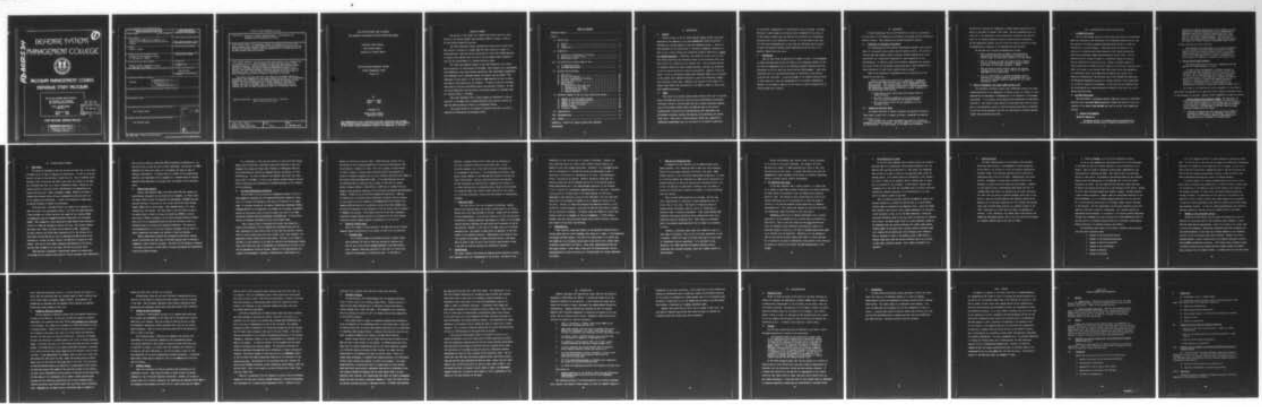
AD-A050 534 DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA F/G 5/1
THE MISSION ELEMENT NEED STATEMENT: ITS POTENTIAL FOR CHANGING --ETC(U)
NOV 77 T H KREBS

UNCLASSIFIED NL

1 OF 1
AD
A050534



END
DATE
FILMED
4 -78
DDC

DEFENSE SYSTEMS MANAGEMENT COLLEGE

PROGRAM MANAGEMENT COURSE
INDIVIDUAL STUDY PROGRAM

THE MISSION ELEMENT NEED STATEMENT: ITS POTENTIAL FOR CHANGING THE USAF ACQUISITION PROCESS

STUDY PROJECT REPORT
PMC 77-2

Thomas H. Krebs
Major USAF

FORT BELVOIR, VIRGINIA 22060

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER	2. GOVT ACCESSION NO. / 3. RECIPIENT'S CATALOG NUMBER
4. TITLE *(and Subtitle)* THE MISSION ELEMENT NEED STATEMENT: ITS POTENTIAL FOR CHANGING THE USAF ACQUISITION PROCESS	5. TYPE OF REPORT & PERIOD COVERED Study Project Report 77-2 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) THOMAS H. KREBS	8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS DEFENSE SYSTEMS MANGEMENT COLLEGE FT. BELVOIR, VA 22060	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS DEFENSE SYSTEMS MANAGEMENT COLLEGE FT. BELVOIR, VA 22060	12. REPORT DATE 77-2 13. NUMBER OF PAGES 39
14. MONITORING AGENCY NAME & ADDRESS *(if different from Controlling Office)*	15. SECURITY CLASS. *(of this report)* UNCLASSIFIED 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT *(of this Report)*

UNLIMTED

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

17. DISTRIBUTION STATEMENT *(of the abstract entered in Block 20, if different from Report)*

18. SUPPLEMENTARY NOTES

19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*

SEE ATTACHED SHEET

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

SEE ATTACHED SHEET

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

DEFENSE SYSTEMS MANAGEMENT COLLEGE

STUDY TITLE: The Mission Element Need Statement: Its Potential for Changing the USAF Acquisition Process

STUDY PROJECT GOALS: To determine, insofar as possible, the role of the Mission Element Need Statement (MENS) as viewed within OSD and the Air Force. To show the potential changes which the introduction of the MENS may have on the USAF system acquisition process.

STUDY REPORT ABSTRACT: The purpose of the study project is to determine how the introduction of the MENS is likely to affect the USAF weapon system acquisition process. Data was gathered by analyzing DoD Directives 5000.1 and 5000.2, reviewing OSD and Air Force correspondence relating to the subject, and conducting informal interviews with key personnel on the Air Staff and in OSD. Creative thought was then applied to the data base to project changes which would be likely to occur due to the MENS.

The report indicates that there are likely to be changes induced in procurement, SPO orientation, long range resource allocation, user involvement, acquisition cycle schedule, and in attitudes between the service and OSD staffs. The report recommends that a formal program be undertaken to "spread the word" on the MENS, that a program initiation line item be started, and that the MENS processing be done in a streamlined fashion.

SUBJECT DESCRIPTORS: Major Acquisition Policies 11.00.00.00
Major Policies 10.02.01.00

NAME, RANK, SERVICE	CLASS	DATE
Thomas H. Krebs, MAJ, USAF	77-2	7 November 1977

THE MISSION ELEMENT NEED STATEMENT:

ITS POTENTIAL FOR CHANGING THE USAF ACQUISITION PROCESS

Individual Study Program

Study Project Report

Prepared as a Formal Report

Defense Systems Management College

Program Management Course

Class 77-2

by

Thomas H. Krebs
Major USAF

November 1977

Study Project Advisor
William H. Cullin

EXECUTIVE SUMMARY

The purpose of this study is to examine the effects which the introduction of the Mission Element Need Statement (MENS) is likely to have on the USAF system acquisition process.

The study highlights several problem areas involving the proper scope that should be included in a single MENS and then focuses on a number of "misconceptions" regarding service actions prior to and after SECDEF approval. It suggests that several years can be cut off the weapon system acquisition cycle by the establishment of a program initiation fund.

The study also suggests changes to the USAF acquisition cycle which may be caused by the introduction of the MENS. These changes are in procurement, SPO orientation, long range resource allocation, user involvement, acquisition cycle schedule, and in attitudes between the service and OSD staffs. The importance of this section to the service or OSD executive is that it makes one aware of what changes are now possible. If they are viewed as desirable, they should be actively facilitated rather than passively observed. If they are viewed negatively they had better be actively opposed for they may occur as a natural result of the MENS.

The study recommends that a formal program be undertaken to "spread the word" on the MENS, that a program initiation line item be started, and that the MENS processing be done in a streamlined fashion.

This report should be of interest to anyone at the OSD or Air Force research and development policy-making levels.

TABLE OF CONTENTS

I. INTRODUCTION

A. Purpose

During 13 years in the Air Force Systems Command (AFSC) I have been impressed by the advances in the systems management "state of the art" evidenced by a growing number of very well managed programs. I have also been impressed by the codification of successful management techniques in what is now a rather complete and voluminous document, AFSCP 800-3, A Guide for Program Management. Conversely, DoD acquisition policy has for years been rather positively and succinctly stated in DoD Directives 5000.1 and 5000.2 which were revised as of 18 January 1977. I had initially planned to highlight acquisition policy changes through a line-by-line comparison of the old and new versions of these two directives. However, I later decided to focus on the Mission Element Need Statement (MENS) and its approval by the SECDEF, which embodies Milestone 0, since the substantial changes were basically in this area. Therefore, the purpose of this study is to examine what effects the introduction of the MENS is likely to have on the USAF acquisition process.

B. Scope

This report will briefly review several studies which led to the creation of the MENS and then will focus on actions surrounding its approval. Following a review of current status will be a rather speculative examination of the possible effects which the MENS may have on the various organizational structures and responsibilities; the requirements and procurement processes; resource allocations; SPO activities; and several other areas. While some of these potential effects were suggested by individuals interviewed, most are the result of the author's reflection

on the natural consequences of a driving force such as the MENS. Although how many of these changes will actually occur is unknown at this time, it is the author's opinion that the MENS has the potential for a significant positive effect on the acquisition process. It is the author's hope that the concluding recommendations in this study may influence decision makers to avoid some apparent pitfalls while smoothing the way for some of the positive changes which can occur.

C. Methodology

Data for this study was gathered in a number of ways: a) by analyzing in detail DoD Directives 5000.1 and 5000.2; b) by reviewing relevant OSD and Air Force correspondence; and c) by conducting informal interviews with key individuals on the Air Staff and within OSD (see Bibliography). Since these interviews were on a non-attribution basis no references to any specific interview has been made. A large percentage of the changes predicted later in this report are solely the responsibility of the author's imagination. However, in the author's opinion, all are based on logical extrapolations of forces already set in motion.

II. BACKGROUND

The MENS requirement and the DoD directives in which it is published are the result of the Commission on Government Procurement and the Acquisition Advisory Council. Each addressed the systems acquisition process.

A. Commission on Government Procurement

The Commission noted that defense requirements documents state needs in terms of a proposed solution rather than the defense problem. The result is that the need then becomes product oriented, thereby eliminating all other alternatives for consideration regardless of their capability or cost effectiveness. In addition, there was a premature commitment to a particular system concept and preliminary design resulting in non-consideration or unfair evaluation of other viable system concepts. (10:4)[1]

Some of the Commission's recommendations on the early part of the acquisition process are:

> Start the acquisition process with a statement of needs and goals that have been reconciled with overall agency capabilities and resources. State program needs or goals independent of any system product. Use long-term projections of mission capabilities and deficiencies prepared and coordinated by agency component to set program goals that specify:
>
> - Total mission costs within which new systems should be bought and used.
> - The level of mission capability to be achieved above that of projected inventories and existing systems.
> - The time period in which the new capability is to be achieved. (3:77)

B. Acquisition Advisory Group

The Deputy Secretary of Defense chartered the Acquisition Advisory Group (AAG) in April 1975 to examine and assess recommendations made by

---

[1] This notation will be used throughout the report for sources of quotations and major references. The first number is the source listed in the bibliography. The second number is the page in the reference.

the services concerning the management of weapon system acquisition at the Office of Secretary of Defense (OSD) level. The AAG recommended that the front end of the acquisition process become more structured and that the basis for the system acquisition decision should be better documented. The AAG emphasized, however, that the front end activity should not become an administrative extension of the DSARC/DCP process. (10:7-8)

The AAG made the following recommendations in part:

- That a continuing series of Mission Area analyses be established in DoD and initiated and conducted by the Services under the functional guidance of the ASD (PA&E).
- That the Services initiate and conduct Mission Concept Studies to determine ways and means of meeting mission needs under the functional guidance of DDR&E.
- That the Mission Concept Studies explore and evaluate competing system concepts and be used as the basis for development of the initial DCP.
- That the establishment of precise performance characteristics for a weapons system be prohibited until such time as the candidate system is approved for full scale development. (7:7)

C. Office of Management and Budget (OMB) Circular A-109

This document, published 5 April 1976, established policies for major system acquisition in the Department of Defense as well as a number of other departments and implemented recommendations of the Commission on Government Procurement. It set general policy which DoD has implemented in DoDD 5000.1 and 5000.2. The thrust of that portion of A-109 which deals with the early part of the acquisition process is that the mission need should be approved by the head of the department and that the need should be stated in general rather than system-oriented terms.

III. THE ACQUISITION PROCESS--THEN AND NOW

A. Pre-MENS Environment

Prior to the present versions of DoDD 5000.1 and 5000.2, the conceptual phase was initiated at the discretion of the individual service and the work was typically performed by advanced planning groups without a formal SPO organization or program manager. Often this phase was carried out in response to a Required Operational Capability (ROC) which had been submitted by an operating command and validated by the Air Staff. The ROC normally would be defined in terms of a particular system with certain desired characteristics specified (e.g., a Mach 2.0 fighter capable of target acquisition at 150nm and aerial combat up to 65,000 ft. altitude, etc.). Under this system it was possible that after years of work and expenditure of considerable funds, the SECDEF would be asked by the service for a decision at Milestone I. The decision would either approve the entry into the validation/demonstration phase of a single solution to the original ROC or, in effect, reject the requirement. It was this kind of situation which was criticized by the studies mentioned in Section II and which led to the revised OSD directives.

B. Post MENS Environment

The environment is uncertain; however, important sections of DoDD 5000.1 and 5000.2 are reproduced below to provide a common data base for later discussions of the impact which the MENS may have on the Air Force acquisition process.

1. Mission Area Analyses

These are defined as:

> Continuous analysis of assigned mission responsibilities in the several mission areas to identify deficiencies in the

current and projected capabilities to meet essential mission needs and to identify opportunities for the enhancement of capability through more effective systems and less costly methods. Mission area analysis should conform with short, mid, and long range planning guidance. The objectives of mission area analysis are to identify capability deficiencies and assess the relative values of operational needs. (1:21)

and are required in the new directive

> DoD Components are responsible for a continuing analysis of mission areas to identify mission needs and to define, develop, produce and deploy systems to satisfy those needs. Mission needs shall be stated in terms of the operational task to be accomplished and not in terms of performance or characteristics of systems to accomplish the mission. (4:2)

2. Mission Element Need Statement

> The system acquisition process is ....initiated with the approval of a mission need.....(4:2)

> At such time as the Secretary of Defense requests or a DoD Component Head perceives a mission need to exist and determines that a new capability is to be acquired to meet the need, the DoD Component Head shall submit a statement of the mission need to the Secretary of Defense and request approval to proceed to identify and explore alternative solutions to the mission need. The considerations to support the determination of the mission need shall be documented in the Mission Element Need Statement (MENS). (4:3)

The format of the MENS can be found in Appendix A to this report.

This format was appended to a 1 April 1977 letter signed by Secretary Brown to the Secretary of the Navy. However, 5000.2 summarizes the MENS as follows:

> Mission Element Need Statement (MENS). The MENS shall be used to describe the mission and to justify the initiation of a new major system acquisition. The document shall be submitted to the Secretary of Defense by the Component Head for the Milestone 0 decision. The MENS shall be not more than ten pages and shall accomplish the following:
>
> 0 Identify the mission area and state the need in terms of the mission element task to be performed. The mission need shall not be stated in terms of capabilities, and characteristics of a hardware or software system.

- Assess the projected threat through the time frame the capability is required.

- Identify the existing DoD capability to accomplish the mission.

- Assess the need in terms of a deficiency in the existing capability, a projected physical obsolescence, or a technological or cost savings opportunity.

- State the known constraints to apply to any acceptable solution including operational and logistics considerations, requirements for NATO standardization or interoperability, limits on the resource investment to be made, timing, etc. These constraints will constitute boundary conditions for the exploration of alternative solutions.

- Assess the impact of not acquiring or maintaining the capability.

- Provide a program plan to identify and explore competitive alternative systems extending through to the next Milestone decision. Include the planning to establish a system program office. (5:3-4)

3. Milestone Zero - Program Initiation

When a mission need is determined to be essential and reconciled with other DoD capabilities, resources and priorities, the Secretary of Defense will approve the mission need and direct one or more of the DoD Components to systematically and progressively explore and develop alternative system concepts to satisfy the approved need. (4:3)

At this point there is a commitment only to identify and explore alternative solutions but no commitment to any specific solution. (5:6)

4. Program Office

When the Secretary of Defense approves program initiation of Milestone 0, the DoD Component shall assign the program manager for a major system acquisition. The program manager shall be given necessary assistance to establish a strong system program office to achieve the program objectives. He shall be given a charter approved by the DoD Component Head stating the program manager's responsibility, authority and accountability for program objectives. (4:5)

5. Business Orientation

A major task of the program manager, following Milestone 0 approval, is to develop and tailor an acquisition strategy for the total program. The strategy shall be directed to program

execution and the achievement of program objectives in an economical, effective and efficient manner. (4:6)

He shall direct the program to include maximum use of effective competition for achieving program objectives throughout the system acquisition process. (4:6)

Business planning should emphasize early competitive exploration of alternatives to avoid premature commitments to solutions that may prove costly and marginally effective. The solicitation for proposed solutions shall be in terms of mission needs and not explicit system characteristics and shall provide complete information including the mission task and the operating environment and threat to enable all sources to respond fully to the need. (5:6)

IV. CURRENT STATUS/CONCERNS

A. MENS Status

The impact of the MENS on both the OSD and Air Staff can, at this date, be summed up by the words "confusion and uncertainty". No one is quite sure who will do what to whom and when it might be done. This is probably understandable since it has been less than a year since the concept of the MENS was introduced and since it is such a fundamental change. Relatively few people outside of those with direct responsibility for implementing the changes even know that a MENS requirement exists. However, the amount of communication between those with such responsibility has been quite low so far judging by my interviews. I found I was acting as a change agent by passing information between the principals.

There have been a few MENS written in a rather ad hoc fashion, but they are mostly of an experimental nature. The first such MENS submitted, a Navy document on a V/STOL aircraft, was signed by the outgoing SECDEF on Inauguration Day and disapproved several months later by the present SECDEF. That disapproval letter mentioned an MNS (Mission Need Statement) as well as a MENS and included an outline for each. This further muddied the waters since 5000.1 and 5000.2 do not mention an MNS. Apparently, the Navy submitted the V/STOL need statement prior to the publication of DoDD 5000.1 and the MNS was its way of complying with OMB circular A-109. According to a recent OSD memo, however, the MNS can be treated as a non entity. Only one Air Force MENS, regarding modifications to the KC-135, has been sent to DDR&E as of this date, and that was in draft form.

There has been considerable congressional pressure for application of the MENS to more programs than would be strictly necessary under DoDD 5000.1.

That directive requires a MENS when DCPs are produced at Milestones I, II, and III as well as when the need is first identified. The purpose of a MENS submission at these later dates is to re-examine the need in light of changing circumstances. It appears that as a result of the congressional interest, the requirement will be expanded on a one-time basis to include immediate MENS submittals on programs which are already in the conceptual phase.

B. Mission Area Analysis

Mission Area Analysis (MAA), from which most MENS will emerge, are proliferating throughout the Air Staff and the commands. An office under the Deputy Chief of Staff for Research and Development (AF/RDXX) has been actively working in this area for over a year, and HQ Air Force Systems Command (AFSC) has an active group. Some commands appear to be quite enthused over the concept. The focal point on the Air Staff for MAA is the Deputy Chief of Staff for Plans and Operations (AF/XO). An ad hoc task group in AF/XO is working on an Air Force Planning Guidance Document which will set up standardized mission areas and sub areas as well as standard formats for mission area analysis worksheets. The purpose of the standardization is to allow all elements throughout the Air Force to easily communicate and compare the results of their MAA findings.

Though quantitative analysis will certainly be performed, several persons interviewed said that much of the need analysis will be through a judgmental, highly subjective process. The basis for the analysis, literally a "breaking into parts", is what AF/XO is doing in producing the standardized areas and worksheet formats.

It is important to note that the results of a MAA could show deficiencies which are entirely correctable within the authority of the local commander and require no formal need statement or development activity. The problem might be resolved by changing tactics, procedures, or force distributions. The value of Mission Area Analysis may be far more than as an input to the MENS. It will, in my opinion, produce benefits just by further clarifying and structuring the thinking processes of all involved in force planning.

C. Air Force Requirements Processing

The Air Staff is in the process of preparing an update to AFR 57-1 which previously governed the old Required Operational Capability (ROC). (As of a 1 October 1977 message to the field, the term ROC is no longer used. It has been replaced by the General Operational Requirement (GOR).) Although AFR 57-1 is not expected to be signed for 4-6 months, the general outline of its present draft provisions suggest that most of the MENS processing procedure has been thoroughly conceptualized. If the process remains as presently envisioned, it will follow these steps:

When a mission need is recognized by an operating command via Mission Area Analysis, a GOR is prepared and coordinated with Army and Navy counterparts in the field as well as with AFSC and Logistics Command. AFSC will add a program plan which will include costs, time, manpower, and appropriate System Program Office (SPO) plans. The GOR, in the format of the MENS, is then submitted to HQ USAF for review by the Requirements Review Group (RRG) which will make a recommendation concerning the validity of the GOR and appropriate follow-on actions. Members of the RRG represent the research and development, logistics, communications, intelligence, and

operations functions on the Air Staff. AF/XO will play a major role in validating the need through examination of the mission area analysis that was performed to identify the need. This role is given to AF/XO because it chairs a number of groups doing continuous mission area analysis in support of documents ranging from the Joint Strategic Objectives Plan (JSOP) to the Program Objectives Memorandum (POM). If the RRG validates the need and estimates that the approved GOR is likely to fall into the "major system" category defined in DoDD 5000.1, a MENS will be prepared and forwarded to the Assistant Secretary of the Air Force for Research and Development (SAFRD). (SAFRD is now the Air Force Acquisition Executive.) Approval by SECDEF would be required before alternative solutions could be studied. If the program costs are estimated to be between $50 and $75 million for RDT&E or $200-300 million for production, an Air Force MENS (AFMENS) will be written and approval by the Secretary of the Air Force would be required to initiate the program. This program would be an Air Force Designated Acquisition Program (AFDAP) and will be reviewed by an Air Force Systems Acquisition Review Council (AFSARC) at Milestones I, II, and III.

D. Potential Problem Areas

There are a number of areas related to the MENS that require further analysis and/or clarification if the intent of A-109 is to be fulfilled.

1. Piecemeal MENS

It is possible under the directives issued to submit a MENS which addresses the need to solve one problem in a Mission Area but not one or more closely related problems in the same Mission Area. Suppose a MENS were generated to take care of a valid need caused by obsolescence in some Mission Area. If the MENS is

approved, a Systems Program Office (SPO) will be chartered to look into alternative solutions to meet that need. Of the solutions examined, one or more which look most attractive will be recommended at Milestone I. The recommendation, however, could easily change somewhat if the MENS had been defined to include the other related needs. And yet, unless the Mission Area Analyses and GOR procedures are unusually well integrated and complete, it is likely that GORS will be submitted which, though valid and worthy of an approved MENS, will reflect either only part of the problem or, if written differently, would solve two parallel or complimentary problems.

2. Combination MENS

The other side of the coin is equally troublesome. Suppose Mission Area Analyses define ten closely related needs in the future. Should one or more than one MENS be written? Assume that our criteria is cost effectiveness. If we had one solution, we could test the cost sensitivity of adding additional requirements (or needs) to the original one and therefore determine how many needs could reasonably be met by one solution. However, in the case of the MENS, there is no solution defined as yet. The number of needs which can optimally be met will depend on the preferred solution. Unfortunately, the preferred solution depends on the number of needs which must be met. Some means must be found to move us out of this circular logic problem in such a way that our limited resources are effectively utilized.

E. Opportunities

For years, people in and around the weapons system acquisition process have complained about the "lengthening" of the process. How much of that

lengthening is real and how much is illusory is debatable. However, few would argue that it is not long or that a shorter process would not be beneficial--all other things being equal. Therefore, it is pleasant to note that the introduction of the MENS may provide an opportunity to make a substantial contribution to a shortening of the cycle. When Milestone 0 occurs, a program can be started. However, sufficient funds under the present process will not be available due to: 1) the $2 million limit on RDT&E reprogramming and 2) the understandable reluctance of the Services to go to Congress for supplemental appropriations for a new start. Therefore, a new program will normally wait to be funded through the PPBS cycle. Depending on when Milestone 0 occurs in the PPBS cycle, this will mean that funds cannot be obligated for another 21 to 33 months--an average of over two years. However, if funds were available for Milestone 0 starts in each service as a routine measure, a long part of that two years could be shaved off the acquisition lifecycle. Of course, there are reasons to believe that Congress might not be amenable to such an arrangement. I would suggest, however, that this area holds such promise that it merits further consideration within OSD and within the Services.

F. Misconceptions

I must conclude, based upon several of the interviews conducted and on various draft position papers reviewed, that there are a number of "misconceptions surrounding the MENS concept. The word is in quotes since it is really only the SECDEF who will ultimately decide what is and what is not a proper interpretation of DoDD 5000.1 and 5000.2. Since these interpretations have not been made, however, I offer below, along with the "misconceptions", my own interpretations of these directives as a starting point for further reflection and debate.

1. MENS and the Technology Base

An argument has been advanced that the MENS provides sorely needed guidance to the technology base to make sure that technology dollars are being spent unearthing solutions to DoD needs. This argument appears to rest on several questionable assumptions: a) there is a time lag between the production of a MENS and the initiation of a program sufficient to allow for results from a technology effort, and b) that the MENS can be sufficiently focused so that the number of solutions is limited and, therefore, the number of related technology areas are limited.

Even if normal PPBS procedures are followed, the lead time from a MENS approval to significant funding expenditures will be on the order of two years. The amount of technology output or leadtime gained (especially when one allows for technology re-direction time) is therefore negligible. Other delays between MENS production and program initiation can be assumed that would allow sufficient time for technology work. These delays are addressed below in succeeding "misconceptions" and are judged to be unlikely to occur.

Ideally, a conceptual phase based upon a MENS will look at a wide range of solutions. This is one of the main objectives of such a document. Within each type of solution there may be a wide range of technologies that are applicable. It is difficult to see, therefore, how a MENS improves the present situation, from a technology base focusing viewpoint, since now a single solution is often pursued.

Mission Area Analysis may, however, help to focus technology if it is done in the proper timeframe. For example, Air Force MAA efforts in support of MENS production will focus on one, four, and nine years in the future. If similar MAA efforts were done for appropriately longer leadtimes (15-20 years) to structure technology efforts, positive results could be anticipated.

2. Pre Milestone Zero Delay

It has been suggested that a normal practice of a service may be to prepare a draft MENS, process it through to the service secretary and then refrain from passing it onto the SECDEF for an extended period of time. The purpose of such a delay would be to allow sufficient technology work to be performed or to allow the range of solutions to be narrowed somewhat through exploratory or advanced development work. Both reasons are somewhat at odds with the intent of establishing a MENS requirement in the first place.

Performing exploratory or advanced development work in direct preparation for the satisfaction of a mission need is prohibited in DoDD 5000.1. This is work that should be done after Milestone 0. Also, the assumption that sufficient technology work needs to be performed assumes a solution to the need is already defined which again is at variance with the directive. Therefore, it is my assumption that if the service secretary agrees that there is a valid need and he is willing to set aside a sufficiently large portion of his resources to satisfy it, then he will forward the MENS expeditiously to the SECDEF.

3. Post Milestone Zero Delay

It has also been suggested that a normal practice of a service secretary may be to deliberately avoid program initiation once the MENS has been approved at Milestone 0. Once again, the technology base is said to be able to focus on such approved needs during the waiting period. This waiting period is postulated to occur because of a lack of funds in the out-years which is another way of saying lack of priority for the programs. In the author's opinion, this assumption is at odds with the requirement that the service secretary estimate his funding constraint on the satisfaction of the need before he submits a MENS for approval.

When the service secretary requests the SECDEF to approve the program initiation to satisfy the need he sets up a not-to-exceed funding wedge for acquisition and ownership costs. Since this wedge must naturally come from the total funding estimated to be available in the out-years, he has, by his own MENS submission, consciously allocated sufficient funds to not only start but hopefully to complete the project. One other reason cited for a post Milestone 0 delay is an assumption that the service secretary will submit needs without funding wedges in the hopes that a growing volume of unfunded needs will convince OSD to provide more total funding in the out-years. This is unlikely to occur, in my opinion, since a MENS without a funding wedge means that the service secretary sets a low priority in this major potential program. Such a MENS is unlikely to be approved.

4. Widened Horizons

The final "misconception" to be treated is that the MENS allows top level service or OSD management a broad perspective on the needs of the service or of all the services respectively. The major needs of the military services could be viewed on a comparative basis from the OSD level. Theoretically, this could be done. Presumably, it would have a positive effect on the funneling of funds to where the needs are the greatest. However, to view needs on such a comprehensive basis means that all the relevant data would have to be available at one time, concerning all needs over the period of interest--perhaps 10-20 years in the future. This would require Mission Area Analyses concerning all missions of all services, being done for all relevant time periods every year with MENS being produced on a schedule similar to the PPBS. Obviously, we are far from this level of competence at present. I feel, therefore, that rather than a wide horizon, the SECDEF may anticipate seeing a bit of the view each time he focuses on a clearly defined need in the form of a MENS.

V. POTENTIAL CHANGES IN THE AIR FORCE ACQUISITION PROCESS

So far, we have examined the background which led to the development of the MENS, and then the relevant sections of the DoD Directives on the subject. Next we looked at potential problem areas, opportunities, and "misconceptions" regarding the MENS. This section deals with the basic purpose of this report: The answer to the question, "What are the potential changes which the introduction of the MENS may have on the USAF system acquisition process?" The most important and difficult change that must be made in the acquisition process is in the attitudes of our people. Because it is not until attitudes change that behavior changes. The MENS requires a basic change in behavior. Though I have not sensed much hostility to the new requirements, it is a different approach than most of us are used to. It is like describing the mission of a strategic bomber without reference to the aircraft. For some experienced, operationally-oriented persons this might be a difficult concept to internalize. For a systems analyst, an experienced program manager, or a graduate of the Defense Systems Management College, the attainment of a goal (satisfaction of the operational need) is the end result of a familiar process which can be instantly conceptualized without reference to a hardware solution (the bomber).

The discussion below covers a wide range of possible impacts grouped into six rather arbitrary areas:

- Changes in the Procurement Process
- Changes in SPO Orientation/Structure
- Changes in Resource Allocation
- Changes in User Involvement
- Changes in Schedule
- Changes in Structure

It is not suggested that all of these changes will necessarily occur soon. It will be over a year from the 18 January 1977 DoDD 5000.1 publication date when the revised Air Force Regulation 57-1 is signed. It will be in that second year before major commands get used to the new GOR process and before some new programs are approved. Finally, it may be several years before the Mission Area Analysis process is working smoothly.

Of course, many of the changes discussed below may not occur at all (since they are basically my suppositions). It should be noted, however, that the introduction of the MENS will tend to move things in the direction of the changes suggested. In other words, the forces favoring change are already in motion. The importance of this section to the service or OSD executive is that it makes one aware that these changes are now possible. If they are viewed as desirable, they should be actively facilitated rather than passively observed. If they are viewed negatively, they had better be actively opposed for they may occur as a natural result of the MENS.

A. Changes in the Procurement Process

According to DoDD 5000.2, the RFP should be structured so that the MENS will be the central part of the conceptual phase statement of work. This has quite serious implications. First, it is going to be a major task to set up the boundaries, constraints, applicable specs and standards, and the desired schedule so that they can be easily adapted to any reasonable solution or set of solutions which may be offered. However, the task of putting together a source selection plan with adequate evaluation criteria will probably be even more difficult. The criteria must be general enough to evaluate widely varying concepts but still somehow point out properly those concepts with the highest "value". I predict that this area will cause

major problems unless they are anticipated and satisfactory solutions prepared before we have to face them with our first "MENS RFP". In addition, the evaluation team cannot be organizationally structured by WBS elements. There are none, not even at level 1.

The companies that bid may not be confined to the aerospace industry giants which we are so used to working with (and who know our way of doing business). A think tank may have the best proposal or a small high-value technology company in Oklahoma. For example:

> Competent industry and educational institutions regardless of size shall be the primary sources for the exploration of competitive system design concepts to satisfy approved mission needs. Government laboratories, federally funded research and development centers and other not-for-profit organizations may also be considered as sources. (4:5)

It is also possible that large companies may team with unusually small partners or may acquire a wider than normal range of technical expertise in-house. After all, an entirely feasible solution set for MENS #XYZ may include a high powered laser, a space borne system, an IRBM, and a cruise missile launcher. This wide range of potential solutions will, in my opinion, open up the competitive process by providing opportunities for innovative contributions to the national defense from a large cross section of enterprises.

B. Changes in SPO Orientation/Structure

It is entirely possible that the number of integrated as opposed to matrix or semi-matrix type System Program Offices will increase as new programs are started under the MENS concept. DoDD 5000.1 states that "the program manager shall be given necessary assistance to establish a strong system program office". Though there is some dispute on this point, the strongest program management office organization is generally conceded to

be a vertical or integrated one. But, aside from the directive, the task itself tends to support such a structure. In order to be able to manage concepts over a wide spectrum of solutions, the PMO cannot afford to depend on functional specialists who may be experienced almost exclusively in space operations, or munitions, or aircraft design. This is the type of support a typical matrix organization in the Air Force would provide. Either a wide spectrum of specialists must be incorporated in the SPO or a number of super-generalists will have to call upon specialists scattered all over the country much as the Army does now. In my opinion, the super-generalists will be in demand in either case.

A subset of these generalists will likely be business-oriented professionals--people who are used to thinking in terms of meeting the needs of the marketplace and optimizing the profit (effectiveness) regardless of the product. Business orientation, actually already being stressed within AFSC for SPO personnel, will become even more valuable in the more competitive atmosphere generated by a response to a broadly defined MENS. SPO managers will have to function even more like general managers or executives than technical experts.

According to some of my sources, a new task of the SPO is likely to be that of need validation during the conceptual phase. To do its job right in the conceptual phase, the SPO will have to take a second look at the Mission Area Analysis which kicked off the MENS initially. It will also have to look at whether present equipment in the Air Force or other services can fill the bill or whether modification to or increases in such equipment will satisfy the need. Since the PM will have been chartered to investigate alternative solutions to the mission need rather than to develop, say, a new aircraft, he and his people are much less likely to identify themselves

with a long term development project. As such, they are more likely to report that the deficiency does not actually exist or that a solution cannot be found within the funding "wedge" allowed. In my opinion, the probability is increased that the mythical PM who scuttles an unworthy program may finally emerge in real life.

C. Changes in Resource Allocation

The new acquisition directive clearly calls for resource constraints to apply to the solution. In the past, we have put design and schedule constraints on a system and have made bounded cost estimates on a solution to the problem. But, making cost estimates in a MENS environment is quite a different matter. First, we do not know the solutions and, second, it is too early to know their costs even if we could define the solutions. And yet, the MENS calls for resource constraints. According to Pentagon sources, the constraint is actually meant to be a "not to exceed" planning wedge. It appears that this is a very subtle point and one which is easily missed. This wedge should be the Service Secretary's estimate of how much it is worth to him in total future acquisition and operation costs to meet the need. It may approximate, for example, what it costs him to meet that need today over some period of time. Maybe the system proposed at Milestone I will be one tenth of that wedge and, if so, fine. If it is twice as much the solution should, by definition, be unacceptable since meeting the need has already been judged to be worth only so much to the service. In other words, affordability of the solution is the key to this constraint. If this wedge is to be meaningful when a number of MENS (and non major programs as well) have been approved and are in the conceptual phase, resource allocation must extend further into the future than it presently does. Incidentally, the MENS resource constraints apply to numbers of

people and their skills as well as to dollars.

Interestingly, those who are most effectively constrained by these controls are the people in industry who could propose a host of solutions to the need. They are given, therefore, total resource guidelines (both acquisition and ownership) within which they must propose their solutions.

D. Changes in User Involvement

According to knowledgeable sources, it is probable that there will be a greater user involvement in the front end of the acquisition process than there is at present. This can already be seen by the way in which the DCS/Plans & Operations, AF/XO, has moved into a key role in requirements validation. This is an area which had been left to the R&D part of the Air Staff in the past.

The widespread usage of Mission Area Analysis will increase the involvement of the operational commands in the requirements process. Once having identified a need through a rigorous process and having seen it approved as a MENS, it is likely that user interest will continue to be high all the way to Milestone I. The SPO is likely to need the user more especially in the area of operational concept development. A different operational concept may be needed for each of the numerous solutions that will be studied.

E. Schedule Changes

There is a potential for both an extension and contraction of the acquisition process. What effect the MENS is likely to have on program schedules is one of the most difficult predictions. However, it is easy to predict that, due to initial confusion, the submission and approval of the MENS an the funding of new programs are bound to be at a much slower pace for awhile

than the start of new conceptual phase programs would have been under the old process. This will undoubtedly lead to both program and funding gaps and peaks in years to come. This could be alleviated, of course, by slowing down some programs or accelerating others during the transition period. However, the foregoing is only conceptual speculation and, in any case, the effects should be transitory.

Some have speculated that the MENS process could turn into as complex and time consuming an activity as a DSARC. Now here I feel there is a potential for the process to go either way, although the probabilities are not on the side of complexity--at least at the OSD level. For example, although the MENS is required to be coordinated through the JCS and through the OSD staff, this is hardly a new task for the Air Staffer. Some papers can age considerably in the process of achieving concurrence if one requires consensus. Consensus, however, is not a prerequisite for submission of the MENS to the SECDEF. All that he requires is the paperwork and the staff inputs to aid him in his decision making. The acquisition directive requires a constrained ten-page MENS and no briefings or council meetings are required. The process appears to have been set up to be genuinely simple at the OSD level with inputs being made basically at the initiative of the service secretary. The majority of the processing time will probably be spent in the GOR/MENS validation process between the using command, AFSC, and the Air Staff. This is not likely to be much different from today's timeline for a major ROC.

There is a possibility that the acquisition process could be shortened because of the high level interest (SECDEF signature), structured beginning, and requirement for a strong program management office. Compared to past

practices, the conceptual phase may move along rather smoothly.

F. Structural Changes

As noted earlier, the Program Manager will be assigned when Milestone 0 occurs, along with a strong program office. Present practice is often to wait until sometime prior to Milestone I before appointing a Program Manager with a small SPO cadre. The management order introduced into the acquisition process by this one change could be very significant in the author's opinion.

Since funds cannot be spent on conceptual programs until Milestone 0 (with the exception of the technology base) I would expect that a large part of Advanced Plans work in various AFSC product divisions will be transferred to conceptual phase program offices. Advanced Plans type work may also now begin to emphasize Mission Area Analysis and GOR related efforts.

Another change involves the Air Staff structure and is related to the MENS but also to the creation of the AFSARC. An AFSARC program of a size which does not require DSARC review puts the Air Staff functional elements in a different situation relative to that program. No longer does the program have to be defended from "them" on the OSD staff. There is no common enemy determined, or probably more likely perceived to be determined, to kill, maim, stretch out, dilute, or divert "our program". The common enemy motivation is replaced by that of a common goal--to field systems which meet valid needs within a reasonable time period at affordable costs. "Our program" becomes "a program" and the staff should tend to be more objective, more critical, more questioning than under the former arrangement. Though the above was merely a potential scenario, I found that these results are already occuring according to Pentagon sources. On AFSARC only programs

the staff is working more like a top level staff. The introduction of the MENS will probably accelerate for conceptual phase programs this positive trend since there is much less of a tendency to become attached to an acquisition effort when there is no concrete identifiable program, but rather a number of potential solutions. A functional staff member who plays devil's advocate with a potential solution rather than a "gold watch" will be looked upon as constructively participating rather than sniping. I feel that there will be more objective in-house criticism resulting in a more professional, less biased decision process. And AFSARCs run well will, according to OSD sources, tend to negate the need for DSARCs even on major programs. The end result, therefore, could well be greater decentralization as well as a restructuring of the staff roles at HQ USAF.

I will predict that another effect of the MENS is likely to be a change in attitudes on both Air Force and OSD staffs regarding how people view new acquisition programs and also how the staffs therefore interrelate. Today the staffs are focused on solutions and are organized around them. The introduction of the MENS is going to make this orientation somewhat meaningless at least for those programs in the conceptual phase. The two staffs may find that they are working together better than before because they now have the same objective--to meet the need. Rather than the DSARC being a test of brute force as it so often is (Col. Jones of AF/---- and his biases in favor of Program X vs. Mr. Smith of ASD/--- and his biases against Program X), the picture could change to one of cooperation in the search for the best solution to the need.

VI. RETROSPECTIVE

Besides compliance with OMB Circular A-109, what was OSD trying to accomplish in DoDD 5000.1 and 5000.2? I believe the intent was to decentralize authority to the Services. I also believe the intent was to change the attitudes of people throughout the weapons system acquisition organizations. Changed attitudes are necessary so that the desired behavior--more efficient management of resources by focusing on the need rather than the solution--would follow. Throughout these directives the Services are exhorted to take the initiative:

- They are encouraged to examine their mission needs in an orderly and continuous process (4:2)
- When needs surface, they are asked to estimate their worth against the background of all other future Service needs in terms of acquisition and ownership resource allocations (5:4)
- To prepare a short, reasoned document with an action plan for the Service to carry out if approved (5:3-4)
- To establish a strong program office (4:5) with a professionally competent and chartered program manager (4:5)
- To avoid diverting the Program Manager from his chartered duties through excessive reviews and reports (5:7)
- To avoid overdirecting the PM by requiring, in effect, that line officials above the PM exercise their decision authority in writing (4:6)
- To follow businesslike methods in fostering real competition in a search for creative solutions (4:6)
- To review the resulting solution in the Service's own SARC (4:3)

and finally to:

- Request permission of the SECDEF to enter into the validation/demonstration phase with one or more of the recommended solutions (4:3)

The resulting spectrum of solutions gathered in an orderly, businesslike, logical, and hopefully timely manner will give the SECDEF a degree of

flexibility he has never had before. He no longer has to choose between not meeting the operational need or accepting a single service-backed solution. If the process is performed in a timely manner, and it is in everyone's best interests to ensure that it is, the SECDEF also has time on his side rather than having it foreclosed by a lengthy conceptual phase.

Whether these goals will be met or not is unclear at this time. The next section suggests some actions that could be taken to increase the probability that the process will work as intended.

VII. RECOMMENDATIONS

A. Spread the Word

First, it would be useful if the office of the Under Secretary of Defense for Research and Engineering (formerly ODDR&E) were to engage in an educational program aimed at the OSD staff, the Air Staff, AFSC, and the product divisions. The mechanics of the changes in 5000.1 and 5000.2 should be briefed along with the spirit of the changes. Every effort should be made to carry on a dialogue so that misconceptions are cleared up and the purposes and processes of these directives are apparent and understood by all. A workshop format might be a useful device.

B. Funding

How and when programs approved at Milestone 0 get funds to start defining alternatives is unclear in the directives.

> DoD Component Heads are not authorized to commit funds to the identification and exploration of alternative system design concepts to meet a mission need prior to the approval of a MENS by the Secretary of Defense and the completion of action required by the Planning, Programming and Budgeting System (PPBS). In selected cases the action to initiate a new major system acquisition program will require immediate initiation of effort to identify alternative solutions prior to completion of the normal budget cycle. In such cases the conditions dictating the urgency will be submitted to the Secretary of Defense together with identification of initial funding required and the funding sources. (5:8)

If the above paragraph means that the new program will normally be entered into the next POM and will start when funds are appropriated by Congress, then the acquisition process has been unwisely extended. If it means that additions to the POM will be supplemented in the interim period by some ready source of funds, then that source should be set up and funded adequately. A line item just for this purpose might be acceptable to Congress--especially considering the alternatives of prolonged delay.

C. Streamlining

The MENS review and approval process described in 5000.1 and 5000.2 could take place in a streamlined fashion or it could be lengthy, cumbersome, and filled with paperwork--in effect, as much effort as another DSARC review. The former surely is in everyone's best interest. The first few MENS that are processed will set the precedents for those to follow. I suggest every effort be made to insure that those who will submit the MENS understand what is required and that OSD be satisfied with what was requested. Excessive staffing should be avoided.

VIII. SUMMARY

In summary, it appears to the author that there is a great potential for accomplishing the intent of A-109 in focusing DoD system acquisition on the search for alternatives rather than on the advocacy of a solution. The MENS is likely to have rather wide ranging effects on the organizational structure and attitudes, the procurement process, the requirements process, and resource allocation. It is also likely to increase the role of the user in the acquisition process, strengthen the Program Manager and his SPO and orient that organization more towards the business side of the enterprise. The MENS appears to have a potential for speeding up the process as well as for slowing it down depending upon how the directives are implemented. In addition, it appears that the intent of OSD, in the writer's opinion, was to decentralize the acquisition process while simultaneously increasing the SECDEF's flexibility. The steps recommended are: 1) providing education, 2) solving the funding delay, and 3) insuring that the MENS review and approval cycle is accomplished expeditiously. Finally, it should be remembered that the changes postulated are part of a process which is not instantaneous but will take place over the next few years. The success or failure of the MENS must await the judgment of time.

OUTLINE FOR
MISSION ELEMENT NEED STATEMENTS

I. MISSION

A. Mission Area. Identify the broad mission area. For Navy mission elements the mission area will normally be sea control and/or sea power projection. Refer to the appropriate MNS.

B. Mission Element Need Task. Describe the specific mission task in terms of functions and capabilities. Relate specifically to higher-level overall mission area needs. Descriptions in terms of hardware characteristics, or in terms of the need to replace some existing system, are not appropriate.

II. THREAT

Assess the projected threat against which the capability is required through the time that the new capability would be in the field. Quantify the threat in terms of numbers and capability, wherever possible. Where appropriate, the threat may be divided into the target threat, the targets (if any) against which the capabilities specified by this MENS are to be directed, and the denial threat, the threat (if any) which may operate to prevent the mission tasks from being accomplished.

III. EXISTING AND PLANNED CAPABILITIES TO ACCOMPLISH THIS MISSION ELEMENT NEED TASK

Identify the existing DoD and Allied capability to accomplish the mission. Where other services or allies have no capability this should be explicitly stated, in each case.

IV. ASSESSMENT

Assess the need in one or more of the following terms:

-- Specific deficiency in the existing capability;

-- Technological opportunity;

-- Inadequacy of force size to meet threat;

-- Opportunity for life-cycle cost savings;

-- or others as appropriate.

V. CONSTRAINTS

A. Development costs -- budget wedges

B. Operational and procurement costs to include manpower based upon a like recent buy of the same type capability

C. Logistics considerations

D. NATO standardization/commonality

E. Other budget wedges if in the new-type/large-cost category

F. Timing of need

G. Others as appropriate

VI. IMPACT OF STAYING WITH THE PRESENT CAPABILITY

-- Ability to meet the projected threat. Impact on combat effectiveness.

-- Cost of increasing quantity of existing equipment to meet threat.

-- Cost of O&S for existing equipment.

-- Other impacts as applicable.

VII. PROGRAM PLAN TO IDENTIFY AND EXPLORE COMPETITIVE ALTERNATIVE SYSTEM CONCEPTS

A. List and briefly describe candidate competitive concepts identified to date, if any. It should be explicitly stated that it is intended to solicit the broadest possible range of qualified sources for candidate system concepts and that all concepts submitted will be evaluated on their merits.

B. Plan for concept phase, up to Milestone I.

C. Plan for establishing a system program office.

VIII. RESOURCES

General statement of manpower, financial resources, and time required to reach Milestone I review.

BIBLIOGRAPHY

1. Air Force Regulation 57-1, General Operational Requirements (draft), 17 August 1977.

2. Bryan, W. W., Lt. Col., USAF. Interview at AF/RDQM, Pentagon, Washington, D.C. on 12 October 1977.

3. Commission on Government Procurement, Report of the Commission on Government Procurement, Vol. 2, US Government Printing Office, December 1972.

4. Department of Defense Directive 5000.1, Major System Acquisitions, 18 January 1977.

5. Department of Defense Directive 5000.2, Major System Acquisition Process, 18 January 1977.

6. Esposito, Alfred L., Brigadier General, USAF (Ret.). Interview at DDR & E, Pentagon, Washington, D.C. on 12 October 1977.

7. Flax, Alexander H., Chairman, Report of the Acquisition Advisory Group, Vols. 1 and 2, 30 September 1975.

8. Freeman, Rowland G., III, Rear Admiral, USN. Interviews at Defense Systems Management College, Ft. Belvior, Virginia on 2 and 4 November 1977.

9. Gibson, Thomas and Spinney, Charles. Interviews at ASD/PA&E, Pentagon, Washington, D.C. on 12 October 1977.

10. Gross, Larry R., Milestone Zero: Its Change on the Air Force Acquisition Process. Study Project Report 77-1, Defense Systems Management College, Ft. Belvoir, Virginia., May 1977.

11. Kuyk, Charles, F. G., Major General, USAF. Interview at AF/RDQ, Pentagon, Washington, D.C. on 12 October 1977.

12. Meade, Larry, Maj., USAF. Interview at AF/XOX, Pentagon, Washington, D.C. on 12 October 1977.

13. Stempson, James A., Lt. Col., USAF. Interview at AF/RDXM, Pentagon, Washington, D.C. on 12 October 1977.