (PM2) are those listed in SECNAVINST 5000.1, enclosure (3), paragraph I.A.3. Additional specific responsibilities follow.

b. Upon deployment of the TRIDENT System, responsibility will be turned over the proper support elements of the Naval Material Command (PM1 and Systems Commands) for support and maintenance.

c. PM2 insures that a total project budget is developed, maintained, and properly justified. The Project Manager coordinates data in support of the Navy's input to the planning, programming and budgeting process. All funds designated for the project, specifically those which support all TRIDENT System and Linear Chair Project research, development, design and ship construction effort, including all ship equipments, weapons and the 6" Acoustic Countermeasure Device, as well as support therefore, and shore facilities acquisition and construction, are assigned by the administering offices in accordance with the overall TRIDENT System Project financial plan. Changes in the financial plan require approval of PM2, except as directed by higher authority. PM2 is responsible for coordinating preparation of programming and budget estimates and supporting data as required. The appropriate Systems Commands and PMs, within their budget coordination responsibilities, integrate the Project Manager's estimates, as reflected in the approved TRIDENT System Project financial plan, for submission to higher authority. Justification

of the program to higher authority is the responsibility of the Project Manager (PM2). PM2 controls, assigns, and reprograms these funds as necessary to support the planned development and procurement of the TRIDENT System 6" Acoustic Countermeasure and Linear Chair Projects. PM2 shall have overall control and responsibility for funds designated in the Navy's budget for the TRIDENT project.

d. PM2 has the responsibility for directing the overall TRIDENT program, 6" Acoustic Countermeasure and Linear Chair Projects within the Naval Material Command. Technical direction and integration of the submarines will be exercised by PMS396, acting for the Commander, Naval Sea Systems Command, under the program management of PM2. Within the resources provided , management and technical responsibility for the development, integration acquisition, and support of the TRIDENT Strategic Weapon System, including missiles, missile fire control, navigation, launcher, associated test instrumentation and coordination of the TRIDENT Strategic Weapon System technical interfaces with the ship subsystem, are the responsibility of PM1. PM1 provides PM2 with all information necessary for overall program and financial control for this portion of the TRIDENT System. Acquisition of SUBASE BANGOR facilities, utility systems and other supporting shore facilities will be performed by the Officer in Charge of Construction, TRIDENT (OICC, TRIDENT) acting for Commander, Naval Facilities Engineering Command, under the direction of PM2. PM2 is responsible for performing the program management function for the acquisition of SUBASE BANGOR. In addition, PM2 will coordinate all effort leading to operation of SUBASE BANGOR and its TRIDENT related tenant activities-the TRIDENT Refit Facility (TRF), the TRIDENT Training Facility (TTF) and the Strategic Weapons Facility, Pacific (SWFPAC). Acquisition management functions related to the outfitting, activation and operation of SWFPAC and the Strategic Weapon System portion of the TTF, are the responsibility of PM1.

6. Relationship to Chartering Authority. PM2 reports directly to the Chief of Naval Material and shall be responsible to him for the direction, control and integration of all efforts within the Naval Material Command relating to TRIDENT and the Linear Chair Project.

7. Special Operating Relationships

a. PM2, with the knowledge of the Chief of Naval Material, keeps the Secretary of the Navy, his civilian executive assistants, and the Chief of Naval Operations fully informed through the Program Coordinator (OP-21).

b. Communications concerning the Project between the Naval Material Command and the OPNAV Program Coordinator and higher authority will be coordinated by PM2. PM2 is to be kept informed of all requests for information received from outside the Naval Material Command.

c. PM2 is authorized direct contact with all activities, organizations and commands directly associated with the Project. He will issue such correspondence, management plans, instructions and directives necessary to insure optimum communications between all activities participating in the Project.

d. PM1 shall prepare and maintain an R&D List for the Strategic Weapon System technology and submit it to PM2 for coordination with the overall TRIDENT R&D list. PM2 promulgates a TRIDENT R&D list in close coordination with inputs from all supporting PMs and System Commands to the Program Coordinator, Director RDT&E (OP 98), and Assistant Secretary of the Navy (Research and Development) for approval. Upon approval of these R&D lists, funds assigned to the lists under Program Elements 63314N, 64363N, and 64560N within Naval Material Command cognizance may not be reprogrammed, increased or decreased without the approval of PM2, except for reprogramming actions which emanate from higher authority. Managers of items on the TRIDENT R&D list, but funded under program elements, will inform PM2 of contemplated reprogramming actions in order that PM2 can make an assessment of the impact on the TRIDENT Program. PM2 shall, with the assistance of PMS396, PME117, and PM1, supporting PMs, and Systems Commands, continue to review the adequacy of all work efforts on the lists in regard to the requirements of the TRIDENT System and shall recommend to the Program Coordinator any necessary changes to the R&D lists.

e. For ASW Master List and SSN R&D List items which also appear on the TRIDENT Weapon System R&D List, PM2 will rely on the Anti-Submarine Warfare Systems Project Manager (PM4) and the Deputy Commander Naval Sea Systems Command, Submarine Directorate (SEA 92) to ensure that adequate funds are programmed and budgeted. PM4 and SEA 92 will keep PM2 advised as to the funding status of all items of mutual interest.

f. Nothing in this charter shall detract in any way from the responsibilities of the Deputy Commander for Nuclear Power, Naval Sea Systems Command (SEA 08), for all matters relating to the naval nuclear propulsion plants for these ships. Accordingly, PM2 will consult with and obtain the concurrence of SEA 08 in all matters relating to or affecting nuclear propulsion plants. SEA 08 will provide budget estimates and request Navy R&D funds for design, development, testing and evaluation of the nuclear

propulsion plants to PM2 via PMS396. PMS396 and the Deputy Commander/Comptroller Naval Sea Systems Command (SEA C1) will maintain the necessary allotment and financial records. SEA 08 will provide PMS396 estimates of SCN funds needed for the nuclear propulsion plants. These estimates will be used by PMS396 to develop the total procurement funding requirements for the TRIDENT ships.

g. Nothing in this charter shall detract in any way from the responsibilities of the Director, Strategic Systems Projects (PM1), under program elements other than those in paragraph 2 above. Accordingly, PM2 will consult with and obtain the concurrence of PM1 in all TRIDENT program matters relating to or affecting Strategic Weapons Systems. PM1 will provide budget estimates and requests for Navy R&D funds for design, development, testing and evaluation of the TRIDENT Strategic Weapon System to PM2. PM2 will maintain the necessary financial records. PM1 will provide PM2 estimates of procurement account funds needed for the TRIDENT Strategic Weapon System. These estimates will be used by PM2 to develop the total procurement funding requirements for the TRIDENT Program.

h. Nothing in this charter shall detract from COMNAVSEA responsibility assigned by NAVMATINST 5460.2A as relates to the TRIDENT submarine acquisition process.

8. Supporting Organizations

a. All Systems Commands and Project Managers shall support, to the full extent of resources assigned by the Chief of Naval Material for this purpose, the TRIDENT Project by the timely accomplishment of project objectives established by the Project Manager. Upon PM2's request, each appropriate Systems Command and Project Office shall provide PM2 with information in sufficient detail to permit him to coordinate the overall program and report on project status, schedules, problem areas and cost. They shall furnish the Project Manager with program information, including justification, for inclusion in the overall TRIDENT and Linear Chair Projects' programming, planning and budgeting documents consistent with guidance provided by PM2. PM2, in turn, will provide each Systems Command and PM1 with information necessary to allow for the consolidation of standard budget exhibits.

b. TRIDENT Project relationships with other organizations are identified in Appendix A to this charter.

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CHARTER FOR ANTI-SHIP MISSILE DEFENSE PROJECT MANAGER (PM20)

CNM DESIGNATED PROJECT

1. System Description. Anti-Ship Missile Defense (ASMD) is defined as equipments and tactical combat systems designated by the CNO as having as one of their missions the detection and destruction or defeat of the anti-ship missile.

2. Scope

a. The ASMD Project consists of the planning, direction, control and integration of effort within the Naval Material Command for the definition, development, test and evaluation, acquisition, installation and support of ASMD equipments and tactical combat systems. The scope also include airborne missiles and surveillance systems relevant to ASMD.

b. OPNAVINST 5430.46 (series) defines the elements of the ASMD Program as items that are critical to Fleet defense against anti-ship missiles and designates certain equipments and systems as part of the ASMD Program. The designated ASMD equipments and systems follow:

(1) Surface-to-air missile systems including associated sensors, displays and control systems.

(2) Surface-to-surface missile systems including associated sensors, displays and control systems.

(3) Gun systems including associated sensors, displays and control systems.

(4) Surface-to-air/surface directed energy weapon systems including associated sensors, and control systems.

(5) EW systems (passive and active) including electro-optics, decoys and associated EW control systems.

(6) Air search radars and associated displays.

(7) Tactical Data Systems.

3. Authority and Responsibilities

a. With the executive authority derived in accordance with reference (a) and acting under the guidance and specific direction of the Chief of Naval Material, the Project Manager is responsible for the planning, direction, control and integration of all efforts within the Naval Material Command

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relating to anti-ship missile defense. In all his actions, the Project Manager is accountable to the Chief of Naval Material, through him to the Chief of Naval Operations and the Secretary of the Navy. To enable him to meet these responsibilities, the Chief of Naval Material delegates to him the authority necessary to specify and direct efforts, within programmed resources, of the Systems Commands and activities of the Naval Material Command in order to:

(1) Ensure that these efforts are properly developed into plans, programs and schedules.

(2) Incorporate these efforts into overall plans for equipment and combat systems acquisition financial plans.

(3) Exercise continuing supervision of technical, management and financial controls.

b. PM20 shall ensure that a total project budget is developed, maintained and justified. The PM shall coordinate data reflecting these responsibilities in support of the Navy's input to the planning, programming and budgeting process. All funds designated for the ASMD Project, including research, development, design, acquisition and Integrated Logistics support, shall be assigned by the appropriation holders in accordance with the over-all financial plan developed by PM20. Changes in the plan and reprogramming of budgeted funds, except those directed by higher authority, will be made only with the approval of PM20. The appropriate Systems Commands, PMs, and NAVMAT activities, within their budget coordination responsibilities, shall integrate the PM20 estimates from his approved financial plan for submission to higher authority. The scope of financial responsibility is further defined below:

(1) Although he will not act as an acquisition manager, PM20 will exercise full management and control over all funds received in the Naval Material Command for ASMD RDT&E and service hardware end items. In addition, any reprogramming of FMP and ILS funds from the PM20 approved ASMD plan requires his approval.

(2) Therefore, PAMI, OPN and SCN funds in the ASMD plan will be entered on the PM20 chart of accounts. RDT&E funds (6.3, 6.4 and 6.5) will likewise be so entered. For funds controlled by the Chief of Naval Research (CNR) and the Chief of Naval Development (CND) (6.1 and 6.2 monies), PM20 shall monitor and appraise these developments and shall make appropriate recommendations to CNR, CND and to the cognizant System Commander regarding items which should be accelerated or decelerated.

(3) PM20 will develop a Master List in accordance with NAVMAT Instruction 5000.16 (series) for approval by the CNM.

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CHARTER FOR THE SONAR PROJECT (PMS302)

1. Systems Description

a. PMS302 shall have cognizance over all sonar efforts assigned to NAVSHIPSYSCOM. In addition to the ship, submarine and transportable systems normally associated with the term "sonar", PMS302 shall have cognizance, within NAVSHIPS, in the following areas: acoustic warfare, acoustic communications, acoustic intelligence collection, acoustic IFF, oceanography and hydrographic survey.

b. PMS302, as SHIPS 038, shall function as program and technical manager under the direction of SHIPS 03 for exploratory development in those areas cited above.

c. PMS302 shall perform technical execution for the following items under the program managership of SHIPS 03:

(1) Acoustic-navigation and mine-avoidance equipments (non-ASW Master List Items).

(2) Mine and torpedo detection sonar and riverine-warfare sonar.

(3) Sonar for inshore underseas warfare and underwater swimmer-detection sonar.

d. PMS302 shall perform technical execution and acquisition under the program managership of SHIPS 03/00C for sonars of swimmer support systems.

2. Scope. PMS302 shall perform intensified project management over all phases of research, development, acquisition, installation, maintenance and life-cycle logistic support for all sonar systems, including the integrated functional support necessary to the successful prosecution of a coordinated effort in the field of sonar. PMS302 shall thus exercise "cradle-to-grave" cognizance over all sonar systems to ensure the Command's optimum response to the requirements of higher authority.

3. Authority

a. The Sonar Project Manager shall exercise the following authority (consistent with paragraph 5) to:

(1) make necessary technical and business management decisions on all matters within the scope of the charter, other than those for which an appropriate Contracting Officer or SUPSHIP is responsible;

(2) exercise control over all resources authorized, allocated for obligation, and approved in the Budget and Five Year Defense Program;

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(3) establish work tasks and schedules for accomplishment, and approve cost estimates and procurement requests;

(4) issue under his own signature necessary correspondence, technical directives, planning directives, management plans and instructions to ensure proper management of the project; and

(5) prepare and sign fitness reports on personnel assigned to his immediate office and other specifically designated personnel.

b. The Sonar Project Manager is not authorized to deviate from established policy.

c. Communication, action, or inaction in any form which contractors may interpret as directional in nature shall be conducted through or with the concurrence of an appropriately assigned contracting officer.

4. Responsibilities. The Sonar Project Manager shall exercise technical and business management and direction over the accomplishment of project objectives. This includes, but is not limited to, responsibility for: (1) feasibility determinations; (2) conduct of trade-off analysis and cost-effectiveness studies within cost, performance, broad characteristics and schedule parameters established by the CNO and/or CMC; (3) approval of system designs, engineering releases for production, engineering reports, and engineering changes; (4) ensuring the implementation and direction of programs to correct equipment deficiencies; (5) ensuring proper selection, tailoring, and application of techniques and management disciplines required for problem identification, appropriate assessment of program progress and timely reporting of same to higher authority; (6) ensuring timely planning, including a Project Master Plan and a Transition/Disestablishment Plan; and (7) ensuring compliance with the provisions of instructions referenced by enclosure (4) to reference (a).

5. Special Operating Relationships

a. Anti-Submarine Warfare Systems Project (PM-4). PMS302 performs project management of sonar systems on the ASW Master List for which PM-4 has coordination and integration responsibilities. Management of these systems shall be the subject of a written operating agreement between the Commander, Naval Ship Systems Command, and the Anti-Submarine Warfare Systems Project Manager.

b. Strategic Systems Project (PM-1). PMS302 performs project management of sonar systems for which PM-1 has coordination and integration responsibilities. Management of these systems shall be the subject of a written operating agreement between the Commander, Naval Ship Systems Command, and the Strategic Systems Project Manager.

c. Reconnaissance, Electronic Warfare, Special Operations, Naval Intelligence (REWSON) Systems Project (PM7). PMS302 carries out Project Engineering responsibilities for the acoustic portion of the Reconnaissance and Surveillance programs for which PM7 has Project Management responsibilities. Specific responsibilities and operating relationships will be the subject of a written operating agreement between the Commander, Naval Ship Systems Command and the REWSON Project Manager.

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c. The Project Manager is delegated the executive authorities set forth in paragraph I.A.2 of enclosure (3) to reference (a).

d. The Project Manager shall ensure that the specific responsibilities set forth in paragraph I.A.3 of enclosure (3) to reference (a) are carried out by Systems Commanders or NAVMAT activities without interfering with the contracting responsibilities of the assigned contracting officer.

e. PM20 shall be responsible for all matters pertaining to legislation, congressional liaison and public information, and for coordinating these functions with MAT-09C, MAT-00D, OPNAV Program Coordinator, the Office of Information and the Office of Legislative Affairs.

(1) The Public Affairs Officer (MAT-00D) will approve the release of public information related to the overall Project prior to submission to the Office of Legislative Affairs.

(2) The Legislative Staff Officer (MAT-09C) will coordinate, review, and approve congressional liaison matters prior to submission to the Office of Legislative Affairs.

(3) The Program Management Office (MAT-03P) will coordinate security review of material proposed for public release by contractors or by NAVMAT component activities.

4. Operating Relationships

a. PM20 shall report to and be directly responsible to the Chief of Naval Material for matters relating to ASMD.

b. PM20 shall, with the knowledge of the CNM, keep Navy civilian authorities and the Chief of Naval Operations fully informed through OPNAV Program Coordinators.

c. PM20 shall control and integrate the joint efforts of the Systems Commands and NAVMAT component activities. PM20 will task CNM designated Project Manager such as PM4 and PM7 for their appropriate inputs into the project efforts within the NMC.

d. Activities within NMC responsible for the execution of the ASMD Project or actions associated with the project will keep PM20 fully advised.

e. PM20 is authorized direct contact with all activities, organizations, and Commands directly associated with the Project. He will issue such correspondence, management plans, instructions, and directives necessary to ensure optimum communications between all activities participating in the project.

3. DIRECTION: The program for FY 76 and FY 7T will, as a minimum, accomplish the indicated efforts in the following areas:

a. AFSC will:

(1) Be the implementing command for the DOD Space Shuttle program.

(2) Shuttle - Monitor the evolving Shuttle design to ascertain design progress toward the incorporation of DOD requirements; assess the capabilities of the Shuttle system to satisfy DOD payload, mission, integration and operational requirements; identify differences and discrepancies and coordinate their resolution with the NASA. Update the definition of DOD Shuttle System Requirements and maintain DOD requirements documentation. Provide updated requirements to HQ USAF/RDSA for transmittal to NASA for incorporation in the NASA STS design (see Paragraph 3.a.(15). Conduct systems engineering and integration studies to support payload and upper stage interface definition and integration in the Shuttle. Develop safety criteria and plans for a safety program to guide the various elements of the STS. Maintain Shuttle technical and program data for all aspects of the DOD involvement in the STS. Prepare, in coordination with the DOD Manager for Manned Space Flight Support Operations (DDMS), a plan for DOD support of STS launch and recovery operations.

The DOD Space Shuttle Program will undergo a Program Review by the DSARC principals, and a DSARC I on the IUS, both currently scheduled for 18 November 1975. The Program Review will provide a total overview of the planned DOD participation in the STS and will be preceded by a NASA summary of their Space Shuttle development program. This review will be supported by an updated Program Memorandum (PM). The AFSC submittal date for the PM is 22 September 1975. The objectives and schedule for the IUS DSARC are provided in the following paragraph.

(3) Upper Stage - Develop a minimum risk, low RDT&E cost upper stage, designated the Interim Upper Stage (IUS). The IUS will be used with DOD payloads that require a higher operating altitude than that attainable by the Shuttle Orbiter. The IUS will be used for DOD payloads from IOC of the Shuttle at KSC, until the NASA Space Tug, presently planned to be completed in 1984, becomes operational.

A DSARC I on the IUS is scheduled for 18 November 1975 to obtain approval to enter the validation phase of development with the selected IUS concept. AFSC is required to submit a DCP draft to AF/RDSA by 2 September 1975 to support the scheduled DSARC.

(4) Operations - The following is to be considered the DOD Space Shuttle operations baseline: DOD operations will be a two phase (near term, far term) program. The near term is defined as that period of time from the KSC IOC until subsequent to the VAFB Shuttle facility IOC. During the near term period, the DOD will make maximum use of the NASA developed orbiter mission control capability. Orbiter command and control of Air Force missions in the near term will be accomplished at the NASA Johnson Space Center (JSC) Mission Control Center (MCC) using an Air Force provided Mission Director. Flight crews will be provided by NASA using Air Force pilots detailed to NASA as part of a common NASA-DOD flight crew pool. NASA will train and equip all astronauts. Payload handling and processing will be the responsibility of the user. Planning for payload and IUS flow should utilize a "factory-to-pad" baseline at both launch sites. Under this concept the vehicle goes directly to the Payload Changeout Room where it will be mated with the Shuttle. Where utilization of this baseline creates unacceptable impact, the program office shall advise AF/RDS of the problem with sufficient detail to allow resolution. The Air Force Satellite Test Center (AFSTC) will continue to be used for DOD on-orbit payload (and IUS) checkout and mission control where applicable.

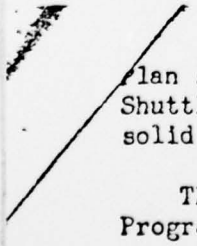
In the far term (post-VAFB Shuttle IOC), an operational concept is planned where NASA will be responsible for orbiter launch and recovery operations out of KSC, and the Air Force for like operations at VAFB. Orbiter mission control will be exercised by the Air Force from an Air Force MCC for DOD launches and NASA mission control will be exercised out of JSC for NASA missions. Since missions carrying both DOD and NASA payloads are planned, control responsibility for the mission will be based on which agency payload is primary.

In light of this baseline, establish the DOD operations concept for the Space Shuttle program. Evaluate the NASA operations baseline against this DOD operations concept, and generate DOD-unique requirements for inclusion in the DOD Shuttle System Requirements Document to enable (1) effective DOD development of Vandenberg AFB (VAFB) as a launch site for this program with an IOC of December 1982, (2) use of a separate DOD Mission Control Center (MCC) to support the far term operations when dictated by mission and/or traffic considerations, and (3) coordination of orbital payload operations with and provision of STS mission data to appropriate payload program offices to assure their effective transition to the Space Transportation System.

Develop a plan to provide for a Space Shuttle capability at VAFB in December 1982. The assessment of the following operational elements, at a minimum, should be initiated: preliminary environmental impacts and meteorological studies of VAFB; definition of launch processing system hardware and software, pad and Shuttle integration concepts and MDF, site activation planning, logistics support, and personnel training requirements. Define the DOD mission control center requirements for the far term operations baseline. Perform DOD flight procedures and safety analyses. Coordinate DOD test and evaluation efforts with the Air Force Test and Evaluation Center. Define communication and tracking requirements. Establish the DOD flight software requirements and DOD mission planning and targeting software definition and assessment.

(5) Mission and payloads - Develop the capability to integrate DOD payloads into the STS. Establish a program to develop analyses ensuring compatibility between DOD payloads and the Shuttle in areas of contamination and thermal control, static and dynamic loads vehicle clearances, electromagnetic compatibility, etc. Interface verification concepts, ground interface verification equipment, and flight integration equipment common to DOD payloads will be identified or defined. Study the feasibility of grouping payloads (including mixing of NASA, commercial, and DOD payloads) to maximize the effectiveness of each Space Shuttle launch. Continue development of a DOD payload user's handbook and a computerized Data Integration System to provide payload offices and the Shuttle SPO with timely access to accurate baseline data. The DOD STS Payload Project Officers Group will continue to be supported in maintaining effective liaision with the payload program offices. Guidance on limiting the interface requirements between the payloads/IUS and the Orbiter is contained in paragraph 4 of this PMD. Payload Program Offices should be encouraged to examine the possibility of relaxing orbit injection requirements by utilizing spacecraft with greater orbit ajust capabilities. Additionally, the incorporation of solid rocket kick motors which require minimum change to the spacecraft or can be incorporated in new designs should be considered as an alternative to the standard IUS.

(6) Transition Period - In conjunction with the Expendable Launch Vehicles Program Office, continue studies to determine the required overlap of today's expendable launch vehicle family and facilities with the Space Shuttle. This study should use the current DOD and NASA mission models as a baseline, and should result in a booster transition plan to phaseout the use of expendable vehicles while still providing launch capability through the transition period. The Transition Plan should provide sufficient flexibility to accommodate unforeseen delays in either the NASA or DOD Shuttle IOC dates, and should address the data required for DOD payload offices to transition to the Shuttle by the dates shown in the current mission model in the most cost effective manner possible. The Titan III C Buy Plan will be one element of the Transition Plan. The plan should also show significant milestones for each transitioning program, together with cost estimates. As a part of the cost analysis, reductions in range support costs and associated manpower resulting from the phaseout of current launch vehicles and complexes should be estimated. AFSC will direct all using programs under its cognizance to provide SAMSO/LV the data necessary to fulfill these requirements. In addition, the Transition



Plan should specifically address the recommendation made by the IRAC R&D Shuttle Panel that a large shroud Titan be considered (with or without spinning solid propellant stages) to ease the Shuttle transition problem.

The Transition Plan will be briefed as part of the scheduled DSARC/Program Review and will be included in the associated documentation.

(7) Shuttle Capabilities - Identify and define a comprehensive, practical, and phased approach for payload office use which leads to the full exploitation of unique Shuttle capabilities. Studies should address the costs associated with redesign of DOD payloads, as well as the long-term benefits available through such redesign. In order to fully exploit the weight and volumetric capability of the Shuttle, initiate a study to address the optimal grouping of payloads, including mixing of DOD payloads with those of NASA or commercial users. In addition this study should refine the concept and implementing techniques for a motivational user charge to encourage high load factors on the Shuttle while minimizing total transportation and payload costs.

(8) Logistics - Provide DOD requirements to NASA in coordination with AFLC (see Paragraph 3b). Monitor the NASA logistics support program development for compatibility with DOD requirements. In addition, draft agreements should be pursued with NASA in all areas of logistic support to (1) minimize duplication, (2) document joint/shared responsibilities and (3) minimize cost of ownership. Continue the review and assessment of the Space Shuttle logistics support system and present semiannual reports on this assessment to AF/RDS/LGY.

(9) Program Management Plan (PMP) - Continue development of a PMP per AFR 800-2. The PMP will show the integrated time-phased tasks and resources (funding, facilities, manpower) required to accomplish the DOD Space Shuttle program. This plan will delineate the organization and management structure for the DOD Shuttle program and identify the relationship and responsibilities of other Air Force and DOD organizations supporting the DOD Space Shuttle program. The PMP will be provided to AF/RDS, and will be updated not less than annually to reflect significant program changes.

(10) Program Memorandum (PM) - A general Program Review of DOD involvement in Space Shuttle activities is scheduled in conjunction with the IUS DSARC. The Program Review will, at a minimum, address Air Force plans for transitioning satellite programs to the Shuttle; the operations concept for use of the Shuttle from KSC, including mission control; current plans for development of VAFB Shuttle facilities; the proposed operating concept for Shuttle operations at VAFB, and any other significant activities involving DOD participation in the Shuttle program. This review will be supported by an updated PM, to be submitted to AF/RDS NLT 22 September 1975.

(11) Decision Coordination Paper (DCP) - The IUS DSARC will be supported by a DCP to be provided to AF/RDS NLT 2 September 1975.

(12) Test and Evaluation (T&E) - Continue development of a T&E Master Plan (TEMP). This plan should identify the activities required by the DOD Space Shuttle program to assure, through independent analysis, that the NASA development program adequately meets DOD requirements. The TEMP should identify any additional testing or evaluation the DOD will be required to perform on NASA developed hardware. The TEMP will establish T&E objectives and requirements for hardware developed by the DOD program. Coordination of T&E requirements with the Air Force Test and Evaluation Center (AFTEC) is required. A draft of the TEMP should be submitted to AF/RDS for comment by January 1976.

(13) Master Program Schedule - Continue development of a Master Program Schedule showing significant activities and milestones for the DOD Shuttle Program. Request this schedule be provided to HQ USAF/RDS through appropriate channels and be updated not less than quarterly.

(14) Security Requirements - In consonance with the objective of establishing a national transportation system as a common carrier for all users, every effort should be taken to minimize the impact of DOD security requirements. In the area of Orbiter COMSEC, there is no DOD payload or upper stage data planned to be downlinked through the Shuttle Orbiter in the near term. It is recognized that there could be a need in the near term for a "private" voice channel from the Orbiter to the Mission Control Center at JSC. An encrypted voice link capability aboard the Orbiter could satisfy these needs at minimal cost in orbiter or ground site impacts. Data boxes (NELO) are currently being developed by NSA for voice on data encryption which could be used for this purpose, while at the same time providing the added capability of bulk encryption of both Orbiter uplink and downlink data.

(15) DOD Shuttle System Requirements Document - The requirements document will be updated by AFSC (SAMSO) on a periodic basis through existing change board action. Updates will reflect PMD direction and other guidance as necessary. The amended document will be provided to AF/RDS for transmittal to NASA through AF/RDS membership on the Space Shuttle Level I Configuration Control Board.

(16) DOD STS Mission Model (FY 1980 - 1991) - Update the Mission Model through existing AFSC (SAMSO) change procedures and forward it to AF/RDS for review and validation by the DOD STS User's Committee before dissemination. Provide Revision 5 to the Mission Model to AF/RDS by January 1976. (NOTE: Revision 4 will be used as the baseline for the DSARC/PR).

(17) Special Study - Initiate a special study to explore alternatives to the current Shuttle manipulator arm in the deployment of DOD payloads. Emphasis should be placed on simple concepts which provide a high degree of confidence that a non-injurious deployment will be achieved.

b. AFLC

(1) Logistics Planning - Provide assistance to AFSC in the development of logistics support planning as required by paragraph 3a(8) above. This planning will encompass both the near term and the far term. Emphasis in the near term should be to assist NASA in the development of a cost effective logistics system. Far term planning should identify requirements for DOD logistics to support the VAFB Shuttle operations. Support the AFSC review and assessment of the Space Shuttle logistics program.

(2) NASA Activity - Provide logistics expertise, within available resources, to assist NASA in the development of the NASA logistics system and to insure incorporation of DOD requirements in that system wherever possible. Evaluate the evolving NASA logistics planning to insure the goal of maximum single point responsibility. AFSC (SAMSO) must be kept current on AFLC activities taken in conjunction with NASA to insure coordination.

c. ATC

(1) Training Programs - The primary burden for training in the Space Shuttle program falls on NASA. In regard to simulator development, AFSC should assure insofar as possible, that expertise within AFSC, i.e. ASD, is made available to NASA. No AFSC/ATC planning should be made which requires DOD training simulators. Orbiter simulators are the responsibility of NASA, and DOD payload simulators are the responsibility of the using program. Near term (pre 1983) planning will assume, for example, NASA training of Space Shuttle flight and ground crews. Far term planning (post 1982) should address requirements for Air Force training necessary for USAF operation of the VAFB Shuttle facilities. ATC will develop training plans in consonance with guidance provided by AFSC.

(2) NASA Activity - Evaluate the evolving NASA training, simulator and training aids and development programs to ascertain their adequacy for satisfying DOD training requirements. Areas where weaknesses or significant philosophical differences in the NASA program are noted will be identified to AFSC and NASA for resolution. Provide, within available resources, assistance to NASA in the development of training programs and training aids/simulators when requested by NASA. NASA utilization of existing Air Force training capability should be forwarded to AFSC and HQ USAF/RDSA for consideration.

d. AFTEC - AFTEC will act in coordination with AFSC in development of the T&E Master Plan (TEMP). AFTEC will ensure that appropriate operational test and evaluation principles and methods are incorporated in the TEMP. In particular, AFTEC will direct its T&E planning efforts toward assessment of the military utility, operational effectiveness, and operational suitability of the Space Shuttle system.

e. USAFSS - USAFSS will assist AFSC in identifying DOD COMSEC requirements for the STS, and planning to ensure the Shuttle Orbiter design can accommodate future DOD COMSEC requirements. Until such time as a unique military mission is approved for the Orbiter, COMSEC planning should assume the only near term requirement for secure communication with the Orbiter can be fulfilled by a full duplex, secure voice link to be used for "private" communication with the MCC. No requirement has been identified for securing other Orbiter data links.

4. PLANNING AND BUDGET FORMULATION GUIDANCE: The following summarizes the current guidance and philosophy governing Air Force participation in the STS, and should be used for planning, programming, and budgeting purposes:

a. During the near term, emphasis is to be placed on the role of the DOD as a major "user" of the STS. Accordingly, when developing near term budgetary figures the following applies:

(1) Emphasis should be placed on using the Orbiter as a reusable replacement for current expendable launch vehicles.

(2) Payload checkout will be accomplished after deployment from the Orbiter bay, using the current DOD ground stations. As an alternative to this concept (if feasible), the use of an antenna or alternate means to allow ground checkout of the payload/IUS before deployment should be investigated, ensuring that this alternative still retains the "minimal" interface between the IUS/payload and the Orbiter mentioned below.

(3) The interface between the Orbiter and the payload/IUS should be minimal, i.e., limited to monitoring payload telemetry which affects the safety of the man only, and commanding limited to that required to safe the payload in event of abort.

(4) The Orbiter should be required to stand by and stationkeep at a safe distance, after release of the payload/IUS. Payload checkout will then be performed through the existing Air Force mission support networks and control centers. If a problem is detected, the Orbiter may be asked to assist in resolving the problem, or possibly retireve the payload for return.

(5) As a near term "major user" and limited operational partner the Air Force will not develop any software or hardware for the NASA Space Shuttle Program except where specifically authorized.

(6) Any changes required to the Orbiter to accommodate the IUS interface are a NASA responsibility, and Air Force funding will not be identified for this purpose.

3. PROGRAM MANAGEMENT DIRECTION: The following actions are mandatory for the implementing and participating commands/agencies. HQ USAF will be notified immediately of an inability to comply.

a. AFSC will:

(1) Prepare an MX System, Validation Phase, Program Management Plan that is responsive to the DCP and consistent with the budget allocation. Coordinate the plan with the participating commands before submission to HQ USAF to assure full support for the program.

(2) Implement the program according to the guidance provided in the AFR 800 series and the Program Management Plan.

b. AFLC, ATC and AFTEC will:

(1) Support AFSC in the preparation of the Program Management Plan.

(2) Participate with AFSC to implement the program.

c. SAC will:

(1) Continue to evaluate the operational requirement, update ROC 16-71 as necessary, and revise the operational concept for the MX Advanced ICBM System.

(2) Support AFSC in the preparation of the Program Management Plan.

(3) Participate with AFSC to implement the program.

3. (C) PROGRAM MANAGEMENT DIRECTION:

The following actions are mandatory. AF/RDQRM will be notified immediately of any inability to comply.

a. (U) Specific Action:

Approval is granted to proceed with the following SHRIKE development and procurement efforts:

(1) Continuation of the AGM-45-7A product improvement effort as defined in Ref 2a(8).

(2) Continuation of the AGM-45-10 development effort as defined in Ref 2a(2).

(3) The FY 76 procurement of 700 AGM-45-9 missiles.

b. (U) Relationships

(1) (U) The SHRIKE program will be controlled, planned and organized as an integrated Service project by a jointly manned Anti-Radiation Missile (ARM) Project Office (PMA-242) located in NAVAIRSYSCOM, Wash DC. The Project Office is headed by a Navy Captain with an Air Force Lt Colonel as Deputy Project Manager.

(2) (U) In support of the Air Force Deputy Program Manager (ARM), HQ AFLC will maintain a representative in the project office at NAVAIRSYSCOM to insure that the improved SHRIKE systems are compatible with Air Force maintenance and supply procedures.

(3) (U) In support of the Air Force Deputy Project Manager (ARM) HQ AFSC will maintain resources at the support office (SDM) at the Armament Development and Test Center, Eglin AFB, Florida, to provide those functions and services required by the Air Force Deputy Project Manager but not available within his resources at NAVAIRSYSCOM.

(4) (U) TAC will provide tri-Command operational guidance and management support for the Air Force Deputy Project Manager (ARM). TAC will maintain a command focal point for direct communications with the Project Manager. Additional interface relationships between elements of the Command and the Project Manager are encouraged and should be accomplished in concert with the command focal point.

(5) (U) The Air Training Command will provide training support for the Air Force Deputy Project Manager as required.

(6) (U) The SHRIKE procurement program will be funded under PE 27162F. Funds for the project will be forwarded by MIPR to the Navy.

(10) Management responsibility and authority is vested in the System Program Director (SPD) or Program Manager, to meet schedule, cost and performance objectives. Limits of the SPD's authority are as identified in applicable regulations, in Development Concept Paper (DCP) 80 as revised, and as specified in the SPD's presentation to the Defense Systems Acquisition Review Council (DSARC) meeting on 17 November 1970.

(11) The SPD will maintain interface relationship and direct communications channels with AFLC, TAC, USAFE, PACAF, and other components of unified commands for program management purposes as required.

(12) Program Coordination within the DOD is accomplished along the following general guidelines:

(a) OSD/ISA interfaces with the JCS, the State Department and DSAA on matters pertaining to allocations and policy regarding MAP and FMS credit plans and programs.

(b) The JCS interfaces with the CINCs, HQ USAF (AF/XOXX), OSD, and the MAAGs on aircraft allocation and policy matters.

(c) The F-5E System Officer in AF/RDPN is the designated Program Element Monitor (PEM) and as such is the single HQ USAF point of contact on overall management of the F-5E program and for matters not within the scope of a single functional area. The PEM will integrate and coordinate the efforts of functional activities within HQ USAF to insure that all decisions, guidance, and direction reflect the Department of Air Force position. He is also responsible for maintaining close working relationships with OSD and SAF offices.

(d) Functional HQ USAF Staff Offices are the OPRs for program activities as follows: AF/LGF interfaces with OSD/ISA, OSD/DSAA, Component Commands (PACAF, USAFE, etc.), unified commands and their MAAGs as appropriate in administration of MAP, FMS cases, student training, and logistic support for Foreign Military Assistance. AF/RDG performs the Procurement and Research and Development Programming functions; AF/ACB is point of contact regarding total system costs. AF/XOXX interfaces with OSD, SAF, JCS, State Department, and others as appropriate, in acting as the focal point for determining Air Staff positions on Security Assistance Policy and planning.

(13) Special Reporting Requirement. This program

Assessment Review (PAR), Secretaries Program Review (SPR),

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