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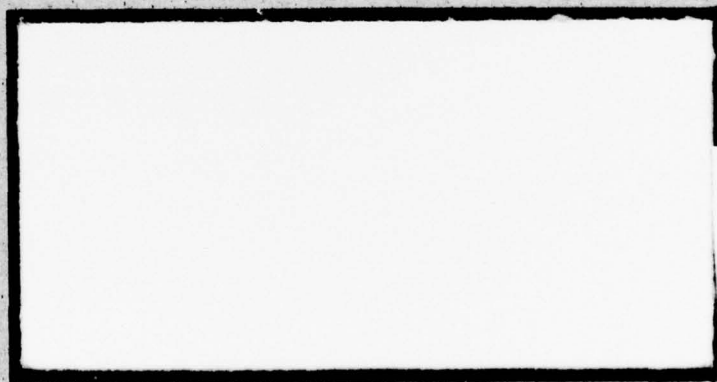
Fort Belvoir, Virginia, 22060

A COMPARISON BETWEEN MILITARY DEPARTMENTS
OF "NON-MAJOR" PROJECT MANAGEMENT

PMC 73-1

R. H. Dewey
GS-13   DAC

A COMPARISON
BETWEEN MILITARY DEPARTMENTS
OF
"NON-MAJOR" PROJECT MANAGEMENT

An Executive Summary
of a
Study Report
by

R. H. Dewey
GS-13   DAC

May 1973

Defense Systems Management School
Program Management Course
Class 73-1
Fort Belvoir, Virginia 22060

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STUDY TITLE: A Comparison Between Military Departments of "Non-Major"
Project Management

STUDY PROBLEM/QUESTION: If there any difference between the Military Departments in terms of techniques utilized, to manage "non-major" systems/items.

STUDY REPORT ABSTRACT:

A gross survey was conducted to determine if the Services' management of "non-major" systems paralleled their project management policies. This was done by identifying which level of the organization, certain essential project management tasks were accomplished.

KEY WORDS: MATERIEL   ACQUISITION   PROJECT MANAGEMENT   MILITARY DEPARTMENTS

COMMODITY MANAGEMENT

Student, Rank Service	Class	Date
Richard H. Daley		
LC-33	1 G 73-1	May 1973

EXECUTIVE SUMMARY

Objective: To determine if there is a difference in the way the
major military department manage non-project managed systems items.

Background: There are specific criteria whereby a system is categorized
as major which requires that the Military Department having cognizance
of this system, assign a Project Manager to assure that the system is
developed and produced to meet certain specified performance, schedule
and cost objectives. Those systems which do not meet the criteria and
therefore are not assigned a project manager, are defined herein as
"non-major". These "non-major" systems are normally managed by one
of these three categories of management: project management,
commodity management and functional management.

Discussion: A gross survey was conducted to determine if the Services'
management of "non-major" systems paralleled their project management
policies. This was done by identifying which level of the organization,
certain essential project management tasks were accomplished.

Conclusion: Based on the limited survey performed, the Navy tends
toward functional management of their "non-major" systems acquisition
which parallels their approach to project management. The Army and
Air Force appear to be more closely aligned; however, their approaches
have reversed from that which they take to project management.

ACKNOWLEDGEMENTS

A COMPARISON
BETWEEN MILITARY DEPARTMENTS
OF
"NON-MAJOR" PROJECT MANAGEMENT

STUDY REPORT

Presented to the Faculty

of the

Defense Systems Management School

in Partial Fulfillment of the

Program Management Course

Class 73-1

by

R. H. Dewey
GS-13   DAC

May 1973

Contents

A COMPARISON
BETWEEN MILITARY DEPARTMENTS
OF
"NON-MAJOR" PROJECT MANAGEMENT

SECTION I

OBJECTIVE

The objective of this paper is to determine if there is a
difference in the way the major military departments manage the
non-project managed systems/items. Given the same basic direction
from the Defense Department, each has chosen to manage its major
systems in a different way. The Air Force has chosen to form a
separate and relatively independent organization for each "major"
item/system; the Navy calls on its functional elements to a maximum
extent; and the Army's policy is in between the other two departments.

"Project Management", per se, has attained a reputation of
being a way to successfully manage. Each military department has
examples of how their particular approach to project management has
resulted in the successful completion of a project within the cost,
schedule and performance parameters laid out for it, and each has its
failures. Each would appear to be satisfied with their particular
approach to project management and although there is considerable

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flexibility within each system, none have incurred major changes since their inception, and are not likely to in the near future.

Thus, the management systems whereby the military departments accomplish their major weapon system acquisitons are well-defined and significantly different from each other. The question for discussion herein is: Does the management of these items by the various departments parallel their approach to project management or is there more of a similarity in the approach that each takes to the acquisition of "non-major" items?

SECTION II

BACKGROUND INFORMATION

One does not think about military item acquisition without
thinking about Project Management. "A fundamental Department of
Defense (DOD) policy is that the acquisition of major weapon systems
will be directed by responsible managers under the concept of program
management."[1]   There are specific criteria whereby the various pro-
grams are designated as major and thus warrant a project manager com-
plete with his own management organization and charter. These criteria
are set out in DODD 5000.1 and are as follows: " . . . (1) dollar
value (programs which have an estimated RDT&E cost in excess of
50 million dollars, or an estimated production cost in excess of
200 million dollars); (2) National urgency; (3) recommendations by
DOD Component Heads or Office of Secretary of Defense (OSD) officials."[2]
But what of those items which do not meet the above criteria? Only 28%
of the Army Materiel Command's (AMC) budget was allocated to project
managed items in FY 72.

When considering project management in the various Services,
there are striking differneces between the way each Service has
implemented project management. This implementation will be illustrated
by a general description of project management in each service, general
in nature because certain of the project management organizations do
not strictly adhere to the pattern generally followed in their
particular service.

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Air Force

The typical organization is self-sufficient in that it "is organized and structured to operate by itself without having to rely on functional organizations for technical and administrative support".3/

Navy

The typical organization operates on a matrix principle which "relies on functional organizations to perform such tasks as research, development, logistics planning, procurement, inspection, and supply and maintenance".3/

Army

Within this department, the organizations tend to fall between the self-sufficient type, typical of the Air Force, and the matrix type, typical of the Navy. Each of the above types of organizations has certain advantages and disadvantages associated with it, namely, that "a matrix organization fosters greater specialization with less technical duplication but makes coordination more difficult. A self-sufficient program structure fosters coordination and communication but makes specialization more difficult, and some technical duplication becomes inevitable".3/

Thus it has been shown that each Service is generally organized in a different manner to "project manage" those items designated as "major" according to the criteria of Department of Defense Directive 5000.1. The question to be addressed henceforth in this paper is: Can we make such clear-cut distinctions between the organizations

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and techniques which the Services utilize to manage their individual "non-major" programs?

Management of "non-major" DOD programs is exclusively located within one of four major "Materiel" Commands: Army Materiel Command, Navy Materiel Command, Air Force Logistics Command and the Air Force Systems Command. (With one exception, Safeguard System, all project managers are also located within these four commands.)

One approach to answering the objectives of the paper would be to list all of the duties or responsibilities of a project manager and the decisions he is required to make and then to determine who has these duties/responsibilities and makes the comparable decisions for the "non-major" programs. However, such an all-inclusive list is beyond the scope of this paper. It would be possible to list some specific representative areas for comparison purposes. Such a list has been extracted from Army Regulation (AR) 70-17[4/] and is listed below:

1. Prepare and maintain the . . . Development Plan.

2. Approve . . . all contractual actions required for accomplishment of the project.

3. Approve the scope and schedule of project effort proposed for accomplishment by in-house activities and the cost of such effort to be defrayed by project funds.

4. Maintain adequate project evaluation and control schedules.

5. Report on the progress of the project . . .

6. Maintain equipment distribution planning on a current basis.

7. Assure that a complete technical data package is obtained and consolidated.

8. Employ configuration management policies and procedures, establish baseline controls and life cycle disciplines.

9. Participate with the combat developer and the appropriate agencies in the preparation and revision of materiel requirements documents and the analyses which support them.

10. Task . . . those agencies having responsibility in the broad managerial areas of training and doctrine or operational employment when problem areas requiring action are evident.

11. Insure that effort at all stages of the project takes into account logistic support requirements and that trade-offs appropriate to the stage of development are made that will maximize the effectiveness and efficiency of the support systems to a degree which is in consonance with the overall operational requirement of the system.

12. Insure that the planning, management, and design of integrated logistic support for the system proceeds with continuity throughout the life cycle of the project and is kept in phase with materiel development.

13. Prepare the written environmental assessment or Environmental Impact Statement, as appropriate, for programs not other-wise covered . . .

A study of this list reveals that each item is equally as important to the "non-major" program as to the project managed program in that the omission of any one of these items could have serious irreparable consequences and result in the particular program not being successful. The consequences of omitting or downgrading one of these tasks will be discussed more thoroughly in Section IV, Discussion.

SECTION III

FRAMEWORK AND METHODOLOGY

Because of the dearth of reference material upon which to base a comparison of the management of "non-major" systems by the three military departments, a questionnaire was constructed requesting that addressees review the list of project manager responsibilities listed in Section II, Background Information and identify where these responsibilities were accomplished, in their respective Services, for "non-major" systems. The addressees included a selected group of DSMS students and faculty and one member of an Army R&D center. A total of twelve individuals were surveyed. A copy of the instructions and questionnaire are in Fig. 1, (page 9).

<u>INSTRUCTIONS</u>

Please review the attached list of PM's "Duties" considering who
performs these duties for a "non-major", i.e. "not project managed"
item/system (LOW LCC). Suggest you select a "non-major" item you
are familiar with and base your answer on this item. Mark the
Org. Chart with the appropriate number.

<u>Project Manager's Responsibilities/Duties</u>

(See Sec. I, Background Information)

ORGANIZATION CHART

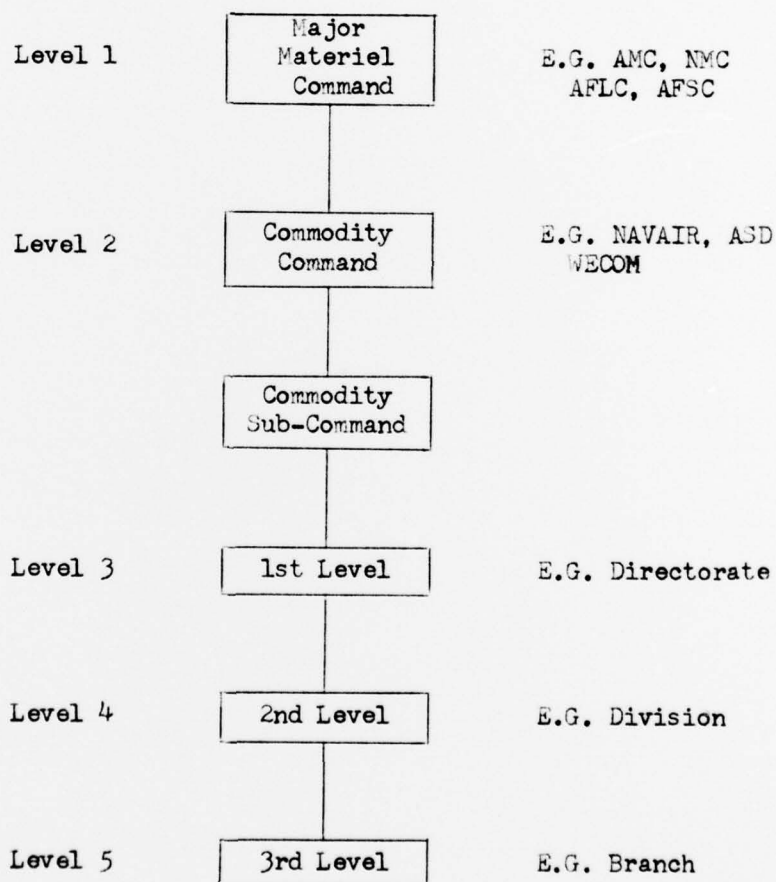|		
Level 1	Major Materiel Command	E.G. AMC, NMC AFLC, AFSC
Level 2	Commodity Command	E.G. NAVAIR, ASD WECOM
	Commodity Sub-Command	
Level 3	1st Level	E.G. Directorate
Level 4	2nd Level	E.G. Division
Level 5	3rd Level	E.G. Branch

Figure 1. Questionnaire

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DISCUSSION

This paper is concerned with the acquisition of "non-major" systems/items or more specifically, what approach the individual military departments take to manage this acquisition process. In addition to project management which is almost exclusively associated with "major" system acquisition, there are such terms as program management, product management, intensive management, commodity management, functional management,--the list is endless. Also endless is the list of titles attached to the individuals who are assigned the responsibility for the acquisition process, to include: project manager, program manager, product manager, intensive manager, commodity manager, product engineer, system engineer, configuration manager, action officer, etc. It is not possible, from these titles alone, to determine how a particular organization is organized for handling individual projects. Nor would it be practical to attempt to distinguish between all the categories of management listed previously. However, it is possible to narrow the field down to three distinguishable categories: functional management, project management and commodity management. These are defined as follows:

Functional Management--Functional management is a function-oriented management approach which derives its authority and responsibility from the commander. The functional director is directly responsible to the (commander) for those related activities

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which are assigned to him, i.e., research and development, personnel training, procurement and production, etc. The functional director has many items or projects to consider and does not focus his attention upon only one or two projects as do the project manager and commodity manager. The functional director at a headquarters is responsible to the commander for all activities concerning his function provided they are not otherwise assigned. Normally the functional director is not concerned with life cycle materiel management whereas both the project manager and commodity manager are vitally interested.[5]

Project Management--Project management is a technique wherein total responsibility for development, production, and fielding of the project-managed items is assigned to one individual who is given the necessary authority and resources to do the job. He has full line authority over all planning, direction and control of tasks and associated resources involved in providing the designated weapon, weapon system or equipment to using units or for its delivery to the intended operational destination. The project manager coordinates and directs subsystems development within . . . subordinate commands and coordinates and takes appropriate actions with other Military Departments, other Government agencies, and industry . . .[5]

Commodity Management--Commodity management is an item-oriented management approach which centers authority and responsibility for a commodity in a single individual . . . Commodity management is

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is a tool which, when utilized by the commander, fills a pressing
need for unification and integration of purpose, direction, and
effort in the research, development, procurement, production, supply,
maintenance and general support operations pertaining to those
end items and major items not under project management. Commodity
management is an approach which is available to the commander to
parallel project management and assist him in maintaining adequate
item appraisal and control not otherwise practical through his
functional staff organization . . . Generally, they operate off-line
and do not have directive authority.5/

There are other more subtle considerations and comparisons that
bear mentioning such as the fact that the project manager has full
control of the project's funds, the functional manager controls the
funds allocated to his function and the commodity manager normally
has no control over funding.5/ The project manager is most likely
to have better qualified personnel on his staff due to higher grade
level, greater visibility, etc. Each category is likely to suffer
from their dependence on functional organizations who are rated by
a different superior; however, the project manager has the advantage
that he controls the funding while the functional manager has the
advantage that at least some of the personnel may work directly for
him or for the same superior. The transfer of the project from one
like cycle phase to the next would entail the takeover by a new
functional manager and consequently a possibility of dropping the
ball or at best, something "falling through the crack". It becomes
difficult to fix responsibility in such cases.5/

The objective of efficient acquisition should be the same regardless of whether the acquired item is large or small, or in the current vernacular of the Department of Defense, major or "non-major". This objective is to develop and produce a (system meeting performance, schedule, and cost objectives which are defined by the (individual) service. This just happens to be the stated role of a program (project) manager (with the addendum that the Secretary of Defense must approve the performance, schedule, and cost objectives).[1] By definition, however, only major systems warrant a project manager who is directly assigned the acquisition responsibility and is also given sufficient authority to be able to exercise control. The criteria for a major system was given in Section II, Background Information.

There is no such policy stated for "non-major" systems, i.e., that the Services "provide centralized management authority over all of the technical and business aspects of a program".[1] Consequently, there is no requirement that a single individual be given responsibility and authority; however, the objective of efficient acquisition is still present.

There are various approaches to, or categories of, management which would apply to the acquisition process of "non-major" systems, namely, project management, commodity management and functional management. These were discussed in Section II, Background Information. There are certainly many other categories; however, they would be variations of these three basic ones. The Services have the flexibility

to organize their "non-major" system acquisition process around any one of these since they do not have a requirement to assign an individual manager as they do for major programs.

Considering the organization of their major programs, the Services have certain flexibility here also, below the project manager level, and in fact the three military departments do each organize differently: the Air Force project manager has a dedicated functional staff reporting to him, the Navy makes maximum use of existing functional organizations, and the Army operates somewhere in between these two extremes.

Not only is the objective of efficient acquisition also present in the "non-major" system acquisition, the tasks required to achieve this objective are the same whether the system is project managed, i.e., major, or not. These tasks are also listed in Section II, Background Information and in Table I.

Given that the Services practice different categories of management for their project managed items, an attempt was made to determine if there were differences in their management practices associated with "non-major" system acquisition. In Section III, the technique by which a comparison was made, is described. Table I is a summary of the results obtained using the questionnaire, Figure 1. A subjective average of the responses by Service is shown. The total figures indicate that the Navy would tend to perform the tasks at a lower level than the other Services, and the Army at a higher level. The overall interpretation is that the lower the

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TABLE I

Organizational Level, By Service, in
Which Specific Tasks are Performed

Tasks	Service*		
	AF	N	A
1. Prepare and maintain the . . . Development Plan.	4	5	4
2. Approve . . . all contractual actions required for accomplishment of the project.	3	3	2
3. Approve the scope and schedule of project effort proposed for accomplishment by in-house activities and the cost of such effort to be defrayed by project funds.	4	3	2
4. Maintain adequate project evaluation and control schedules.	4	5	3
5. Report on the progress of the project . . .	5	4	4-5
6. Maintain equipment distribution planning on a current basis.	5	5	4
7. Assure that a complete technical data package is obtained and consolidated.	5	5	5
8. Employ configuration management policies and procedures, establish baseline controls and life cycle disciplines.	5	5	5
9. Participate with the combat developer and the appropriate agencies in the preparation and revision of materiel requirements documents and the analyses which support them.	3	5	4
10. Task . . . those agencies having responsibility in the broad managerial areas of training and doctrine or operational employment when problem areas requiring action are evident.	5	2	4

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TABLE I--Continued

11.	Insure that effort at all stages of the project takes into account logistic support requirements and that trade-offs appropriate to the stage of development are made that will maximize the effectiveness and efficiency of the support systems to a degree which is in consonance with the overall operational requirement of the system.	3	5	5
12.	Insure that the planning, management, and design of integrated logistic support for the system proceeds with continuity throughout the life cycle of the project and is kept in phase with materiel development.	4	5	5
13.	Prepare the written environmental assessment or Environmental Impact Statement, as appropriate, for programs not otherwise covered . . .	3	5	3-4
	TOTAL	53	58	51

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* AF - Air Force
  N - Navy
  A - Army

level at which the task is performed, the more the organization tends toward the functional management category. The higher the level at which the task is performed, the more the organization tends toward project management.

It is recognized that this survey represents a very small sample of the total number of projects in the "non-major" category within the three Services.

To narrow the scope even further, a specific, but unidentified, case of how a "non-major" system is managed is described. In this case, the primary responsibility for the system rests with either the development activity or the production activity depending on the life cycle phase the system is in. An individual is tasked by the respective organization as "project engineer" and he is expected to perform his own functional duties on the system in question, and possibly on others as well, while at the same time serving as coordinator for the system. This entails resolving the various problems which come up, providing support and/or guidance to the contractor(s), reporting system status to command level, etc. He exercises this responsibility with no direct authority over supporting functional elements and thus has no control over their priorities or funding. Therefore, a project engineer faced with a production problem requiring input from the developing activity, generally has the additional problem of motivating the development activity to respond with some sense of urgency which he feels and he is very often frustrated in his attempts. This is primarily due

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to the fact that the development activity is not normally faced with situations whereby its input is required on short notice to resolve serious problems and to the fact that it does not report directly to this project engineer. This is the classical example of functional management and is probably representative of the majority of "non-major" systems.

One additional aspect of the major versus "non-major" system does bear some discussion. As was mentioned earlier, the tasks listed in Table I are no less important in the "non-major" system acquisition process than in that of the major system. In fact, because of the vast difference in resources, both in money and personnel, the possibility of overlooking one of the tasks in the "non-major" category is significantly higher than in the major category. And in fact the impact of this mistake, as a percentage of the total effort, could also be significantly higher than in the major category. This is not say that if the project manager (i.e., major system) overlooked task number nine concerning training and operational deployment it would not have a significant impact on his program. However, the impact would not be as significant as on the "non-major" program, primarily because of the authority and resources he could bring to bear on the situation. And it is not possible that any of the tasks would be totally overlooked by the major program; however, it is possible that one might be overlooked, or as a minimum reviewed but deemed not applicable to the "non-major" project only to find out later that it does have a significant effect on the program

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and the resources that would be required to correct the situation

are not available or are not justifiable compared to the overall

investment to date in the project.

SECTION V

CONCLUSIONS

The objective of this paper was to determine if there is a difference in the way the military departments manage the non-project managed systems/items, by specifically answering the question:

> Does the management of ("non-major) items by the various departments parallel their approach to project management or is there more of a similarity in the approach that each takes to the acquisition of "non-major" items?

The answer to the question is that, based on the limited survey performed, the Navy tends toward functional management of their "non-major" systems acquisition which parallels their approach to project management. The Army and Air Force appear to be more closely aligned; however, their approaches have reversed from that which they take to project management.

It is recognized that this was a gross survey and one from which no significant conclusions can be drawn. By combining this survey approach, on a much broader scale, with an analysis of the achievement of original performance, schedule and cost objectives by the Services, regarding "non-major" systems acquisition, a meaningful comparison could be drawn.

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   A thorough discussion of the three management systems listed in the title.