

AD-A039 731

DEFENSE SYSTEMS MANAGEMENT SCHOOL FORT BELVOIR VA
THE ARMY REQUIREMENTS PROCESS. (U)
MAY 74 W F FLETCHER

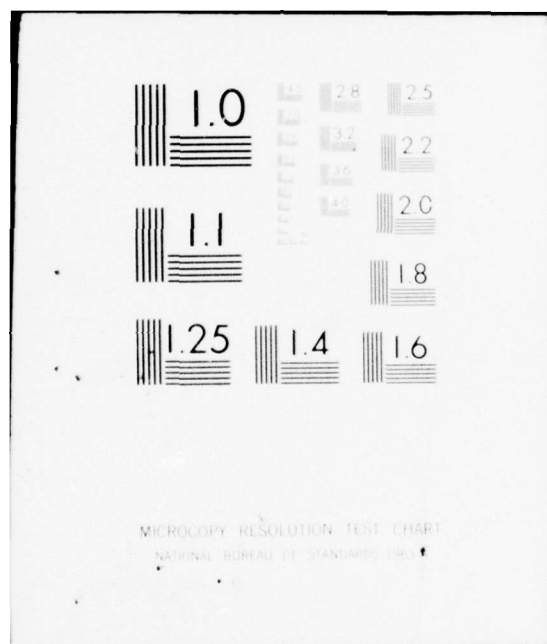
F/G 5/1

UNCLASSIFIED

NL

3 OF 12
AD
A039731





AD A 039731

DEFENSE SYSTEMS MANAGEMENT SCHOOL



PROGRAM MANAGEMENT COURSE INDIVIDUAL STUDY PROGRAM

THE ARMY REQUIREMENTS PROCESS

STUDY REPORT
PMC 74-1

WILLIAM F. FLETCHER
MAJOR USA

AD No. **DDC FILE COPY**

FORT BELVOIR, VIRGINIA 22060

DISTRIBUTION STATEMENT A

Approved for public release;
Distribution Unlimited

DDC
RECEIVED
MAY 23 1977
B

FLETCHER

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) 6 THE ARMY REQUIREMENTS PROCESS.		5. TYPE OF REPORT & PERIOD COVERED 9 Student Project Report, 74-1
7. AUTHOR(s) 10 WILLIAM F. FLETCHER		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS DEFENSE SYSTEMS MANAGEMENT COLLEGE FT. BELVOIR, VA 22060		8. CONTRACT OR GRANT NUMBER(s) 11 15 May 74
11. CONTROLLING OFFICE NAME AND ADDRESS DEFENSE SYSTEMS MANAGEMENT COLLEGE FT. BELVOIR, VA 22060		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 12 44 p.
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE 1974-1
		13. NUMBER OF PAGES 41
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) 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 408 462		

DEFENSE SYSTEMS MANAGEMENT SCHOOL

STUDY TITLE:

THE ARMY REQUIREMENTS PROCESS

STUDY GOALS:

To examine the Army Requirements Process in order to determine what the Army has done to meet the requirements set forth in DOD 5000.1.

STUDY REPORT ABSTRACT

This report describes the Army Requirements Process from the conceptual plans through ASARC/DSARC I in order to determine what the Army has done to implement DOD 5000.1. The report is divided into five sections. Section I introduces the report. *After a brief introduction, the author traces how the Army determines what it needs,* Section II traces how we determine what we need, i.e., the source of the documentation. *Next,* The present documentation required to go to DSARC I is reviewed in Section III along with the documents that it replaces. Section IV is an evaluation of *He then evaluates how the Army has* how we have met the intent of DOD 5000.1 and what the Army is doing to reduce the overall cost and the time necessary to develop the new requirements. Section V contains the summary and conclusions.

KEY WORDS: MATERIEL ACQUISITION REQUIREMENTS MANAGEMENT ROC
DESIGN AND DEVELOPMENT DOCUMENTATION LIFE CYCLE MANAGEMENT
AMARC REPORT COST EFFECTIVENESS

NAME, RANK, SERVICE

Wm. F. Fletcher, Major, USA

CLASS

74-1

DATE

15 May 74

THE ARMY REQUIREMENTS PROCESS

An Executive Summary

of a

Study Report

by

William F. Fletcher
Major USA

May 1974

Section 1	
NTIS	White Section ☒
OC	Bull Section ☐
MANPOWER	☐
JUSTIFICATION	☐
DISTRIBUTION/AVAILABILITY CODES	
DISC.	AVAIL. and/or SPECIAL
A	

Defense Systems Management School
Program Management Course
Class 74-1
Fort Belvoir, Virginia 22060

EXECUTIVE SUMMARY

The purpose of this report is to examine the Army Requirements Process from the conceptual plans through ASARC/DSARC I in order to determine what the Army has done to meet the requirements and intent of DOD 5000.1.

The report includes 5 sections. The first and second sections include an introduction as well as an outline of the Army Requirements Process. Section II points out that the request for military hardware is prepared under three general conditions: 1) when the enemy equipment poses a threat that we must be prepared to meet; 2) when technological opportunities appear; and 3) when there is a general consensus that our equipment is obsolete.

Anyone can propose a new requirement concept from the user to unsolicited proposals from industry. The report traces a request from the proposal through the TRADOC channels to ACSFOR approval. The primary functions of the Task Force are then traced from the time of the ROC approval through ASARC/DSARC I.

The third section is a study of the present documentation required in order to go to DSARC I. The documentation is explained as to why it is needed, what it accomplishes, and what it replaced in the pre-DOD 5000.1 era.

The fourth section discusses the measures taken by the Department of the Army to implement DOD 5000.1 and its

intent. It covers the documentation changes as well as the reorganization changes that were implemented in order to shorten the requirements generation time. The function and importance of the Special Task Force are described as one of the Army's best efforts in meeting the intent of DOD 5000.1. The problem areas are briefly described also.

The fifth section contains the summary and conclusions of the report.

THE ARMY REQUIREMENTS PROCESS

STUDY REPORT

Presented to the Faculty
of the
Defense Systems Management School
in Partial Fulfillment of the
Program Management Course
Class 74-1

by

William F. Fletcher
Major USA

May 1974

This study represents the views, conclusions, and recommendations of the author and does not necessarily reflect the official opinion of the Defense Systems Management School nor the Department of Defense.

CONTENTS

Executive Summary.....	11
Introduction.....	1
How We Determine What We Need.....	3
The Materiel Requirements Documentation.....	11
What The Army Has Done To Meet The Intent Of DOD 5000.1....	21
Summary and Conclusions.....	29
Figure 1, Relationship of Current Documents to Documents Fostered by DOD 5000.1 and AR 1000.1.....	32
Figure 2, DA Originated ROC.....	33
Figure 3, TRADOC Originated ROC.....	34
Annotated Bibliography.....	35

THE ARMY REQUIREMENTS PROCESS

Introduction

Three years ago, on 13 July 1971, Department of Defense issued DOD Directive 5000.1, Acquisition of Major Defense Systems, which contained policy guidance requiring an overhaul of the entire materiel acquisition process within DOD (Ref 1:1-6).¹ The main theme of this document was that we must figure out a way to get what we need faster and cheaper and still not cut corners to the extent that we end up with a white elephant.

One year later, on 13 July 1972, DA's implementing instructions, AR 1000.1, Basic Policies for Systems Acquisition by the Department of the Army, went into effect (Ref 2:1-7). The gist of the regulation was that we (U.S. Army) must shorten the requirements generation time. The major system decision must be made at the highest level. We must shorten the development time from DSARC I to IOC to approximately six years and do this while obtaining the highest quality piece of equipment at the lowest cost. The following month, 23 Aug 1972, a Letter of Instruction (LOI) (Ref3:1) was sent out by ACSFOR which provided

1

This notation will be used throughout this Study 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 detailed instructions on how to go about putting the policy into practice.

It is now May, 1974, three years after the publication of the basic policy and two years after publication of DA's implementing instructions. In a time period when the National Defense budget is declining as a percentage of the Gross National Product, as a share of the federal budget, and as a percentage of all public spending in real terms and is not only less than the amount provided in FY 1973, but also smaller than the FY 1964 budget (Ref 4:22), we are still trying in the Army to relate the "do it cheaper, better, faster" doctrine to the specific procurement actions.

The purpose of this paper is to examine the Army Requirements Process from the conceptual plans through ASARC/DSARC I in order to determine what the Army has done to meet the requirements set forth in DOD 5000.1. This will be accomplished by a study of the literature as well as personal interviews with experts in the field in order to determine how the Army has implemented DOD 5000.1.

The study is divided into five sections. It is introduced and its importance outlined in Section I. A background for the study is provided in Section II by tracing how we determine what we need, i.e., the source of the documentation. The materiel requirements documentation (DP, QMDR, ROC, MN, DCP, etc.) is presented in Section III. Section IV is an evaluation of how we have met the requirements of DOD 5000.1. Conclusions and/or recommendations are presented in Section V.

How We Determine What We Need

A requirement for military hardware is prepared in three ways. First, when potential enemies are developing equipment superior to ours or when their equipment poses a threat, we must be prepared to meet these occasions (Ref 3:A3). If a Russian Redeye (SAT) can shoot down our helicopters, we must develop either passive or active countermeasures in order that we do not lose the capabilities of our airmobile concepts. We must insure that we maintain our technology base and maintain the status quo or improve our position.

Secondly, we establish requirements when technological opportunities or breakthroughs appear (Ref 3:A2). The current work being done in the laser field by all three services is a good example of this. Now, as the Soviet Union reaches nuclear parity with the United States, a breakthrough in the laser field will provide the needed impetus to keep us on an even basis with the Soviet Union.

In the third case, a requirement will be established when there is a general consensus that our present equipment is obsolete or we can obtain a better system at a reasonable cost. An example of this was our changeover from reciprocating engines in helicopters to turbine engines for increased payload and an increase in reliability, availability, and maintainability (RAM).

Armed with these reasons for establishing new requirements, the next step is to determine where the specific ideas

or concepts come from. It can be stated very simply that anybody can propose a new request. This includes industry, the users, TRADOC, etc. Ideas come from the laboratories of AMC as well as from lessons learned in overseas commands (i.e., the VietNam era). There are ideas that come from the top down as well as some that come from the bottom up. The Army Scientific Advisory Panel and Army Staff may direct some ideas into the Operational Capability Objectives (OCO) stage.

An example of industry initiation of a concept was the effort of the Ground Vehicle Division of Lockheed Missile and Space Company to develop a wheeled vehicle that would compete with tracks in cross-country mobility. In the middle sixties Lockheed funded a development program which resulted in a series of high mobility wheeled vehicles known as twisters. The Army was interested in the vehicles and ordered three for tests of its military potential. The tests proved that the twister was more mobile than any tracked vehicles in the inventory. However, even though it offered potential for military use, there was no requirement for it so no further action was taken.

While ideas come literally from anywhere, the requirements are transformed into the form of documents in an area where change has occurred several times in the past decade. The changes were made in order to improve the requirements process. Prior to 1962 CONARC was the combat developer and it was the technical services that prepared the documentation for submission through CONARC to DA for approval. In 1962 came reorg-

anization and the birth of CDC, which was developed in part to consolidate under one command the total combat developments function. CDC was also to have Army-wide responsibility for developing materiel objectives. In this concept, agencies of CDC had the advantage of being co-located with the schools. It was these agencies that documented the requests between 1962 and 1973.

The 1973 reorganization of the Army disbanded CDC and introduced Training and Doctrine Command (TRADOC) into the picture. TRADOC now bears the responsibility for preparing all materiel requirements documents in their schools and centers (Ref 5).

The detailed materiel requirement documentation, the nuts and bolts of the documents, are covered in Section III. This section will continue with the requirements process at the point in time in which a ROC is approved for a major system. ^{Required operational capability}

When the ROC is approved at ACSFOR, this approval conveys two decisions: first, that the Army has a valid need for the capability described in the ROC and second, that the Army intends to pursue development necessary to achieve the capability. The development effort undertaken to satisfy a ROC (i.e., to get it into an R&D program) will depend on the status of technology to provide the capability. In other words, an approved ROC can lead to effort in one of the three categories of the R&D program (Ref 3, Annex D):

1. Exploratory Development (6-2). When the mater-

iel developer discovers that only exploratory development effort can be initiated due to specific technological barriers which cannot be overcome, he must recommend that HQDA disapprove the ROC or forward it and state the barriers that must be overcome. This statement, if approved, becomes the technological objective for priority 6.2 effort.

2. Advanced Development (6.3). The advanced development initiated by a ROC will normally consist of components or subsystem development and such other effort as is needed to establish the cost and technical feasibility of a new materiel system or improvement of an existing one. During the advanced development, Section I of the Development Plan will consist of the ROC and the letter of approval by HQDA as evidence that expenditure of funds is authorized.

3. Entry Into Validation Or Full Scale Development (6.4). If technology is sufficient to satisfy a new ROC to move directly into this phase, the development plan will be formulated as soon as possible after approval of the ROC and validation or full scale development will be initiated following a favorable ASARC/DSARC I.

The materiel developer, when asked to assess the technical risks and costs of a proposed ROC will include in his recommendation the initial estimate of acquisition costs and the amount and category of funds to be programmed by fiscal year.

After considering the recommendations of the materiel developer, initial funding will be delivered for each new ROC.

If it is not funded within two years, it will automatically be rescinded.

At the time a ROC is approved for a major system, a Special Task Force (STF) will be assembled (Ref 3:Annex E) to prepare the Draft Development Concept Paper (DCP), Defense Program Memorandum (DPM), and Army Program Memorandum (APM). The DCP is required only for items programmed for DSARC review; the DPM only as required by OSD; the APM is normal for items programmed for ASARC review (Ref 3:Annex E).

The Task Force is also responsible for the Concept Formulation Package which can take from a few months to four or five years with extensive contractor assistance. The Concept Formulation Package consists of the following:

A. A mission performance envelope, which is the scenario in which the equipment will be evaluated and hence determine the performance characteristics required as well as potential operational missions.

B. Trade-off determination of the various candidate systems using different technologies and concepts including product improvement of existing systems.

C. A trade-off analysis and solution of the best technical approach. This analysis is conducted within the framework of the mission and performance envelope, system trade-offs, risks, capabilities, cost, schedules, and logistic support. The result of this is the selection of the best and alternate approaches.

D. A cost and operational effectiveness analysis.

This analysis compares the selected design against competing systems, existing or proposed, and is usually predicated on life cycle costs or discounted life cycle costs. The effectiveness portion relates to comparisons considered in a manner similar to the cost comparisons. However, they are not usually as easily adapted to qualitative analysis.

E. A basis of issue plan. This prescribes how many of the items are required and how many existing items can be replaced. It can also give an insight into the personnel requirements.

Upon completion of the concept formulation, the performance characteristics will be more definitely spelled out and the materiel developer will be given the necessary information to enter into the validation process. We must have this detailed concept formulation because in this period of having to make the most of each and every dollar we cannot rely on subjective opinions predicated on limited personal experience. An essential element of concept formulation is the idea that performance characteristics will be stated in bands of performance rather than single design. This permits the materiel developer to make system trade-offs with some flexibility and to save time and money. For non-major systems, this CFP will be prepared by a joint working group in TRADOC.

The Task Force is composed of the following (Ref 3: Annex E):

Director	Best qualified O6/higher
PM Designee	Designated officer
User/Users	Major operational commands
Materiel Developer	To include nucleus of PM officers
Combat Developer	TRADOC
Trainer	TRADOC
Resource Program	HQDA Staff

The specific output of the TF is the DCP and the CFP which, together with the DA approved ROC, provide the basis for the DSARC I decision point. In cases where the Task Force recommends proceeding into Advanced Development, the report will include:

- System Summary
- System Requirements and Analysis
- Discussion of Alternatives
- Plan for System Development
- Technical Portion of the RFP
- Financial Procurement Plan
- Plan for Test and Evaluation

After DSARC I the Task Force is disbanded and the PM assumes the responsibility for management of the program.

Summary

In this section the Army Requirements Process has been traced. It was pointed out that a requirement for military hardware is prepared under three general conditions: 1) when the enemy equipment poses a threat that we must be prepared to

meet; 2) when technological opportunities appear; and 3) when there is a general consensus that our equipment is obsolete.

Anyone can propose a new requirements concept from the user to industry, who is usually in business for monetary gain. These requirements are then prepared into documents at the various centers and schools of TRADOC. After showing how the ROC has been prepared by TRADOC, the developments process was traced up through ASARC/DSARC I with a section showing how the development effort is funded. The primary functions of the Task Force were explained in order to acquaint the reader with how the ROC gets from approval to ASARC/DSARC I.

It has been the purpose of this section to provide the reader with some understanding of how the Army gets the initial requirement or need from the proposer to the ASARC/DSARC I, which will determine if there is a valid need for the equipment and give the go-ahead for the validation phase. Section III will analyze the Materiel Requirements Documentation that is necessary to proceed to DSARC I.

The Materiel Requirements Documentation

The starting point of the materiel development process is an efficient documentation system which permits us (U.S. Army) to develop information and detailed requirements statements that are equally useful to the user, developer, and producer. In the past three years, since DOD 5000.1, there have been three different documentation procedures used by the Army. The original system started with a document called the Qualitative Materiel Development Objective (QMDR). This document set forth the broad performance objectives. It was replaced by the MN, which did not last long in the system before being replaced with the ROC (See Figure I for current documents). The ROC differs from the MN primarily in that it is restricted to four pages, thereby reducing the reams of paper that accompanied the MN, most of which was rationale.

At the very beginning of the acquisition process, we have the initial establishment of a capability (ROC). The ROC is intended to be a four page document, operationally oriented and containing only those characteristics essential for describing the operational capabilities and expected duration of the application of the item in direct pursuit of the intended mission.

There are two paths that a ROC (Ref 5:5) can take for approval. The first case is when it is submitted from outside TRADOC. In this case ACSFOR will usually receive the ROC and

then send it to HQ TRADOC, which will forward the ROC to the appropriate materiel developer with a request that pertinent technical cost, R&D category, and management information be provided. It will simultaneously be sent to the proponent center for action.

The proponent center determines who the proponent school will be and forwards the ROC to the school for appropriate action. The school will then accomplish the actions spelled out in Paragraph 3b(1), Annex B of DA LOI (Ref 3:3) which includes a review and evaluation to insure that the ROC represents a valid need for the Army. It will also identify all other ongoing action which might be duplicating. The technical and cost assessment data for the materiel developer will also be obtained. For ROC's which are validated, the school will further define the information in the ROC and return it to the center. The proponent center then forwards one copy of the ROC to TRADOC with appropriate comments and recommendations. Finally TRADOC will effect final coordination with the materiel developer and return the ROC to HQDA along with the management level and R&D category recommendations for the materiel developer. The HQ TRADOC letter will recommend approval or disapproval. All of this review and processing will be completed within 45 days (Ref 5:5). Figure 2 depicts this flow of a ROC.

In the case of TRADOC developed ROC's, the TRADOC school initiating the ROC will forward the draft ROC simultaneously to other interested TRADOC schools and centers for comment

and to the appropriate materiel developer for provision of technical and cost information.

ROC's received by TRADOC Headquarters will then be coordinated with the headquarters of the proponent materiel developer to obtain concurrence in the technical and cost information and recommendations as to the appropriate decision making process to be used at the appropriate R&D category. TRADOC, upon receipt of the materiel developer comments, forwards the proposed ROC to HQDA (ACSFOR) for approval. Concurrent with this submission, the ROC's are dispatched to selected major U.S. Army Commands and quadripartite countries for review and comment. The major commands will be given 30 days from the date of dispatch of the ROC to comment (Ref 5:4).

After receipt of the ROC, ACSFOR will determine the adequacy of the ROC as submitted and request additional information if appropriate. ACSFOR will also review and evaluate comments submitted by major Army commands. Any comments which change the operational capability as described in the ROC will be incorporated in the letter of approval. Within 45 days of receipt of the ROC's, HQDA ACSFOR with the Chief, Research and Development, will decide whether approval or disapproval is appropriate (Figure 3 shows a TRADOC initiated ROC).

For major systems ACSFOR will forward the ROC to the Army Chief of Staff for a decision along with recommendations and implementing instructions appropriate for a Special Task Force. After approval the Special Task Force will be appointed

as described in Section II.

Now that a ROC has been traced, a brief review of the contents of the ROC is presented (Ref 3:3). The first paragraph contains the statements of the need, which is a brief descriptive title and statement of the requirement. The next paragraph is a statement of the time frame in which the new or improved requirement is required. Threat/operational deficiency is a brief paragraph which states concisely the threat or operational deficiency which the system will overcome. Under operational/organizational concepts it is stated how the equipment will be used (mission capability), geographical areas of use, and the type unit(s) which will use the equipment. The fifth paragraph, essential characteristics, contains only those principal performance characteristics as well as RAM characteristics which are necessary to describe the operational features of the system. In the technical assessments paragraph the materiel developer will provide an analysis of the technical effort required. The last paragraph, cost assessment, incorporates an initial broad based estimate of the acquisition cost which is provided by the materiel developer.

It should be added here that although the ROC is the beginning of the acquisition process, there is a document that is a prerequisite to R&D money expenditures by the materiel developer. That is the Operational Capability Objective (OCO). This is nothing more than a DA approved description of an operational capability desirable of achievement in a specified

time frame, usually taken to be 10 or more years in the future.

Prior to 1968 research and exploratory development (called 6.1 and 6.2 funding) were left largely to the laboratories of AMC. It was the need for some control so that the researchers did not go off on wild goose chases that led to the establishment of the broad requirements objectives called the OCO. These broad objectives can be materiel or non-materiel (Ref 7:30), such as R&D programs in the area of human factors, personnel support, construction, topography, logistics support, operations research techniques, medical support, environmental factors, and other broad categories, such as one OCO calling for the "capability to engage in all types of operations under conditions of darkness or low visibility with near daylight effectiveness."

The ROC was the first of the two principal documents in the new post DOD 5000.1 acquisition process. The second is the Development Plan (DP). The Development Plan is considered the controlling document for the materiel development and, as such, is appropriately refined and updated throughout the development process and the ensuing life cycle when product improvements or changes to the materiel system occur. The Development Plan is the document of record maintained to reflect all phases of planning and program execution consistent with HQDA directives as well as policies of the Secretary of the Army and the Secretary of the Defense.

The designated materiel developer is the overall pro-

ponent for the DP. The DP is appropriate for all materiel development efforts. The final report of the Special Task Force is provided to the materiel developer for his use as it pertains to the DP.

The Development Plan is the one key document that is used as guidance in preparing a request for proposals during the Validation Phase. The DP replaces the Advanced Development Plan, System Development Plan, and Project Master Plan (Figure 1).

The contents of the DP are contained in six sections (Ref 8:2-1). Section I is the systems summary, containing initially the approved ROC and the HQDA implementing instructions. The approved DCP is also included in Section I. This section is structured in similar fashion to the DCP format.

Section II, Systems Requirements and Analyses, is prepared jointly by the combat and materiel developers. It is used to develop the other sections of the DP. If this section is updated or revised, then the other sections dependent upon it must also be changed. This section contains the essential RAM requirements. AR702-3 is the guideline and authority for implementing the RAM characteristics into the ROC and DP. The RAM requirements in the DP must be stated in terms appropriate for the system considering its intended purpose, complexity, method of acquisition, and cost effectiveness.

In the preparation of this section the TRADOC schools and centers must further define the abbreviated RAM requirements

stated in the ROC to provide the developer with "flawless" guidance to support its development process, while staying within the established RAM parameters of the approved ROC. As a minimum the RAM requirements shall be reviewed and updated prior to each of the major decision points meetings.

Section III of the DP contains the plans for system development. These plans are the tasking and supporting plans required by the materiel developer to implement and pursue the materiel development requirements and critical issues stated in Section II. The plans are for internal use in the project office and are coordinated with the TRADOC schools and centers.

Section IV, Coordinated Test Program (CTP), is a coordinated plan of all projected development tests and operational tests required to demonstrate achievement of the minimum acceptable value and specified value of requirements stated in Section II of the DP. Responsibility for preparation of the CTP and the DT is the Project Manager's. The OT is the responsibility of OTEA.

Section V is the plan for personnel and training requirements. This plan includes any identification of new skills and individual and crew training requirements. It is closely related to Section IV and initially contains only broad general training requirements. It is updated with the other sections of the plan as the project moves through the development phases.

Section VI, Plan for Logistics Support, addresses life-cycle support requirements. In the interest of economy, ex-

treme care must be exercised in preparing this section to insure that we do not get locked into expensive, long-lead-time support items prior to the time that the design is locked in concrete. In order to insure that a cost effective approach is followed, this section is developed in three phases as follows:

1. Prior to validation decision, DSARC I, this section will contain only a broad general plan for logistics support. Milestones for verifying logistics support at each key decision point are included.

2. When the DP is updated prior to full scale development this section will be updated to include identification of special logistics needs, preliminary estimates of life cycle support costs, and the plan for identification of logistics requirements.

3. This phase will address each of the following to the extent necessary to insure supportability of the item prior to large scale production (Ref 9:1):

- Maintenance plans

- Support and test equipment

- Supply support

- Transportation and handling

- Technical data

- Facilities

- Personnel and training

- Logistics support resource fundings

Logistics support management information

The document that records the decision of the Secretary of Defense is the Development Concept Paper (DCP) (Ref 8:3-1). This paper establishes approval thresholds of cost, performance, and and schedule acceptable to OSD and HQDA. It is the principal decision document at a DSARC and, after approval, constitutes a contract between OSD and the Army.

The Task Force prepares the initial draft DCP and the Project Manager prepares subsequent revisions to it as necessary. When completed this is included in Section II of the DP. The DCP is broken down into eight sections as follows:

Section I is the nature of the program. It answers such questions as why it is needed, what it will accomplish, what it will replace, what guarantees are needed, and what it does in relation to the threat.

Section II is the background. This is a summary of the development history, sunk costs, and testing results. The ROC and implementing decision will be referenced.

Section III contains the management issues that are key to the program before the next DSARC.

Sections IV and V contain the alternatives and an assessment of the alternatives with recommendations. Also, if there are any "design-to" parameters in the system, this is where they will be covered.

Section VI contains test and evaluation and states the planned tests and critical issues to be solved by these

tests.

Section VII is the logistical support which is basically a summary of the ILS plan.

Section VIII includes Security Classification Guidelines. The DCP is a summary document and normally should not exceed 20 pages.

Summary

In this section the present documentation required to go into DSARC I has been reviewed in order to provide the reader with an understanding of the present documentation and what it has replaced. Section IV will evaluate how we have met the requirements of DOD 5000.1 and what the Department of the Army is doing to continue to reduce the cost and time necessary to develop new materiel systems.

What The Army Has Done To Meet The Intent of DOD 5000.1

The Army Requirements Process has been traced from its inception through DSARC I in Section II. Section III contained a thorough review of all documentation required in the requirement process through DSARC I. The purpose of this section is to determine what the Army has done to meet the intent of DOD 5000.1.

On 13 July 1971 DOD issued DOD Directive 5000.1, Acquisition of Major Defense Systems, which contained policy guidance requiring an overhaul of the entire materiel acquisition process within DOD. This directive was written in simple language and called for the minimization of documentation and procedural guidance as well as the decentralization of responsibility and authority for the acquisition of major weapon systems, and a program manager with sufficient authority to carry out the program.

One year later DA issued AR 1000.1, Basic Policies for Systems Acquisition By the Department of the Army. This AR contained the implementing instructions for DOD 5000.1 and includes the following six basic policies, together with certain related procedural steps, which were to present to the Army a realistic system acquisition program for the Army to follow:

1. Shortened requirements generation time
2. High level decision making
3. Shortened development time

4. Funding priority
5. Cost versus quantity
6. Program cost control

Shortly after the AR was sent to the field, ACSFOR provided detailed instructions on how to go about putting the policy into practice. CDC then indorsed the LOI and, as a step further, instructed those elements of CDC concerned with materiel acquisition to continue using the Joint CDC/AMC Materiel Need Procedure Handbook (15 March 72) in preparation of requirements documents.

The amount of time that it took DA to publish implementing instructions and the number and amount of instructions points out that the intent of rapid implementation (90 days) and minimization of implementing documentation was not met as intended by DOD 5000.1.

With the implementation of AR 1000.1 and the accompanying LOI published by ACSFOR the Army embarked on a major revision of its acquisition process. One of the first changes was in documentation (Figure 1). The problem in the change in documentation as related by current users of the system was that in one eighteen month period, there were three different procedures used by the Army. With such rapid change these individuals feel that the MN system was not given a fair shake (Ref 6). The primary difference between the ROC and the MN series is that most of the rationale is deleted from the ROC and it is limited to four pages.

What has happened in reality is that although the ROC is passed up to ACSFOR in the new required four page format, the intermediate commands still require the rationale that was required under the MN series of documents. In TRADOC the proponent functional centers such as the Logistical Center at Ft. Lee require RAM characteristics and rationale to be forwarded to them. TRADOC Headquarters requires a rationale annex in support of paragraph 5 (characteristics) and a coordination annex. All these annexes are removed before forwarding to ACSFOR. However, it does not reduce the requirements on the initial drafter.

The documentation change was initiated in order to shorten the requirements generation time. The TRADOC LOI, 7 Aug 73, Processes of Materiel Requirements Documentation Within TRADOC, lists deadlines for processing a ROC. For all ROC's that do not start in TRADOC, TRADOC and the materiel developer have 45 days to do all the coordinating that they are going to do on the ROC's. DA then has 45 additional days to complete the staffing of the ROC and arrive at a decision. The DA goal is 90 days from the time a ROC enters the system until the time it is approved or disapproved. In a TRADOC initiated ROC, 45 days are allowed from the initial submission until forwarding to DA. Interviews with personnel in the TRADOC Chain of Command showed that all suspense dates in processing the ROC's are presently being met.

A second method used to shorten the requirements gen-

eration time was the development of a Special Task Force (STF) to draft the DCP and prepare the Concept Formulation Package and the DP.

Prior to AR 1000.1 the Concept Formulation Package was prepared by CDC and AMC. The idea in forming the STF was that high level management would be more responsive and closer in touch with the realities of the funding and programming world of the Pentagon. The use of the Task Force to take the approved ROC through DSARC I has proved to be a good concept and has shortened the requirements generation time in that the TF group has had the latitude and support to push the programs through DSARC I(Ref 6).

The third method used by the Army to reduce the requirements generation time, as well as to implement the rest of the policies of AR 1000.1, was the reorganization of the Army. CDC was organized in 1962 in order to consolidate under one command the total combat developments function. It was to have Army wide responsibility for developing materiel objectives and qualitative requirements. CDC replaced CONARC as the user's representative in the development process. The development of CDC did not bring the hoped for improvements to the combat developments process. Its missions were too diverse (concept formulation studies, doctrine, materiel development), and this coupled with the multi-layered organization made useful communications with instructional agencies difficult and communications with headquarters did not improve over the pre-CDC era.

The 1973 reorganization was made in part to improve the process of developing, testing, and acquiring new items of equipment, weapons, and other materiel (Ref 10:1). TRADOC merged the previously separated CDC agencies with the service schools which removed the previous barriers between CDC and the user. The reorganization also reduced the number of staff agencies that a ROC had to go through before getting to ACSFOR. This reduction of agencies with which coordination had to be made reduced the required time needed to make a decision.

One of the problems that the Army has had with the last two reorganizations is the designation of the true user. CDC definitely proved not to be the user and, in reality, in some instances did not even represent the users' interests. Today the development of doctrine is charged to TRADOC while the forces who actually use it are assigned to the Army Forces Command (FORSCOM) and the Unified and Specified Commands. TRADOC, however, does attempt to coordinate closely with the using units and is easily able to do this through their doctrinal organization at the service schools.

In order to meet the second guideline set forth in AR 1000.1, DA has instituted its version of the DSARC to involve high level decision makers. The ASARC is currently composed of Department of Army Secretariat and Army Staff personnel (Ref 2:4). The ASARC process, along with the DSARC, has met the intent of DOD 5000.1 to involve high level personnel in the decision making process.

The final four basic policies of AR 1000.1 are beyond the scope of this paper in that they pertain to the requirements process after DSARC I, but they are of such importance that they will be included briefly in order to show how they have shortened the overall requirements generation time.

Development time can be shortened if the item enters development after its technical characteristics have been demonstrated to be sufficient to insure that they are within the state-of-the-art. The Army's procedure that advanced development be between competitive prototypes insures that this will be the case. The recommended time for development from DSARC I to IOC is six years. The Army should have no problem meeting this guideline.

With the RDTE appropriation the Army must fully fund its top priority projects so that development time is not lengthened for reasons of funds. The highest priority for exploratory and advanced development funding should be for components and subsystems of future systems that have been identified by approved ROC's. The Army has met this objective.

The success of a program is a function not only of our ability to acquire a system that meets desired technical performance objectives within reasonable acquisition time, but also of acquiring the system within planned budgets. In order to accomplish this, the CFP must reflect the most realistic cost estimates. All trade-off analyses must consider cost effectiveness, and the cost effectiveness of any changes must

be kept in line. TRADOC and AMC are currently very cost conscious and are doing their best in order to bring projects in on schedule and within cost.

The final problem area to be discussed in the implementation of DOD 5000.1 is the use of competent people and the fact that they need to be left in the job long enough to accomplish it. DA has not identified a Project Management Career Program that will entice competent young officers into a field of procurement. Several steps have been taken in the right direction, such as the new Chapter 30 to DA PAM 600-3 (Ref 12:1). However, the steps to PM as outlined in that reference do not leave enough time for a PM to gain any experience. Example: the education that is required along with the three service schools and their requirements will take over seven years with no other assignments included.

Until the Army sets up a career development field in project management and makes it competitive with other specialty fields such as the Logistics Officer Career Development Program, they will not attract the type of officers that are needed. The Army has stabilized tours in the PM offices to an acceptable level.

Summary

As reported in the Directorate Report of the Army Materiel Acquisition Review Committee (AMARC) (Ref 13:VII), the Army should be endorsed as to its response to DOD 5000.1. This report specifically stated that the Army documentation is

good. This writer agrees that the documentation that is forwarded to DA is in strict compliance with DOD 5000.1. The Army has taken the ASARC/DSARC approach to task with enthusiasm and has met the intent of DOD in this area. The use of the Task Force is an extraordinary and effective use of assets and does much to further reduce time from the approval of the ROC until DSARC I. The fact that the Army embarked on a major revision of the requirements process in 1972 after the publication of DOD 5000.1 indicates that the Army perceived that it had a problem in this area and intended to make improvements.

The purpose in this section was to indicate what measures the Army had taken to implement DOD 5000.1 and AR 1000.1 and to determine if they were in fact meeting the intent of the regulations. It was pointed out that in most areas the Army has made progress, but not without problems. The final section of the study contains a summary of the study and conclusions and recommendations of the author.

Summary and Conclusions

The fact that the Army embarked on a major revision of its acquisition process in 1972, shortly after the publication of DOD 5000.1 indicates that the Army perceived that it had a major problem in this area. The question that this paper has addressed is whether this new acquisition process has accomplished what it set out to achieve and whether the Army has met the intentions of DOD 5000.1.

The introduction of AR 1000.1 and its accompanying LOI have given the user strict guidance on what he can develop and the guidelines he must follow. The AMARC report stated:

"The Army has formulated an impressive framework of policies and procedure to guide materiel acquisition: attention has been given to identifying the players (users, materiel developer, combat developer, etc.) and their roles, definite streamlining has occurred in the documentation and administrative steps, the decision making process has improved, and commendable steps have been taken in decentralizing responsibilities and management of non-major systems." (Ref 10:14)

However, this has not all come about without problems. In the process of interviewing the baseline people that write the ROC's, it became clear that there really hasn't been much change in the documentation since the MW days. What has happened is that the amount of documentation that goes forward to ACSFOR has been drastically reduced, but the intermediate levels of management under TRADOC still require rationale appendixes that are not furnished to ACSFOR.

The writer recently addressed this question to a high

level speaker at DSMS: What can be done to stop the intermediate level proliferation of requests? The speaker stated that he, in essence, agreed with the AMARC report which recommends that in a new development process, no ROC-DSARC, STF, ASARC/DSARC be established until the equipment needed has passed actual experiments and the user is sure of exactly what he wants (i.e., until FSD), thereby eliminating the need for rationale appendices. The writer does not agree. The one way to stop this excessive paperwork at intermediate levels is to have DA Staff order subordinate commands to eliminate it.

One of the first things that the Army does at the indication of a problem is to reorganize. In solving the acquisition process problem this was one of the methods used. The present system with TRADOC of processing a ROC still has exactly the same number of layers as the old CDC system. Within CDC a ROC went from the agency at the school/center through the group, logistics personnel, etc. through Headquarters CDC to ACSFOR. With TRADOC the ROC starts at the school. In many cases the people at the CDC agencies, the Logistics Center, etc. are still the same people who now process the ROC right on through Headquarters TRADOC. Only the names of their organizations have changed. What has been accomplished is that the user/school has been brought more into the process and the amount of necessary coordination has been reduced.

At the present time there is a reorganization taking place at DA and according to the AMARC report, the reorganiza-

tion will reduce the number of staff agencies involved in the acquisition process, thereby reducing the weapons acquisition time.

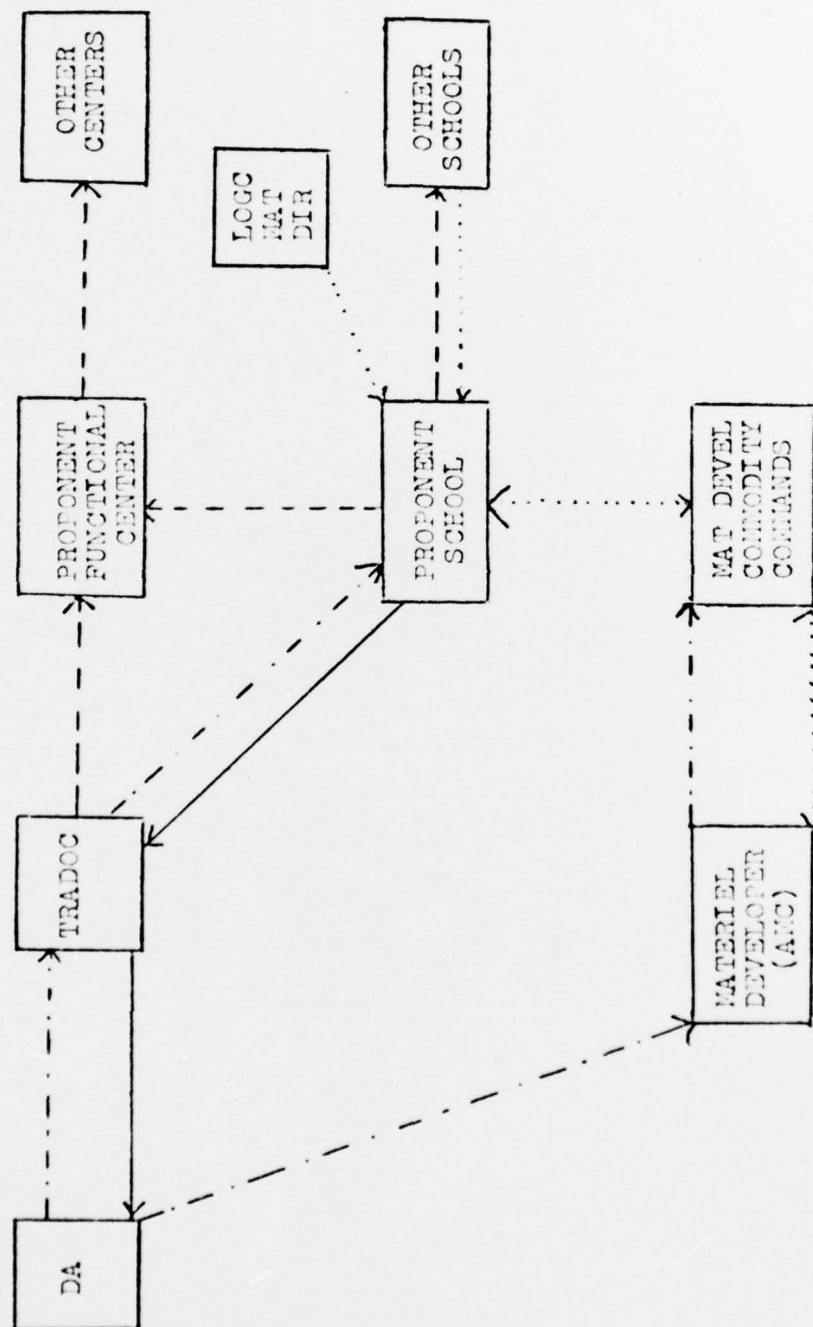
Tracing the Army's requisition process from its inception through ASARC/DSARC I and comparing what is being done now to the requirements spelled out in DOD 5000.1, the Army has improved the requisition process by reorganization, changing the documentation process, and instituting the ASARC/DSARC system and Special Task Force concept. However, there are still problem areas in the process such as the intermediate level proliferation of reports and the lack of a career development field for project officers.

RELATIONSHIP OF CURRENT DOCUMENTS TO
DOCUMENTS FOSTERED BY DOD 5000.1 AND AR 1000.1

<u>Past</u>	<u>Current</u>
Operational Capability Objective (OCO)	Operational Capability Objective (OCO)
Initial Draft Proposed Materiel Need (IDPMN)	
Draft Proposed Materiel Need (DPMN)	
Proposed Materiel Need w/ Techni- cal Plan (PMN, TP)	Required Operational Capability (ROC)
Materiel Need w/ Technical Plan (MN, TP)	
Materiel Need (Product Improve- ment)(MN(PI))	
Materiel Need (Abbreviated) (MN(A))	
Advanced Development Plan (ADP)	
System Development Plan (SDP)	
Draft Proposed Materiel Need (Engineering Development) (DPMN(ED))	Development Plan (DP)
Proposed Materiel Need (Engineer- ing Development)(PMN(ED))	
Materiel Need (Engineering Devel- opment)(MN(ED))	
Materiel Need (Product Improve- ment)(MN(PI))	
Project Manager Master Plan (PMMP)	
Concept Formulation Package (CFP)	Concept Formulation Package(CFP)
Trade-Off Determination (TOD)	Trade-Off Determination (TOD)
Trade-Off Analysis (TOA)	Trade-Off Analysis(TOA)
Best Technical Approach (BTA)	Best Technical Approach (BTA)
Cost & Operational Effect- iveness Analysis (COEA)	Cost & Operational Effect- iveness Analysis (COEA)
Materiel Need (Production) (MN(P))	Eliminated

Figure 1

DA ORIGINATED ROC



ROC PROPOSAL

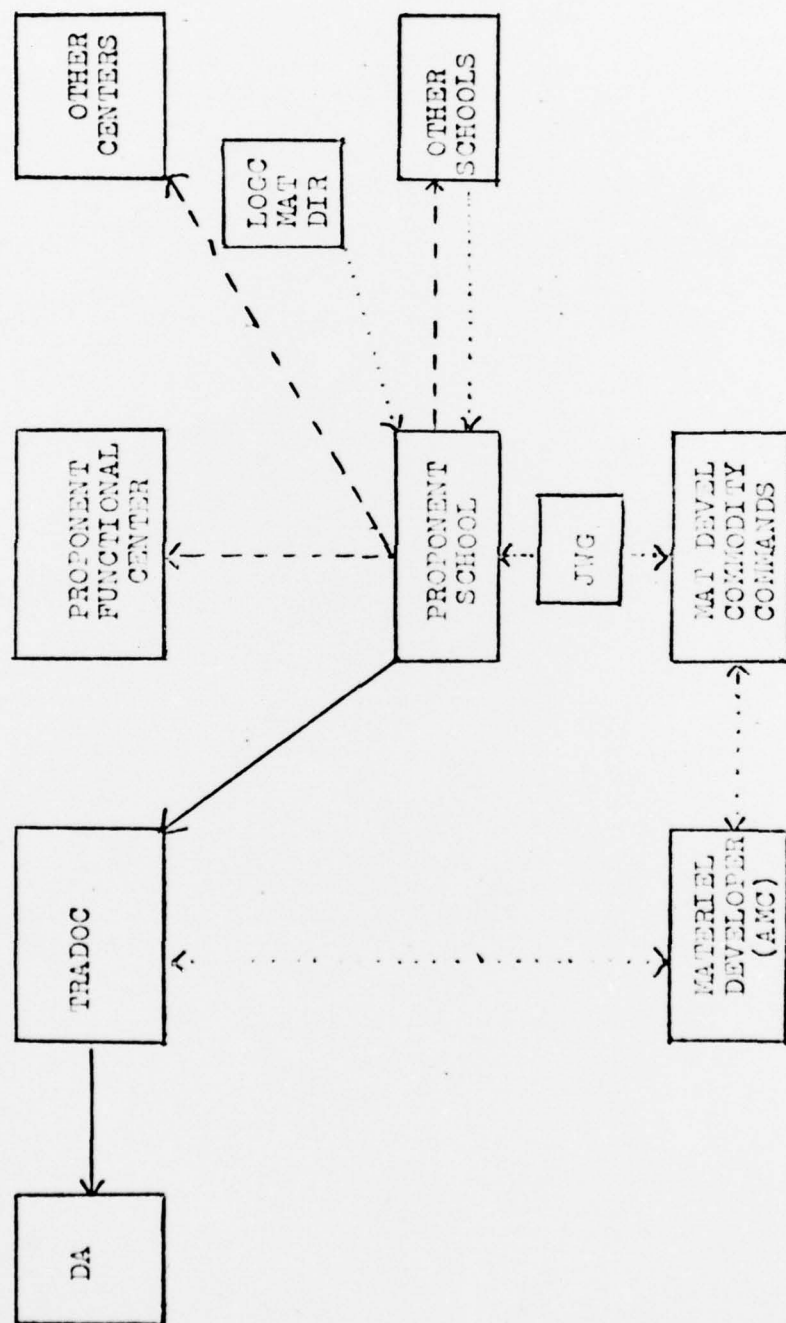
TASKING

COORDINATION/INPUT

INFORMATION

Figure 2

TRADOC ORIGINATED ROC



ROC PROPOSAL

INFORMATION

COORDINATION INPUT

Figure 3

ANNOTATED BIBLIOGRAPHY

1. Department of Defense Directive, Number 5000.1, Acquisition of Major Defense Systems. Washington, D.C., Department of Defense, 1971.

This directive establishes policy for major defense system acquisition in the military departments and defense agencies.

2. Headquarters, Department of the Army, Regulation Number 1000.1, Basic Policies For Systems Acquisition by the Department of the Army. Washington, D.C., Department of Army, 1972.

This regulation is the Army's implementing instructions for DOD 5000.1.

3. Headquarters, Department of the Army, Office of the Assistant Chief of Staff for Force Development, Letter of Instructions, 23 August 1972. Washington, D.C., Department of Army, 1972.

This is the Letter of Instruction for implementing the new materiel acquisition guideline.

4. Schlesinger, James R., Annual Defense Department Report by the Secretary of Defense 1975. Washington, D.C., Government Printing Office, 1974.

Report of the Secretary of Defense, James R. Schlesinger, to the Congress on the FY 1975 Defense Budget and FY 1975-1979 Defense Program on 4 March 1974.

5. Headquarters, U.S. Army Training and Doctrine Command, Processing of Materiel Requirements Documentation Within TRADOC. Ft. Monroe, Va., ATCD-CS, 7 August 1973.

This LOI prescribes the procedures for the preparation and processing of materiel documentation within TRADOC.

6. Conway, John C., Materiel Acquisition Specialist, Deputy Commandant for Combat and Training Developments. U.S. Army Transportation School, Ft. Eustis, Va. (Interviewed in his office on 27 March 1974).
7. Headquarters, Department of the Army, Office of the Chief of Research and Development, Information for Industry. Washington, D.C., Department of Army, 1972.

This booklet is an invitation to industry leaders to join and participate with the Army R&D team. It is an informational booklet to let industry know how to do this.

8. Headquarters, Department of the Army, Regulation Number 70-27, Development Plan/Development Concept Paper/Program Memorandum. Washington, D.C., Department of Army, 1973.

This regulation provides the policy, procedures, and content for development plans and defines responsibilities for processing OSD development concept papers.

9. Headquarters, Department of the Army, Technical Manual Number 38-710, Integrated Logistics Support, Implementation Guide for DA Systems and Equipment. Washington, D.C., Department of Army, 1972.
10. Army Materiel Acquisition Review Committee, Report of the Army Materiel Acquisition Review Committee, Volume II Committee Reports. Washington, D.C., U.S. Government Printing Office, 1 April 1974.

This committee report studies all phases of the Army materiel acquisition process and makes recommendations for improvement of the process.

11. Comptroller General's Report to Congress, The Army Reorganization for the 1970's: An Assessment of the Planning. B-172707, 24 July 1972.

This is a study of the planning and the reasons for the Army reorganization.

12. Department of the Army Pamphlet, Number 600-3, Officer Professional Development and Utilization, Chapter 30. Washington, D.C., Department of Army, March 1974.

This contains the new guidelines for the career development of Project Managers.

