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MANPOWER, PERSONNEL, AND TRAINING REQUIREMENTS FOR MATERIEL SYSTEM ACQUISITION

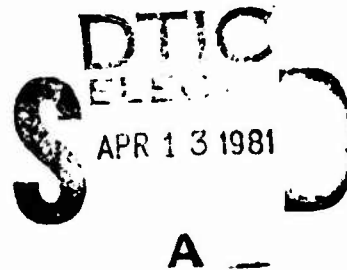
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October 1980

MANPOWER & EDUCATIONAL SYSTEMS
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Life Cycle System Management Model (LCSMM)											
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) <p>The Assistant Secretary of Defense, Manpower, Reserve Affairs, and Logistics has expressed concern over anticipated manpower needs for new materiel systems. DOD has revised review procedures and now requires detailed manpower planning information for the various stages of system review. This report analyzes the Army LCSMM process to determine its adequacy to develop manpower information. It concludes that the written process is sound but there are deficiencies in the system that require further study.</p>											

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Research Product 80-27

**MANPOWER, PERSONNEL, AND TRAINING
REQUIREMENTS FOR MATERIEL
SYSTEM ACQUISITION**

Alfred S. Rhode, Benjamin B. Skinner, James L. Mullin,
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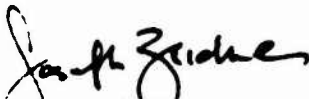
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FOREWORD

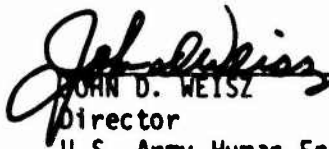
The Army is engaged in the largest modernization program in its history. Over the next ten years, large numbers of new sophisticated weapon systems will enter the Army inventory. A limiting factor in the modernization program may be the manpower, personnel and training requirements to effectively use and maintain these new weapon systems. New Army and DoD regulations have been written addressing manpower, personnel, training, and human factors issues to be considered during the materiel system acquisition process.

The Army has developed an elaborate materiel system acquisition process to insure timely, coordinated, efficient, and cost effective development of major systems. Numerous documents are developed to support various milestones decisions made by the Army System Acquisition Review Council and Defense System Acquisition Review Council.

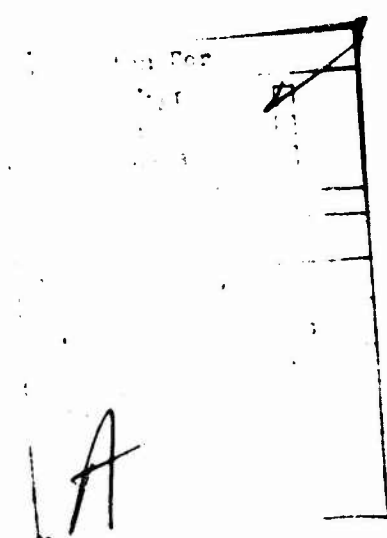
The present effort undertaken jointly by the Army Research Institute and the Human Engineering Laboratory provides an integrated presentation of manpower, personnel, and training information required to be reported on within the documents generated during the Army Life Cycle System Management Model. It relates this information to the specific requirements given by Army and DoD regulations. A related effort jointly undertaken by the Human Engineering Laboratory and the Army Research Institute analyzes the impact of system design upon manpower, personnel, and training requirements and will be published separately. Reports of these two efforts will provide guidance as to how the Army satisfies personnel and training requirements and could be used in efforts to determine where increased emphasis to manpower, personnel, and training could be applied.



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PREFACE

This publication is a report describing manpower, personnel, and training requirements during the Life Cycle System Management Model Process. It relates manpower, personnel, and training information required by The Department of Defense at various system development review stages to data sources available within the Army. The report identifies system deficiencies and makes appropriate recommendations.

The views, opinions, and findings contained in this report are those of the authors and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other official documentation.

EXECUTIVE SUMMARY

The Assistant Secretary of Defense, Manpower, Reserve Affairs, and Logistics (ASD(MR&L)) recently expressed concern over the anticipated manpower needs of materiel systems presently under development. Department of Defense (DOD) directives governing the Materiel System Acquisition Process have been extensively revised to require expanded manpower, personnel, and training information to be submitted to the Office of the Secretary of Defense (OSD) for each major system scheduled for review by the Defense Systems Acquisition Review Council (DSARC).

The Department of the Army (DA) is currently implementing a comprehensive force modernization program and seven materiel systems are presently scheduled for DSARC review during fiscal year 1960. The necessary manpower information must be provided to OSD in a timely manner to insure successful review and approval of these systems.

This report analyzes the manpower, personnel, and training information required to be generated by Army regulations during the Life Cycle System Management Model (LCSMM) process, and concludes that if properly prepared in the sequence stipulated, it should meet the expanded Department of Defense requirements. However, it was noted that the sequence of some events in the LCSMM process was not in accordance with more current practices. This effort did not include an evaluation of the validity of either those information requirements or the quality of the information produced in response to them. Army regulations concerning equipment design and their impact on manpower and training information requirements were also not considered in this report.

The analysis found indications that the information generated prior to recent DSARC review has been inadequate in some cases, and that additional emphasis is needed on manpower planning and reporting. A summary of findings follows:

A. DOD directives require that the Mission Element Need Statement (MENS) include manpower considerations and a statement of manpower constraints. Current Army regulations require that the Draft MENS be appropriately staffed within Department of the Army Headquarters. Firm responsibilities for providing the initial manpower policy and constraint guidance to the drafters of the MENS are not currently documented. Further, there is no specified requirement for Deputy Chief of Staff for Personnel (DCSPER) review or participation nor is there guidance regarding any standards or basis for the statement of policy.

B. DOD directives require that specific manpower, personnel, and training information be provided for each DSARC. No significant variation is apparent between DSARC manpower, personnel, and training information requirements and the information that should be generated by documented Army procedures. This analysis does, however, identify problems within the Army in implementing and following the documented procedures as specified. Further, there is an apparent discrepancy between Army regulations and the LCSMM process regarding the Qualitative and Quantitative Personnel Requirements Information (QQPRI) and the Basis of Issue Plan (BOIP) which indicates a need for detailed analysis of the QQPRI process.

C. Manpower, personnel, and training information developed during the LCSMM process to meet DSARC requirements must also be utilized by internal Army planning systems to insure that effective, fully ready materiel systems are fielded and manned when required. These planning systems include the Planning, Programming, and Budgeting Systems (PPBS); Army Personnel Management Systems; and Army Training System. This report notes the supporting Army regulations and procedures do not clearly identify how manpower affordability of a system is to be established, or how decision emanating from the LCSMM process milestone review are integrated into the Army's annual PPBS cycle. Further, lack of identification of responsibilities in some areas regarding interface and use of information developed during the LCSMM process in Personnel Management Systems was evident.

D. The report recommends a complete Department of the Army level review of the Manpower, Personnel, and Training (MPT) requirements of the major materiel systems to be fielded in the mid 1980's, and correction of deficiencies noted. It also recommends the development of a long term program to improve the quality and timeliness of MPT planning and programming during the LCSMM process. A summary of recommendations follows:

1. Update Army regulations to include current OSD requirements and report formats.
2. Develop and formalize assessment procedures within the LCSMM process to evaluate the impact of each individual system on the total Army MPT requirements to include composite impact of all systems.
3. Provide additional guidance to the field on methods for timely development, promulgation, and review of personnel requirements for materiel systems under development.
4. Review and update the LCSMM process to reflect current requirements.
5. Institutionalize the interfacing of the LCSMM process with the planning, programming, and budgeting system.

6. Enforce better adherence to the Army regulations concerning the MPT aspects of the LCSMM process.
7. Review and analyze the QQPRI process to determine if and where deficiencies exist. Review should include tools and technique used to identify manpower requirements.
8. Monitor and track the development of the QQPRI and BOIP during all phases of the development process.
9. Require DCSPER representation during critical developmental field reviews to determine the MPT status of major systems.
10. Analyze the impact of equipment design on manpower, personnel, and training requirements and, if necessary, prepare alterations to Army regulations to provide for greater visibility of and control over that impact.
11. Review and document the current MPT status of the forty-two major systems scheduled for fielding in the mid 1980's. Prioritize by importance and Initial Operating Capability (IOC).
12. Develop a long term program to improve the quality and timeliness of MPT planning and programming during the LCSMM Process utilizing the experience gained from the forty-two major systems review.
13. Review actions at levels below DA level which are needed to produce specified information. Develop a step by step guide for actions to be accomplished (with time line) to insure MPT has been adequately and timely planned during the acquisition process. This guide should include requirements at all action and review levels.
14. Perform a survey of existing review procedures, models, trade-offs, and similar methods, to ascertain if techniques exist to enable designers, planners and systems engineers to perform needed analyses during the various Army Systems Acquisition and Review Council (ASARC) and DSARC milestones, to include composite impact of all systems.
15. Examine procedures and MPT implications for acquisition of systems which do not require ASARC/DSARC exposure.

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CHAPTER I
INTRODUCTION

A. BACKGROUND

Matériel Systems Acquisition programs are the subject of continuing analyses, reviews, and evaluations. The scope and extent of these program appraisals are consistent with the high cost of matériel systems over a life cycle, their impact on operational capability and effectiveness, and their demand on current and future resources. Specific guidelines have been established for development and acquisition of major systems by The Departments of Defense (DOD) and the Army (DA). The process is detailed and involves many management levels.

Despite the detail and depth of documentation and directives governing the acquisition process, problems regarding establishment of manpower requirements, skill and skill levels, and their true cost have been prevalent. Sufficient numbers of properly trained personnel are essential to man, maintain, and support current and future matériel systems. The improvements in these systems offered by new technology, a corresponding requirement for more highly skilled personnel, the steady upward trend in operating and support cost, and the projected reduced availability of the recruitable population demand a close and early look at manpower requirements for matériel systems under development to measure both supportability and affordability.

There has been increased emphasis on the need to specify manpower constraints, identify manpower requirements early in the acquisition phase, consider manpower in trade-off analyses, and determine more accurately and efficiently the quantitative and qualitative manpower requirements for new systems. Recent DOD and Army actions have been taken which require manpower considerations to be included in the Army Systems Acquisition Review Council (ASARC) and Defense Systems Acquisition Review Council (DSARC) reviews.

In August 1978 the Assistant Secretary of Defense, Manpower, Reserve Affairs, and Logistics (ASD(MRA&L)) issued two memoranda outlining the manpower and logistics guidelines which must be followed for presenting major systems to the DSARC. He expressed concern over the anticipated manpower needs of weapons systems presently in development. He also established requirements for a comprehensive manpower analysis to be submitted to the Office of the Secretary of Defense (OSD) for each major system scheduled for review by the DSARC.

As a result of these memoranda, Department of Defense Directive DDDD 5000.1 (Major System Acquisitions) and Department of Defense Instruction DODI 5000.2 (Major System Acquisition Procedures) were subsequently revised in October 1979 (formal coordination draft) and promulgated on 19 March 1980, these directives provide more detailed guidelines regarding specific form and content of additional manpower, personnel, and training information to be submitted for each OSD milestone review.

Essentially, the new directives incorporate the concerns expressed in the memoranda. These areas should also be considered at ASARC reviews.

Increased emphasis has been placed on manpower reviews in materiel acquisition within the Army. In the past the Deputy Chief of Staff for Personnel (DCSPER) provided representation at major reviews, such as ASARC reviews, only at the invitation of the Chairman of the ASARC (AR 15-14, Systems Acquisition Review Council Procedures). Recently, DCSPER was made a regular member of the ASARC. Other internal actions are also being taken within the Army staff to improve manpower review efforts relative to materiel acquisitions, such as the establishment of the Force Modernization Office and numerous ad hoc committees.

The DCSPER role is delineated clearly in Draft AR 71-9, Materiel Objectives and Requirements, 15 April 1979:

- e. The Deputy Chief of Staff for Personnel (DCSPER) has Army General Staff responsibility for developing a personnel system to meet the needs of new or improved doctrine, organization, and materiel, including the determination of new or revised MOS. DCSPER ensures that all manpower/personnel issues associated with new/improved doctrine, organizations, and/or materiel are identified, fully developed and analyzed. The DCSPER will furnish active duty military personnel cost information to COA Comptroller of the Army for use in Cost Analysis and review of existing or developmental systems; and to Director of Program Analysis and Evaluation (DPA&E) for affordability analysis.

In order to execute these assigned responsibilities, DCSPER must have several kinds of information, including a full knowledge of the scope of the systems undergoing ASARC action. Additionally, DCSPER should know what specific information is required at each review level and the information source, and have some insight as to how the data is derived. In the final analysis, DCSPER must identify the manpower/personnel issues and judge the supportability of the stated manpower resource requirements. Also, an examination must be made of the projected demands for manpower to determine if they can be supported.

The Army is currently implementing a broadly based pervasive force modernization program resulting from extensive research and development conducted during the early 1970's. Forty-two major weapons systems are in some phase of development and are scheduled for fielding by the mid 1980's (Figure I-1). Seven weapons systems are currently scheduled for DSARC review during fiscal year 1980. To insure successful review and approval of these systems the necessary manpower information must be provided to the ASARC in a timely manner for review and approval prior to submission to the DSARC.

B. PURPOSE

The purpose of this report is to examine the adequacy of Army manpower information, currently developed during the Life Cycle System Management Model

ARMY FORCE MODERNIZATION

MAJOR SYSTEMS SCHEDULED FOR FIELDING IN THE NEXT 5-8 YEARS

AIR DEFENSE	COMMUNICATIONS	INFANTRY
Stinger	TACSATCOM	LWCMS
Roland	TRI-TAC COMMO	Viper
Patriot	AN/TTC-39	I-81 Mortar
Divad Gun	AN/TYC-39	INTELLIGENCE
ARMOR	SRWBR	Trailblazer
M00A3	MOD REC Traffic Term	Quicklook
XM1	SINGARS	TACELIS/AGTELIS
CFV	ENGINEER	Quick Fix
IFV	SLUFAE	PAWS
AVIATION	FAMECE	TACJAM
UH-60	UET	FIELD ARTILLERY
CH-47 MOD	GEMSS	Tacfire
AAH	FASCAM	Copperhead
COMMAND AND CONTROL	TARGET SYSTEMS	TPQ-36
SIGMA	REMBASS	TPQ-37
PLRS	RPV	BCS
	SOTAS	GLLD
		Pershing II
		MLRS
		FAMAS

Figure I-1
Army Force Modernization

(LCSMM) process (Department of the Army Pamphlet 11-25, Life Cycle System Management Model for Army Systems, May 1975), in light of recently expanded Department of Defense requirements. Furthermore, the report identifies deficiencies in the LCSMM process and procedures, notes apparent information gaps, and develops initial corrective recommendations.

C. METHODOLOGY

A basic mapping approach was employed in this report to determine initially the adequacy of current Army procedures in developing manpower information during the LCSMM process. Army regulations were researched extensively to identify manpower information requirements and their major components, to identify the responsibilities associated with the requirements, and to determine spatial and time relationships. Information required by current regulations for the ASARC at each milestone review was identified and classified into generic categories. The agencies responsible for developing the information and its chronological flow from originator through formal institutional approvals to the ASARC were determined. The most current Department of Defense DSARC requirements were determined next. A comparative analysis of Army information supply versus DOD demand was conducted at the ASARC/DSARC interface to identify inadequacies and deficiencies in the Army manpower information system development. Based upon these analyses, certain recommendations were made to improve the system, and criteria were established to assess the status of manpower, personnel, and training planning of the the forty-two emerging systems prior to their next ASARC/DSARC milestone reviews.

This review was conducted at the Department of the Army and DOD levels. Army regulations and the LCSMM process have been extensively reviewed. Key activities within the process and at those levels were identified. This report did not examine lower level actions required to complete an event within the LCSMM process, although there is evidence that a review below DOD and DA levels is desirable.

D. ORGANIZATION

This report is organized into eight chapters, preceded by an executive summary. At the back of the report is a glossary of the acronyms used in the report. The Executive Summary highlights the findings and recommendations of the study. Chapter I provides background and other introductory information, and Chapter II describes the DOD Materiel Acquisition Process as it pertains to Manpower, Personnel, and Training.

The LCSMM process progresses in stages which are distinct phases, each described separately in Chapters III through VII of this report. Each phase, in turn, requires a series of actions broken down into sequential key events. Each event is described separately and fully, and contains all of the information necessary to complete the event. While this method of presentation results in some repetition of information throughout the report, it enables each event to be read as a separate unit without the necessity to refer to other parts of the report.

In general the organization of Chapters III through VII follow a similar sequence: (1) an introductory paragraph(s); (2) a graphic display of the key events in the chapter; (3) tables of the events and the information requirements; (4) separate descriptions of each event, together with displays of sample formats and annexes for the required information and procedures where appropriate; and (5) separate descriptions of the information requirements.

Chapter VIII summarizes the findings of the study and presents conclusions and recommendations.

Figure displays and tables are found throughout this report to supplement the narrative. All of these figures and tables were developed specifically for the study, except for those depicting formats of the Letter of Agreement (LOA) and Concept Formulation Package (CFP) (taken from AR 71-9) and of the Mission Element Need Statement (MENS), the Decision Coordinating Paper (DCP) and its annexes, and the annexes to the Integrated Program Summary (IPS) (all taken from DODI 5000.2).

CHAPTER II
THE MATERIEL ACQUISITION PROCESS

A. PURPOSE

The purpose of this chapter is to describe the DOD Materiel System Acquisition Process, as it pertains to Manpower, Personnel, and Training (MPT). The discussion centers around the DOD information requirements as stated in DOD Directive 5000.1 (Major System Acquisitions) and DOD Instruction 5000.2 (Major System Acquisition Procedures) both dated 19 March 1980, and the Department of the Army implementing directives. Since DOD Directive 5000.1 (DODD 5000.1) and DOD Instruction 5000.2 (DODI 5000.2) have recently been revised, the Army documents used in this analysis are in some cases out of date, although some are currently under revision (e.g. AR 71-9, Materiel Objective and Requirements).

B. GENERAL POLICY

As part of the routine planning for accomplishment of its assigned mission, the Army conducts continuing analyses of its mission areas to identify deficiencies, counter new threats, and find more effective means of performing assigned tasks. During these analyses, a deficiency may be identified that would lead to initiation of a major system acquisition program. A system acquisition may result from a deficiency in an existing system, from a decision to establish new capabilities in response to a technologically feasible opportunity, or from what is seen as a significant opportunity to reduce the cost of ownership either in dollars or manpower or both.

After assessing system concepts, the one decided upon to be developed may include a change in United States or North Atlantic Treaty Organization (NATO) tactical or strategic doctrine in the use of existing military or commercial systems, or in the modification or product improvement to existing systems.

Although DODD 5000.1 and DODI 5000.2 address major system acquisition processes, they do not include all of the research and development effort of the Army. The Secretary of Defense (SECDEF) designates certain acquisition programs as "major" systems. As a general rule, SECDEF designates as "major" a system acquisition which (including system modifications and additional procurement of existing systems) exceeds \$100 million (constant dollars) in Research Development, Test, and Evaluation (RDT&E) funds or \$500 million (constant dollars) in production funds. The SECDEF reserves the right to designate as a major system any developmental item that is of special interest to the Department of Defense regardless of the costs. Each system in the acquisition process designated as "major" must go through the review and approval process as outlined in DODD 5000.1 and DODI 5000.2. Systems not so designated are processed through review and approval within the Department of the Army. Programs, regardless of size, directed toward developing and maintaining a viable technological base are not designated as major by SECDEF, but are subject to review by the Army.

C. MILESTONE DECISIONS AND PHASES OF ACTIVITY

The DOD Major System Acquisition Process consists of four milestone decisions and four phases of activity as depicted in Figure II-1. Approval of a Mission Element Need Statement by the Secretary of Defense constitutes the Milestone 0 decision and authorization to proceed into Phase 0, Concept Exploration. The Concept Exploration Phase includes solicitation, evaluation, and competitive exploration of alternative concepts. This phase culminates with a DOD review (DSARC I) and subsequent approval by the SECDEF, constituting the Milestone I Decision. The Milestone I decision consists of the selection of alternatives and the authorization to proceed into Phase I, Demonstration and Validation. This phase is concluded with a DOD review (DSARC II) and subsequent SECDEF approval, constituting the Milestone II Decision. The Milestone II decision includes the selection of alternatives and authorization to proceed into Phase II, Full Scale Development. This phase culminates with a DOD review (DSARC III) and subsequent approval by the SECDEF, constituting the Milestone III decision. The Milestone III decision provides authorization to proceed into Phase III, Production and Deployment. The decision at Milestone III (DSARC III) may be modified by the SECDEF to authorize limited production and to require the Army to further test and evaluate the materiel system under development. The SECDEF may direct an evaluation of specific areas and another review (i.e. DSARC III A). An example is the decision of the SECDEF after review by the DSARC III of the XM-1 Tank. As stated in an undated memorandum from the Assistant Secretary of Defense, Manpower, Reserve Affairs, and Logistics to the Assistant Secretary of the Army, Research, Development, and Acquisition (ASA(RDA)), subject, XM-1 Manpower and Logistic Analysis Requirements:

...manpower and logistic support resource requirements were important considerations in the recent DSARC decision...at DSARC IIIA an analysis should be presented by the Army which specifically addresses the effect of demonstrated and projected reliability and durability levels on: tank operational availability, spares investment requirements; maintenance manpower requirements; tank modification costs; and the resultant effect on operating and support costs....The analysis should be performed in parallel with the test and evaluation reviews directed by the DSARC.

Figure II-2 graphically displays the four phases and four milestones of the Defense Major System Acquisition Process, noting key activities at each event.

At the end of each phase of the Defense System Acquisition Process (after DSARC review), the SECDEF transmits his decision to the Department of the Army by a Secretary of Defense Decision Memorandum (SDDM). The SDDM documents each milestone decision and establishes program goals and thresholds. It also reaffirms established needs and program objectives.

Major systems under development by the Army proceed through the DOD System Acquisition Process; however, prior to each DSARC review, there is a corresponding ASARC review. The ASARC reviews establish a recommended position for the Secretary of the Army on the system under review. The Army uses the

ACQUISITION PHASES AND MILESTONES

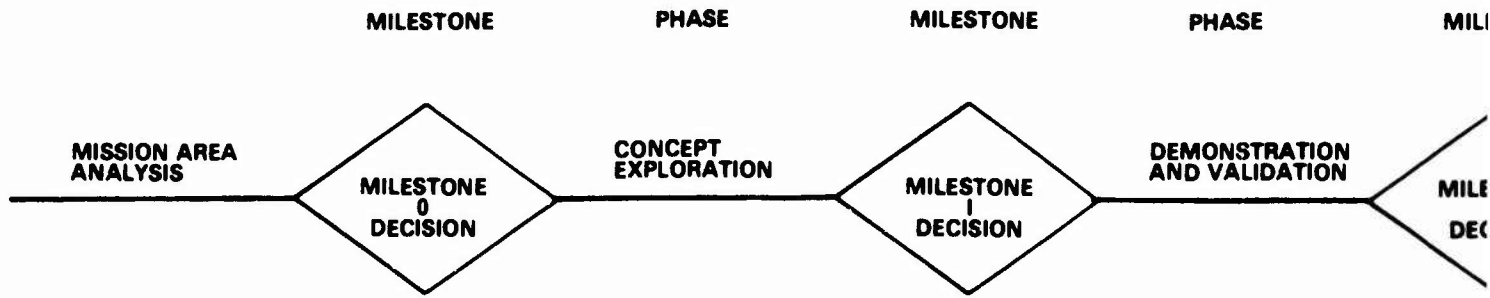


Figure II-1
DOD Major System Acquisition Process

1

PHASES AND MILESTONES

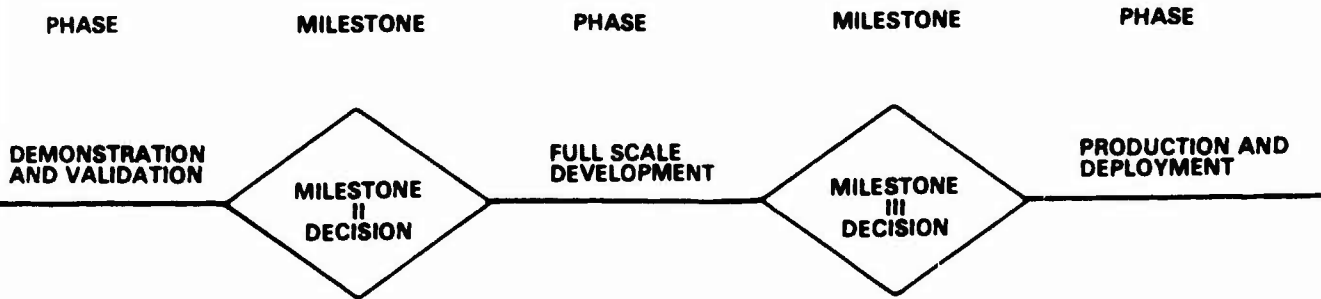


Figure II-1
System Acquisition Process

2

PHASE			CONCEPT EXPLORATION
MILESTONE	(MISSION AREA ANALYSIS)	O (MENS APPROVAL)	
ACTIVITIES	<ul style="list-style-type: none"> ● CONTINUING ANALYSIS OF MISSION AREAS <ul style="list-style-type: none"> — IDENTIFY DEFICIENCIES — TECHNOLOGICAL OPPORTUNITIES — REDUCTION IN COST (MANPOWER AND DOLLARS) ● DETERMINE ACQUISITION NEED ● DIA VALIDATED THREAT ● DATE SYSTEM IS TO BE FIELDIED ● GENERAL MAGNITUDE OF ACQUISITION RESOURCES REQUIRED ● RESOURCES ARMY HAS PROGRAMMED FOR "CONCEPT EXPLORATION" PHASE ● DEVELOP PLAN FOR CONCEPT EXPLORATION PHASE ● RECOMMENDATION WHETHER PROGRAM SHOULD BE DESIGNATED A "MAJOR SYSTEM" ● INCORPORATE DOD STAFF COMMENTS ON DRAFT MENS ● RESUBMIT UPDATED MENS 	<ul style="list-style-type: none"> ● DOD STAFF COMMENTS ON ARMY'S MENS BACK TO ARMY ● IS MISSION ELEMENT TASK ESSENTIAL TO ARMY'S MISSION? ● IS THREAT REALISTIC? ● DOES COST SAVINGS AND TECHNOLOGY MERIT CONTINUATION OF EFFORT? ● IS PLAN FOR NEXT PHASE SOUND? ● ISSUE SDDM AND SCHEDULE DSARC I 	<ul style="list-style-type: none"> ◇ DEVELOP ACQUISITION STRATEGY ● INVESTIGATE SOURCE OF COMPETITIVE COSTS ● EXPLORE ALTERNATE ACQUISITION METHODS ● DEVELOP TEST & EVALUATION MATRIXX ● DEVELOP TRAINING PLAN ● DEVELOP FORCE GUIDANCE ● DEVELOP PLAN FOR DEMONSTRATION VALIDATION PHASE ● UPDATE MISSION AND THREAT ● SUBMIT "FOR CONCEPT EXPLORATION" AND IPS TO: <ul style="list-style-type: none"> — OPERATIONAL AND FORCE STRUCTURE — MANPOWER GROWTH THRESHOLDS — PERSONNEL FILLING ESTIMATE — MANPOWER REQUIREMENTS ANALYSIS — TRAINING IMPACT SUMMARY ● INCORPORATE DOD STAFF COMMENTS IN "MISSION AND IPS"

DOD MAJOR SYSTEMS ACQUISITION PROCESS

DEPT RATION		DEMONSTRATION AND VALIDATION		
	I (DSARC I)		II (DSARC II)	
<p>ACQUISITION</p> <p>TE SOURCE FOR VE CONCEPTS TERNATIVES</p> <p>EST & N MASTER PLAN</p> <p>RAINING DOCUMENT ORCE LEVEL</p> <p>LAN FOR ATION AND N PHASE SSION ANALYSIS</p> <p>T OR COMMENT PS TO DOD ONAL CONCEPTS ICE STRUCTURE VER GOALS AND OLDS NEL FUNDING</p> <p>E VER ESTIMATE VER SENSITIVITY</p> <p>S G IMPLICATIONS RY</p> <p>ATE DOD STAFF S IN "FINAL DCP"</p>	<ul style="list-style-type: none"> ● DOD STAFF COMMENTS AND "FOR COMMENT DCP" AND IPS BACK TO ARMY ● IS MISSION ELEMENT TASK REAFFIRMED? ● DO ALTERNATIVE DESIGN CONCEPTS MEET STATED REQUIREMENTS? ● IS ACQUISITION STRATEGY SOUND? ● IS PLAN FOR NEXT PHASE SOUND? ● ISSUE SDDM WITH ALTERNATIVE SELECTED 	<ul style="list-style-type: none"> ● FABRICATE PROTOTYPE SYSTEM ● SELECT BEST ALTERNATIVE ● CONDUCT DT/OT I TESTS AND EVALUATE RESULTS ● EVALUATE CONTRACTOR PROPOSALS ● UPDATE MISSION ANALYSIS AND THREAT ● PERFORM TRADE-OFF ANALYSIS ● DEVELOP PLAN FOR FULL SCALE DEVELOPMENT PHASE ● SUBMIT "FOR COMMENT DCP" AND IPS TO DOD <ul style="list-style-type: none"> - MANPOWER GOALS AND THRESHOLDS - PERSONNEL FUNDING ESTIMATE - MANPOWER ESTIMATE - MANPOWER SENSITIVITY ANALYSIS - MANPOWER EVALUATION - MANPOWER TRADE-OFF ANALYSIS - MANPOWER REQUIREMENTS COMPARISON - TRAINING REQUIREMENTS SUMMARY - TRAINING PLAN SUMMARY ● INCORPORATE DOD STAFF COMMENTS IN "FINAL DCP" AND IPS 	<ul style="list-style-type: none"> ● DOD STAFF COMMENTS ON "FOR COMMENT DCP" AND IPS BACK TO ARMY ● IS MISSION ELEMENT TASK REAFFIRMED? ● DOES SYSTEM SELECTED MEET ARMY'S NEEDS? ● IS TRADEOFF ANALYSIS REALISTIC? ● IS THE ARMY WITHIN THE THRESHOLDS AND CONSTRAINTS AS STATED IN PREVIOUS SDDM? ● IS PLAN FOR NEXT PHASE SOUND? ● ISSUE SDDM. 	<ul style="list-style-type: none"> ● AWAF ● LIMIT ● FINAL ● PROD ● COND ● AND I ● UPDA ● AND 1 ● UPDA ● PLAN ● UPDA ● PERS ● PLAN ● DEVE ● PROD ● MENT ● SUBN ● DCP" - MA TH - PE ES - MA - MA - MA - MA - MA - MA AN - MA RE CO - TR RE SU - TR SU ● INCO COMI AND I

Figure II-2
DOD Major System Acquisition Process

2

	FULL SCALE DEVELOPMENT		PRODUCTION AND DEPLOYMENT
DSARC II)		III (DSARC III)	
<p>COMMENTS ON "FOR COMMENT DCP" AND IPS TO ARMY ELEMENT TASK SELECTION? ARE THE ELEMENTS SELECTED? ARE THE ELEMENTS' NEEDS? ARE THE ELEMENTS' ANALYSIS?</p> <p>ARE THE ELEMENTS WITHIN THE THRESHOLDS AND CONSTRAINTS AS STATED IN THE PREVIOUS SDDM? IS THE PLAN FOR NEXT PHASE SOUND?</p>	<ul style="list-style-type: none"> ● AWARD CONTRACT FOR LIMITED PRODUCTION ● FINALIZE PLAN FOR PRODUCTION ● CONDUCT DT/OT II TESTS AND EVALUATE RESULTS ● UPDATE MISSION ANALYSIS AND THREAT ● UPDATE LOGISTICS PLANNING ● UPDATE MANPOWER, PERSONNEL AND TRAINING PLANS ● DEVELOP PLAN FOR PRODUCTION AND DEPLOYMENT PHASE ● SUBMIT "FOR COMMENT DCP" AND IPS TO DOD <ul style="list-style-type: none"> - MANPOWER GOALS AND THRESHOLDS - PERSONNEL FUNDING ESTIMATE - MANPOWER ESTIMATE - MANPOWER SENSITIVITY ANALYSIS - MANPOWER EVALUATION - MANPOWER TRADE-OFF ANALYSIS - MANPOWER REQUIREMENTS COMPARISON - TRAINING REQUIREMENTS SUMMARY - TRAINING PLAN SUMMARY ● INCORPORATE DOD STAFF COMMENTS IN "FINAL DCP" AND IPS 	<ul style="list-style-type: none"> ● DOD STAFF COMMENTS ON "FOR COMMENT DCP" AND IPS BACK TO ARMY ● IS MISSION ELEMENT TASK REAFFIRMED? ● ARE MAJOR ISSUES IDENTIFIED AND RESOLVED? ● ARE PRODUCTION QUANTITY REQUIREMENTS VALID? ● ARE MANPOWER AND FISCAL REQUIREMENTS CONSISTENT WITH PPBS? ● IS THE ARMY WITHIN THE THRESHOLDS AND CONSTRAINTS AS STATED IN PREVIOUS SDDM? ● IS PLAN FOR NEXT PHASE SOUND? ● ISSUE SDDM 	<ul style="list-style-type: none"> ● CONDUCT DT/OT III TESTS IF REQUIRED AND EVALUATE RESULTS ● FINALIZE PROGRAM ACTIVATION AND DEPLOYMENT PLANS ● UPDATE OPERATIONAL AND TRAINING PLANS ● CONTRACT AWARD FOR FULL PRODUCTION ● ACHIEVE READINESS POSTURE ● CONTINUOUSLY MONITOR LOGISTICS AND MAINTENANCE AREAS

3

11

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LCSMM to describe the Army process by which materiel systems are initiated, validated, developed, deployed, and supported. Specific events within the LCSMM are designed to guide the progression of developing materiel systems throughout their life cycles. Chapters III through VII discuss the LCSMM process and requirements as they pertain to Manpower, Personnel, and Training and review the Army requirements relative to the DOD requirements.

D. AFFORDABILITY

DOD Directive 5000.1 (Major System Acquisition) states that affordability will be considered at every milestone within the DOD Major System Acquisition Process. A materiel system under development normally does not proceed into the Concept Exploration phase unless sufficient resources are, or can be, programmed for that phase or into the Full Scale Development Phase, unless sufficient resources are, or can be, programmed over the remaining life cycle of the deploying system. Affordability is a function of cost, priority within the Army, and the availability of fiscal and manpower resources. Specific facets of affordability to be reviewed at milestone decision points are described in Chapters III through VII.

E. DEPARTMENT OF DEFENSE RESPONSIBILITIES

The DSARC is a top level group which advises the SECDEF on milestone decisions for major systems. (See Figure II-3 for DSARC composition.) Permanent members of the DSARC, as identified in DODD 5000.1 (Major Systems Acquisitions) and DODI 5000.2 (Major System Acquisition Procedures) include:

1. The Defense Acquisition Executive (DAE)

The DAE is the principal advisor and staff assistant to the SECDEF for the acquisition of defense systems and equipment. Appointed by the SECDEF and serving as the Chairman of the DSARC, he has the authority to designate action officers who process the milestone documentation and monitor the status of the major system in all phases of the acquisition process.

2. The Under Secretary of Defense for Policy (or his designated representative)

3. The Under Secretary of Defense for Policy (or his designated representative)

He is responsible for policy and review of all research, engineering development, technology, test and evaluation, contracting, and production of systems within the context of DODD 5000.1.

4. The Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics) (ASD(MRA&L))

He is responsible for logistic and manpower planning and for ensuring that logistic planning is consistent with system hardware parameters, logistics policies and readiness objectives.

PERMANENT MEMBERS

Defense Acquisition Executive

Under Secretary of Defense for Policy

Under Secretary of Defense for Research and Engineering

Assistant Secretary of Defense Comptroller

Assistant Secretary of Defense for Manpower, Reserve
Affairs and Logistics

Assistant Secretary of Defense for Program Analysis and Evaluation

Chairman, Joint Chiefs of Staff

PRINCIPAL ADVISORS

Assistant Secretary of Defense for Communications, Command,
Control, and Intelligence

Advisor to the Secretary of Defense and Deputy Secretary of Defense on
NATO Affairs

Deputy Under Secretary of Defense for Research and Engineering
for Acquisition Strategy and Producability

Director of Defense Intelligence Agency

Director of Test and Evaluation

Chairman of the Cost Analysis Improvement Group

Director, Weapons Support Improvement Group

Figure-II-3
Defense Systems Acquisition Review Council (DSARC)

5. The Assistant Secretary of Defense (Comptroller) (ASD(C))

His principal objective is to coordinate with the USDR&E and ASD (PA&E) the interface of the acquisition process with the Planning, Programming and Budgeting System (PPBS).

6. The Assistant Secretary of Defense (Program Analysis and Evaluation) (ASD(PA&E))

In coordination with USDR&E, ASD (PA&E) he monitors the military departments procedures for analysis of mission areas, cost-effectiveness studies, and along with ASD(C), monitors the interface of the acquisition process with the PPBS.

7. The Chairman, Joint Chiefs of Staff (JCS) or his designated representative

F. THE DEPARTMENT OF THE ARMY RESPONSIBILITIES

ASARC establishes the Army's recommended position on designated major systems in preparation for DSARC review (AR 70-1, Army Research, Development, and Acquisition). The ASARC is chaired by the Vice Chief of Staff (VCSA). The regular members designated in AR 15-14, Systems Acquisition Review Council Procedures, are shown in Figure II-4.

1. The Vice Chief of Staff, Army (VCSA)

He conducts all formal ASARC reviews, approves selection of Army Major Systems for ASARC, and reviews and approves all charters for Special Task Forces (STF) and ASARC Independent Evaluation Teams. A discussion of STF's and other similar special evaluations or monitoring groups is found in Chapter III.

2. Assistant Secretary of the Army, for Research, Development, and Acquisition (ASA(RDA))

He is responsible for policy and review of all research and development incident to the developing system. For those major systems on which the SECDEF is the final approval authority, the Army recommendation, together with the ASARC results and the "For Coordination" draft of the Decision Coordinating Paper, are forwarded to the SECDEF by the ASA (RDA). The "For Coordination" draft of the DCP will be discussed later in this chapter.

3. Assistant Secretary of the Army for Installations, Logistics, and Financial Management (ASA(IL&FM))

4. Commanding General, U.S. Army Materiel Development and Readiness Command (DARCOM)

DARCOM is normally the Materiel Developer.

REGULAR MEMBERS

Vice Chief of Staff , Army

Assistant Secretary of the Army for Research, Development, and Acquisition

Assistant Secretary of the Army for Installation, Logistics, Financial Management

Commanding General, U.S. Army Materiel Development and Readiness Command

Commanding General, U.S. Army Training and Doctrine Command

Deputy Chief of Staff for Operations and Plans

Deputy Chief of Staff for Research, Development, and Acquisition

Deputy Chief of Staff for Logistics

Deputy Chief of Staff for Personnel

Deputy Under Secretary of the Army for Operations Research

Director of Program Analysis and Evaluation

SPECIAL MEMBERS

(will attend on call of Chairman)

Assistant Secretary of the Army for Manpower and Reserve Affairs

Army General Counsel

Comptroller of the Army

Assistant Chief of Staff for Intelligence

Assistant Chief of Staff for Automation and Communications

The Inspector General

Commanding General, U.S. Army Operational Test and Evaluation Agency

Commanding General, U.S. Army Concepts Analysis Agency

Others as may be required.

Figure II-4
Army Systems Acquisition Review Council (ASARC)

5. Commanding General, U.S. Army Training and Doctrine Command (TRADOC)

TRADOC is normally the Combat Developer and the Trainer.

6. Deputy Chief of Staff for Research, Development, and Acquisition (DCSRDA)

He exercises general staff responsibility for coordinating the preparation of the documentation for ASARC reviews, chairs the preliminary ASARC reviews, designates a permanent executive secretary of the ASARC, and prepares and publishes a coordinated plan of action immediately prior to a scheduled ASARC review. In addition, prior to each ASARC review, the DCSRDA examines the proposed system for affordability within the RDT&E and procurement appropriations (fiscal appropriations), and for the priorities established by the Deputy Chief of Staff for Operations and Plans (DCSOPS) in view of the resources (funds, manpower, and equipment) available, or projected to be available, to the Army.

7. Deputy Chief of Staff for Operations and Plans (DCSOPS)

In coordination with the Army Staff, DCSOPS ensures that the operational need and mission requirements are stated in the DCP and other required documents, including projected threat, related tactics and doctrine, and force structure and manpower; exercises general staff responsibility for the preparation and presentation of the user briefing at ASARC I and for the update of the briefing at each succeeding review. He provides NATO assessment, addresses force issues, exercises general staff responsibility for Special Task Forces and Special Study Groups, establishes priorities for use in affordability determinations, and ensures that a current Cost and Operational Effectiveness Analysis (COEA) is available at each ASARC review.

8. Deputy Chief of Staff for Logistics (DCSLOG)

Prior to each ASARC review, DCSLOG reviews the logistic support considerations and the integrated logistic support (ILS) plan for adequacy and timeliness, assures that any special logistics problems and critical logistics issues are identified and included in the DCP, and, prior to the production decision, assures that the logistic support plans are adequate and supportable for the deployment of the system.

9. Deputy Chief of Staff for Personnel (DCSPER)

He is responsible for the review of the manpower and personnel implications of all documentation to be addressed during the ASARC review. He ensures that the manpower required to support the system under development is, or will be, programmed in the budget (if required) or the Program Objective Memorandum (POM); ensures that the Military Occupational Specialty (MOS), skill levels, progression, MOS conversions, recruiting objectives, and lead

time are attainable and supportable; and ensures that manpower and personnel problems and critical issues are identified and included in the DCP.

10. Deputy Under Secretary of the Army, Operations Research (DUSA(OR))

He is responsible for policy formulation and program direction of operations research related to force structure requirements, materiel items in all life cycle phases, and test and evaluation and field experimentation of materiel items, units, and forces. He is also responsible for staffing the MENS in the Army Secretariat and coordination with the Office of the Secretary of Defense (OSD).

11. Director of Program Analysis and Evaluation (PA&E)

He is responsible for assessing the affordability of the system under development as it impacts on the total Army and all systems under development, and ensures that the total resources have been, or will be, programmed in the POM for the life cycle of the system.

G. DOCUMENTATION REQUIREMENTS

1. Department of Defense Required Documents

At each milestone event the Department of Defense requires the Department of the Army to justify in varying degrees the continuation of a materiel system under development. The documentation normally required by the Army to fully justify SECDEF approval for the continuation of the development of a system and the authorization to expend funds is as follows:

a. Milestone 0

The culmination of the Army's Mission Area Analysis of the Materiel System Acquisition Process is the submission by the Army of a Mission Element Need Statement (MENS). A MENS is the document upon which the Milestone 0 decision is based. The MENS identifies and defines: a specific deficiency within a mission area, defined as narrowly as possible so that there is a reasonable probability of correcting the deficiency by the development of a single system, the relative priority of the deficiency within the Army Mission Area, the Defense Intelligence Agency (DIA)-validated threat forecast or other factors causing the deficiency, the date the system must be fielded to meet the threat, and the general magnitude of acquisition resources that the Army is willing to invest. The format and a detailed discussion of the specific requirements of a MENS is found in Chapter III. The MENS will not exceed five pages including annexes. New systems proceeding through mission analysis that may exceed a cost of \$100 million (constant) in RDT&E funds or \$500 million (constant) in production funds shall go through a MENS review. The Army must submit a MENS to the DAE along with a recommendation as to whether the program should be designated a "major system." The DAE solicits comments from the DOD staff, JCS, other military departments and DIA. If the DAE plans to recommend "major system" designation, comments received from

the coordination of the MENS will be provided to the Department of the Army within twenty workdays after the DAE receipt of the MENS. Upon receipt of the DOD comments, the Army will revise the MENS and return it to the DAE within twenty workdays for approval action. If the DAE does not recommend "major system" designation, the MENS shall be returned to the Army for assumption of the responsibility for milestone decisions on the program.

When the DAE plans to recommend approval of a MENS and "major system" designation, and after receipt of an updated (DOD comments included) MENS from the Army, the designated DOD Action Officer prepares a Secretary of Defense Decision Memorandum. After formal coordination with DOD (all permanent DSARC members and such advisors as the DAE considers appropriate) the DAE submits the SDDM to the SECDEF for approval and signature.

b. Milestones I, II, and III

After MENS approval and issuance of the SDDM, the Defense System Acquisition Process becomes a formal structured procedure. Each milestone review is accomplished through the DSARC process. Table II-1 depicts the DOD Milestone Planning Schedule (DODI 5000.2).

The OSD Milestone Planning Meeting is scheduled by the DAE and chaired by the designated Action Officer six months prior to each DSARC (I, II, and III) meeting. The purpose of this meeting is to identify the system and program alternatives and the issues and items to be emphasized in both the Army's submission of the Decision Coordinating Paper (DCP) and the Integrated Program Summary (IPS). DSARC members, DSARC advisors, Department of the Army, and program managers are represented at the meeting. The DCP and IPS requirements are discussed in detail in Chapters IV through VII. A general discussion of the documents is included in this chapter.

The "For Comment DCP" and IPS are submitted together by the Army to the DAE three months prior to a scheduled DSARC meeting. The DOD Action Officer distributes copies of the "For Comment DCP" and IPS to the DSARC Members and Advisors and their staffs for review and discussion with the Army. The Action Officer prepares and transmits formal comments to the Army two months prior to the scheduled DSARC meeting. At this point in the process, every effort is made to resolve major issues prior to the DSARC meeting.

The "Final DCP" and IPS update is submitted by the Army to the DAE fifteen (15) workdays prior to the DSARC meeting. The DOD Action Officer distributes copies of the "Final DCP" and update to the IPS to each DSARC member and advisor.

The "Pre-Brief" meeting is the forum wherein the representatives of each DSARC member and advisor present their position on the DCP to the DAE. Attendees are prepared to discuss the DCP or provide specific program recommendations. Following the "Pre-Brief," the DOD Action Officer prepares a recommended position paper, provides copies to each member and principal advisor so that final action can be taken at the executive session following

TABLE II-1
MILESTONE PLANNING SCHEDULE

EVENT	SCHEDULE IN RELATION TO DATE OF DSARC MEETING	RESPONSIBLE AGENCY
1. Milestone Planning Meeting	-6 months	DOD - DAE
2. "For Comment DCP" and IPS	-3 months	DA - DUSA (OR)
3. DCP Comments to Department of The Army	-2 months	DOD - AO
4. "Final DCP" and updated IPS	-15 workdays	DA - DUSA(OR)
5. DOD Cost Analysis Improvement Group (CAIG) Briefing	-15 workdays	DOD - Chairman CAIG
6. DOD Test and Evaluation Briefing	-15 workdays	DOD Director, T&E
7. Manpower and Logistics Briefing	-15 workdays	DOD-ASD-MRA&L
8. DIA to DSARC Chairman	-10 workdays	DOD-Director, DIA
9. DSARC Chairman Pre-Brief (DOD Staff only)	- 5 workdays	DOD - DAE
10. CAIG Report	- 3 workdays	DOD - CAIG CHAIRMAN
11. Test and Evaluation Report	- 3 workdays	DOD - DAE
12. Manpower and Logistics Report	- 3 workdays	DOD - ASD - MRA&L
13. DSARC Meeting	0	DOD - DAE
14. SDDM Issued to Department of The Army	+ 15 workdays	DOD - SECDEF

the formal DSARC meeting. Members and principal advisors having dissenting positions submit them at the executive session for final resolution.

2. The DCP and the IPS

Figure II-5 illustrates the DCP and the IPS.

a. The DCP

The DCP is the primary documentation for use by the DSARC in arriving at the milestone recommendation to the SECDEF. It summarizes the program and acquisition strategy, the alternatives considered, and the issues. The DCP is limited to ten pages, including annexes. The basic document is divided into five parts as follows:

Part I: Statement from the Secretary of Defense of both the direction the Army needs to continue system development and any deviation from DOD policy such development requires.

Part II: Description of the overall program.

Part III: Revalidation of the need.

Part IV: Summary of the alternatives considered and the rationale for recommending the preferred alternative.

Part V: Summary of the program acquisition strategy with emphasis on the next phase.

Part VI: Identification and assessment of the issues which will affect the SECDEF's milestone decision.

The DCP also contains the following three annexes:

Annex A: Goals and thresholds. This annex reflects the goals and thresholds approved by the SECDEF as stated in the SDDM following the preceding Milestone review. It also reflects the Army's current estimates of requirements which address supportability and manpower. This area includes the manning level for both operators and maintenance personnel.

Annex B: Resources--Preferred Alternative. This annex denotes the resources (costs in dollars only required to support the Army's preferred alternative including the Operating and Maintenance (O&M) and Military Personnel (MILPER) costs. In order to determine the O&M and MILPER costs, the manpower required to operate and maintain the system under development must be determined by military identity (e.g., officer, warrant officer, and enlisted) and by the stationing plan (e.g., CONUS, Europe, Korea) as there are O&M costs associated with military stationing.

Annex C: Life Cycle Cost. Reflected in this annex are the life cycle costs for each alternative considered. In order to arrive at the cost data for each alternative, the manpower and training costs must be determined.

b. The IPS

The IPS is a summary of the implementation plan developed by the Army for the entire acquisition cycle with emphasis placed on the phase the program is entering. The IPS accompanies the DCP when the "For Comment DCP" is submitted to DOD and, is updated when the "Final DCP" is submitted. The IPS provides information for a management overview of the entire life cycle of the system and will not exceed 50 pages, including all annexes except Annex B (Resource--Funding Profile).

The format and content of the IPS are contained in DODI 5000.2 (Major System Acquisition Procedures) and Chapters IV through VI this document.

The basic IPS document will normally include some twenty-two topics (see Figure II-6), several of which have manpower, personnel, and training implications, including the following:

(1) The Logistics paragraph requires a summary of the information contained in the Integrated Logistics Support Plan (ILSP).

(2) The Manpower paragraph addresses the system activity level used to compute the manpower requirement, indicates the posture level (e.g. combat surge, sustained combat, or precombat readiness), specifies the available hours per person per month used to compute numbers of people from workload estimates, and contain any critical assumptions that have an impact on the manpower requirements. This paragraph must be consistent with Annex D (Manpower) of the IPS.

(3) The Training paragraph identifies significant differences in the training implications of the alternative systems under considerations and summarizes the plan for attaining and maintaining the required proficiency of the operating and support personnel, on-the-job and unit training, use of simulators, the number of personnel to be trained, and the training costs.

The following five annexes are required to accompany the basic IPS:

Annex A: Resources--Cost Track Summary. This annex reflects the operating and maintenance costs of the manpower (military and civilian) for the life cycle of the system.

Annex B: Resources--Funding Profile. This annex reflects each fiscal year's costs of the system, and the cost data includes manpower.

Annex C: Resources--Summary of System Acquisition Costs. This annex displays the sources of funding in current dollars by the Five Year Defense Plan (FYDP) categories. In order to be consistent with Annexes A and B, the total manpower costs must be included in this Annex.

DECISION COORDINATING PAPER (DCP) AND INTEGRATED PROGRAM SUMMARY (IPS)

DCP (10 PAGES)

PART I—STATEMENT OF DECISION NEEDED FROM DOD
PART II—PROGRAM DESCRIPTION
PART III—REVALIDATION OF NEED
PART IV—SUMMARY OF ALTERNATIVES AND RATIONAL FOR
PREFERRED ALTERNATIVE
PART V—SUMMARY OF ACQUISITION STRATEGY
PART VI—DISCUSSION OF ISSUES

ANNEX A
GOALS AND THRESHOLDS

ANNEX B
RESOURCES—PREFERRED ALTERNATIVE

ANNEX C
LIFE CYCLE COSTS

IPS (10 PAGES EXCLUDING ANNEX B)

SUMMARY OF IMPLEMENTING PLAN
INCLUDES A PARAGRAPH ON MANPOWER AND WORKLOAD DATA

ANNEX A
RESOURCES—COST TRACK SUMMARY

ANNEX B
RESOURCES—FUNDING PROFILE

ANNEX C
RESOURCES—SUMMARY OF SYSTEM
ACQUISITION COSTS

ANNEX D
MANPOWER

ANNEX E
LOGISTICS

Figure II-5
Decision Coordinating Paper (DCP) And Integrated Program Summary (IPS)

Annex D: Manpower. This annex numerically displays the manpower estimate in support of the program system. It is limited to one page with the following three sections:

Section 1: This section contains the current manpower estimate for force structure and includes a display of the unit type, program alternative, reference system, number of units, active military, reserve components, and "others" category. This section is not required for Milestone I review.

Section 2: This section contains the contractor support and depot workload display.

Section 3: This section displays the net change in total force manpower associated with the proposed system deployment.

Annex E: Logistics

3. Milestone Reference File (MRF).

The MRF is a working file that provides the back-up data referenced by the Army in the DCP and IPS at each milestone review. When the Army submits the "Final DCP" and the IPS Update to the DAE, the back-up data in the Milestone Reference File (MRF) will accompany these documents. The DAE maintains the MRF in a location and makes the file available to any DOD staff member requiring more detailed information than that contained in the DCP or IPS. The DAE maintains the file until SDDM is issued.

H. DEPARTMENT OF THE ARMY IMPLEMENTATION

The Department of the Army has developed a detailed set of regulations outlining procedures to integrate manpower, personnel, and training considerations into the Army Materiel Acquisition Cycle. These procedures and the accompanying documentation requirements are described in detail in Chapter III through VII of this report. These chapters describe the MPT information flow for each of the four phases of the Department of Defense Major System Acquisition Process and the documentation requirements for each milestone review. Figure II-7 displays the information and documentation flow for all four phases and milestones of the Major System Acquisition Process as they are described individually in Chapters III through VII.

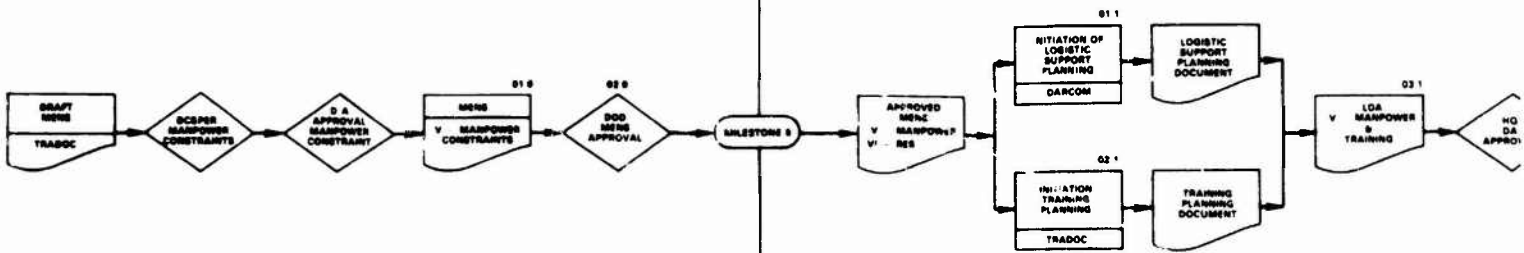
IPS TOPICS FOR INCLUSION IN BASIC DOCUMENT

1. Program History
2. Program Alternatives
3. Cost Effectiveness Analysis
4. Threat Assessment
5. System Vulnerability
6. Organizational and Operational Concept
7. Overview of Acquisition Strategy
8. Technology Assessment
9. Contracting
10. Manufacturing and Production
11. Data Management
12. Test and Evaluation
13. Cost
14. Logistics
15. Reliability and Maintainability
16. Quality
17. Manpower
18. Training
19. Facilities
20. Energy, Environment, and Safety
21. Computer Resources
22. International Programs

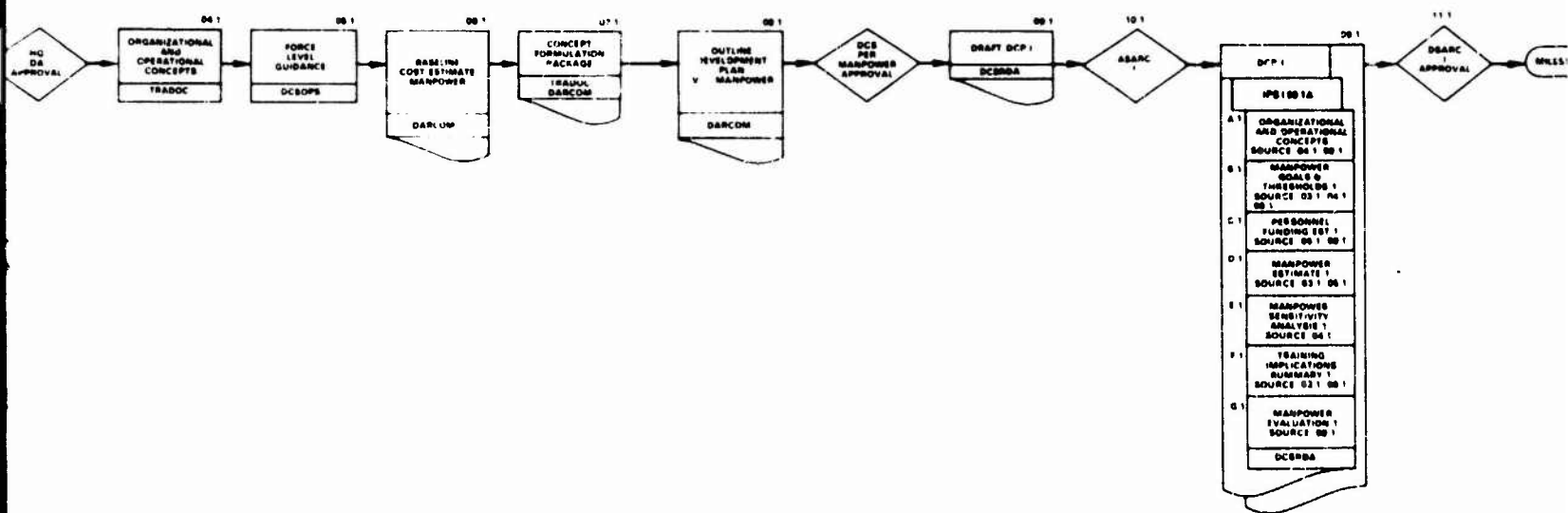
Figure II-6
IPS Topics For Inclusion In Basic Document

MISSION AREA ANALYSIS PHASE

0



CONCEPT EXPLORATION PHASE



2

SYSTEM ACQUISITION PROCESS

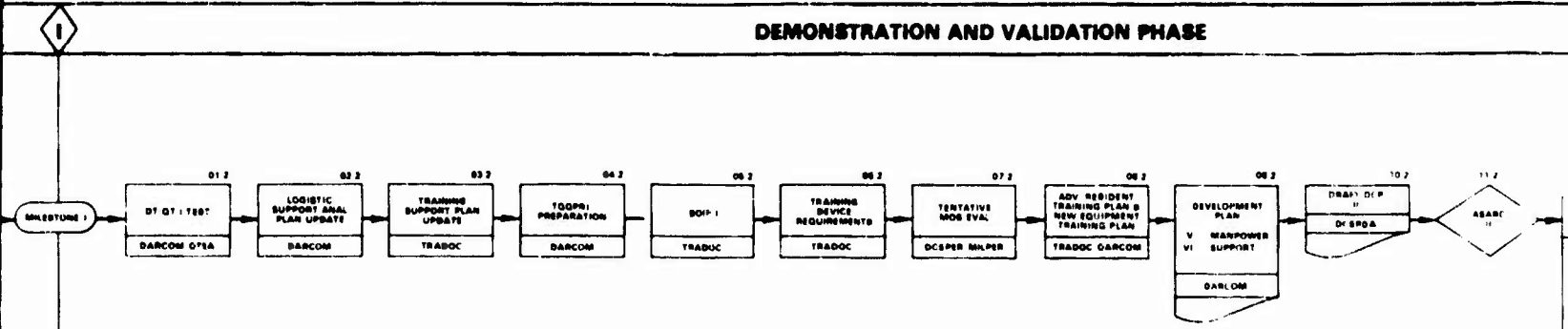
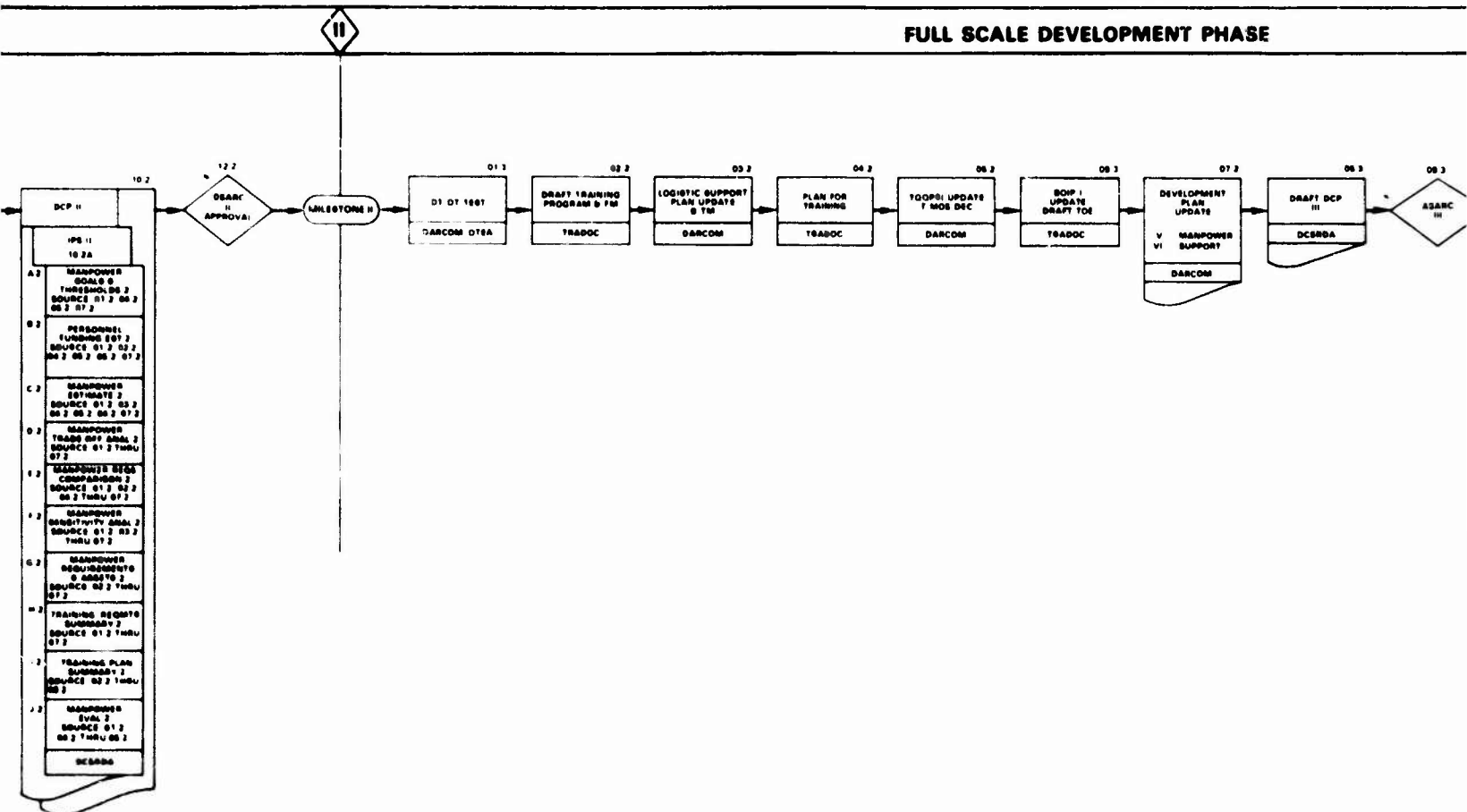


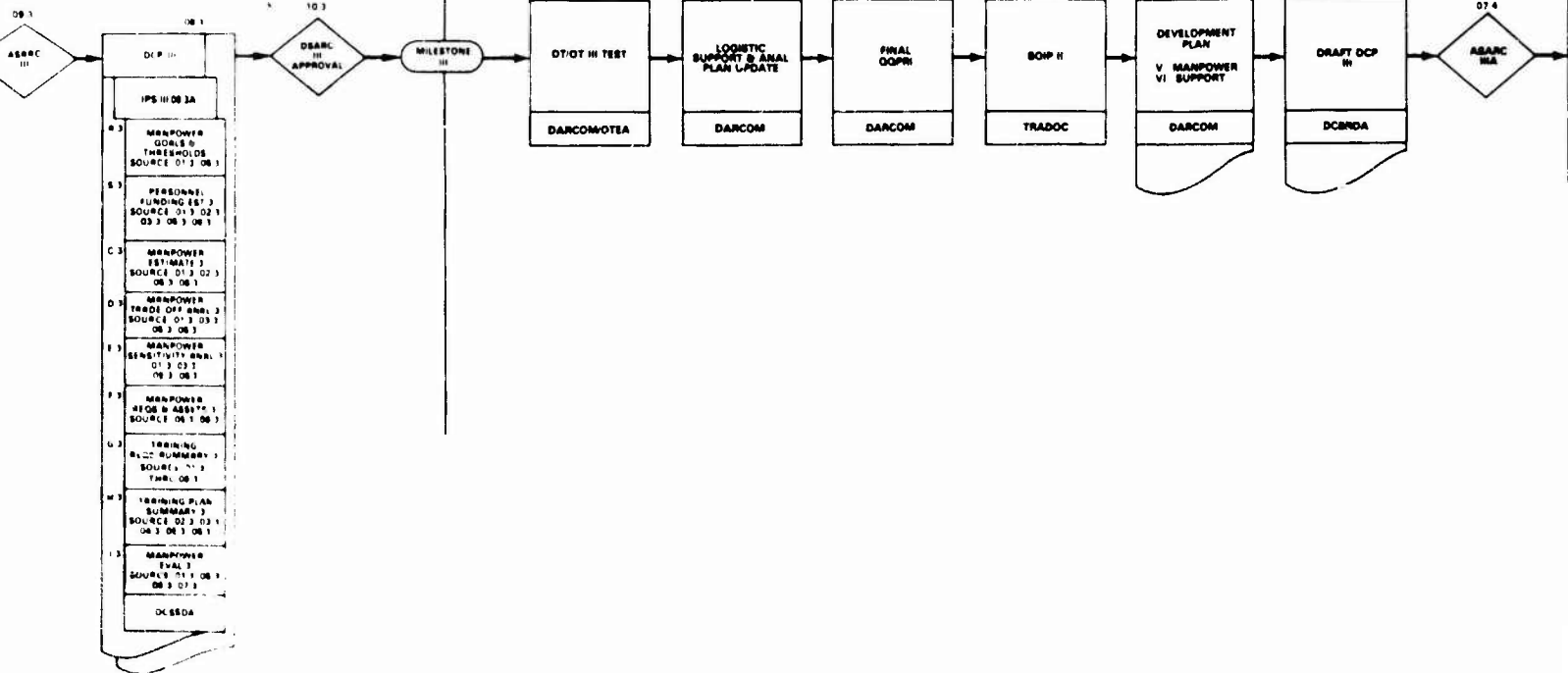
Figure II-7
Major System Acquisition Process

3

FULL SCALE DEVELOPMENT PHASE



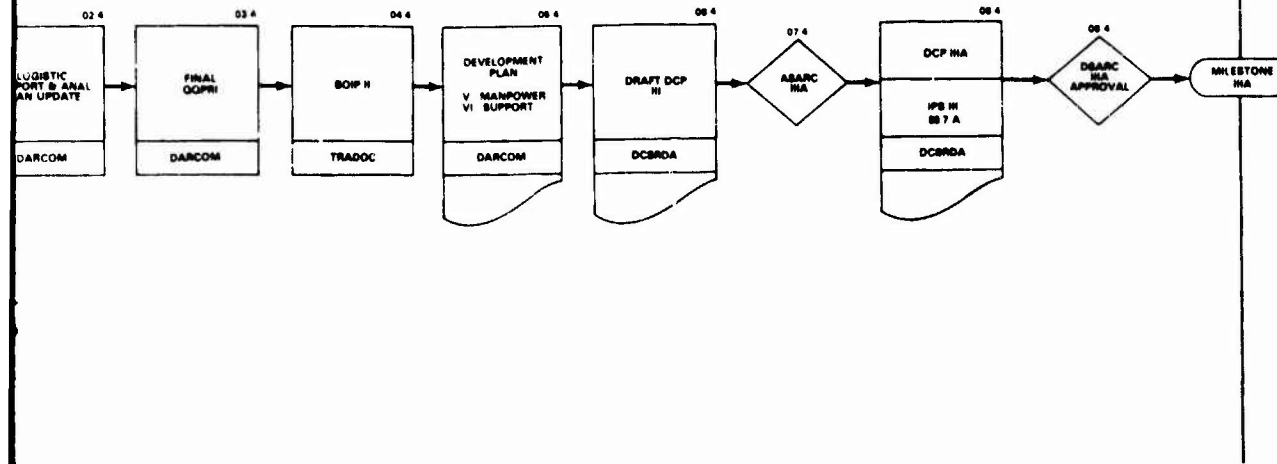
PRODUCTION AND DEPLOYMENT PHASE



51

PRODUCTION AND DEPLOYMENT PHASE

IIA



6

CHAPTER III
MISSION AREA ANALYSIS

A. INTRODUCTION

The purpose of this chapter is to describe those key actions that occur prior to initiating development of a new major system. Although not labeled as such by either DOD or Army regulations, this report designates this plan as the Mission Area Analysis Phase for clarity.

The Services perform continuing analysis of mission areas. The Mission Area Analysis Phase consists of identification and definition through analysis of current and projected mission needs, capabilities, resources, and technologies available. When a need is identified, it will be stated in terms of a task to be performed. A Mission Element Need Statement (MENS) is prepared, coordinated, and staffed with appropriate agencies within the Army and DOD. Approval of the MENS by the Secretary of Defense ends the Mission Area Analysis Phase for that specific need and constitutes authority to proceed into Phase 0, "Concept Exploration."

This chapter describes key events within this phase and specific requirements pertaining to manpower. Figure III-1 provides a graphic display of events within the phase. Detailed information concerning each event is contained in subsequent events and information requirements descriptions. A summary of events and information requirements is found in Tables III-1 and III-2.

TABLE III-1
 SYSTEM ACQUISITION PROCESS
 MANPOWER-PERSONNEL-TRAINING
 EVENTS FOR MILESTONE 0

EVENTS	TITLE	AGENCY RESPONSIBLE FOR SUBMISSION	APPROVAL AUTHORITY	REFERENCES
01.0	Development of Mission Element Need Statement (MENS)	Combat Developer (TRADOC)	HQDA-DCSOPS	AR 71-9 DODI 5000.2
02.0	MENS Approval/ Milestone 0	DCSOPS	OSI	AR 71-9 DODI 5000.2

TABLE III-2
 SYSTEM ACQUISITION PROCESS
 MANPOWER-PERSONNEL-TRAINING
 INFORMATION REQUIREMENT FOR MILESTONE 0

EVENTS	TITLE	REFERENCES
A.0	Manpower Constraints	AR 71-9 DODI 5000.2

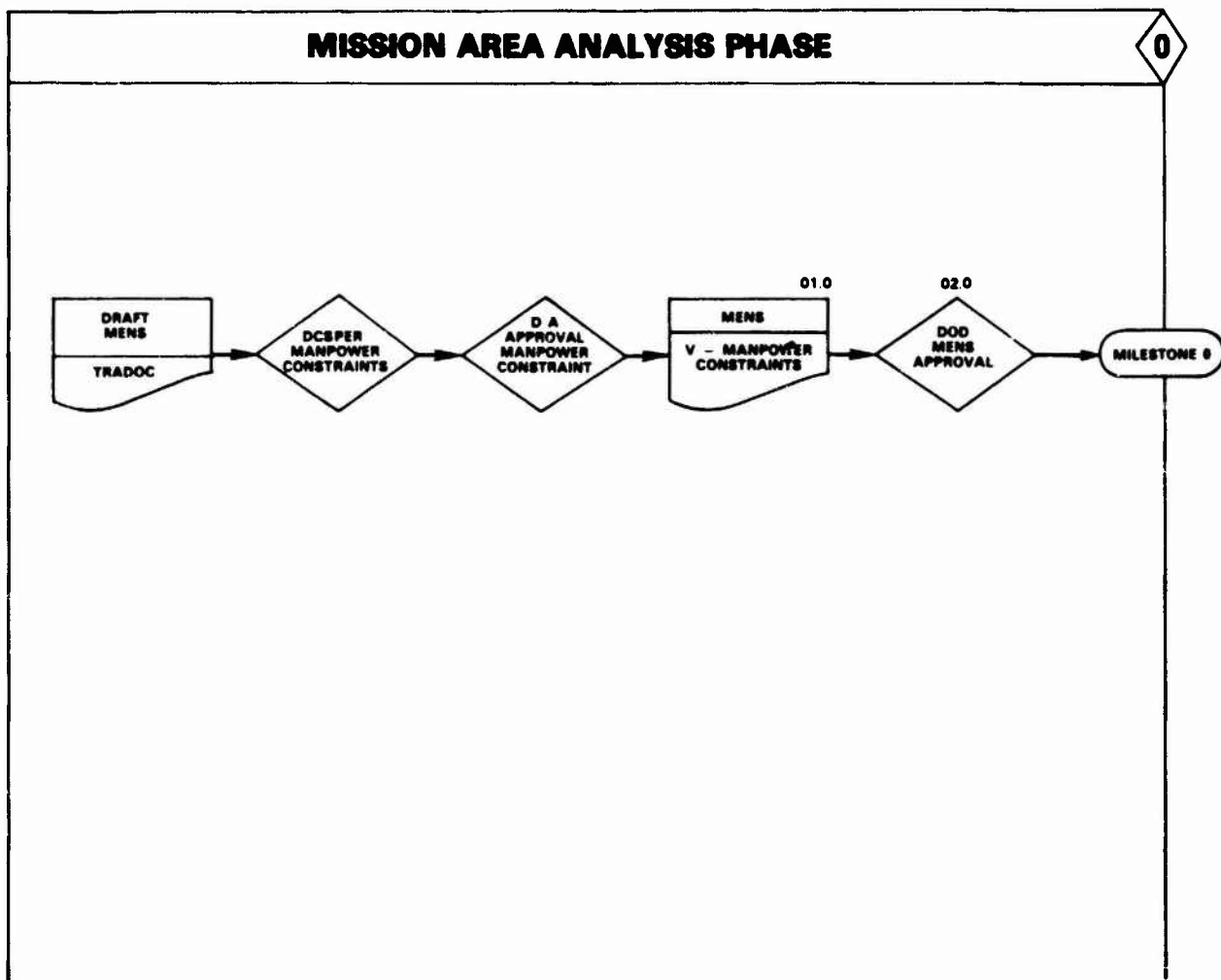


Figure III-1
Mission Area Analysis Phase

B. EVENT 01.0: DEVELOPMENT OF MISSION ELEMENT NEED STATEMENT (MENS)

1. References

- a. DODI 5000.2 Major System Acquisition Procedures, dated 19 Mar. 1980
- b. AR 71-9 Materiel Objectives and Requirements, Final Draft, 15 April 1979

2. General Description and Content

A MENS is a requirement document for major systems only. It is used to identify and support the need for a new or improved mission capability. The mission need may be the result of a projected deficiency or obsolescence in existing systems, a change in threat, or an opportunity to reduce operating cost. The purpose of the MENS is to justify the initiation of a new major system acquisition at Milestone 0 in the Acquisition Cycle and to support a force structure associated with a new major system acquisition.

The MENS is developed in coordination with the Materiel Developer by the Combat Developer after an analysis of mission areas in order to identify those elements for which an existing or projected capability is deficient. Figure III-2 provides a sample MENS Format.

3. Information Flow

- a. TRADOC, the Combat Developer, in coordination with DARCOM, the Materiel Developer, submits a MENS to the DCSOPS, DA.
- b. DCSOPS has general staff responsibility to develop the DA decision for approval or disapproval.
- c. DA staff coordination is obtained on the MENS by DCSOPS.
- d. DCSPER, DA should comment on Sections: D, Assessment of Need; E, Constraints; and F, Resources and Schedule, of the MENS.
- e. After DA staff approval, the MENS is coordinated by DCSOPS with the Army Secretariat.
- f. The Deputy Under Secretary of the Army (Operations Research) (DUSA(OR)) then forwards the MENS to the Secretary of Defense (SECDEF).
- g. SECDEF approval of the MENS authorizes concept exploration and identification of alternative systems concepts. This approval also permits programming of funds.
- h. DCSOPS announces approval of the MENS, and in coordination with DCSRDA determines the need for a Special Task Force (STF), Special Study Group (SSG), a Steering Group, or a Study Advisory Group (SAG). The purpose of

these groups is to analyze the stated need, ensure inclusion of all alternatives in this analysis, monitor experimentation, or undertake other tasks that may require the concentration of special expertise for a short duration.

i. DCSOPS lists the approved MENS in the next revision of the Catalog of Approved Requirement Documents (CARDS).

j. DCSRDA provides funding guidance for the exploration of the alternative systems concepts and plans for the designation of a Project Manager(PM) at Milestone I.

k. TRADOC appoints a TRADOC System Manager (TSM) for project coordination.

l. TRADOC reproduces the approved MENS and makes appropriate distribution to major U.S. Army Commands, other Services, and U.S. industry.

m. TRADOC also prepares an initial Cost and Operational Effectiveness Analysis (COEA), although cost and performance data is not firm.

Figure III-3 provides the MENS Information Flow Diagram.

NOTE: Paragraphs 3.k, l, and m actually occur after MENS approval, but are shown here for clarity.

MISSION ELEMENT NEED STATEMENT OUTLINE

A. MISSION

1. Mission Areas. Identify the mission area(s) addressed in this MENS. (A need can be common to more than one mission area. When this is the case, the multiple mission areas should be identified.)

2. Mission Element Need. Briefly describe the nature of the need in terms of mission capabilities required, not the characteristics of a hardware or software system.

B. THREAT OR BASIS FOR NEED

Summarize the basis for the need in terms of an anticipated change in the projected threat or in terms of an exploitable technology. When the need is based on a threat change, assess the projected threat over the period of time for which a capability is required. Highlight projected enemy force level and composition trends, system capabilities, or technological developments that define the quantity or quality of the forecast threat. Include comments by the Defense Intelligence Agency and provide specific references from which the threat description is derived. Quantify the threat in numbers and capability. When the need is based on exploitation of developing technology, describe the benefits to mission performance.

C. EXISTING AND PLANNED CAPABILITIES TO ACCOMPLISH THIS MISSION

Briefly summarize the existing and planned DoD or Allied capabilities to accomplish the mission. This must not be a narrow, one-Service view when looking across multi-service or overlapping mission areas such as air defense. Reference existing documentation such as force structure documents.

D. ASSESSMENT OF NEED

The most important part of the MENS is the evaluation of the ability of current and planned capabilities to cope with the projected threat. Base the evaluation on one or more of the following factors:

1. Deficiency in the existing capability (e.g., excessive manpower, logistic support requirements, or ownership costs; inadequate system readiness or mission performance).
2. Exploitable technological opportunity.
3. Force size or physical obsolescence of equipment.
4. Vulnerability of existing systems.

Figure I11-2
Mission Element Need Statement Outline
(Wording reproduced exactly from document in DODI 5000.2)

E. CONSTRAINTS

Identify key boundary conditions for satisfying the need, such as:

1. Timing of need.
2. Relative priority within the mission area.
3. The magnitude of resources the DoD Component is willing to commit to satisfy the need identified. This resource estimate is for initial reconciliation of resources and needs. It is not to be considered as a program cost goal or threshold.
4. Logistics, safety, and manpower considerations.
5. Standardization/interoperability with NATO, as well as among the DoD Components.

F. RESOURCE AND SCHEDULE TO MEET MILESTONE I

Identify an approximate schedule and an estimate of resources to be programmed along with the approach proposed for developing alternative concepts for presentation to the Secretary of Defense at Milestone I.

Figure III-2
Mission Element Need Statement Outline
(Continued)

MENS INFORMATION FLOW

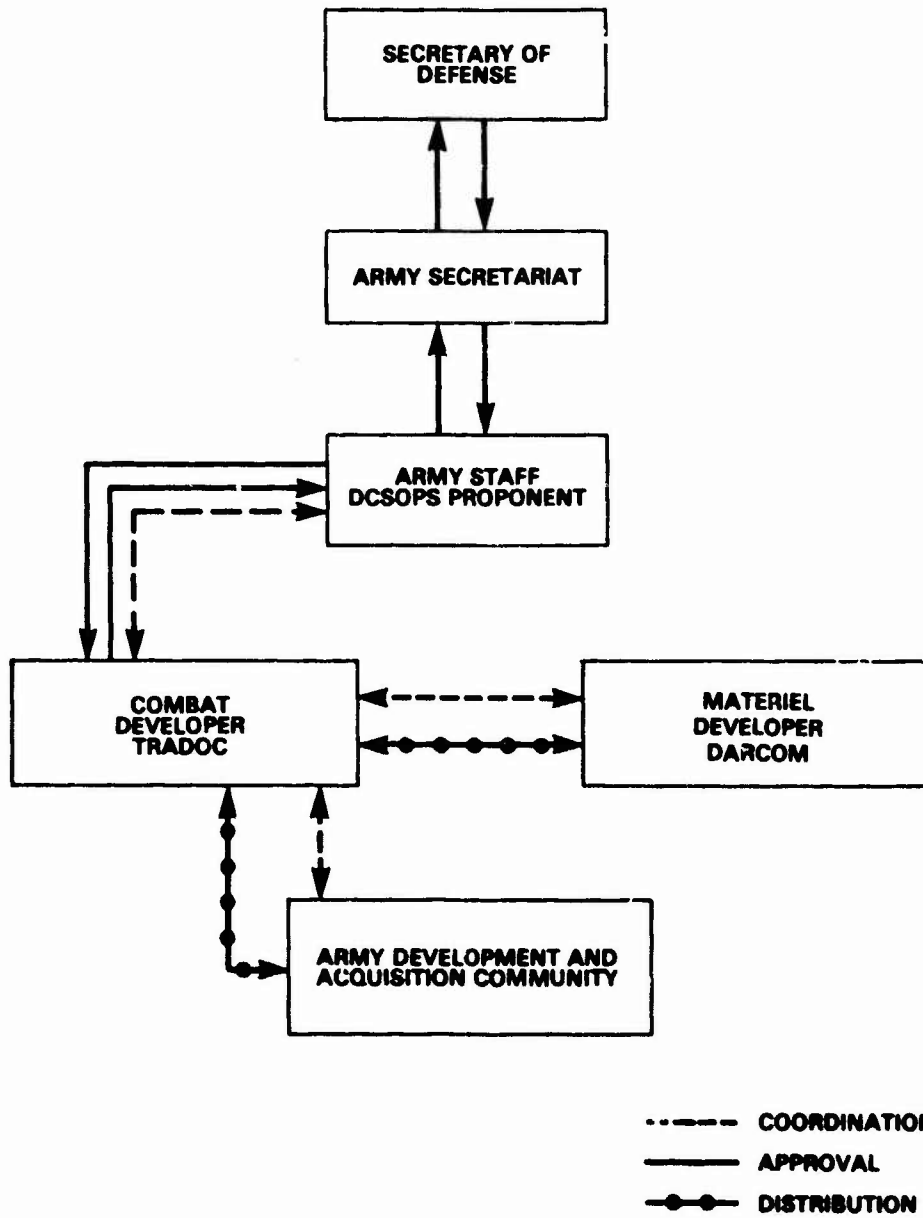


Figure III-3
MENS Information Flow Diagram

C. EVENT 02.0: MENS APPROVAL/MILESTONE 0

1. References

- a. DODI 5000.2 Major System Acquisition Procedures, dated 19 Mar. 1980
- b. AR 71-9 Materiel Objectives and Requirements, Final Draft, 15 April 1979

2. General Description and Content

Each major system acquisition program requires a MENS approved by the Secretary of Defense. The Army prepares a MENS to document major deficiencies in its ability to meet mission requirements. SECDEF approval authorizes concept exploration and identification of alternative system concepts. This approval permits the programming of funds and allows contract award for exploration of alternative system concepts. Approval of the MENS constitutes approval of Milestone 0.

3. Information Flow

DCSOPS coordinates the MENS within HQDA and the Army Secretariat. It is then staffed with OSD by the DUSA (OR). When approved, the MENS is returned to DCSOPS for action as described in Event 01.0 Development of Mission Element Need Statement. Figure III-3 depicts the MENS information flow.

D. INFORMATION REQUIREMENT A.0: MANPOWER CONSTRAINTS

1. References

- a. DODI 5000.2 Major System Acquisition Procedures, dated 19 Mar. 1980
- b. AR 71-9 Materiel Objectives and Requirements, Final Draft, 15 April 1979

2. General Description and Content

Each major system acquisition requires a MENS. Sections E.3 and E.4 of the MENS (See Figure III-2, "Constraints" Section) require that the manpower and resources constraints of the proposed systems be addressed, including manpower constraints related to the mission element, the mission area, or force level limitations.

New systems shall be designed to minimize both the numbers and skill requirements of people needed for operation and support, consistent with system objectives. Manpower and personnel factors, including numbers and occupation and skill levels required, are included as constraints in system design. These considerations start with the initial concept studies and are refined as the system progresses.

3. Information Flow

TRADOC in coordination with DARCOM develops the MENS. This document is then forwarded to DCSOPS, DA for Army staffing and coordination prior to forwarding to the OSD. Incident to DA staffing the DCSPER should review the broad manpower implications of the proposed system considering the projected life of the system, the cost, and the availability of manpower.

CHAPTER IV
CONCEPT EXPLORATION

A. INTRODUCTION

Approval of the MENS by the Secretary of Defense authorizes the Army to proceed into Phase 0, Concept Exploration. At this time the Army determines the need for a Special Study Group, Special Task Force, Steering Group, or Study Advisory Group to assist in the effort for a short duration. A Project Manager could be assigned; however, DCSRDA normally makes plans to assign a Project Manager at Milestone I.

This chapter provides a description of the key events during the Concept Exploration Phase in the LCSMM process. It further incorporates DOD requirements as related to manpower, personnel, and training. Figure IV-1 is a graphic display containing the key events of the LCSMM process during this phase. Events/documents which contain specific manpower, personnel, and training information are keyed to the DOD information requirement category to display sources of information. A summary of Events and Information Requirements is found in Tables IV-1 and IV-2, respectively.

TABLE IV-1
 SYSTEM ACQUISITION PROCESS
 MANPOWER-PERSONNEL-TRAINING
 EVENTS FOR MILESTONE I

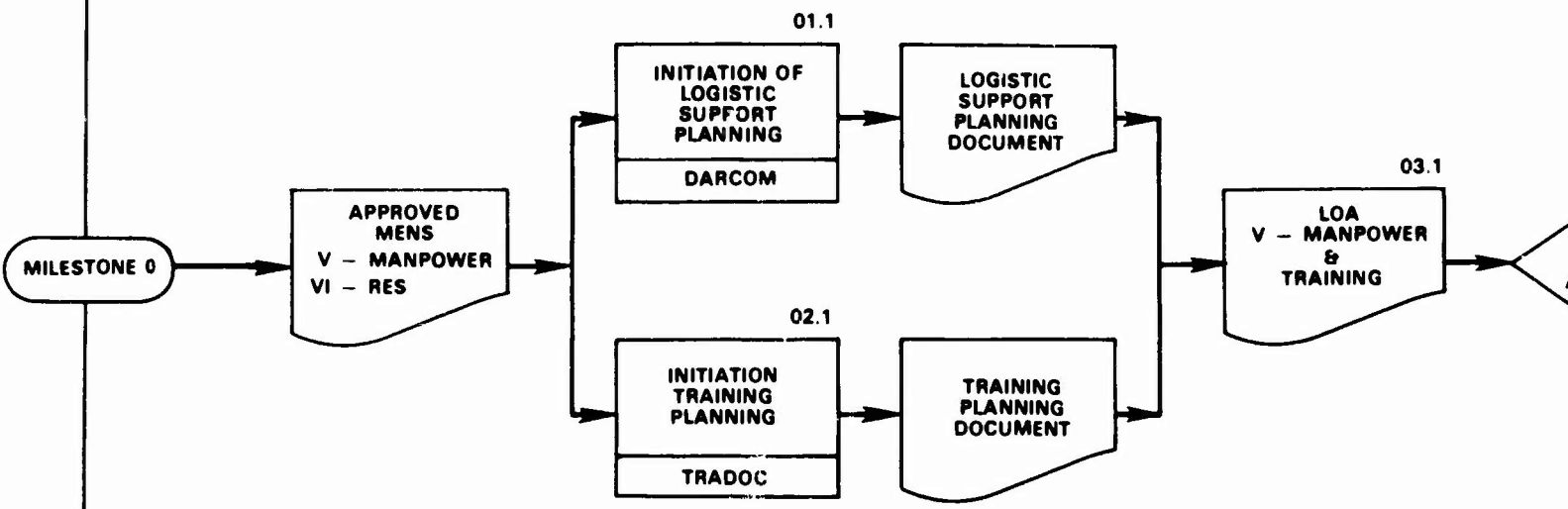
EVENTS	TITLE	AGENCY RESPONSIBLE FOR SUBMISSION	APPROVAL AUTHORITY	REFERENCES
01.1	Initiation of Logistic Support Planning	Materiel Developer (DARCOM)	Materiel Developer (DARCOM)	AR 71-9, AR 700-127
02.1	Initiation of Training Planning	Trainer (TRADOC)	Trainer (TRADOC)	AR 350-50, AR 611-1, AR 602-1, DA Pam 11-25
03.1	Preparation of Letter of Agreement	Combat Developer (in coordination with Materiel Developer)	HQDA-DCSOPS if required	AR 70-1, AR 70-27, AR 602-1 AR 1000-01
04.1	Inclusion of Organizational and Operational Concepts	Combat & Materiel Developers	HQDA-DCSOPS	AR 1-1, AR 70-1, AR 71-2, AR 71-9, AR 570-2, AR 611-1, DA Pam 11-25
05.1	Development of Force Level Guidance	HQDA-DCSOPS	HQDA-DCSOPS	AR 1-1, AR 71-1, AR 71-9
06.1	Development of BCE	Materiel Developer	HQDA-COA	AR 11-18, AR 70-1
07.1	Preparation of CFP	Materiel and Combat Developers	HQDA-DCSRDA	AR 15-14, AR 70-27, AR 71-1, AR 1000-1, AR 71-9, DA Pam 11-25
08.1	Preparation of ODP	Materiel Developer	HQDA-DCSRDA	AR 70-27, DA Pam 11-25
09.1	Preparation of Draft DCP I	HQDA-DCSRDA	HQDA-DCSRDA	AR 15-14, DODD 5000.1, DODI 5000.2

EVENTS	TITLE	AGENCY RESPONSIBLE FOR SUBMISSION	APPROVAL AUTHORITY	REFERENCES
09-1A	Development of IPS I	HQDA-DCSRDA	HQDA-DCSRDA	DODI 5000.2
09.1B	Development of MRF	HQDA-DCSRDA		DODI 5000.2
10.1	Review by ASARC I	HQDA-DCSRDA	SEC Army	AR 15-14, DA Pam 11-25
11.1	Review by DSARC I	Defense Acquisition Executive (DAE)	SECDEF	DODD 5000.1 DODI 5000.2

TABLE IV-2
 SYSTEM ACQUISITION PROCESS
 MANPOWER-PERSONNEL-TRAINING
 INFORMATION REQUIREMENTS FOR DSARC I

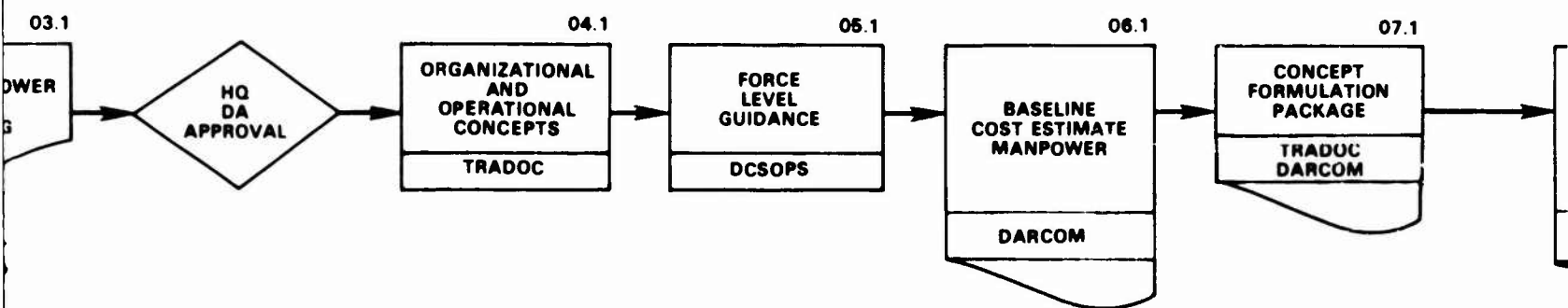
REQUIREMENT	TITLE	REFERENCES
A.1	Organizational and Operational Concept	DODI 5000.2, AR 70-27, AR 70-41, AR 71-9, DA Pam 11-25
B.1	Manpower Goals and Thresholds 1	DOD 5000.2, AR 70-1, AR 70-27
C.1	Personnel Funding Estimate 1	DODI 5000.2, AR 11-18, AR 70-1
D.1	Manpower Estimate 1	DODI 5000.2, AR 70-1
E.1	Manpower Sensitivity Analysis 1	DODI 5000.2
F.1	Training Implications Summary 1	DODI 5000.2
G.1	Manpower Evaluation 1	DODI 5000.2

0



EVENT 1		02.1	04.1	06.1	08.1	09.1
INFORMATION REQUIREMENT	ARMY SYSTEM ACQUISITION PROCESS DOCUMENT	LETTER OF AGREEMENT	ORGANIZATIONAL & OPERATIONAL CONCEPTS GUIDANCE	FORCE LEVEL GUIDANCE	BASE LINE COST ESTIMATE	OUTLINE DEVELOPMENT PLAN
	DSARC 1 INFORMATION REQUIREMENTS ORGANIZATIONAL					
A.1	ORGANIZATIONAL OPERATIONAL CONCEPTS		X	X		
B.1	MANPOWER GOALS & THRESHOLDS 1	X	X	X		
C.1	PERSONNEL FUNDING ESTIMATE 1			X	X	
D.1	MANPOWER ESTIMATE 1	X		X		
E.1	MANPOWER SENSITIVITY ANALYSIS 1		X			
F.1	TRAINING IMPLICATIONS SUMMARY 1	X				X
G.1	MANPOWER EVALUATION 1					X

CONCEPT EXPLORATION PHASE



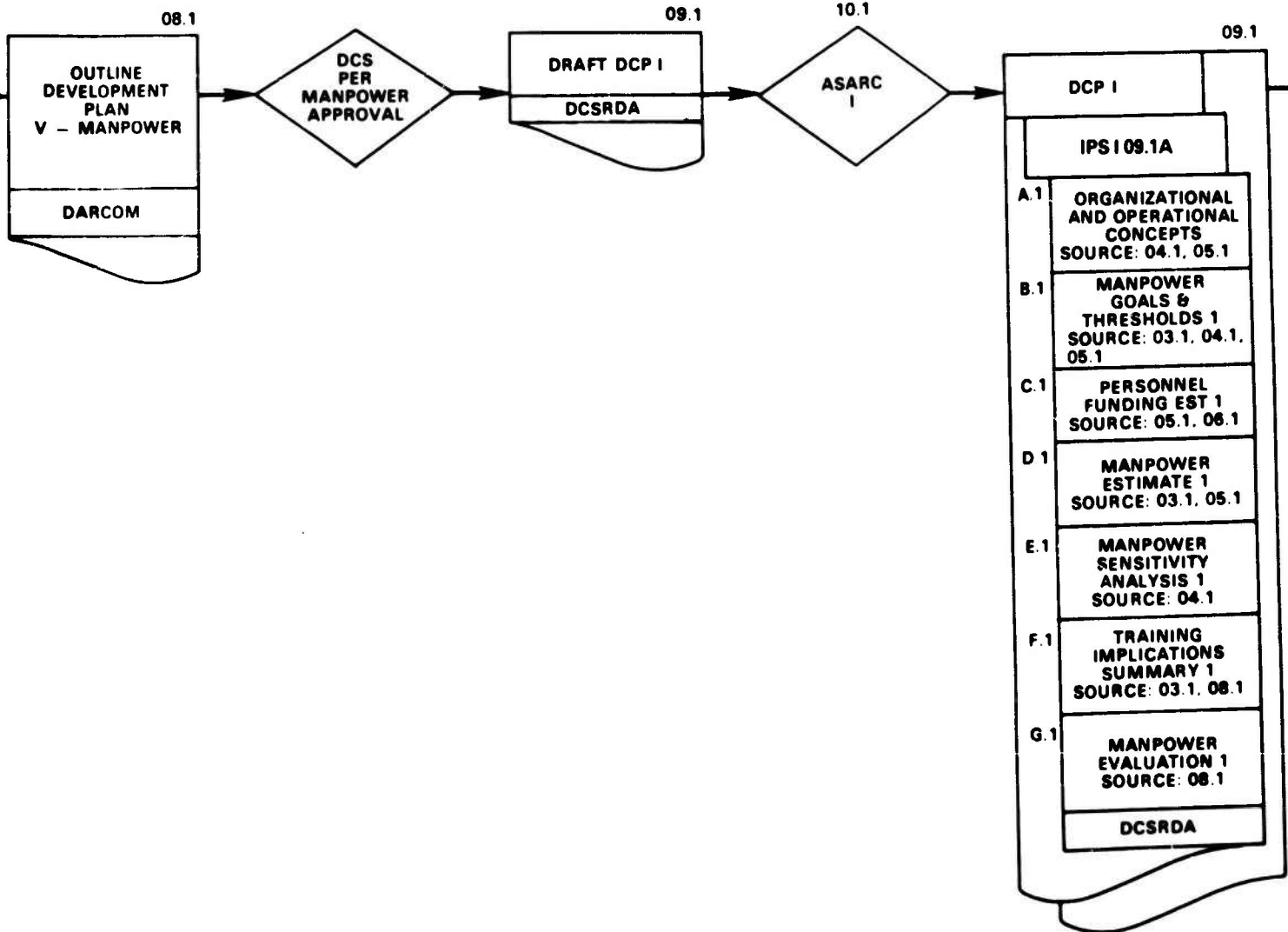
	06.1	06.1	06.1
BASE LINE COST ESTIMATE			
OUTLINE DEVELOPMENT PLAN			
X			
	X		
	X		

THE MATRIX AT THE LEFT IS DESIGNED TO IDENTIFY EXISTING DOCUMENTS WITHIN THE LCSMM PROCESS WHICH SHOULD INCLUDE MPT INFORMATION REQUIRED BY DOD AT DSARC. THE ABOVE FLOW DIAGRAM DEPICTS THE MPT INFORMATION PLANS AND DOCUMENTS (EVENTS) AND DECISION POINTS IN THE CONCEPT EXPLORATION PHASE OF THE LCSMM. THE COLUMN HEADINGS OF THE MATRIX AT THE LEFT DISPLAY THE MPT EVENTS (CORRESPONDING TO THE FLOW DIAGRAM). THESE EVENTS CAN PROVIDE INPUT TO THE IPS INFORMATION REQUIRED BY DOD. IPS INFORMATION REQUIREMENTS ARE DISPLAYED AT THE LEFT OF THE MATRIX; EVENTS AND INFORMATION REQUIREMENT RELATIONSHIPS ARE IDENTIFIED.

EXAMPLE: LOA (EVENT 03.1) SHOULD PROVIDE MPT INFORMATION APPLICABLE TO PREPARATION OF THE MANPOWER GOALS AND THRESHOLDS 1 (REQUIREMENT D.1), AND TRAINING IMPLICATIONS SUMMARY (REQUIREMENT F.1) FOR THE IPS.

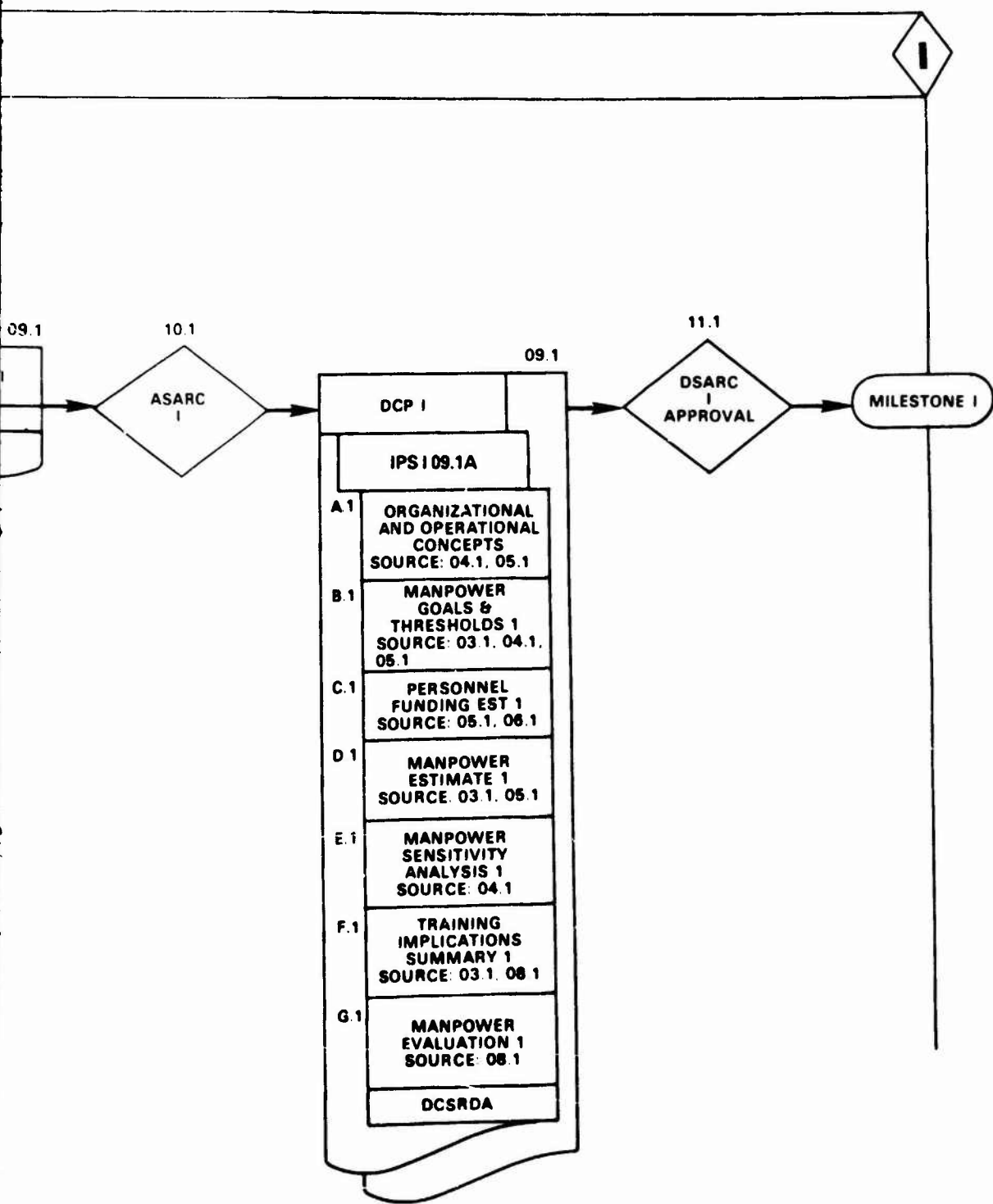
Figure IV-1
Concept Exploration Phase

2



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B. EVENT 01.1: INITIATION OF LOGISTIC SUPPORT PLANNING

1. References

- a. AR 71-9 Materiel Objectives and Requirements, Final Draft 15 April 1979
- b. AR 700-127 Integrated Logistic Support, dated 11 April 1975

2. General Description and Concept

Investigation of the logistic support planning requirements is initiated in the concept exploration phase and includes the collection and analysis of equipment and maintenance work force performance data from deployed systems. Emphasis is placed on identifying potential designs influencing supportability problems; defining current and proposed changes in logistic doctrine, concepts, organization, and procedures (i.e., the anticipated logistic environment); identifying alternative support concepts (contract support); and establishing recommended support parameters, life cycle support cost goals, and limits on the requirement for logistic resources. All of the above impact to some extent on manpower and personnel requirements. To further the logistic support planning, the Army has developed the Integrated Logistic Support (ILS) concept. This management process considers logistic support considerations and maintenance techniques, (e.g., Reliability Centered Maintenance (RCM)), which are integrated into the design effort, with the objective of obtaining reliable, maintainable, and supportable equipment at the least cost of ownership throughout the life cycle. Emphasis is on identifying potential design supportability problems, and identifying the system's limitations in meeting the logistic resource requirements for support, test equipment, and skilled personnel (including the training programs and training devices needed to develop these skills). The documented results are entered, as appropriate, in the Letter of Agreement (LOA), the DCP, the Outline Development Plan (ODP), and the Concept Formulation Package (CFP). These documents are fully described later in this chapter. They are used at DOD and DA to manage the materiel acquisition process.

3. Information Flow

The Materiel Developer is responsible for the preparation of the Logistic Support Planning document in coordination with the Combat Developer and Trainer (TRADOC) and the Logistician (DARCOM and DCSLOG, DA). The Logistic Support Planning document is used by the Materiel Developer and DCSRDA as feeder information in the development of the LOA DCP, ODP, and CFP.

C. EVENT 02.1: INITIATION OF TRAINING PLANNING

1. References

- a. AR 350-35 New Equipment Training and Introduction, dated 15 December 1979
- b. AR 602-1 Human Factors Engineering Program, dated 1 June 1976
- c. AR 611-1 Military Occupational Classification Structure Development and Implementation, dated 27 April 1976
- d. DA Pam 11-25 Life Cycle System Management Model for Army Systems dated 21 May 1975

2. General Description and Concept

Training planning commences early in the conceptual phase and continues throughout the materiel acquisition process. The training planning action is oriented toward the establishment of training considerations which will influence the design of equipment and identify the training implications that have an impact on materiel readiness, capability, and overall cost. Training planning affects the materiel system in two ways: First, training considerations and human factors can influence design; and secondly, application of the training strategy to the overall training program insures that properly trained personnel will be ready when the materiel system is deployed. Such planning shall consider trade-offs conducted between equipment design, formal training, on-the-job training, and unit training, and should develop a cost effective plan for attaining and maintaining the personnel proficiency needed to meet mission objectives. The training planning includes all methods, media devices, Skill Qualification Tests (SQT), training extension course, and simulation required for institutions and units. The results of this planning are incorporated in the ODP and the DCP for use at DA and DOD.

3. Information Flow

TRADOC, in coordination with the Materiel Developer, Combat Developer (if other than TRADOC), and the Logistician, conducts this planning. Planning information can be used as feeder information in the development of the LOA, the DCP, the ODP, and the CFP. These documents are discussed fully later in this chapter.

D. EVENT 03.1: PREPARATION OF LETTER OF AGREEMENT (LOA)

1. References

- a. AR 70-1 Army Research, Development, and Acquisition dated 1 May 1975
- b. AR 70-27 Outline Development Plan/Development Plan/Army Program Memorandum/Defense Program Memorandum/Decision Coordinating Paper, dated 17 March 1975
- c. AR 602-1 Human Factors Engineering Program, dated 1 June 1976
- d. AR 1000-1 Basic Policies For Systems Acquisition dated 1 April 1978

2. General Description and Content

A LOA is a document prepared and authenticated jointly by the Combat Developer and the Materiel Developer, who outline the basic agreements for further investigation of a potential materiel system.

The purpose of the LOA is to ensure agreement between the Combat Developer and the Materiel Developer on the nature and characteristics of the proposed system; and to define the associated operational, technical, personnel, training, and logistics support concepts.

Format and content required in a LOA is found in Figure IV-2. Paragraph 5 of the format (System Development) provides for training and manpower, including training and manpower constraints related to mission area or force level. The input data for this requirement is obtained from the information developed in the Logistic Support Planning Document (Event 01.1) and the Training Planning Document (Event 02.1).

3. Information Flow

The LOA, prepared by the Combat Developer in coordination with the Materiel Developer, in which projected advanced development costs exceed \$15 million will be forwarded by the Combat Developer to DCSOPS DA for approval; all other LOA's will be approved and signed at Materiel and Combat Developer levels and forwarded to DCSOPS, DA (mail symbols DAMO-RQ) for information. The LOA submitted to DCSOPS, DA is processed as follows:

- a. DCSOPS has general staff responsibility to develop the DA decision for approval or disapproval.
- b. DCSRDA (mail symbols DAMA-WSM) determines the need to appoint a Project Manager/Designee and provides funding guidance for the exploration of alternate systems concepts.

- c. DCSPER (mail symbols DAPE-MBA) determines acceptability of estimated manpower requirements and force structure implication of the proposed system.

FORMAT FOR LETTER OF AGREEMENT (LOA)

LOA submitted to DCSOPS will be in the format provided below. Information indicated in that format should be provided to the extent such information is available. The LOA should contain the minimum information necessary to adequately describe the system.

1. NEED.

a. A brief description of the threat, in terms of the collection capabilities of the enemy to locate and target the proposed system; then a description of the enemy destructive capabilities to exploit this information. Current systems used to counter the threat, the systems to be replaced, and the timeframe for which the new capability is needed will then be enumerated. Detailed Threat Annex will be attached as Annex C.

b. Catalog of Approved Requirement Documents (CARDS) reference number: (To be assigned by DA ODCSOPS).

2. OPERATIONAL CONCEPT.

a. A description of the role of the system on the battlefield and its relationship to other systems, multilateral developments and emerging US tactics.

b. The mission profile will be attached as Annex A.

3. SYSTEM DESCRIPTION.

a. A statement indicating the principal characteristics expected to be in the system, to include how the system will defeat the threat, what counter-countermeasures will be considered, what the system looks like and those technological alternatives that have a reasonable chance of developmental success. Included, if applicable, must be requirements and provisions (to include communications) for interoperability; continuity of operations (CONOPS); security; reliability, availability, and maintainability (RAM), standardization, to include commonality for hardware and software to which the system will adhere; nuclear survivability; collective protection equipment; adverse weather/reduced visibility conditions (full ECM, smoke/obscurants, aerosols, rain, fog, haze, dust, etc.).

b. A discussion of other service, NATO/ABCA, or other allied nation interest in the Army development/procurement. Include data on other service or allied developments with a view toward establishing potential for standardization/interoperability, or co-production. Include data on potential for procurement of allied nation items/systems.

Figure IV-2
Format for Letter of Agreement
(Wording reproduced exactly from document in Appendix D, AR 71-9)

4. PROSPECTIVE OPERATIONAL EFFECTIVENESS AND COST. A realistic quantitative estimate of the operational effectiveness to be gained from the new alternatives when compared with the system to be replaced. This paragraph should include a subparagraph which identifies the estimated cost of the new capability. It should also include a subparagraph which identifies the estimated additional manpower requirements or manpower savings of the new capability on a per system, using unit, and total Army basis.

5. SYSTEM DEVELOPMENT. This paragraph is divided into operational, technical, logistical, training, and manpower subparagraphs. Each subparagraph describes the system unique events which the combat developer, materiel developer, logistician, trainer, and administrator must undertake to produce the total system. Include manpower constraints related to mission area or force level. Include commitment to assess alternatives to reduce manpower requirements or to increase productivity.

6. SCHEDULES AND MILESTONES. A listing of the significant events and their times, which will be conducted as a result of the particular LOA.

7. FUNDING. A broad estimate of the Advanced Development (AD), Engineering Development (ED), and Unit Flyaway Costs. The AD and ED costs will be broken down by fiscal year and expressed in constant dollars. This paragraph will also identify the number of prototypes which will be fabricated.

ANNEX A - Operational Mode Summary/Mission Profile - A list of tasks and conditions in terms of frequency and urgency visualized for system employment in military operations. The Mission Profile is logically derived from the Operational Concept and provides the starting point for developing the system characteristics.

ANNEX B - Coordination Annex - List all commands, other services, allied nations and activities with whom the LOA was coordinated, and provide full rationale for nonacceptance of comments, if any.

ANNEX C - Threat Annex - This detailed threat package to include coverage of the total threat that the proposed system is expected to face on the battlefield over its life cycle, to include those threat systems it is designed to counter as well as those threat systems which counter or degrade the proposed system will be specified. This Annex will be classified as required and withdrawn and handled as a separate document to facilitate transmittal, as required.

ANNEX D - Rationale Annex - Supports various characteristics stated in the LOA.

ANNEX E - RAM Annex - Supports the stated RAM characteristics.

NOTE: Only Annexes A&B are required to be forwarded to HQDA.

Figure IV-2
Format for Letter of Agreement
(Continued)

E. EVENT 04.1: INCLUSION OF ORGANIZATIONAL AND OPERATIONAL CONCEPTS

1. References

- a. AR1-1 Planning, Programming, and Budgeting within The Department of The Army, dated 25 May 1976
- b. AR 70-1 Army Research, Development, and Acquisition, dated 1 May 1975
- c. AR 71-2 Basis of Issue Plan, dated 19 April 1976
- d. AR 71-9 Materiel Objectives and Requirements, Final Draft, dated 15 April 1979
- e. AR 570-2 Organization and Equipment Authorization Tables: Personnel, with Changes 1-10, dated 22 July 1969 through 15 Sept. 1978
- f. AR 611-1 Military Occupational Classification Structure Development and Implementation, dated 27 April 1976
- g. DA Pam 11-25 Life Cycle System Management Model For Army Systems, dated 21 May 1975

2. General Description and Content

Possible organizational/operational equipment and personnel trade-offs that would be required by inclusion of the system in the total Army force structure should be identified as early as practicable. The result of these investigations serves as the basis for later preparation of the Tentative Qualitative and Quantitative Personnel Requirements Information (TQQPRI), doctrinal and organizational test support package and the Basis of Issue Plan I (BOIP I).

3. Information Flow

The Combat and Materiel Developers are responsible for the preparation of the organizational and operational concepts statement. Guidance is received from DCSOPS during development of the Force Level Guidance and is used in the final preparation of the Force Level Guidance. The data from this concept is used as feeder information by the Materiel Developer and Combat Developer to develop the TQQPRI and BOIP I.

F. EVENT 05.1: DEVELOPMENT OF FORCE LEVEL GUIDANCE

1. References

- a. AR 1-1 Planning, Programming, and Budgeting within The Department of The Army, dated 25 May 1976
- b. AR 71-1 Army Combat Developments, dated 16 Sept. 1968
- c. AR 71-9 Materiel Objectives and Requirements, Final Draft, 15 April 1979

2. General Description and Content

Force level guidance is developed by a review of the system to determine contemplated use. It provides the concept of operation and mission in support of national security objectives and military strategy. This information is developed by the DA staff and furnished to the major commanders for their information concerning the contemplated system concept and resulting trade-offs that might be required in the force structure.

3. Information Flow

DCSOPS, DA develops the force level guidance in coordination with the Army staff. This information is passed to the Combat Developer and Materiel Developer for incorporation into the Baseline Cost Estimates (BCE) and the Concept Formulation Package (CFP). It is also provided to the major subordinate commanders as information concerning future force structure configuration. The major commanders may provide comments to DCSOPS (DA) for consideration during the Program Objective Memorandum (POM) development (normally in the November to January timeframe).

G. EVENT 06.1: DEVELOPMENT OF BASELINE COST ESTIMATES (BCE)

1. References

- a. AR 11-18 The Cost Analysis Program,
dated 10 Oct. 1975
- b. AR 70-1 Army Research, Development, and Acquisition,
dated 1 May 1975
- c. DA PAM 11-2 Research and Development Cost Guide for Army
Materiel Systems
- d. DA PAM 11-3 Investment Cost Guide for Army Materiel Systems
- e. DA PAM 11-4 Operating and Support Cost Guide for Army Materiel
Systems
- f. DA PAM 11-5 Standards for Presentation and Documentation of
Life Cycle Cost Estimates for Army Materiel Systems

2. General Description and Content

Baseline Cost Estimate (BCE) is a term denoting a complete, detailed, and fully documented estimate of materiel system life cycle costs. It is a dynamic document, refined and updated throughout the acquisition cycle. The primary purpose of the BCE is to provide a reasonable estimate of the life cycle cost (LCC) of the system. The estimate addresses the cost of acquisition plus operation and does provide unit cost information for use in establishing the initial Design to Cost (DTC) goal. The DTC is a management concept wherein unit cost goals are established to guide hardware design and control program costs.

3. Information Flow

The Materiel Developer is responsible for the preparation of the BCE. The BCE is forwarded to HQDA--Comptroller of the Army (COA) for validation and independent assessment. The BCE provides costs input, including manpower, for the Concept Formulation Package (CFP) and initial DCP. The BCE is periodically updated throughout the life cycle in conjunction with subsequent milestone reviews.

H. EVENT 07.1: PREPARATION OF CONCEPT FORMULATION PACKAGE (CFP)

1. References

- a. AR 15-14 Systems Acquisition Review Council Procedures, dated 1 April 1978
- b. AR 70-27 Outline Development Plan/Development Plan/ Army Program, Memorandum/Defense Program Memorandum/Decision Coordinating Paper, dated 17 March 1975
- c. AR 71-1 Army Combat Developments, dated 16 Sept. 1968
- d. AR 71-9 Materiel Objectives and Requirements, Final Draft, dated 15 April 1979
- e. AR 1000-1 Basic Policies For Systems Acquisition, dated 1 April 1978
- f. DA Pam 11-25 Life Cycle System Management Model for Army Systems, dated 21 May 1975

2. General Description and Content

The CFP provides documentary evidence that the concept formulation effort has satisfied the concept formulation objectives. Figure IV-3 details the content and format of the CFP package. Among the package items are the following:

- a. The Trade-Off Determination (TOD) Appendix describes the individual technical approach, enumerates trade-offs required for the suggested approach, the life cycle costs and scheduling estimates as related to acquisition of the item, and recommends technical approach including estimates of total Army manpower requirements.
- b. The Trade-Off Analysis (TOA) Appendix describes risks, capabilities, estimated total Army manpower requirements, costs, schedules and logistic support requirements.
- c. The Best Technical Approach (BTA) Appendix describes the estimated cost and estimated total Army manpower requirements.
- d. The Cost and Operational Effectiveness Analysis (COEA) Appendix describes the Life-Cycle-Acquisition cost for each alternative.

3. Information Flow

- a. The CFP is developed jointly by the Combat Developer and Materiel Developer.

b. The portions of the CFP identified below are prepared by the following:

- (1) The TOD Appendix: Prepared by the Materiel Developer.
- (2) The TOA Appendix: Prepared jointly by the Materiel and the Combat Developer.
- (3) The BTA Appendix: Prepared jointly by the Materiel and the Combat Developer.
- (4) The COEA appendix: Prepared by the Combat Developer.

c. The DCSRDA, DA examines the proposed system concepts or proposed systems for affordability within priorities established by the DCSOPS, DA. The CFP is used for input to the Outline Development Plan (ODP).

FORMAT FOR CONCEPT FORMULATION PACKAGE (CFP)

The Concept Formulation Package will be organized as described below and, as a minimum, will include the information indicated below. The detail and volume of the CFP will be simplified as appropriate to the complexity of the issues addressed and to the cost of the subject materiel.

a. Covering Letter. Letter including the following:

(1) An introduction that describes the purpose of the package, how it is organized, and the magnitude of effort required to satisfy objectives of concept formulation.

(2) A description of the system(s) (what the system is; what it is intended to do; threat environment in which it will operate; performance characteristics; new or unusual features; life cycle cost estimates; estimation of manpower requirements; systems being replaced; and competing systems). For Tactical Automated Systems (TAS) a description of interoperability (and supporting communications) requirements, continuity of operations (CONOPS) provisions, security requirements and provisions, standards of hardware and software to which the system will adhere, and reliability, availability, and maintainability (RAM) requirements must be included.

(3) Needs and limitations affecting results and conclusions provided in the appendices (e.g., unusually stringent performance characteristics, surety aspects, fiscal guidance and funds availability, urgency of need, and requirement to accelerate development).

(4) Highlights of appendices (brief summaries of conclusions, key unresolved problems, and prospects of solution with appropriate references made to supporting documents).

b. Trade-off Determination (TOD) appendix (prepared by the materiel developer).

(1) Description of the individual technical approach(es), including consideration of proposed product improvement and procurement of non-developmental systems (e.g., commercial, other Service, other nation) as a alternative to new development.

(2) Evidence that the proposed technical approach(es) is engineering rather than experimental, with an indication of the technical risks.

(3) Enumeration of trade-offs required for the suggested approach(es).

Figure IV-3
Format for Concept Formulation Package
(Wording reproduced exactly from document in Appendix H, AR 71-9)

(4) Estimated life cycle costs and scheduling estimates as related to acquisition of the item.

(5) The recommended technical approach (including technical analysis or tradeoffs, risks, capabilities needed, costs, schedules, integrated logistic support requirements, estimated total Army manpower requirements, and environmental and ecological factors inherent in the technical approach(es).

c. Tradeoff Analysis (TOA) appendix (prepared jointly by the materiel developer and the combat developer).

(1) Mission and Performance Envelopes (MPE) with justification and rationale.

(2) Analysis of system tradeoffs, risks, capabilities, estimated total Army manpower requirements, costs, schedules, and logistic support.

(3) Selection of the best approach(es) from an operational and integrated logistic support aspect, and establishment of environmental and ecological factors that must be faced by the Army in fielding the system.

d. Best Technical Approach (BTA) (prepared jointly by the materiel developer and the combat developer).

(1) Description of the Best Technical Approach and integrated logistic support concepts based on the results of the TOD and TOA.

(2) Evidence that the proposed Best Technical Approach is an engineering process rather than an experimental process.

(3) Estimated cost (RDT&E, OMA, MCA), estimated total Army manpower requirements, procurement and scheduling estimates.

(4) Recommendation as to whether the development should be project managed.

(5) A Draft Environmental Impact Statement will be included in accordance with Appendix I.

e. Cost and Operational Effectiveness Analysis (COEA) appendix (prepared by the combat developer).

(1) Costs.

(a) The costs for each COEA alternative should specify what costs are included as defined by the Key Cost Categories.

Figure IV-3
Format for Concept Formulation Package
(Continued)

(b.) Hardware should be specified by quantity and Life-Cycle-Acquisition cost in each COEA alternative.

(c.) Costs of specific concern to the Combat Developer. Training Costs, ILS and Force Costs, should be presented separately. Other costs not included because of wash-out effects, sunk or unknown, should be noted in the text.

(d.) Application of cost categories should be appropriate to each COEA alternative, so that none is biased.

(e.) COEA alternative costs, may be represented by cost differences between the specific action alternatives and the baseline case. Note that these costs are used for decisions that may affect budgeting, but are not figures that can be used directly in the budget.

(2) Operational effectiveness. Operational Effectiveness will be quantified to the greatest extent possible in terms of measures of effectiveness of the force in which the new system is included. Where data or techniques do not permit quantitative analysis of all important system aspects, such as reliability, availability, and maintainability (RAM), electromagnetic capability, logistics, and realistic battlefield environmental conditions, a qualitative evaluation should be used to expand the quantitative assessment.

(3) Cost effectiveness. The candidate systems are structured into COEA alternatives, defining fielding alternatives for the candidates, including combinations of them if appropriate. These action alternatives are then contrasted to the baseline alternative (status quo), by ranking through cost effectiveness or relative worth ratios, modified by experience and military judgment where appropriate.

Figure IV-3
Format for Concept Formulation package
(Continued)

I. EVENT 08.1: PREPARATION OF THE OUTLINE DEVELOPMENT PLAN (ODP)

1. References

- a. AR 70-27 Outline Development Plan/Development Plan/Army Program Memorandum/Defense Program Memorandum/Decision Coordinating Paper, dated 17 March 1975
- b. DA Pam 11-25 Life Cycle System Management Model For Army Systems dated 21 May 1975

2. General Description and Content

An ODP is prepared by the Materiel Developer in coordination with the Combat Developer prior to entry into the demonstration and validation phase. The ODP is a definitive plan for the management of the advanced development effort. It is a structured document containing specific sections (e.g., Section V, Plan for Personnel and Training Requirements). Specific content and level of detail is dependent on the developmental stage of a particular program. Section V identifies required skills, training devices, training facilities and other requirements, for individual and crew training.

3. Information Flow

The ODP is prepared by the Materiel Developer in conjunction with the Combat Developer, the Logistician, and the Trainer, using data from the LOA (Event 03.1). The Materiel Developer coordinates with HQDA and other commands as required; after coordination the Materiel Developer proceeds within the funding thresholds established. The ODP does not require HQDA approval; however, all ODP's will be forwarded to HQDA DCSRDA for information.

J. EVENT 09.1: PREPARATION OF DRAFT DECISION COORDINATING PAPER (DCP) I

1. References

- a. DODD 5000.1 Major System Acquisition, dated 19 Mar. 1980
- b. DODI 5000.2 Major System Acquisition Procedures, dated 19 Mar. 1980
- c. AR 15-14 Systems Acquisition Review Council Procedures, dated 1 April 1978

2. General Description and Content

The Draft DCP is a DOD acquisition management document which supports the decision making process at a given milestone throughout the acquisition cycle of a major system. It presents rationale for proceeding with, delaying, or stopping a major development program at predetermined milestones.

DCP format and content description is contained in Figure IV-4. The DCP will be no more than 10 pages, including the three Annexes described below:

a. Annex A: Goals and Thresholds

This Annex reflects the goals and thresholds approved by SECDEF, at MENS approval, to commence the system acquisition cycle. It also reflects the system proponents' current anticipated estimates of requirements consistent with the operational concepts, projected activity level, anticipated force structure, and identified maintenance and support demands (see Figure IV-5).

b. Annex B: Resources--Preferred Alternative

Indicated in this Annex are the resources required to support the preferred alternative. In the Operating and Support section, the system proponent indicates the O&M costs (including civilian personnel pay and military manpower O&M costs) and military personnel cost (e.g. military pay and allowances, TDY, per diem) of the system (see Figure IV-6).

c. Annex C: Life Cycle Cost

Reflected in this annex are the costs for each alternative that have been considered. The costs are reflected in constant and current dollars. Manpower and training cost must be included in the alternative costs (see Figure IV-7).

Accompanying the DCP and treated as separate but supporting documents are the Integrated Program Summary (IPS) and the Milestone Reference File (MRF). These two documents are described in detail in Events 09.1A and 09.1B.

3. Information Flow

DCSRDA prepares the Draft DCP based on information developed by the Materiel Developer in the ODP. After obtaining DA staff approval the Draft DCP is submitted to the Army Systems Acquisition Review Council for their consideration.

DECISION COORDINATING PAPER (DCP)--FORMAT

The DCP shall be prepared in the format shown below. The DCP shall not exceed 10 pages, including annexes. Supporting documentation should be referenced.

Part I: State the direction needed from the Secretary of Defense, including deviation from policy contained in DOD Directive 5000.1.

Part II: Describe the overall program. The Description and Mission statement contained in the "Congressional Data Sheets" may satisfy this requirement.

Part III: Revalidate the need.

Part IV: Summarize system and program alternatives considered and the reasons why the preferred alternative was selected.

Part V: Summarize the program acquisition strategy with emphasis on the next phase.

Part VI: Identify and assess issues affecting the SECDEF's Milestone decision.

ANNEXES

- A. Goals and Thresholds
- B. Resources--Preferred Alternative
- C. Life Cycle Cost

Figure IV-4
Format for Decision Coordinating Paper
(Wording reproduced exactly from document in DODI 5000.2)

GOALS AND THRESHOLDS

	Last Approved by SECDEF 1/		Current Estimate (c)	Recommended to SECDEF at this Milestone 2/	
	Goal	Threshold		Goal	Threshold
	(a)	(b)		(d)	(e)
<u>Cost</u> 3/ 4/ RDT&E 5/ Procurement Flyway					
<u>SCHEDULE</u> 4/ 5/ Next Milestone IOC					
<u>PERFORMANCE</u> 7/ Operational Availability 8/ 9/ Mission Reliability 9/ 10/ Weight Range Speed Sortie Rate 11/					
<u>SUPPORTABILITY AND MANPOWER</u> 7/ Manning 12/ Maintenance-related R&M 9/ 13/ POL Consumption Spares					

- 1/ Provide Goals and Thresholds from last SDDM.
- 2/ Explain any changes from columns (a) and (b) in a footnote.
- 3/ Provide values for total RDT&E and procurement appropriations and for flyaway/rollway/sailaway cost. Additional cost amount may be appropriate for individual systems.
- 4/ Add additional stubs as appropriate. The stubs indicated are mandatory.
- 5/ Provide both a total RDT&E program goal and threshold. Fiscal year thresholds shall be displayed in a footnote to this Annex and shall total to the overall RDT&E threshold.
- 6/ Provide projected data for next milestone and for IOC. Define IOC by footnote. Additional schedule elements may be added, as appropriate.
- 7/ Select appropriate parameters that drive system effectiveness and costs. The stubs indicated are only examples.
- 8/ Use readiness-related R&M parameters that constitute operational availability if more appropriate.
- 9/ Provide goals and thresholds to be achieved by the next milestone. Predicted R&M growth shall be displayed in a footnote to this Annex as a series of intermediate thresholds capable of being measured during development, production, and deployment.
- 10/ Include mission maintainability if maintenance will be performed during the mission.
- 11/ Include combat utilization rate if different from peacetime utilization rate.
- 12/ Include both operators and maintenance personnel.
- 13/ Include separate parameters for depot maintenance.

Figure IV-5. DCP Annex A (FODI 5000.2)

RESOURCES--PREFERRED ALTERNATIVE
(Current Dollars in Millions)

	FY 19 PRIOR	FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	TO COM- PLETION	TOTAL PROGRAM
Acquisition Quantities Development Production Deliverables									
DEVELOPMENT Validation Phase Full-Scale Develop- ment Total Development cost 1/ RDT&E Funding (Approved FYDP)									
PRODUCTION System Cost 2/ (Long Lead Re- quirements) Initial Spares Total Procure- ment Cost 1/ Procurement Funding (Ap- proved FYDP)						()	()	()	()
MILCON During Develop- ment During Production Total MILCON MILCON Funding (Approved FYDP)									
Total Program Acquisition Cost 1/ NOTCF, Procurement and MILCON Funding (Ap- proved FYDP) Difference ()									
Estimated Other Resources Re- quirements 3/ During Development During Production									
OPERATING AND SUPPORT O&M MILPERS Procurement 4/ Total Operating and Support Cost 1/									
TOTAL LIFE CYCLE REQUIREMENTS									

- 1/ Definitions should be in accordance with DOD Instruction 5000.33.
- 2/ Equal to Weapon System Cost as defined in DODI 5000.33; for Shipbuilding, Outfitting and Post Delivery Costs will be included.
- 3/ Other Life Cycle related costs (i.e., Installation, Project Manager Office, Civilian Salaries, etc.) funded by other appropriations; a.g., O&M & MILPERS during Development and/or Production phase. Also, Production Base Support (Industrial Facilities), shore-based training facilities and other system peculiar costs identified as a separate line item, or as a portion of a separate line item in another part of the Procurement Budget. Identify the content of this entry.
- 4/ Procurement costs associated with operation/owning a weapon system such as modifications, replenishment spares, ground equipment, etc.

Figure IV-6. DCP Annex B (DODI 5000.2)

LIFE CYCLE COST

CONSTANT DOLLARS (MILLIONS)

<u>ALTERNATIVE</u>	<u>DEVELOPMENT</u>	<u>PRODUCTION</u>	<u>O&S</u>	<u>TOTAL</u>
A 1				
A 2				
A 3				
o				
o				
o				

CURRENT DOLLARS (MILLIONS)

<u>ALTERNATIVE</u>	<u>DEVELOPMENT</u>	<u>PRODUCTION</u>	<u>O&S</u>	<u>TOTAL</u>
A 1				
A 2				
A 3				
o				
o				
o				

Figure IV-7
DCP Annex C (DODI 5000.2)

K. EVENT 09.1A: DEVELOPMENT OF INTEGRATED PROGRAM SUMMARY (IPS) I

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The IPS is a summary of the plan developed by the Army for the acquisition cycle with emphasis on the phase the program is entering. The IPS provides information for a management overview of the entire system. The format and content are dictated by DODI 5000.2. The IPS does not exceed 50 pages, including all annexes except Annex B. The IPS requires several mandatory annexes--three dealing with resources (cost and funding) and one each dealing with manpower and logistics. In addition to the Annexes, specific data on manpower and training are included within the narrative portion of the IPS, as described below:

- At Milestone I the manpower paragraph specifies the system activity level used to estimate the system manpower requirements, such as a combat surge, sustained combat, or peacetime. Additionally, the following are considered:

- a. Manpower sensitivity to alternative concepts under considerations.

- b. New organization and maintenance concepts to improve personnel proficiency and performance.

- At Milestone I the training paragraph requires that the training differences of each alternative systems be considered.

Accompanying the IPS are five Annexes:

Annex A Resources: Cost Track Summary

This Annex reflects the O&M and Military Personnel Costs for the system in the development and production phase (see Figure IV-8).

Annex B: Resources--Funding Profile

This Annex reflects the O&M and Military Personnel costs for the operating and support phase identified for each alternative (see Figure IV-9).

Annex C: Resources--Summary of Systems Acquisition Costs

This Annex reflects the cost data by program element. Additionally, training costs associated with the system are identified (see Figure IV-10).

Annex D: Manpower

This Annex provides the current manpower estimates for the military force structure to include unit manning, contract support, depot workload, and changes that will develop in the force structure due to the deployment of the new system (see Figure IV-11).

Annex E: Logistics

3. Information Flow

The data generated by the IPS goes to support the DCP. The ODP provides the data used to compile the information included in the IPS.

RESOURCES--COST TRACK SUMMARY 1/
(Millions of Dollars)

	FY Constant (Base Year) ⁵			Escalated \$
	Planning/ Development Estimate ^{2/}	SDDM (Date) ^{3/}	Current Estimate ^{4/}	Current Estimate ^{4/}
DEVELOPMENT PHASE				
RDT&E				
Validation Phase				
Full Scale Development				
Contractors (Provide one level of WBS indenture based on program requirements)				
In-House (Provide one level of WBS indenture based on program requirements)				
Contingency (Service)				
TOTAL RDT&E APPROPRIATION				
MILCON				
O&M ^{5/}				
MILPERS ^{5/}				
TOTAL DEVELOPMENT PHASE				
PRODUCTION PHASE				
PROCUREMENT				
System Cost ^{7/}				
Flaway (Provide one level of WBS indenture based on program requirements)				
Other System Costs				
Initial Spares				
Other Line Item				
Procurement ^{8/}				
TOTAL PROCUREMENT APPROPRIATION				
MILCON				
O&M ^{5/}				
MILPERS ^{5/}				
TOTAL PRODUCTION PHASE				
TOTAL OPERATING & SUPPORT PHASE				
TOTAL LIFE CYCLE REQUIREMENTS				

AVERAGE ANNUAL SYSTEM

O&S COSTS

No. of Systems: No. of Years:

- ^{1/} Apply footnotes as required to explain the chart. Adjustments to format are authorized to accommodate program; stub entries will be decided on at the initial Milestones Planning Meeting. Definitions should be in accordance with DOD Instruction 5000.33.
- ^{2/} Identify basis for estimate and date of SDDM.
- ^{3/} Add columns as necessary for each SDDM revision.
- ^{4/} The preferred alternative or the latest approved baseline cost estimates contained in the SDDM will be shown in constant and current (escalated estimate columns).
- ^{5/} Other Life Cycle related costs (i.e., installation, Project Manager Office, Civilian Salaries, etc.) funded by O&M and MILPERS during Development and/or Production phase.
- ^{6/} Enter Quantity.
- ^{7/} Equal to Weapon System Cost as defined in DODI 5000.33.
- ^{8/} Production Base Support (Industrial Facilities), shore-based training facilities, and other systems peculiar cost identified as a separate line item, or as a portion of a separate line item, in another part of the Procurement Budget. Identify the content of this entry.

NOTE: Reasons for significant variations in estimate should be explained by footnote (e.g., schedule slippage, Congressional funding, etc.).

Figure IV-8. IPS Annex A (DODI 5000.2)

RESOURCES--FUNDING PROFILE 1/
(Dollars in Millions)

Annex to be completed for each alternative:

- 1) In constant (base) year dollars
- 2) In Escalated dollars using current FYDP rates and round rules

	PRIOR FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	TOTAL PROGRAM
Acquisition Quantities to be Procured <u>2/</u> Development Production Deliveries							
DEVELOPMENT PHASE RDT&E RDT&E Validation Phase Full Scale Development Flyaway, Rollaway, Sailaway Other System Costs TOTAL RDT&E APPROPRIATION MILCON O&M <u>3/</u> MILPERS <u>3/</u> TOTAL DEVELOPMENT PHASE							
PRODUCTION PHASE PROCUREMENT <u>4/</u> System Cost <u>5/</u> Flyaway, Rollaway, Sailaway Other System Costs Initial Spares Other Line Item Procurement <u>6/</u> TOTAL PROCUREMENT APPROPRIATION MILCON O&M <u>3/</u> MILPERS <u>3/</u> TOTAL PRODUCTION PHASE							
OPERATING AND SUPPORT PHASE MILPERS O&M Procurement <u>7/</u> TOTAL OPERATING AND SUPPORT PHASE							

- 1/ Apply footnotes as required to explain the chart. Adjustments to format are authorized to accommodate program; stub entries will be decided on at the Initial Milestone Planning Meeting. Definitions should be in accordance with DOD Instruction 5000.33.
- 2/ Identify the number of Development and Production units to be acquired by fiscal year.
- 3/ Other Life Cycle related costs (i.e., Installation, Project Manager Office, Civilian Salaries, etc.) funded by other appropriations; e.g., O&M and MILPERS during Development and/or Production phase.
- 4/ Enter the costs by appropriation e.g., Aircraft, Procurement, Mililite Procurement, SCN or Other Procurement. If more than one applies, identify it separately.
- 5/ Equal to Weapon System Cost as defined in DODI 5000.33.
- 6/ Production Base Support (Industrial Facilities), shore-based training facilities, and other system peculiar costs identified as a separate line item, or as a portion of a separate line item, in another part of the Procurement Budget. Identify the content of each entry.
- 7/ Procurement costs associated with operation/owning a weapon system such as modifications, replenishment spares, ground equipment, etc.

Figure IV-9
IPS Annex B (DODI 5000.2)

RESOURCES - SUMMARY OF SYSTEM ACQUISITION COSTS (1)

<u>SOURCES OF FUNDING</u>	<u>CURRENT DOLLARS (MILLIONS)</u>
Department of the Army	\$XXXXX
Program Element XXXXX	\$XXXXX
Program Element XXXXX	<u>XXXXX</u>
Department of the Navy	
Program Element XXXXX	<u>\$XXXXX</u>
Department of the Air Force	
Program Element XXXXX	<u>\$XXXXX</u>
Defense Agencies	
Program Element XXXXX	<u>\$XXXXX</u>
Other U.S. Government	XXXXX
Other Foreign	<u>XXXXX</u>
TOTAL FUNDING	\$XXXXX

<u>APPLICATIONS</u>	<u>CURRENT DOLLARS (MILLIONS)</u>
Major System Equipment	\$XXXXX
System Project Manager	XXXXX
System Test and Evaluation	XXXXX
Peculiar Support Equipment	XXXXX
Training	XXXXX
Data	XXXXX
Operational Site Acquisition	XXXXX
Industrial Facilities	XXXXX
Common Support Equipment	<u>XXXXX</u>
TOTAL FUNDING	\$XXXXX

(1) Refer to DOD Instruction 5000.33

Figure IV-10
IPS Annex C (DODI 5000.2)

MANPOWER

The IPS will have a one page Manpower annex including the following:

A. Current Manpower Estimate for Military Force Structure: 1/

<u>2/</u> UNIT TYPE	UNIT MANNING <u>3/</u>		PROGRAM TOTALS <u>5/</u>			OTHER
	PROGRAM ALTERNATIVE	REFERENCE SYSTEM	NO. OF UNITS <u>4/</u>	ACTIVE MILITARY	RESERVE COMPONENT	

B. Contractor support and depot workload (Annual manhours per end item deployed) 6/:

	DSARC SYSTEM	Reference System
Contractor Support (below depot)		
Depot Level Workload		

C. Net change in Total Force Manpower associated with the proposed system deployment:

	Active Force	Reserves	DoD Civilians
Number of Authorizations			

1. Not required at Milestone 1.
2. List each unit type that will operate the system/primary system elements, including unit types that provide intermediate maintenance of system components. Examples of unit types are "Tank Battalion," "Munitions Maintenance Squadron," "Avionics Intermediate Maintenance Department."
3. For each unit type, show the manning required to satisfy the most demanding mission (normally combat employment, but may be pre-combat readiness for certain naval vessels and systems on alert). Show total unit manning for operating units, organizational level direct support units, and dedicated intermediate support units. For units that provide intermediate level support to many primary systems, such as a naval shore based intermediate maintenance departments, show manning equivalent of the man-years of work attributable to the program alternative. Denote manning equivalents with an asterisk.
4. Number of units of each type in the planned force structure for the program alternative.
5. Multiply number of units by unit manning, and equivalent manning by quantity of systems deployed, to obtain total manning required for units operating and/or supporting the program alternative system. Show how these requirements are expected to be satisfied as: active military authorizations, reserve component authorizations, and/or other to be identified in footnote. Unprogrammed requirements must be shown as "other".
6. Annual manyears of below-depot contractor support divided by the planned quantity of the system in the force structure, and the annual manyears for depot level maintenance of the system and its components divided by the planned quantity of the system in the force structure. Not required at Milestone 1.

Figure IV-11
IPS Annex D (DODI 5000.2)

L. EVENT 09.1B : DEVELOPMENT OF MILESTONE REFERENCE FILE (MRF) I

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The MFR is established at each milestone to provide a central location for existing program documentation referenced in the DCP and IPS. This file is provided to DOD at the time the DCP and IPS are submitted. The purpose is to provide DOD personnel detailed information concerning the proposed system.

3. Information Flow

Developed by the Materiel Developer, the MRF is submitted to DCSRDA for submission to the ASARC.

M. EVENT 10.1: REVIEW BY ARMY SYSTEM ACQUISITION REVIEW COUNCIL (ASARC) I

1. References

- a. AR 15-14 Systems Acquisition Review Council Procedures, dated 1 April 1978
- b. DA Pam 11-25 Life Cycle System Management Model for Army Systems dated 21 May 1975

2. General Description and Content

ASARC is a group of top Army managers responsible for reviewing major system acquisition programs and making appropriate recommendations to the Secretary of the Army for his consideration prior to forwarding the Army position to the Secretary of Defense.

Composition of the ASARC is shown in Figure II-4, Chapter II, of this report.

The ASARC has established procedures that insure all pertinent information is available to render a decision. To insure impartial and objective reviews, the VCSA may convene an independent evaluation team to assist in the presentation of information for a selected materiel system.

3. Information Flow

After being reviewed by the Army Staff, the DCP and supporting documents are presented to the ASARC for their deliberation. In turn their comments are presented to the Secretary of the Army for his approval; and then the DCP package is sent to DOD.

N. EVENT 11.1: REVIEW BY DEFENSE SYSTEM ACQUISITION REVIEW COUNCIL (DSARC) I

1. References

- a. DODD 5000.1 Major System Acquisitions,
dated 19 Mar. 1980
- b. DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The Defense System Acquisition Review Council (DSARC) acts as the top level DOD body for system acquisition, providing advice and assistance to the Secretary of Defense for major acquisitions. Composition of the DSARC is shown in Figure II-3, Chapter II of this report.

The DCP along with the supporting papers are considered and evaluated to determine if a program is ready to proceed to the next stage of development, Demonstration and Validation. Subsequent to DSARC action, a SDDM is issued to the DOD Component involved. The SDDM documents the SECDEF Milestone decision including approval of cost, schedule, performance supportability goals, and other instructions as appropriate.

3. Information Flow

Upon completion of DSARC action, a SDDM is prepared for signature by SECDEF. The SDDM provides guidance to the Army for conduct of the next acquisition phase, Demonstration and Validation.

O. INFORMATION REQUIREMENT A.1: ORGANIZATIONAL AND OPERATIONAL CONCEPT

1. References

- a. DODI 5000.2 Major System Acquisition Procedures, dated 19 Mar. 1980
- b. AR 70-27 Outline Development Plan/Development Plan/Army Program Memorandum/Defense Program Memorandum/Decision Coordinating Paper, dated 17 March 1975
- c. AR 70-41 Coordination With Allies and Other Nations in Research and Development of Defense Equipment, dated 3 Jan. 1974
- d. AR 71-9 Materiel Objectives and Requirements, Final Draft, dated 15 April 1979
- e. DA Pam 11-25 Life Cycle System Management Model for Army Systems, dated 21 May 1975

2. General Description and Content

Reference a requires that Part II of the DCP for DSARC I describe the overall system and its mission. The IPS event for DSARC I is required to contain an amplifying section entitled "Organizational and Operational Concepts," which describes the organizational structure associated with the system and how it is intended for integration into the force structure. It also describes the initial concept concerning deployment and operation of the system in both peacetime and wartime to satisfy the MENS. Initial system readiness objectives and activity rates are also required to be described. This information provides the basis for all subsequent manpower requirements determination and support planning. The system activity rates upon which manpower requirements are estimated for Milestone I are to be specified.

3. Information Flow

The operational concept developed during materiel concept investigation and the LOA provide sources for this information. Reference d requires a LOA to be executed between the Combat and Materiel Developers prior to Milestone I which specifies:

- a. The Nature of the System
- b. Characteristics
- c. Concept of Operations
- d. Personnel Requirements
- e. Training Requirements
- f. Logistic Support Requirements

DCSPER reviews the estimated manpower requirements contained in the LOA to determine their acceptability and force structure implications. DCSOPS is the final approval agency for the Department of the Army.

Subsequently, the information is refined and updated in the CFP and the ODP. Event 04.1, Organizational and Operational Concepts, provides a basis for their updates. Reference d requires the Combat Developer and the Materiel Developer to jointly develop a CFP that expands the information contained in the LOA. DCSRDA reviews and DCSOPS approves the CFP. The CFP is further refined and integrated into Section II of the ODP originated by DARCOM in accordance with Reference b. The ODP is the primary source of organizational and operational concept information required for DSARC I.

P. INFORMATION REQUIREMENT B.1: MANPOWER GOALS AND THRESHOLDS 1

1. References

- a. DODI 5000.2 Major System Acquisition Procedures, dated 19 Mar. 1980
- b. AR 70-1 Army Research, Development, and Acquisition, dated 1 May 1975
- c. AR 70-27 Outline Development Plan/Development Plan/Army Program Memorandum/Defense Program Memorandum/Decision Coordination Paper, dated 17 March 1975

2. General Description and Content

Reference a requires estimated manpower goals and thresholds consistent with the operational concepts, force structure, projected activity level, and support concepts to be identified by Milestone I. Annex A to the DCP is required to contain the following information:

- a. Estimate of operator manning
- b. Estimate of maintenance manning
- c. Recommended total manning goal

3. Information Flow

The Organizational and Operational concepts originated by the Combat Developer (see Event 04.1) as modified by the Force Level Guidance (see Event 05.1) and developed by DCSOPS form the original input for Manpower Goals and Thresholds.

The manpower, personnel, and training information contained in Event 04.1, Organizational and Operational Concepts, and in Event 05.1, Force Level Guidance, is refined and incorporated into Section 5 of the ODP by the Materiel Developer in coordination with the Combat Developer (see Event 08.1). DCSRDA subsequently prepares Annex A to the Draft DCP (see Event 09.1) from the ODP and obtains DA Staff approval prior to forwarding to OSD.

Q. INFORMATION REQUIREMENT C.1: PERSONNEL FUNDING ESTIMATE 1

1. References

- a. DODI 500C.2 Materiel System Acquisition Procedures, dated 19 March 1980
- b. AR 11-18 The Cost Analysis Program, dated 10 Oct. 1975
- c. AR 70-1 Army Research, Development, and Acquisition, dated 1 May 1975

2. General Description and Content

Reference a requires that Annex A to the IPS contain the following military personnel, civilian personnel, and Operations and Maintenance (O&M) funding (constant and escalated) estimates for the preferred alternative system:

- a. Development Phase
- b. Production Phase
- c. Operating and Support Phase
- d. Total Life Cycle
- e. Average Annual

Reference a also requires that Annex B to the IPS contain the following military personnel and civilian personnel O&M funding estimates for the preferred system and for each alternative system considered:

- a. Development Phase: Each FYDP year plus total program
- b. Production Phase: Each FYDP year plus total program
- c. Operating & Support Phase: Each FYDP year plus total program

The information is used to evaluate the overall costs of the system to be acquired and to monitor increases/decreases in cost during the development and acquisition process. These cost estimates are based upon, and correlate with, Manpower Estimate 1 contained in Annex A of the IPS.

3. Information Flow

The Baseline Cost Estimate, which includes manpower cost prepared by the Materiel Developer (Event O6.1), forms the original input to MILPERS Funding Estimate I.

The Baseline Cost Estimate is subsequently forwarded to HQDA-COA for validation and assessment. Upon completion of this validation it is incorporated into the CFP (Event 07.1) and refined and integrated into the ODP (Event 08.1). DCSRDA subsequently prepares Annexes A, B, and C to the Draft DCP (Event 09.1) from the ODP and obtains HQDA staff and ASARC approval prior to forwarding to OSD.

R. INFORMATION REQUIREMENT D.1: MANPOWER ESTIMATE 1

1. References

- a. DODI 5000.2 Major System Acquisition Procedures, dated 19 Mar. 1980
- b. AR 70-1 Army Research, Development, and Acquisition, dated 1 May 1975
- c. ASD (MRA&L) Memorandum 17 August 1978, Subj: Manpower Analysis Requirements for System Acquisition,

2. General Description and Content

Reference a requires that Annex D to the IPS (Manpower) contain an estimate of the net change in total Army manpower associated with the proposed system deployment. The estimated changes include those in the active force, reserve, and DOD civilians. Detailed estimates of unit type, manning, and civilian manpower support, are not required to be displayed in Annex D to the IPS for DSARC I. Summary estimates of this information are required, however, to develop required Military Personnel Funding Estimate 1 and the Manpower Sensitivity Analysis 1 required by reference a for Milestone I, and to satisfy the generalized requirement in reference a for a summary paragraph in the DCP I that addresses "the estimated manning levels per unit (e.g. squadron, battalion, or ship), and for the total program to meet wartime and peacetime requirements."

3. Information Flow

The manpower information contained in Event 04.1, Organization and Operational Concepts, and in Event 05.1, Force Level Guidance, forms the original input for Manpower Estimate 1.

The information is subsequently refined and incorporated into Section V of the ODP (Event 08.1) by the Materiel and Combat Developers. DCSRDA subsequently prepares Annex A to the Draft DCP (Event 09.1) and Annex D to the IPS from the ODP, and obtains DA Staff approval prior to forwarding to OSD.

S. INFORMATION REQUIREMENT E.1: MANPOWER SENSITIVITY ANALYSIS I

1. References

- a. DODI 5000.2 Major System Acquisition Procedures, dated 19 Mar. 1980
- b. ASD (MRA&L) Memo 17 August 1978
Subj: Manpower Analysis Requirements for System Acquisition

2. General Content and Description

Reference a requires that the IPS for Milestone I discuss the manpower requirements associated with each system alternative examined during the Conceptual Phase, and provide a rationale for the option selected.

The discussion of the manpower requirements of the preferred system should correlate with the military personnel funding and manpower estimates contained in Annexes A, B, and D of the IPS. Manpower requirements for the preferred system are further analyzed to determine their sensitivity to alternative system employment concepts. The results of this analysis are summarized and included in the IPS (reference a). This information is utilized to support the decision to proceed to the Demonstration and Validation phase.

3. Information Flow

The TOD Annex of the CFP provides the original analytic input for Manpower Sensitivity Analysis I. As described in Event 07.1, the TOD Annex includes Army requirements inherent in the technical approach. It is subsequently refined and incorporated into the Outline Development Plan (Event 08.1) by the Materiel Developer. DCSRDA prepares the Draft DCP (Event 09.1) and Draft IPS (Event 09.1A) from the ODP and obtains DA Staff approval prior to forwarding to OSD.

T. INFORMATION REQUIREMENT F.i: TRAINING IMPLICATIONS SUMMARY 1

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. Content and Purpose

Reference requires a discussion in the IPS for Milestone I that identifies any significant differences in the training implications of the alternative systems considered.

3. Information Flow

The training planning information developed by TRADOC forms the original input for training implications.

The information determined during training planning is subsequently refined by the Materiel and Combat Developers and incorporated in Event 03.1, LOA; Event 04.1, Organizational and Operational Concepts; and Section 5 of Event 08.1, Outline Development Plan. DCSRDA subsequently prepares the Draft DCP and Draft IPS (Events 09.1 and 09.1A) from the ODP, and obtains DA staff approval prior to forwarding to OSD.

U. INFORMATION REQUIREMENT G.1: MANPOWER EVALUATION 1

1. References

- a. DODI 5000.2 Major System Acquisition Procedures, dated 19 Mar. 1980
- b. ASD (MRA&L) Memorandum 17 Aug. 1978
Subj: Manpower Analysis Requirements for System Acquisition

2. General Description and Content

References a and b require a discussion in the IPS alternative approaches which will be analyzed during the Demonstration and Validation Phase to significantly reduce manpower requirements or increase productivity, such as:

- a. Changes in maintenance concepts, including number of levels and functions to be performed.
- b. Increases in productivity of personnel through the use of new concepts.

3. Information Flow

The ODP (Event 08.1), prepared by the Materiel Developer, addresses alternative approaches that are pursued during the Demonstration and Validation Phase.

DCSRDA prepares the Draft DCP and the Draft IPS (Events 09.1 and 09.1A) from information contained in the ODP, and obtains HQDA approval prior to forwarding to OSD.

CHAPTER V
DEMONSTRATION AND VALIDATION

A. INTRODUCTION

A favorable decision by the Secretary of Defense upon DSARC I review and a corresponding SDDM constitute the Milestone I decision. This decision provides approval for the Army to proceed into Phase I, Demonstration and Validation.

This Chapter describes the LCSMM process during the Demonstration and Validation Phase. It provides a description of the key events during the process. It further incorporates DOD requirements as related to manpower, personnel, and training. Figure V-1 is a graphic display of the LCSMM process during this phase, including the key events. Events/documents which contain specific manpower, personnel, and training information are keyed to the corresponding DOD information requirement category to display sources of information. Events and Information Requirements are summarized in Tables V-1 and V-2, respectively.

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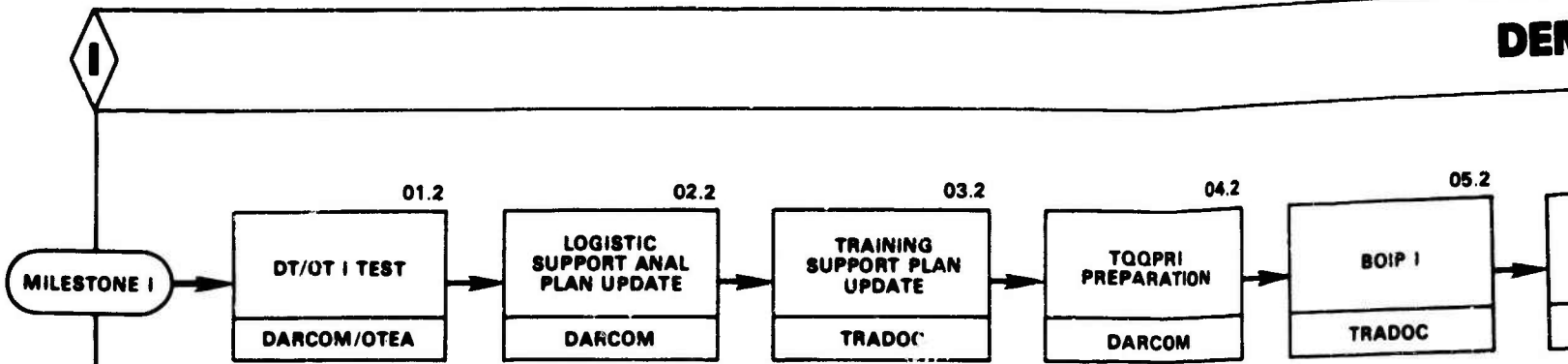
TABLE V-1
 SYSTEM ACQUISITION PROCESS
 MANPOWER-PERSONNEL-TRAINING
 EVENTS FOR MILESTONE II

EVENTS	TITLE	AGENCY RESPONSIBLE FOR SUBMISSION	APPROVAL AUTHORITY	REFERENCES
01.2	DT/OT I Test	Material Developer DT/Operational Tester OT	HQDA-DCSRDA	AR 70-10, AR 71-3, AR 611-1, 602-1
02.2	Logistic Support Analysis Plan- ning Update	Material Developer	HQDA-DCSOPS	AR 71-2, AR 700-18, AR 700-127, AR 750-1
03.2	Training Support Planning Update	Trainer	HQDA-DCSOPS	AR 71-2, AR 350-35, AR 611-1, AR 602-1
04.2	Development of TQQPRI Informa- tion	Material Developer	HQDA-DCSPER/ MILPERCEN	AR 71-2, AR 350-35, AR 602-1, AR 611-1
05.2	Development of Initial Unit Structure and BOIP I	Combat Developer	HQDA-DCSOPS	AR 1-1, AR 71-2, AR 71-9, AR 611-1
06.2	Identification of Training Device Requirements (TDR)	Trainer	HQDA-DCSOPS	AR 70-1, AR 71-7, AR 602-1
07.2	Tentative MOS Evaluation	MILPERCEN	MILPERCEN	AR 71-2, AR 611-1
08.2	Development of Advanced Resident Training Plan (Individual and Collective Training Plan); and New Equip- ment Training Plan	Trainer and Material Developer	HQDA-DCSOPS	AR 350-35, AR 71-7, AR 750-1

EVENTS	TITLE	AGENCY RESPONSIBLE FOR SUBMISSION	APPROVAL AUTHORITY	REFERENCES
09.2	Formulation of DP	Materiel Developer	HQDA-DCSRDA	AR 70-27
10.2	Preparation of Draft DCP II	HQDA-DCSRDA	HQDA-DCSRDA	AR 15-14, DODD 5000.1, DODI 5000.2
10.2A	Development of IPS	HQDA-DCSRDA	HQDA-DCSRDA	DODI 5000.2
11.2	Review by ASARC II	HQDA-DCSRDA	SECARMY	DA Pam 1.1-25
12.2	Review by DSARC II	DAE	SECDEF	DODD 5000.1, DODI 5000.2

TABLE V-2
 SYSTEM ACQUISITION PROCESS
 MANPOWER-PERSONNEL-TRAINING
 INFORMATION REQUIREMENTS FOR DSARC II

REQUIREMENT	SUBJECT	REFERENCES
A.2	Manpower Goals and Thresholds 2	DODI 5000.2
B.2	Personnel Funding Estimate 2	DODI 5000.2
C.2	Manpower Estimate 2	DODI 5000.2
D.2	Manpower Trade-Off Analysis 2	DODI 5000.2
E.2	Manpower Requirements Comparison 2	DODI 5000.2
F.2	Manpower Sensitivity Analysis 2	DODI 5000.2
G.2	Manpower Requirements and Assets 2	DODI 5000.2
H.2	Training Requirements Summary 2	DODI 5000.2
I.2	Training Plan Summary 2	DODI 5000.2
J.2	Manpower Evaluation Schedules 2	DODI 5000.2

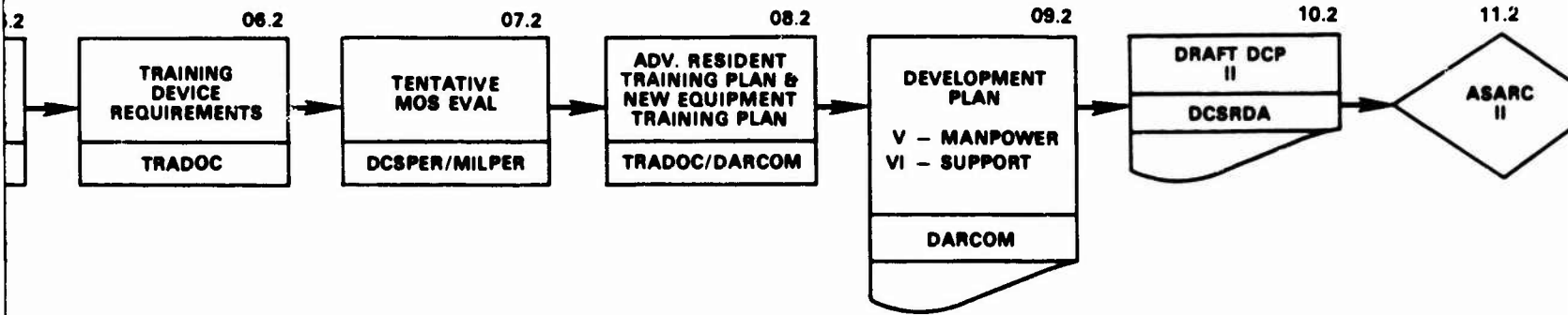


EVENT 1 →		01.2	02.2	03.2	04.2	05.2	06.2	07.2	08.2
INFORMATION REQUIREMENTS		DT/OT I TEST RESULTS	LOGISTICS SUPPORT PLAN LVD	US TRAINING SUPPORT	TQOPRI	BOIP 1	TRAINING DEVICE REQUIREMENTS	T MOB EVAL	TRAINING PLAN NET
A.2	MANPOWER GOALS & THRESHOLDS 2	X				X	X	X	
B.2	PERSONNEL FUNDING ESTIMATE 2	X	X		X	X	X	X	
C.2	MANPOWER ESTIMATE 2	X		X	X	X	X	X	
D.2	MANPOWER TRADE OFF ANALYSIS 2	X	X	X	X	X	X	X	
E.2	MANPOWER REQUIREMENTS COMPARISON 2	X	X		X	X	X	X	
F.2	MANPOWER SENSITIVITY ANALYSIS 2	X		X	X	X	X	X	
G.2	MANPOWER REQUIREMENTS & ASSETS 2		X	X	X	X	X	X	
H.2	TRAINING REQUIREMENTS SUMMARY 2	X	X	X	X	X	X	X	
I.2	TRAINING PLAN SUMMARY 2		X	X	X	X	X	X	X
J.2	MANPOWER EVALUATION 2	X			X	X	X	X	X

THE MATRIX AT THE LEFT LISTING DOCUMENTS WHICH SHOULD INCLUDE BY DOD AT D8ARC. DEPICTS THE MPT DOCUMENTS (EVENTS DEMONSTRATION AND LCSMM. THE COLUMNS TO THE LEFT DISPLAY THE INPUT TO THE IPS IN FC INFORMATION REQUIREMENTS LEFT OF THE MATRIX. REQUIREMENT RELATION

EXAMPLE: TRAINING PREPARATION OF PRIMARY 2 (REQUIREMENT EVALUATION 2)

DEMONSTRATION AND VALIDATION PHASE

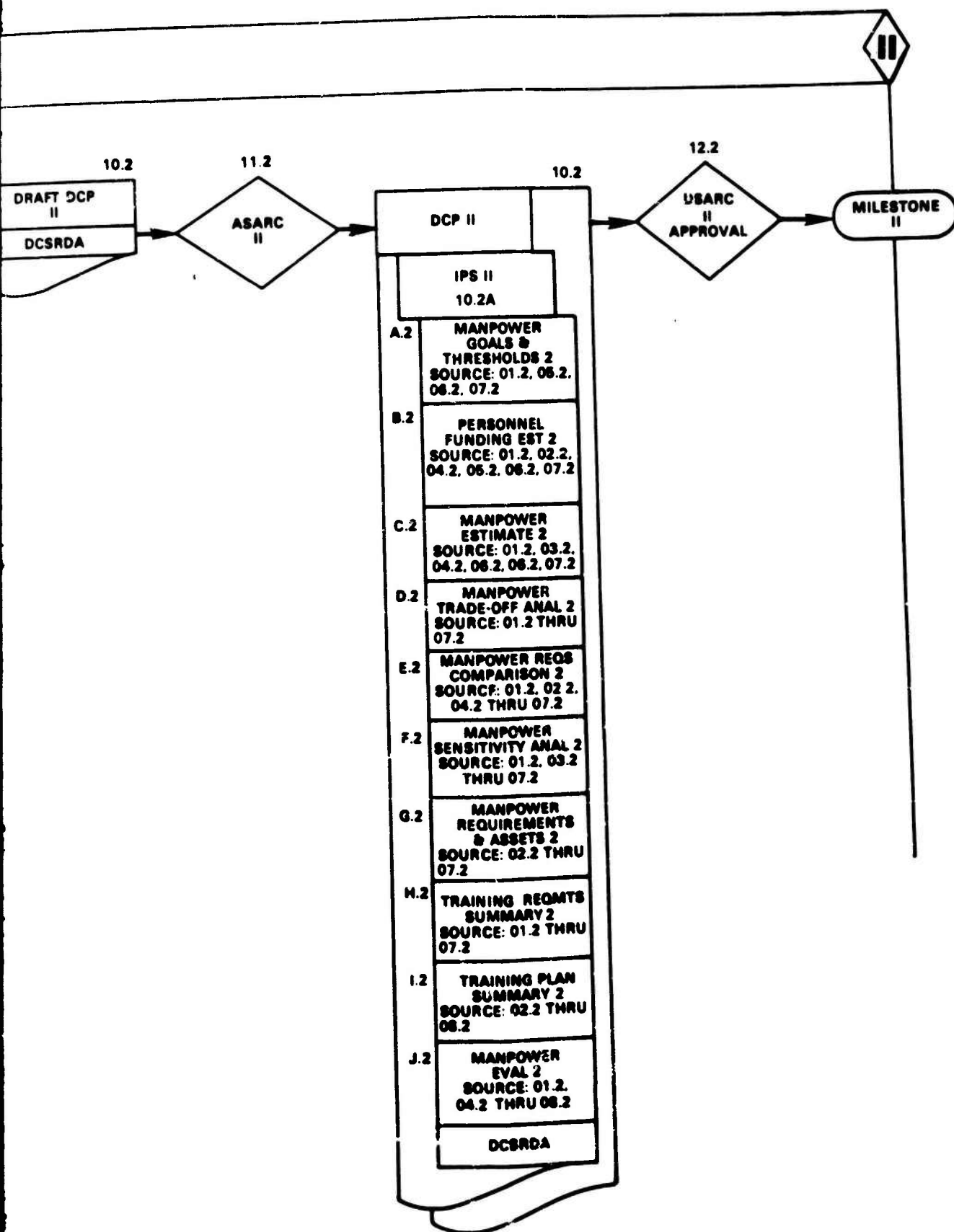


AT THE LEFT IS DESIGNED TO IDENTIFY EX-
 EVENTS WITHIN THE LCGMM PROCESS
 D INCLUDE MPT INFORMATION REQUIRED
 DEARC. THE ABOVE FLOW DIAGRAM
 E MPT INFORMATION PLANS AND
 EVENTS) AND DECISION POINTS IN THE
 ON AND VALIDATION PHASE OF THE
 COLUMN HEADINGS OF THE MATRIX AT
 LAY THE MPT EVENTS (CORRESPONDING
 DIAGRAMS. THESE EVENTS CAN PROVIDE
 PS INFORMATION REQUIRED BY DOD. IPS
 REQUIREMENTS ARE DISPLAYED AT THE
 MATRIX. EVENTS AND INFORMATION RE-
 LATIONSHIPS ARE IDENTIFIED.

TRAINING PLAN (EVENT 06.2) SHOULD
 MPT INFORMATION APPLICABLE TO
 TION OF THE TRAINING PLAN SUM-
 (REQUIREMENT L-2) AND MANPOWER
 SON 2 (REQUIREMENT J-2) FOR THE IPS.

Figure V-1

2



B. EVENT 01.2: DEVELOPMENT TEST (DT) DESIGN AND OPERATIONAL TEST (OT) I

1. References

- a. AR 70-10 Test and Evaluation During Development and Acquisition of Materiel, dated 29 August 1975
- b. AR 71-3 User Testing, dated 8 March 1977
- c. AR 602-1 Human Factors Engineering Program, dated 1 June 1976
- d. AR 611-1 Military Occupational Classification Structure Development and Implementation, dated 27 April 1976

2. General Description and Content

The Development Test (DT) I is conducted during the validation phase to demonstrate that the technical risks have been identified. The DT is complete enough to determine component interface problems and equipment performance capability.

The Operational Test (OT) I is an operational test of hardware/software configuration and training package of a system to provide an indication of military utility and worth to the user. The OT estimates the potential of the new system in relation to existing capabilities and the adequacy of the concepts for employment, supportability, organization, doctrinal, tactical, and training requirements.

After completion of the DT/OT I, the results are distributed to the Operational Tester, Combat Developer, Trainer, Logistician, and Materiel Developer, for use in refining identified critical issues. The test reports are among the primary sources used to develop independent evaluations.

3. Information Flow

The data derived from the DT/OT I test results are used to update the TQQPRI, BOIP, the logistic support analysis, the training support analysis, and the Development Plan (DP).

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C. EVENT 02.2: LOGISTICS SUPPORT ANALYSIS PLANNING UPDATE

1. References

- a. AR 71-2 Basis of Issue Plan,
dated 19 April 1976
- b. AR 700-18 Provisioning of U.S. Army Equipment,
dated 21 Sept. 1973
- c. AR 700-127 Integrated Logistics Support,
dated 11 April 1975
- d. AR 750-1 Army Materiel Maintenance Concepts and Policies,
dated 1 April 1978

2. General Description and Content

At this stage the results of the DT/OT I are analyzed along with the system design to identify logistic supportability problems. Total life cycle cost assessments are also made. In addition the logistic implications and their funding requirements, derived from test, demonstration, and integrated logistic support (ILS) are refined. Also alternative logistic support concepts are considered. Long lead time support items are identified and planning provisions are made for full scale development.

3. Information Flow

The update is accomplished by the Materiel Developer in coordination with the Combat Developer and Trainer. The manpower information developed during this analysis is used to update the manpower section of the DP.

D. EVENT 03.2: TRAINING SUPPORT PLANNING UPDATE

1. References

- a. AR 71-2 Basis of Issue Plan,
dated 19 April 1976
- b. AR 350-35 New Equipment Training and Introduction,
dated 15 Dec. 1979
- c. AR 602-1 Human Factors Engineering Program,
dated 1 June 1976
- d. AR 611-1 Military Occupational Classification Structure
Development and Implementation, dated 27 April 1976

2. General Description and Content

The training support planning update considers the information developed during the DT/OT I to determine what modifications are required to the initial training planning document. This includes an analysis of the training strategy, research, and human factors engineering implications of the overall training program.

3. Information Flow

The Trainer in coordination with the Materiel and Combat Developers update the training plan to reflect the experience gained during DT/ OT I. The results are incorporated in the DP.

E. EVENT 04.2: DEVELOPMENT OF TENTATIVE QUALITATIVE AND QUANTITATIVE PERSONNEL REQUIREMENTS INFORMATION (TQQPRI)

1. References

- a. AR 71-2 Basis of Issue Plan, dated 19 April 1976
- b. AR 350-35 New Equipment Training and Introduction, dated 15 Dec. 1979
- c. AR 602-1 Human Factors Engineering Program, dated 1 June 1976
- d. AR 611-1 Military Occupational Classification Structure Development and Implementation, dated 27 April 1976

2. General Description and Content

The introduction of new or improved materiel systems has an impact on the personnel system which must be taken into account. The need to develop Military Occupational Specialty/Special Skill Identifier (MOS/SSI) required to operate and/or maintain systems in an orderly manner is critical to the procurement, training, and deployment of personnel. Personnel requirements information is developed in consonance with elements of ILS to assure that they are compatible and mutually supporting. To accomplish this, the Quantitative and Qualitative Personnel Requirements Information (QQPRI) system has been developed. The Tentative QQPRI, (TQQPRI) report is based upon human factors/studies, the logistic support analysis, training strategy research, and behavioral research. It provides the most current information concerning numbers and qualifications of personnel involved in the use, support and maintenance of the proposed system. When appropriate and feasible it describes personnel duties and tasks to include work units, performance standards, manpower authorization factors, recommended MOS, skill levels, and organization. It also includes implications for personnel selection and training.

The Materiel Developer, who is the proponent for the TQQPRI, provides task and skill information resulting from his logistic support analysis including:

- a. DA approved statement of requirement or procurement directive.
- b. Description of the equipment.
- c. The annual maintenance manhours by MOS at each level of maintenance or each item which is identified on the BOIP feeder data sheet (DA Form 362b-R).

- d. The number of direct operators for the end items.
- e. The quantity of equipment to be delivered by fiscal year.
- f. Identity of the duty positions for the end item by descriptive title and recommendation of a suggested MOS.
- g. The individual duties and tasks for all identified operator and maintainer positions.
- h. The MOS from which personnel can be obtained if there is not a present MOS that can be used for the position.
- i. The knowledges, skills, abilities, and physical and mental qualifications required by personnel for a new recommended MOS.
- j. The additional qualifications required for a new MOS.
- k. A list of contractor or other training which was provided for test and evaluation.
- i. Copies of all training materiel.

The Combat Developer furnishes a copy of Basis of Issue Plans (BOIP), tentative Tables of Organizational and Equipment (TOE), Tables of Distribution and Allowanced (TDA) extracts, or mission statements.

The completed TQQPRI and BOIP I are forwarded, concurrently, to HQDA through USA MILPERCEN to DCSPER-DA for approval or modification of the qualitative and quantitative personnel requirements, revisions of authorization documents, revision of MOS/SSI, and for establishing policies, plans, and programs pertinent to the development, implementation, and maintenance of the Military Occupational Classification structure. MILPERCEN provides a tentative decision on MOS requirements.

3. Information Flow

The TQQPRI is used to update the DP and it also provides information to support the DCP and IPS.

F. EVENT 05.2: DEVELOPMENT OF INITIAL UNIT STRUCTURE AND BASIS OF ISSUE PLAN I (BOIP I)

1. References

- a. AR 1-1 Planning, Programming, and Budgeting within the Department of the Army, dated 25 May 1976
- b. AR 71-2 Basis of Issue Plan, dated 19 April 1976
- c. AR 71-9 Materiel Objectives and Requirements, Final Draft, dated 15 April 1979
- d. AR 611-1 Military Occupational Classification Structure Development and Implementation, dated 27 April 1976

2. General Description and Content

The initial unit structure is a product of studies completed by the Combat Developer after consideration of the TQQPRI. The extent of the structure developed will be limited to elements such as control, maneuver, and organic logistics. The structure should outline these elements together with aggregate strengths and major items of equipment. The BOIP I predicts early in the materiel acquisition cycle the quantitative requirements for a new item of equipment to be included in the TOE, the TDA, and the Common Tables of Allowance (CTA). The BOIP I is an initial estimate covering the planned placement of a new item of equipment and anticipated personnel changes as indicated by the TQQPRI.

3. Information Flow

The BOIP I is developed by the Combat Developer from information developed at his level and from information provided by the Materiel Developer and forwarded to DA (DCSOPS-RQR). The BOIP I, with TQQPRI, is staffed at HQDA and returned to the Combat Developer either approved, disapproved, or in need of adjustment. The Combat Developer in turn provides the BOIP I to the Materiel Developer and other interested agencies. The BOIP I becomes a supporting document to the ODP or the DP.

G. EVENT 06.2: IDENTIFICATION OF TRAINING DEVICE REQUIREMENTS (TDR)

1. References

- a. AR 70-1 Army Research, Development, and Acquisition, dated 1 May 1975
- b. AR 71-7 Military Training Aids and Army Training Aids Centers, dated 15 Oct. 1973
- c. AR 602-1 Human Factors Engineering Program, dated 1 June 1976

2. General Description and Content

The need and type of training devices will be identified as early as possible in the materiel development life cycle. Human engineering characteristics and human performance reliability are considered during the design to minimize cross-training or relearning problems. The training devices may be subjected to DT/OT testing to insure their reliability and maintainability.

3. Information Flow

The Trainer prepares the training devices requirements in coordination with commands having a vested interest in the proposed device. The manpower information derived from the training device requirements provide manpower and training data to the DP.

H. EVENT 07.2: TENTATIVE MOS EVALUATION

1. References

- a. AR 71-2 Basis of Issue Plan, dated 19 April 1976
- b. AR 611-1 Military Occupational Classification Structure Development and Implementation, dated 27 April 1976

2. General Description and Content

A tentative MOS evaluation is performed on all TQPRI's. The purpose of this evaluation is to consider the proposed MOS structure and to determine how it fits within the currently approved MOS structure. MILPERCEN also uses this information to establish personnel qualifications and to facilitate selection and distribution of personnel. This evaluation also serves as a basis for the preparation of advance training plans and the BOIP.

3. Information Flow

The Materiel Developer in coordination with the Trainer develops the TQPRI. MILPERCEN reviews the TQPRI to insure conformance with the current MOS structure. The tentative MOS evaluation serves as a basis for the preparation of Advance Training Plans, the BOIP, and the DP.

I. EVENT 08.2: DEVELOPMENT OF ADVANCED RESIDENT TRAINING PLAN AND NEW EQUIPMENT TRAINING PLAN

1. References

- a. AR 71-7 Military Training Aids and Army Training Aids Centers, dated 15 Oct. 1973
- b. AR 350-35 New Equipment Training and Introduction, dated 15 Dec. 1979
- c. AR 750-1 Army Materiel Maintenance Concepts and Policies, dated 1 April 1978

2. General Description and Content

The approved tentative MOS decision commences the development of the Advanced Resident Training Plan. The plan identifies the proposed training courses, the course length, anticipated number of personnel requiring training, equipment required, and proposed training location.

The New Equipment Training (NET) Plan is intended to insure the initial transfer of knowledge from the Materiel Developer to the Materiel User/Trainer/Supporter. This training is limited to personnel who will operate and maintain the materiel and who will proliferate the training within units.

3. Information Flow

The Advanced Resident Training Plan is developed by the Trainer and submitted to DA (DCSPER/DCSOPS) for approval. Subsequent to approval the Trainer incorporates the plan in the Development Plan. The New Equipment Training Plan is developed by the Materiel Developer. The Materiel Developer ensures that the Trainer, User, and the Operational Tester are informed of the NET implementation. The NET also becomes a part of the Development Plan.

J. EVENT 09.2: FORMULATION OF DEVELOPMENT PLAN (DP)

1. Reference

AR 70-27 Outline Development Plan/Development Plan/Army Program Memorandum/Defense Program Memorandum/Decision Coordinating Paper, dated 17 March 1975

2. General Description and Content

The DP is the document which records program decisions, contains the approved materiel requirements, and provides appropriate analysis of technical options and life cycle plans for development, testing, production, training, and logistic support of materiel items. The DP is a dynamic document appropriately refined and updated during the materiel acquisition process. The DP contains all information for the particular program; however, the specific content, scope, and level of detail is tailored to the needs and stage of development of the specific program.

Section V, Plan for Personnel and Training Requirements, includes identification of new skills, new equipment training, individual and crew training requirements, training devices, training facilities, and associated schedules. The QQPRI is provided by the Materiel Developer to the Combat Developer for use in preparing the unit structure and BOIP I, and to the Trainer for training implications.

Section VI, Plan for Logistic Support, provides for the identification of logistic support resources in the areas of personnel and training. These are included in this section to insure the supportability of the end item.

3. Information Flow

The DP is prepared by the Materiel Developer in conjunction with the Combat Developer, Logistician, and Trainer.

The DP incorporates and documents information developed prior to this event. The Materiel Developer obtains coordination/agreement with HQDA and other commands as required. The DP as an entity does not require HQDA review or approval.

K. EVENT 10.2 PREPARATION OF DRAFT DECISION COORDINATING PAPER (DCP) II

1. References

- a. DODD 5000.1 Major System Acquisitions, dated 19 Mar. 1980
- b. DODI 5000.2 Major System Acquisition Procedures, dated 19 Mar. 1980
- c. AR 14 - 15 Systems Acquisition Review Council Procedures, dated 1 April 1978

2. General Description and Content

The DCP is a DOD acquisition management document which supports the decision making process throughout the acquisition cycle of a major system. At Milestone II the DCP becomes a significant tool in determining the progress of the system acquisition process. The DCP with its Annexes and the IPS and the MRF are prepared for consideration by the Army and DSARC.

The MRF is described in Event 09.1B in Chapter IV of this report. The IPS, a more significant and comprehensive document, is described in Event 10.2A.

DCP format is shown in Figure V-2. The following Annexes are an integral part of the DCP:

Annex A: Goals and Thresholds

This Annex reflects the goals and thresholds previously approved by SECDEF at Milestone I. It also reflects refinements that have been made to the system based on the experience gained by the system proponent (see Figure V-3).

Annex B: Resources--Preferred Alternative

This data provides a more refined statement of what the system will require relating to O&M and Military Personnel costs. (see Figure V-4).

Annex C: Life Cycle Cost

This Annex furnishes information on the dollar cost, constant and current, of each alternative (see Figure V-5).

3. Information Flow

DCSRDA prepares the Draft DCP based on updated information provided by the Materiel Developer. After obtaining DA staff approval, the Draft DCP is submitted to the ASARC.

DECISION COORDINATING PAPER (DCP)--FORMAT

The DCP shall be prepared in the format shown below. The DCP shall not exceed 10 pages, including annexes. Supporting documentation should be referenced.

Part I: State the direction needed from the Secretary of Defense, including deviation from policy contained in DOD Directive 5000.1.

Part II: Describe the overall program. The Description and Mission statement contained in the "Congressional Data Sheets" may satisfy this requirement.

Part III: Revalidate the need.

Part IV: Summarize system and program alternatives considered and the reasons why the preferred alternative was selected.

Part V: Summarize the program acquisition strategy with emphasis on the next phase.

Part VI: Identify and assess issues affecting the SECDEF's Milestone decision.

ANNEXES

- A. Goals and Thresholds
- B. Resources--Preferred Alternative
- C. Life Cycle Cost

Figure V-2
Format for Decision Coordinating Paper
(Wording reproduced exactly from document in DODI 5000.2)

GOALS AND THRESHOLDS

	Last Approved by SECDEF <u>1/</u>		Current Estimate	Recommended to SECDEF at this Milestone <u>2/</u>	
	Goal	Threshold		Goal	Threshold
	(a)	(b)	(c)	(d)	(e)
<u>Cost</u> <u>3/</u> <u>4/</u> RDT&E <u>5/</u> Procurement Flyaway					
<u>SCHEDULE</u> <u>4/</u> <u>5/</u> Next Milestone IOC					
<u>PERFORMANCE</u> <u>7/</u> Operational Availability <u>8/</u> <u>9/</u> Mission Reliability <u>9/</u> <u>10/</u> Weight Range Speed Sortie Rate <u>11/</u>					
<u>SUPPORTABILITY</u> <u>AND MANPOWER</u> <u>7/</u> Manning <u>12/</u> Maintenance-related R&M <u>9/</u> <u>13/</u> POL Consumption Spares					

- 1/ Provide Goals and Thresholds from last SDDM.
- 2/ Explain any changes from columns (a) and (b) in a footnote.
- 3/ Provide values for total RDT&E and procurement appropriations and for flyaway/rollway/sailaway cost. Additional cost element may be appropriate for individual systems.
- 4/ Add additional stubs as appropriate. The stubs indicated are mandatory.
- 5/ Provide both a total RDT&E program goal and threshold. Fiscal year thresholds shall be displayed in a footnote to this Annex and shall total to the overall RDT&E threshold.
- 6/ Provide projected date for next milestone and for IOC. Define IOC by footnote. Additional schedule elements may be added, as appropriate.
- 7/ Select appropriate parameters that drive system effectiveness and costs. The stubs indicated are only examples.
- 8/ Use readiness-related R&M parameters that constitute operational availability if more appropriate.
- 9/ Provide goals and thresholds to be achieved by the next milestone. Predicted R&M growth shall be displayed in a footnote to this Annex as a series of intermediate thresholds capable of being measured during development, production, and deployment.
- 10/ Include mission maintainability if maintenance will be performed during the mission.
- 11/ Include combat utilization rate if different from peacetime utilization rate.
- 12/ Include both operators and maintenance personnel.
- 13/ Include separate parameters for depot maintenance.

Figure V-3. DCP Annex A (DODI 5000.2)

RESOURCES--PREFERRED ALTERNATIVE
(Current Dollars in Millions)

	FY 19 PRIOR	FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	TO COM- PLETION	TOTAL PROGRAM
Acquisition Quantities Development Production Deliveries									
DEVELOPMENT Validation Phase Full-Scale Develop- ment Total Development cost <u>1/</u> RDT&E Funding (Approved FYDP)									
PRODUCTION System Cost <u>2/</u> (Long Lead Re- quirements) Initial Spares Total Procure- ment Cost <u>1/</u> Procurement Funding (Ap- proved FYDP)		(A non-add entry for each fiscal year)				()	()	()	()
MILCON During Develop- ment During Production Total MILCON MILCON Funding (Approved FYDP)									
Total Program Acquisition Cost <u>1/</u> NOTCF, Procurement and MILCON Funding (Ap- proved FYDP) Difference ()									
Estimated Other Resources Re- quirements <u>3/</u> During Development During Production									
OPERATING AND SUPPORT O&M MILPERS Procurement <u>4/</u> Total Operating and Support Cost <u>1/</u>									
TOTAL LIFE CYCLE REQUIREMENTS									

1/ Definitions should be in accordance with DOD Instruction 5000.33.

2/ Equal to Weapon System Cost as defined in DODI 5000.33; for Shipbuilding, Outfitting and Post Delivery Costs will be included.

3/ Other life cycle related costs (i.e., Installation, Project Manager Office, Civilian Salaries, etc.) funded by other appropriations; e.g., O&M & MILPERS during Development and/or Production phase. Also, Production Base Support (Industrial Facilities), shore-based training facilities and other system peculiar costs identified as a separate line item, or as a portion of a separate line item, in another part of the Procurement Budget. Identify the content of this entry.

4/ Procurement costs associated with operation/owning a weapon system such as modifications, replenishment spares, ground equipment, etc.

Figure V-4. DCP Annex B (DODI 5000.2)

LIFE CYCLE COST
CONSTANT DOLLARS (MILLIONS)

<u>ALTERNATIVE</u>	<u>DEVELOPMENT</u>	<u>PRODUCTION</u>	<u>O&S</u>	<u>TOTAL</u>
A 1				
A 2				
A 3				
o				
o				
o				

CURRENT DOLLARS (MILLIONS)

<u>ALTERNATIVE</u>	<u>DEVELOPMENT</u>	<u>PRODUCTION</u>	<u>O&S</u>	<u>TOTAL</u>
A 1				
A 2				
A 3				
o				
o				
o				

Figure V-5
DCP Annex C (DODI 5000.2)

L. EVENT 10.2A: DEVELOPMENT OF INTEGRATED PROGRAM SUMMARY (IPS) II

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The IPS is a summary of the implementation plan for the acquisition cycle of the system. The IPS provides information for a management overview of the entire system.

At Milestone II in the acquisition process, the following manpower and training implications are considered:

• Manpower

Trade-offs conducted among hardware design.

Significant manpower differences between the old and new systems.

Sensitivity of manpower requirements to the proposed maintenance goals.

Sources of manpower for the new system, including a summary of projected requirements versus projected assets in critical fields.

New occupations that may be required.

Schedules for:

Further trade-off analyses among design and support elements impacting manpower.

Job Task identification.

Planned test and evaluation to verify manpower estimates.

• Training

Plans for attaining and maintaining required proficiency of operating and support personnel.

Quantified scope and duration of formal, on-the-job, and unit training.

Summary by fiscal year and by occupation of all formal training requirements.

Number of personnel to be trained and training costs.

Accompanying the IPS are five Annexes:

Annex A: Resources--Cost Track Summary

This Annex provides the O&M and Military Personnel cost for the development and production phases (see Figure V-6).

Annex B: Resources--Funding Profile

This Annex provides the cost of O&M, Military Personnel Operating and Support phases for each alternative (see Figure V-7).

Annex C: Resources--Summary of System Acquisition Cost

This Annex reflects cost data by program element (see Figure V-8).

Annex D: Manpower

This Annex provides the current manpower estimate for the military force structure to include unit manning, contract support, depot workload, and net changes in the total force associated with the proposed system. (see Figure V-9).

Annex E: Logistics

3. Information Flow

Data generated by the IPS goes to support the DCP. The updated data of the DP is used to compile the information contains in the IPS. This information along with the DCP is considered by the ASARC.

RESOURCES--COST TRACK SUMMARY 1/
(Millions of Dollars)

	FY Constant (Base Year)\$			Escalated \$
	Planning/ Development Estimate 2/	SDDM (Data) 3/	Current Estimate 4/	Current Estimate 4/
DEVELOPMENT PHASE				
RD&E				
Validation Phase				
Full Scale Development				
Contractors (Provide one level of WBS indenture based on program requirements)				
In-House (Provide one level of WBS indenture based on program requirements)				
Contingency (Service)				
TOTAL RD&E APPROPRIATION				
MILCON				
O&M 5/				
MILPERS 5/				
TOTAL DEVELOPMENT PHASE				
PRODUCTION PHASE				
PROCUREMENT				
System Cost 7/				
Flyaway (Provide one level of WBS indenture based on program re- quirements)				
Other System Costs				
Initial Spares				
Other Line Item				
Procurement 8/				
TOTAL PROCUREMENT APPROPRIATION				
MILCON				
O&M 5/				
MILPERS 5/				
TOTAL PRODUCTION PHASE				
TOTAL OPERATING & SUPPORT PHASE				
TOTAL LIFE CYCLE REQUIREMENTS				

AVERAGE ANNUAL SYSTEM O&S COSTS
No. of Systems: No. of Years:

- 1/ Apply footnotes as required to explain the chart. Adjustments to format are authorized to accommodate program; stub entries will be decided on at the initial Milestone Planning Meeting. Definitions should be in accordance with DOD Instruction 5000.33.
- 2/ Identify basis for estimate and date of SDDM.
- 3/ Add columns as necessary for each SDDM revision.
- 4/ The preferred alternative or the latest approved baseline cost estimate contained in the SDDM will be shown in constant and current (escalated estimate columns).
- 5/ Other Life Cycle related costs (i.e., Installation, Project Manager Office, Civilian Salaries, etc.) funded by O&M and MILPERS during Development and/or Production phase.
- 6/ Enter Quantity.
- 7/ Equal to Weapon System Cost as defined in DODI 5000.33.
- 8/ Production Base Support (Industrial Facilities), shore-based training facilities, and other systems peculiar cost identified as a separate line item, or as a portion of a separate line item, in another part of the Procurement Budget. Identify the content of this entry.

NOTE: Reasons for significant variations in estimate should be explained by footnote (e.g., schedule slippage, Congressional funding, etc.).

Figure V-6. IPS Annex A (DODI 5000.2)

RESOURCES--FUNDING PROFILE 1/
(Dollars in Millions)

Annex to be completed for each alternative:

- 1) In constant (base) year dollars
- 2) In Escalated dollars using current FYDP rates and round rules

	PRIOR FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	TOTAL PROGRAM
Acquisition Quantities to be Procured 2/ Development Production Deliveries							
DEVELOPMENT PHASE RDT&E RDT&E Validation Phase Full Scale Development Flyaway, Rollaway, Sailaway Other System Costs TOTAL RDT&E APPROPRIATION MILCON O&M 3/ MILPERS 3/ TOTAL DEVELOPMENT PHASE							
PRODUCTION PHASE PROCUREMENT 4/ System Cost 5/ Flyaway, Rollaway, Sailaway Other System Costs Initial Spares Other Line Item Procurement 6/ TOTAL PROCUREMENT APPROPRIATION MILCON O&M 3/ MILPERS 3/ TOTAL PRODUCTION PHASE							
OPERATING AND SUPPORT PHASE MILPERS O&M Procurement 7/ TOTAL OPERATING AND SUPPORT PHASE							

- 1/ Apply footnotes as required to explain the chart. Adjustments to format are authorized to accommodate program; stub entries will be decided on at the initial Milestone Planning Meeting. Definitions should be in accordance with DOD Instruction 5000.33.
- 2/ Identify the number of Development and Production units to be acquired by fiscal year.
- 3/ Other Life Cycle related costs (i.e., Installation, Project Manager Office, Civilian Salaries, etc.) funded by other appropriations; e.g., O&M and MILPERS during Development and/or Production phase.
- 4/ Enter the costs by appropriation e.g., Aircraft, Procurement, Missile Procurement, SCM or Other Procurement. If more than one applies, identify it separately.
- 5/ Equal to Weapon System Cost as defined in DODI 5000.33.
- 6/ Production Base Support (Industrial Facilities), shore-based training facilities, and other system peculiar costs identified as a separate line item, or as a portion of a separate line item, in another part of the Procurement Budget. Identify the content of each entry.
- 7/ Procurement costs associated with operation/owning a weapon system such as modifications, replacement spares, ground equipment, etc.

Figure V-7
IPS Annex B (DODI 5000.2)

RESOURCES - SUMMARY OF SYSTEM ACQUISITION COSTS (1)

<u>SOURCES OF FUNDING</u>	<u>CURRENT DOLLARS (MILLIONS)</u>
Department of the Army	\$XXXXX
Program Element XXXXX	\$XXXXX
Program Element XXXXX	<u>XXXXX</u>
Department of the Navy	
Program Element XXXXX	<u>\$XXXXX</u>
Department of the Air Force	
Program Element XXXXX	<u>\$XXXXX</u> XXXXX
Defense Agencies	
Program Element XXXXX	<u>\$XXXXX</u> XXXXX
Other U.S. Government	XXXXX
Other Foreign	<u>XXXXX</u>
TOTAL FUNDING	\$XXXXX

<u>APPLICATIONS</u>	<u>CURRENT DOLLARS (MILLIONS)</u>
Major System Equipment	\$XXXXX
System Project Manager	XXXXX
System Test and Evaluation	XXXXX
Peculiar Support Equipment	XXXXX
Training	XXXXX
Data	XXXXX
Operational Site Acquisition	XXXXX
Industrial Facilities	XXXXX
Common Support Equipment	<u>XXXXX</u>
TOTAL FUNDING	\$XXXXX

(1) Refer to DOD Instruction 5000.33

Figure V-8
IPS Annex C (DODI 5000.2)

MANPOWER

The IPS will have a one page Manpower annex including the following:

A. Current Manpower Estimate for Military Force Structure: ^{1/}

2/ UNIT TYPE	UNIT MANNING ^{3/}		PROGRAM TOTALS ^{5/}			
	PROGRAM ALTERNATIVE	REFERENCE SYSTEM	NO. OF UNITS ^{4/}	ACTIVE MILITARY	RESERVE COMPONENT	OTHER

B. Contractor support and depot workload (Annual manhours per end item deployed) ^{6/}:

	DSARC SYSTEM	Reference System
Contractor Support (below depot)		
Depot Level Workload		

C. Net change in Total Force Manpower associated with the proposed system deployment:

	Active Force	Reserves	DoD Civiliane
Number of Authorizations			

1. Not required at Milestone 1.
2. List each unit type that will operate the system/primary system elements, including unit types that provide intermediate maintenance of system components. Examples of unit types are "Tank Battalion," "Munitions Maintenance Squadron," "Avionics Intermediate Maintenance Department."
3. For each unit type, show the manning required to satisfy the most demanding mission (normally combat employment, but may be pre-combat readiness for certain naval vessels and systems on alert). Show total unit manning for operating units, organizational level direct support units, and dedicated intermediate support units. For units that provide intermediate level support to many primary systems, such as a naval shore based intermediate maintenance department, show manning equivalent of the man-years of work attributable to the program alternative. Denote manning equivalents with an asterisk.
4. Number of units of each type in the planned force structure for the program alternative.
5. Multiply number of units by unit manning, and equivalent manning by quantity of systems deployed, to obtain total manning required for units operating and/or supporting the program alternative system. Show how these requirements are expected to be satisfied as: active military authorizations, reserve component authorizations, and/or other to be identified in footnote. Unprogrammed requirements must be shown as "other".
6. Annual manyears of below-depot contractor support divided by the planned quantity of the system in the force structure, and the annual manyears for depot level maintenance of the system and its components divided by the planned quantity of the system in the force structure. Not required at Milestone 1.

Figure V-9
IPS Annex D (DODI 5000.2)

M. EVENT 11.2: REVIEW BY THE ARMY SYSTEM ACQUISITION REVIEW COUNCIL (ASARC)

II

1. References

- a. AR 15-14 System Acquisition Review Council Procedures,
dated 1 April 1978
- b. DA Pam 11-25 Life Cycle System Management Model for Army Systems,
dated 21 May 1975

2. General Description and Content

The ASARC is a group of top Army managers that review major systems acquisition programs and make appropriate recommendations to the Secretary of the Army for decision and subsequent forwarding to the Secretary of Defense. The purpose of the ASARC II is to determine the readiness of the program to enter full scale development. An ASARC II meeting is held at such time that HQDA has determined that the program warrants and is ready for commitment of resources. The Draft DCP along with the IPS and MRF is updated by the DCSRA and presented to the ASARC for their review. This document provides a more refined and clearer picture of the system as it pertains to cost, logistics, and personnel.

3. Information Flow

The DCP and supporting documents after being reviewed by the Army Staff, are presented to the ASARC. Their recommendations are presented to the Secretary of the Army for his approval and subsequent forwarding to DOD.

N. EVENT 12.2: REVIEW BY THE DEFENSE SYSTEM ACQUISITION REVIEW COUNCIL
(DSARC) II

1. References

- a. DODD 5000.1 Major System Acquisitions,
dated 19 Mar. 1980
- b. DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The DSARC acting as a top level DOD corporate body for system acquisitions provides advice and assistance to SECDEF in determining if a program is ready to proceed into the next phase of the acquisition cycle. Favorable action by the DSARC and signature by the SECDEF indicates that the system can proceed to the next stage, Full Scale Development.

3. Information Flow

A SDDM memorandum documents the Milestone II decision, this decision involves the selection of alternative(s) and authorization to proceed with Full Scale Development, which includes limited production for operational test and evaluation. This authorization to proceed with Full Scale Development also means that the SECDEF intends to deploy the system.

0. INFORMATION REQUIREMENT A.2: MANPOWER GOALS AND THRESHOLDS 2

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

Manpower goals and thresholds consistent with operational concepts, force structure, projected activity levels, maintenance demand, and support concepts are identified at Milestone II. DCP Annex A requires that the following be displayed:

- a. Previously Approved Manning Goals and Threshold
- b. Current Estimate of Operating Manning
- c. Current Estimate of Maintenance Manning
- d. Recommended Total Manning Goal and Threshold

The supporting IPS provides the data for these estimates.

3. Information Flow

The TQQPRI (Event 04.2) is prepared by the Materiel Developer and the BOIP I (Event 05.2) is prepared by the Combat Developer from the original input to the manpower goals. The thresholds prepared by the Army and approved by the SECDEF shall reflect reasonable variances from the goals prepared in the DCP.

The information is subsequently refined and incorporated into the DP (Event 09.2) by the Materiel Developer. DCSRDA prepares the Draft DCP and Draft IPS (Events 10.2 and 10.2A) from the DP and obtains DA staff approval prior to forwarding to OSD.

P. INFORMATION REQUIREMENT B.2: PERSONNEL FUNDING ESTIMATE 2

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

Personnel funding estimates will be prepared for Milestone II. DCP Annex B requires total estimated Operating and Support costs for MILPERS to be identified by fiscal year. Annex B to the IPS requires these costs to be identified by fiscal year in constant/current dollars.

3. Information Flow

The information required for Personnel Funding Estimate 2 is provided from the DT/OT test results (Event 01.2), the TQQPRI (Event 04.2), BOIP I (Event 05.2), and the tentative MOS Evaluation (Event 07.2). DT test results and the TQQPRI are provided by the Materiel Developer. The MOS evaluation is done by MILPERCEN. OT test results are provided by the Operational Tester.

The data is subsequently refined and incorporated into the Development Plan (Event 09.2) by the Materiel Developer. DCSRDA prepares the Draft DCP and Draft IPS (Events 10.2 and 10.2A) from the DP and obtains DA Staff approval prior to forwarding to OSD.

Q. INFORMATION REQUIREMENT C.2: MANPOWER ESTIMATE 2

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The reference requires the IPS (Annex D, Manpower) to contain a current manpower estimate for military force structure, which includes unit manning, contractor support, depot workload, and the net changes in the total force associated with proposed system deployment.

3. Information Flow

The information required for this event is provided from the DT/OT test results (Event 01.2), the TQQPRI (Event 04.2), BOIP I (Event 05.2), and the tentative MOS Evaluation (Event 07.2). The Materiel Developer provides the DT test results and the TQQPRI. The Combat Developer provides the BOIP and MILPERCEN provides the MOS Evaluation.

The data is subsequently refined and incorporated into the DP (Event 09.2) by the Materiel Developer. DCSRDA prepares the Draft DCP and Draft IPS (Events 10.2 and 10.2A) from the DP and obtains DA Staff approval prior to forwarding to OSD.

R. INFORMATION REQUIREMENT D.2: MANPOWER TRADE-OFF ANALYSIS 2

1. Reference

DODI 5000.2 Major System Acquisition Procedures
dated 19 Mar. 1980

2. General Description and Content

A summary of significant manpower implications of trade-offs conducted among hardware design, support characteristics, and support concepts are included in the manpower paragraph of the IPS for Milestone II. This summary is used to support the requirements contained in Annex U (Manpower) to the IPS.

This summary should be based upon a detailed trade-off analysis that addresses system characteristics, support concepts, trade-offs for maintenance effectiveness among manpower (numbers, occupations, and skill levels), support equipment, system design, and support structure. Manpower trade-off analysis documentation, if available, shall be included in the MRF.

3. Information Flow

The information required for this event is provided from the DT/OT test results (Event 01.2), the TQQPRI (Event 04.2), BOIP I (Event 05.2), and the tentative MOS Evaluation (Event 07.2).

The Materiel Developer provides the DT test results and TQQPRI. The BOIP is provided by the Combat Developer and MILPERCEN provides the MOS Evaluation. OT test results are provided by the Operational Tester.

The data is subsequently refined and incorporated into the Development Plan (Event 09.2) by the Materiel Developer. DCSRDA prepares the Draft DCP and Draft IPS (Event 10.2 and 10.2A) from the DP and obtains DA Staff approval prior to forwarding to GSD.

S. INFORMATION REQUIREMENT E.2: MANPOWER REQUIREMENTS COMPARISON 2

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

Annex D of IPS for Milestone II requires a manpower estimate for military force structure for the proposed system and display of current manpower requirements for a reference system. The manpower paragraph in the IPS briefly explains significant manpower differences in comparison with a reference system considering design, support concept, and employment objective. The reference system should be one that is being replaced by the new system, performs a similar function, or has similar technological characteristics. If supporting analysis is documented, it is incorporated in the project MRF.

3. Information Flow

The information required for this event is provided from the DT/OT test results (Event 01.2), the TQQPRI (Event 04.2), BOIP I (Event 05.2), and the tentative MOS Evaluation (Event 07.2). DT test results and the TQQPRI are provided by the Materiel Developer. The BOIP is provided by the Combat Developer. The OT test results are provided the Operational Tester, and MILPERCEN accomplishes the MOS Evaluation.

The data is subsequently refined and incorporated into the DP (Event 09.2) by the Materiel Developer. DCSRDA prepares the Draft DCP and Draft IPS (Events 10.2 and 10.2A) from the DP and obtains DA Staff approval prior to forwarding to OSD.

T. INFORMATION REQUIREMENT F.2: MANPOWER SENSITIVITY ANALYSIS 2

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The IPS includes an analysis that quantifies the sensitivity of manpower requirements to proposed reliability and maintainability goals and to proposed system activity rates for Milestone II.

3. Information Flow

The information required for this event is provided from the DT/OT test results (Event 01.2), the TQPRI (Event 04.2), BOIP I (Event 05.2), and the tentative MOS Evaluation (Event 07.2). Test results from the DT and the TQPRI are provided by the Materiel Developer, from the OT by the Operational Tester, and from the BOIP by the Combat Developer. MILPERCEN accomplishes the MOS Evaluation.

The data is subsequently refined and incorporated into the DP (Event 09.2) by the Materiel Developer. DCSRDA prepares the Draft DCP and Draft IPS (Events 10.2 and 10.2A) from the DP and obtains DA staff approval prior to forwarding to OSD.

U. INFORMATION REQUIREMENT G.2: MANPOWER REQUIREMENTS AND ASSETS 2

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The IPS for Milestone II includes a description of the sources of manpower for the new system, a summary of projected requirements versus projected Army assets in critical career fields, and the identity of new occupations that may be required. This is included in the Manpower paragraph of the IPS.

3. Information Flow

The information required for this event is provided from the DT/OT test results (Event 01.2), the TQQPRI (Event 04.2), BOIP I (Event 05.2), and the tentative MOS Evaluation (Event 07.2). Test results from the DT and the TQQPRI are provided by the Materiel Developer, from the OT by the Operational Tester, and from the BOIP by the Combat Developer. MILPERCEN accomplishes the MOS Evaluation.

The data is subsequently refined and incorporated into the Development Plan (Event 09.2) by the Materiel Developer. DCSRDA prepares the Draft DCP and Draft IPS (Events 10.2 and 10.2A) from the DP and obtains DA Staff approval prior to forwarding to OSD.

V. INFORMATION REQUIREMENT H.2: TRAINING REQUIREMENTS SUMMARY 2

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The IPS for Milestone II provides a summary by fiscal year of all formal training requirements for the proposed system, identifying numbers of personnel to be trained and training costs (including facility modifications). The net impact on special emphasis training programs such as undergraduate flight training is identified. This information is incorporated in the training paragraph of the IPS.

The detailed training requirements study/plan upon which this summary is based is included in the project MRF. Initial training planning described in Event 02.1 and subsequent updates form the basis for this information.

3. Information Flow

The Training Support Planning Update (Event 03.2) (prepared jointly by the Trainer and the Materiel Developer) the Advance Resident Training (ART) (Individual and Collective Training Plan (ICTP)) plan, and the NET plan (Event 08.2), form the original input to the Training Requirements 2. The ART/ICTP plan is prepared by TRADOC, while NET plan is prepared by the Materiel Developer.

The updated Training Support Plan including NET and ART planning, is summarized and incorporated into the DP by the Materiel Developer (Event 09.2). DCSRDA prepares the Draft DCP and Draft IPS (Events 10.2 and 10.2A) from the DP and obtains DA Staff approval prior to forwarding to OSD.

W. INFORMATION REQUIREMENT 1.2: TRAINING PLAN SUMMARY 2

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The reference requires the IPS for Milestone II to summarize Army plans for:

...attaining and maintaining the required proficiency of operating and support personnel, quantifying the scope and duration formal training, time in on-the-job and unit training, use of simulators and other major training devices in formal and unit training and use of other job performance and training aids. Anticipated savings from use of simulators or other training devices will be identified.

3. Information Flow

The Training Support Planning Update (Event 03.2) prepared jointly by the Trainer and Materiel Developer, the NET plan, and the ART plan form the basic input to the Training Plan Summary. Information concerning training devices and simulators are derived from the Training Device Requirement document (Event 06.2) originated by the Trainer.

The updated Training Support Plan (including information from the NET and ART plans) information and the Training Devices Requirements document are incorporated in to the DP by the Materiel Developer (Event 09.2). DCSRDA prepares the Draft DCP and Draft IPS (Events 10.2 and 10.2A) from the DP and obtains DA Staff approval prior to forwarding to OSD.

X. INFORMATION REQUIREMENT J.2: MANPOWER EVALUATION SCHEDULES 2

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The IPS for Milestone II shall include schedules for further trade-off analysis among design and support elements impacting manpower, job task identification, manpower analysis planned during full scale development, and planned test and evaluation to verify the manpower estimates and underlying assumptions.

3. Information Flow

The results of the tentative MOS Evaluation (Event 07.2) and the results of DT/OT Test Reports (Event 01.2) identify the basic issues that are analyzed and evaluated during Full Scale Development.

The Materiel Developer analyzes this information and develops a future DT plan that is incorporated in the DP (Event 09.2), while the Operational Tester develops the OT Plan. DCSRDA subsequently prepares the Draft DCP and IPS (Events 10.2 and 10.2A) from the DP and obtains DA Staff approval prior to forwarding to OSD.

CHAPTER VI
FUL. SCALE DEVELOPMENT

A. INTRODUCTION

A favorable decision by the Secretary of Defense upon DSARC II review and a corresponding SDDM constitute the Milestone II decision. This decision provides approval for the Army to proceed into Phase II, Full Scale Development.

This chapter describes the LCSMM process during the Full Scale Development Phase. It provides a description of the key events during the process, and further incorporates DOD requirements as related to manpower, personnel, and training. Figure VI-1 is a graphic display of the LCSMM process during this phase, including the key events. Specific manpower, personnel, and training information in the events/documents are keyed to the corresponding DOD source. Events and Information Requirements are summarized in Tables VI-1 and VI-2, respectively.

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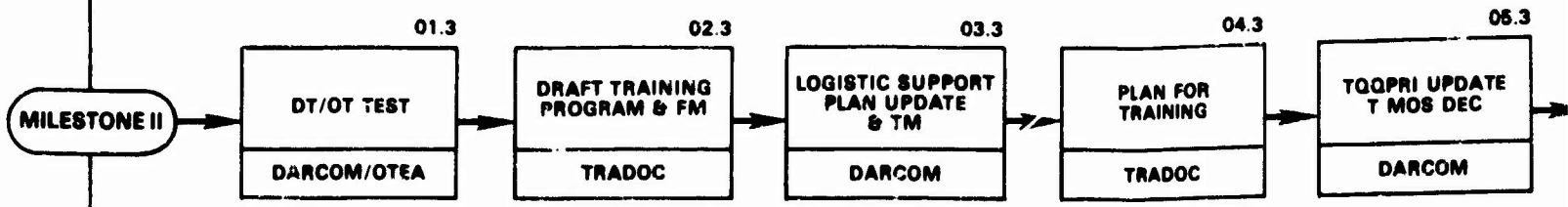
TABLE VI-1
SYSTEM ACQUISITION PROCESS
MANPOWER-PERSONNEL-TRAINING
EVENTS FOR MILESTONE III

EVENTS	TITLE	AGENCY RESPONSIBLE FOR SUBMISSION	APPROVAL AUTHORITY	REFERENCES
01.3	DT/OT II Test	Materiel Developer- DT/Operational Tester- OT	HQDA-DCSRDA	AR 10-4, AR 70-10, AR 71-2, AR 71-3, AR 602-1, DA Pam 11-25
02.3	Preparation of Draft Training Program and Field Manuals	Trainer	HQDA/DCSOPS	AR 70-1, AR 750-1, DA Pam 11-25
03.3	Preparation of Logistic Sup- port Planning and Technical Manuals	Materiel Developer	HQDA/DCSLOG	AR 70-1, AR 700-127 DA Pam 11-25
04.3	Update of Plan for Training	Trainer	HQDA/DCSOPS DCSFER	AR 71-2, AR 350-35, AR 611-1
05.3	Tentative QPPI and Tentative MOS Decision	Materiel Developer	MILPERCEN	AR 71-2, AR 350-35, AR 611-1, AR 700-18, AR 750-1, DA Pam 11-25
06.3	Preparation of Draft Plan TOE and Update of BOIP I	Combat Developer	HQDA-DCSOPS/ DCSPER	AR 70-27 AR 71-2, AR 570-2, DA Pam 11-25
07.3	Update of Development Plan (DP)	Materiel Developer	HQDA/DCSRDA	AR 70-27
08.3	Preparation of Draft DCP III	HQDA-DCSRDA	HQDA-DCSRDA	DODD 5000.1, DODI 5000.2, AR 15-14

EVENTS	TITLE	AGENCY RESPONSIBLE FOR SUBMISSION	APPROVAL AUTHORITY	REFERENCES
08.3A	Development of IPS III	HQDA-DCSRDA	HQDA-DCSRDA	DODI 5000.2
09.3	Review By ASARC III	HQDA/DCSRDA	SECARMY	AR 15-14, DA Pam 11-25
10.3	Review by DSARC III	DAE	SECDEF	DODD 5000.1, DODI 5000.2

TABLE VI-2
 SYSTEM ACQUISITION PROCESS
 MANPOWER-PERSONNEL-TRAINING
 INFORMATION REQUIREMENTS FOR DSARC III

REQUIREMENTS	SUBJECT	REFERENCES
A.3	Manpower Goals and Thresholds 3	DODI 5000.2
B.3	Personnel Funding Estimate 3	DODI 5000.2
C.3	Manpower Estimate 3	DODI 5000.2
D.3	Manpower Trade-Off Analysis 3	DODI 5000.2
E.3	Manpower Sensitivity Analysis 3	DODI 5000.2
F.3	Manpower Requirements and Assets 3	DODI 5000.2
G.3	Training Requirements Summary 3	DODI 5000.2
H.3	Training Plan Summary 3	DODI 5000.2
I.3	Manpower Evaluation Schedules 3	DODI 5000.2



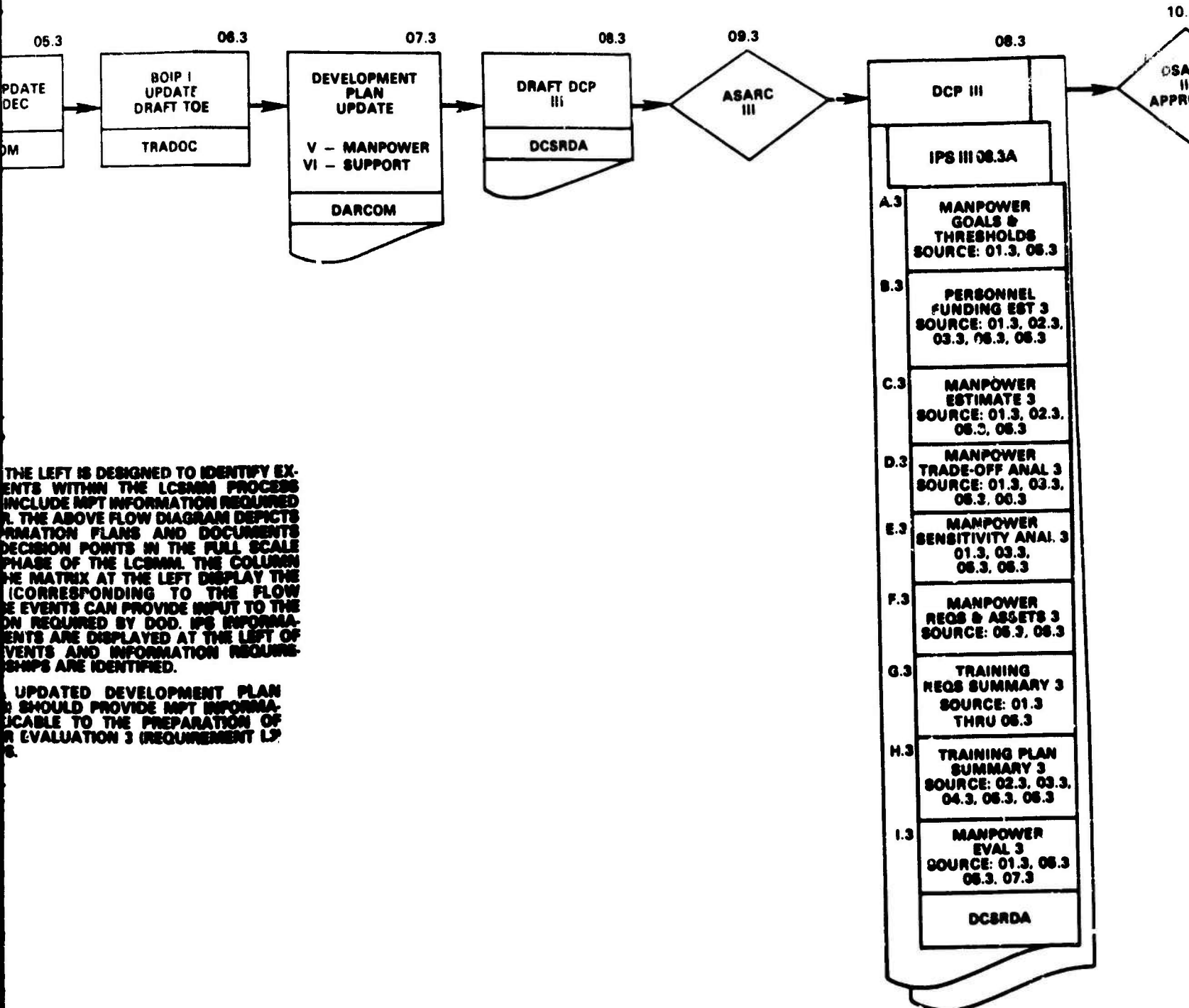
EVENT I →		01.3	02.3	03.3	04.3	05.3	06.3	07.3
INFORMATION REQUIREMENT		DT/OT TEST	DRAFT TRAINING PROGRAM	U/D LOGISTIC SUPPORT PLAN & TM	PLAN FOR TRAINING	U/D TQPRI/T MOS	DRAFT TOS, BOP I	UPDATED DEVELOPMENT PLAN
A.3	MANPOWER GOALS & THRESHOLDS 3	X					X	
B.3	PERSONNEL FUNDING ESTIMATE 3	X	X	X		X	X	
C.3	MANPOWER ESTIMATE 3	X	X			X	X	
D.3	MANPOWER TRADE-OFF ANALYSIS 3	X		X		X	X	
E.3	MANPOWER SENSITIVITY ANALYSIS 3	X		X		X	X	
F.3	MANPOWER REQUIREMENTS & ASSETS 3					X	X	
G.3	TRAINING REQUIREMENTS SUMMARY 3	X	X	X	X	X	X	
H.3	TRAINING PLAN SUMMARY 3		X	X	X	X	X	
I.3	MANPOWER EVALUATION 3	X				X	X	X

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EXAMPLE: UPDATED EVENT (7.3) SHOULD TION APPLICABLE TO MANPOWER EVALUAT FOR THE IFS.

1

SCALE DEVELOPMENT PHASE

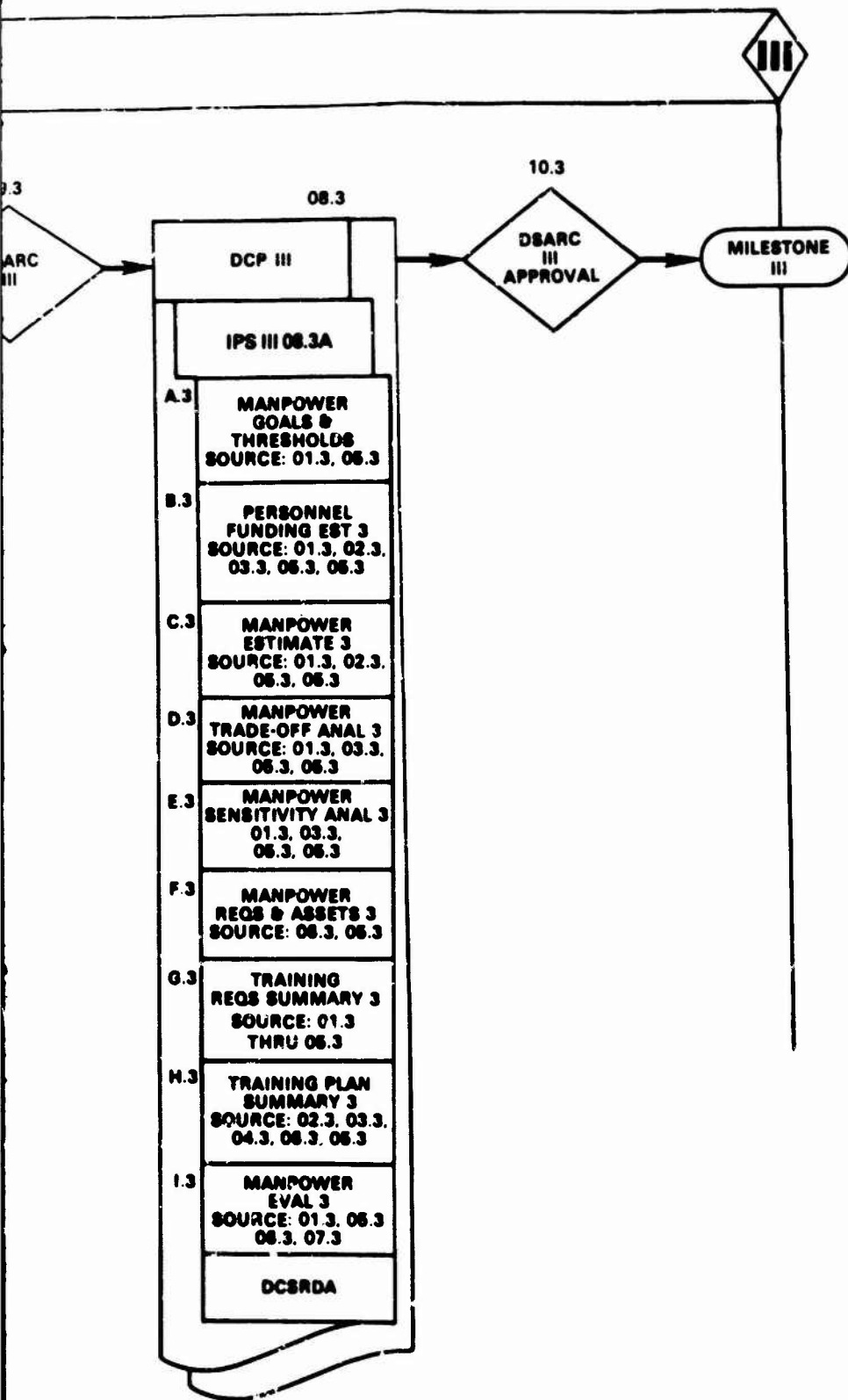


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 EVENTS WITHIN THE LCSMM PROCESS
 INCLUDE MPT INFORMATION REQUIRED
 R. THE ABOVE FLOW DIAGRAM DEPICTS
 RMATION PLANS AND DOCUMENTS
 DECISION POINTS IN THE FULL SCALE
 PHASE OF THE LCSMM. THE COLUMN
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 EVENTS AND INFORMATION REQUIS-
 SHIPS ARE IDENTIFIED.

UPDATED DEVELOPMENT PLAN
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 ICABLE TO THE PREPARATION OF
 R EVALUATION 3 (REQUIREMENT L3
 E.

Figure VI-1
 Full Scale Development Phase

2



B. EVENT 01.3: DEVELOPMENT TEST (DT) AND OPERATIONAL TEST (OT) II

1. References

- a. AR 10-4 U.S Army Operational Test and Evaluation Agency, dated 30 Dec. 1974
- b. AR 70-10 Test and Evaluation During Development and Acquisition of Materiel, dated 29 August 1975
- c. AR 71-2 Basis of Issue Plan, 19 April 1976
- d. AR 71-3 User Testing, dated 8 March 1977
- e. AR 602-1 Human Factors Engineering Program, dated 1 June 1976
- f. DA Pam 11-25 Life Cycle System Management Model for Army Systems, dated 21 May 1975

2. General Description and Content

The DT II provides the final technical data for determining system readiness for transition into either low-rate initial production or full scale production. The DT II measures performance--including compatibility, safety, and supportability--of the system, associated equipment, and development training and maintenance test support packages. The DT II also includes tests of human engineering and training devices.

The OT II tests the engineering of the prototype equipment prior to initial production decision. The goal is to estimate the systems operational suitability in as realistic an operational environment as possible.

After completion of DT/OT II the results are distributed to the Operational Tester, the Combat Developer, the Trainer, and the Materiel Developer for use in updating the DP, the TQQPRI, the BOIP, and the Advanced Training Plan.

3. Information Flow

The Materiel Developer conducts the DT, and the Operational Tester conducts the OT. Both the Materiel Developer and Operational Tester provide the test results to DA (including DCSOPS, DCSRDA, DCSPER, DCSLOG) and to each other. The developed data is used to update the DP, the TQQPRI, the BOIP I, and the Advanced Training Plan.

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C. EVENT 02.3: PREPARATION OF DRAFT TRAINING PROGRAM AND DRAFT FIELD MANUALS

1. References

- a. AR 70-1 Army Research, Development, and Acquisition, dated 1 May 1975
- b. AR 750-1 Army Materiel Maintenance Concepts and Policies, dated 1 April 1978
- c. DA Pam 11-25 Life Cycle System Management Model For Army Systems, dated 21 May 1975

2. General Description and Content

The Trainer determines what updates are required to the Army Training Tests (ATT), Army Training Programs (ATP), or the Army Training Evaluation Program (ARTEP) by the new system. Update to the ATT and ATP is rare, as they have been replaced by the ARTEP. At the same time, a Draft Field Manual (FM) is prepared containing applicable doctrine and organizational and training evaluations found during the OT.

3. Information Flow

The Trainer prepares the training tests. The Draft FM is distributed to interested service schools and DA agencies for coordination and guidance. This information also assists in refining the systems training requirements.

D. EVENT 03.3: PREPARATION OF LOGISTIC SUPPORT PLANNING AND TECHNICAL MANUALS

1. References

- a. AR 70-1 Army Research, Development, and Acquisition, dated 1 May 1975
- b. AR 700-127 Integrated Logistics Support, dated 11 April 1975
- c. DA Pam 11-25 Life Cycle System Management Model for Army Systems, dated 21 May 1975

2. General Description and Content

A detailed examination of the proposed system to include prototype items is made for the purpose of recommending enhancement in reliability and maintainability, selecting optimum support concept, and identifying the logistic resources needed to support the system. The logistic support analysis contains qualitative and quantitative requirements on support and test equipment, facilities, personnel, and training. This information is also used to formulate equipment publications, such as technical manuals.

3. Information Flow

The information is developed by the Materiel Developer in coordination with the Combat Developer and the Trainer using data developed during the DT/OT testing. This data is used to update Section VI Plan for Logistic Support of the DP. This data is also used by the Materiel and Combat Developer to provide manpower information (personnel and training).

E. EVENT 04.3: UPDATE OF PLAN FOR TRAINING

1. References

- a. AR 71-2 Basis of Issue Plan, dated 19 April 1976
- b. AR 350-35 New Equipment Training and Introduction, dated 15 Dec. 1979
- c. AR 611-1 Military Occupational Classification Structure Development and Implementation, dated 27 April 1976

2. General Description and Content

This is an update of the training plan to validate personnel and training requirements. It includes an expanded concept for institutional, unit, and individual training, as well as for initial proficiency training. The updated training plan will be examined during the OT.

3. Information Flow

The Trainer in coordination with the Combat and Materiel Developers develops the updated training plan, the data from which is incorporated into the updated DP as refinements of the training and manpower requirements.

F. EVENT 05.3: TENTATIVE QQPRI (TQQPRI) AND TENTATIVE MOS DECISION

1. References

- a. AR 71-2 Basis of Issue Plan, dated 19 April 1976
- b. AR 350-35 New Equipment Training and Introduction, dated 15 Dec. 1979
- c. AR 611-1 Military Occupational Classification Structure Development and Implementation, dated 27 April 1976
- d. AR 700-18 Provisioning of U.S. Army Equipment, dated 21 Sept. 1973
- e. AR 750-1 Army Materiel Maintenance Concepts and Policies, dated 1 April 1978
- f. DA Pam 11-25 Life Cycle System Management Model for Army Systems, dated 21 May 1975

2. General Description and Content

Revisions to the previously prepared TQQPRI are made as required. MILPERCEN provides a tentative decision (new or revised) on MOS requirements to support the TQQPRI. Also included in the tentative MOS decision is the structure for supervisory MOSs.

3. Information Flow

The Materiel Developer in coordination with the Combat Developer and the Trainer develops the TQQPRI. MILPERCEN provides the tentative decision on the MOS's shown in the TQQPRI. This data is used to refine the manpower and training requirements of the proposed system, and incorporated into the updated DP.

G. EVENT 06.3: PREPARATION OF DRAFT PLAN FOR TABLES OF ORGANIZATION AND EQUIPMENT (TOE) AND UPDATE OF BASIS OF ISSUE PLAN (BOIP) I

1. References

- a. AR 70-27 Outline Development Plan/Development Plan/Army Program Memorandum/Defense Program Memorandum/Decision Coordinating Paper, dated 17 March 1975
- b. AR 71-2 Basis of Issue Plan, dated 19 April 1976
- c. AR 570-2 Organization and Equipment Authorization Tables - Personnel, dated 22 July 1969
- d. DA Pam 11-25 Life Cycle System Management Model for Army Systems, dated 21 May 1975

2. General Description and Content

If the system being developed requires a new TOE, the Combat Developer prepares the draft. Incorporated into this draft are the authorization factors developed in the TQQPRI and specified in BOIP I. Also considered are the related TOE(s) addressed in BOIP I which may require modification resulting from the introduction of the new system.

3. Information Flow

The Combat Developer prepares the Draft TOE and provides copies to the Trainer, Materiel Developer, and the Logistician. The Draft TOE provides another means of refining the manpower and training requirements of the new system. This information is incorporated into the updated DP.

H. EVENT 07.3: UPDATE OF DEVELOPMENT PLAN (DP)

1. Reference

AR 70-27 Outline Development Plan/Development Plan/Army Program Memorandum/Defense Program Memorandum/Decision Coordinating Paper, dated 17 March 1975

2. General Description and Content

The DP records program decisions and provides appropriate analysis of technical options and life cycle plans for development, testing, production, training support, and logistic support of materiel items. The updated DP incorporates the DT/OT II test results, the updated training program, the logistic support planning, the updated TQPRI, and the BOIP I.

Section V, Plan for Personnel and Training of the DP, includes the information developed during the latest series of tests to include information from the updated TQPRI.

3. Information Flow

The updated DP is prepared by the Material Developer in conjunction with the Combat Developer, Logistician, and Trainer. This document provides information for developing the DCP.

I. EVENT 08.3: PREPARATION OF THE DRAFT DECISION COORDINATING PAPER (DCP)
III

1. References

- a. DODD 5000.1 Major System Acquisitions,
dated 19 Mar. 1980
- b. DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980
- c. AR 15-14 Systems Acquisition Review Council Procedures,
dated 1 April 1978

2. General Description and Content

The DCP is a DOD acquisition management document which supports the decision making process throughout the acquisition cycle of a major system. At Milestone III a DCP is developed to show the status of the system based on the experience gained during the DT/OT test and on the refinements of requirements made by the Trainer, Logistician, Materiel Developer, and Combat Developer. The DCP with its Annexes, the IPS, and the MRF are prepared for consideration by the Army and DOD Acquisition Review Councils.

The MRF is described in Event 09.1B in Chapter IV of this report. A more comprehensive description of the IPS is contained in Event 08.3A. DCP format is shown in Figure VI-2. The following Annexes are included in the DCP:

Annex A: Goals and Thresholds

This Annex reflects the goals and thresholds previously approved by SECDEF at Milestone II. It also reflects refinements that have been made to the system based on the experience gained by the system proponent (see Figure VI-3).

Annex B: Resources--Preferred Alternative

This data provides a more refined statement of what the system will require relating to O&M and Military Personnel costs (see Figure VI-4).

Annex C: Life Cycle Cost

This Annex provides dollar cost data for each alternative (see Figure VI-5).

3. Information Flow

DCSRDA prepares the Draft DCP based on updated information provided by the Materiel Developer. After obtaining DA staff approval the Draft DCP is submitted to the ASARC.

DECISION COORDINATING PAPER (DCP)--FORMAT

The DCP shall be prepared in the format shown below. The DCP shall not exceed 10 pages, including annexes. Supporting documentation should be referenced.

Part I: State the direction needed from the Secretary of Defense, including deviation from policy contained in DOD Directive 5000.1.

Part II: Describe the overall program. The Description and Mission statement contained in the "Congressional Data Sheets" may satisfy this requirement.

Part III: Revalidate the need.

Part IV: Summarize system and program alternatives considered and the reasons why the preferred alternative was selected.

Part V: Summarize the program acquisition strategy with emphasis on the next phase.

Part VI: Identify and assess issues affecting the SECDEF's Milestone decision.

ANNEXES

- A. Goals and Thresholds
- B. Resources--Preferred Alternative
- C. Life Cycle Cost

Figure VI-2
Format for Decision Coordinating Paper
(Wording reproduced exactly from document in DODI 5000.2)

GOALS AND THRESHOLDS

	Last Approved by SECDEF 1/		Current Estimate	Recommended to SECDEF at this Milestone 2/	
	Goal	Threshold		Goal	Threshold
	(a)	(b)		(d)	(e)
Cost 3/ 4/ RDT&E 5/ Procurement Flyaway					
SCHEDULE 4/ 5/ Next Milestone IOC					
PERFORMANCE 7/ Operational Availability 8/ 9/ Mission Reliability 9/ 10/ Weight Range Speed Sortie Rate 11/					
SUPPORTABILITY AND MANPOWER 7/ Manning 12/ Maintenance- related R&M 9/ 13/ POL Consumption Sparas					

- 1/ Provide Goals and Thresholds from last SDDM.
- 2/ Explain any changes from columns (a) and (b) in a footnote.
- 3/ Provide values for total RDT&E and procurement appropriations and for flyaway/rollway/sailaway cost. Additional cost element may be appropriate for individual systems.
- 4/ Add additional stubs as appropriate. The stubs indicated are mandatory.
- 5/ Provide both a total RDT&E program goal and threshold. Fiscal year thresholds shall be displayed in a footnote to this Annex and shall total to the overall RDT&E threshold.
- 6/ Provide projected data for next milestone and for IOC. Define IOC by footnote. Additional schedule elements may be added, as appropriate.
- 7/ Select appropriate parameters that drive system effectiveness and costs. The stubs indicated are only examples.
- 8/ Use readiness-related R&M parameters that constitute operational availability if more appropriate.
- 9/ Provide goals and thresholds to be achieved by the next milestone. Predicted R&M growth shall be displayed in a footnote to this Annex as a series of intermediate thresholds capable of being measured during development, production, and deployment.
- 10/ Include mission maintainability if maintenance will be performed during the mission.
- 11/ Include combat utilization rate if different from peacetime utilization rate.
- 12/ Include both operators and maintenance personnel.
- 13/ Include separate parameters for depot maintenance.

Figure VI-3. DCP Annex A (DODI 5000.2)

RESOURCES--PREFERRED ALTERNATIVE
(Current Dollars in Millions)

	FY 19 PRIOR	FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	TO COM- PLETION	TOTAL PROGRAM
Acquisition Quantities Development Production Deliveries									
DEVELOPMENT Validation Phase Full-Scale Develop- ment Total Development cost <u>1/</u> RDT&E Funding (Approved FYDP)									
PRODUCTION System Cost <u>2/</u> (Long Lead Re- quirements) Initial Spares Total Procure- ment Cost <u>1/</u> Procurement Funding (Ap- proved FYDP)		(A non-add entry for each fiscal year)				()	()	()	()
MILCON During Develop- ment During Production Total MILCON MILCON Funding (Approved FYDP)									
Total Program Acquisition Cost <u>1/</u> NOICF, Procurement and MILCON Funding (Ap- proved FYDP) Difference ()									
Estimated Other Resources Re- quirements <u>3/</u> During Development During Production									
OPERATING AND SUPPORT O&M MILPERS Procurement <u>4/</u> Total Operating and Support Cost <u>1/</u>									
TOTAL LIFE CYCLE REQUIREMENTS									

- 1/ Definitions should be in accordance with DOD Instruction 5000.33.
- 2/ Equal to Weapon System Cost as defined in DODI 5000.33; for Shipbuilding, Outfitting and Post Delivery Costs will be included.
- 3/ Other Life Cycle related costs (i.e., Installation, Project Manager Office, Civilian Salaries, etc.) funded by other appropriations; a.g., C&M & MILPERS during Development and/or Production phase. Also, Production Base Support (Industrial Facilities), shore-based training facilities and other system peculiar costs identified as a separate line item, or as a portion of a separate line item, in another part of the Procurement Budget. Identify the content of this entry.
- 4/ Procurement costs associated with operation/owning a weapon system such as modifications, replenishment spares, ground equipment, etc.

Figure VI-4. DCP Annex B (DODI 5000.2)

LIFE CYCLE COST

CONSTANT DOLLARS (MILLIONS)

<u>ALTERNATIVE</u>	<u>DEVELOPMENT</u>	<u>PRODUCTION</u>	<u>O&S</u>	<u>TOTAL</u>
A 1				
A 2				
A 3				
o				
o				
o				

CURRENT DOLLARS (MILLIONS)

<u>ALTERNATIVE</u>	<u>DEVELOPMENT</u>	<u>PRODUCTION</u>	<u>O&S</u>	<u>TOTAL</u>
A 1				
A 2				
A 3				
o				
o				
o				

Figure VI-5
DCP Annex C (DODI 5000.2)

J. EVENT 08.3A: DEVELOPMENT OF THE INTEGRATED PROGRAM SUMMARY (IPS) III

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The IPS is a summary of the implementation plan for the acquisition cycle of the system.

At Milestone III in the acquisition process the following manpower and training implications are considered:

• Manpower

Changes from manpower estimates presented at Milestone II.

Sensitivity of manpower to reliability and maintainability levels, and to systems activity rates.

Shortfalls in meeting requirements by occupation.

New occupations not yet approved and programmed.

Plans for evaluating manpower requirements during follow-on test and evaluation.

• Training

Plans for attaining and maintaining the required proficiency of operating and support personnel.

Summary by fiscal year and occupation of all formal training requirements for the proposed system.

Plans and additional resources required to train the initial group (component) of operation and support personnel for unit conversion to fielded systems.

Plans for training reserve component personnel whose mission requires operation or support of the system.

Plans for validation of proficiency and personnel performance.

Accompanying the IPS are five Annexes:

Annex A: Resources--Cost Track Summary

This Annex provides the O&M and Military Personnel cost for the development and production phases (see Figure VI-6).

Annex B: Resources--Funding Profile

This Annex provides the cost of O&M, Military Personnel, Operating and Support phases for each alternative (see Figure VI-7).

Annex C: Resources--Summary of System Acquisition Cost

This Annex reflects cost data by program element (see Figure VI-8).

Annex D: Manpower

This Annex provides the current manpower estimate for the military force structure to include unit type manning, depot workload, and net changes in the total force associated with the proposed system (see Figure VI-9).

Annex E: Logistics

3. Information Flow

Data generated by the IFS goes to support the DCP. The updated information provided by the DP is used to compile information in the IPS. The IPS along with the DCP is considered by the ASARC.

RESOURCES--COST TRACK SUMMARY 1/
(Millions of Dollars)

	FY Constant (Base Year)\$			Escalated \$
	Planning/ Development Estimate 2/	SDDM (Date) 3/	Current Estimate 4/	Current Estimate 4/
DEVELOPMENT PHASE				
RDT&E				
Validation Phase				
Full Scale Development				
Contractors				
(Provide one level of WBS indenture based on program requirements)				
In-House				
(Provide one level of WBS indenture based on program requirements)				
Contingency (Service)				
TOTAL RDT&E APPROPRIATION				
MILCON				
O&M 5/				
MILPERS 5/				
TOTAL DEVELOPMENT PHASE				
PRODUCTION PHASE				
PROCUREMENT				
System Cost 7/				
Flyaway				
(Provide one level of WBS indenture based on program requirements)				
Other System Costs				
Initial Spares				
Other Line Item				
Procurement 8/				
TOTAL PROCUREMENT: APPROPRIATION				
MILCON				
O&M 5/				
MILPERS 5/				
TOTAL PRODUCTION PHASE				
TOTAL OPERATING & SUPPORT PHASE				
TOTAL LIFE CYCLE REQUIREMENTS				

AVERAGE ANNUAL SYSTEM

O&S COSTS

No. of Systems: No. of Years:

- 1/ Apply footnotes as required to explain the chart. Adjustments to format are authorized to accommodate program; such entries will be decided on at the initial Milestone Planning Meeting. Definitions should be in accordance with DOD Instruction 5000.33.
- 2/ Identify basis for estimate and date of SDDM.
- 3/ Add columns as necessary for each SDDM revision.
- 4/ The preferred alternative or the latest approved baseline cost estimate contained in the SDDM will be shown in constant and current (escalated estimate columns).
- 5/ Other Life Cycle related costs (i.e., installation, Project Manager Office, Civilian Salaries, etc.) funded by O&M and MILPERS during Development and/or Production phase.
- 6/ Enter Quantity.
- 7/ Equal to Weapon System Cost as defined in DODI 5000.33.
- 8/ Production Base Support (Industrial Facilities), shore-based training facilities, and other systems peculiar cost identified as a separate line item, or as a portion of a separate line item, in another part of the Procurement Budget. Identify the content of this entry.

NOTE: Reasons for significant variations in estimate should be explained by footnote (e.g., schedule slippage, Congressional funding, etc.).

Figure VI-6. IPS Annex A (DODI 5000.2)

RESOURCES--FUNDING PROFILE 1/
(Dollars in Millions)

Annex to be completed for each alternative:
1) In constant (base) year dollars
2) In Fiscalized dollars using current
FY/F rates and round rules

	PRIOR FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	TOTAL PROGRAM
Acquisition Quantities to be Procured 2/ Development Production Deliveries							
DEVELOPMENT PHASE RDT&E RDT&E Validation Phase Full Scale Development Flyway, Rollaway, Sailaway Other System Costs TOTAL RDT&E APPROPRIATION MILCON O&M 3/ MILPERS 3/ TOTAL DEVELOPMENT PHASE							
PRODUCTION PHASE PROCUREMENT 4/ System Cost 5/ Flyway, Rollaway, Sailaway Other System Costs Initial Spares Other Line Item Procurement 6/ TOTAL PROCUREMENT APPROPRIATION MILCON O&M 3/ MILPERS 3/ TOTAL PRODUCTION PHASE							
OPERATING AND SUPPORT PHASE MILPERS O&M Procurement 7/ TOTAL OPERATING AND SUPPORT PHASE							

- 1/ Apply footnotes as required to explain the chart. Adjustments to format are authorized to accommodate program; stub entries will be decided on at the initial Milestone Planning Meeting. Definitions should be in accordance with DOD Instruction 5000.33.
- 2/ Identify the number of Development and Production units to be acquired by fiscal year.
- 3/ Other Life Cycle related costs (i.e., Installation, Project Manager Office, Civilian Salaries, etc.) funded by other appropriations; e.g., O&M and MILPERS during Development and/or Production phase.
- 4/ Enter the costs by appropriation e.g., Aircraft, Procurement, Millile Procurement, SCN or Other Procurement. If more than one applies, identify it separately.
- 5/ Equal to Weapon System Cost as defined in DODI 5000.33.
- 6/ Production Base Support (Industrial Facilities), shore-based training facilities, and other system peculiar costs identified as a separate line item, or as a portion of a separate line item, in another part of the Procurement Budget. Identify the content of each entry.
- 7/ Procurement costs associated with operation/owning a weapon system such as modifications, replenishment spares, ground equipment, etc.

Figure VI-7
IPS Annex B (DODI 5000.2)

RESOURCES - SUMMARY OF SYSTEM ACQUISITION COSTS (1)

<u>SOURCES OF FUNDING</u>	<u>CURRENT DOLLARS (MILLIONS)</u>
Department of the Army	\$XXXXX
Program Element XXXXX	\$XXXXX
Program Element YXXXX	<u>XXXXX</u>
Department of the Navy	
Program Element XXXXX	<u>\$XXXXX</u>
Department of the Air Force	
Program Element XXXXX	<u>\$XXXXX</u>
Defense Agencies	
Program Element XXXXX	<u>\$XXXXX</u>
Other U.S. Government	XXXXX
Other Foreign	<u>XXXXX</u>
TOTAL FUNDING	\$XXXXX

<u>APPLICATIONS</u>	<u>CURRENT DOLLARS (MILLIONS)</u>
Major System Equipment	\$XXXXX
System Project Manager	XXXXX
System Test and Evaluation	XXXXX
Peculiar Support Equipment	XXXXX
Training	XXXXX
Data	XXXXX
Operational Site Acquisition	XXXXX
Industrial Facilities	XXXXX
Common Support Equipment	<u>XXXXX</u>
TOTAL FUNDING	\$XXXXX

(1) Refer to DOD Instruction 5000.33

Figure VI-8
IPS Annex C (DODI 5000.2)

MANPOWER

The IPS will have a one page Manpower annex including the following:

A. Current Manpower Estimates for Military Force Structure: 1/

UNIT TYPE <u>2/</u>	UNIT MANNING <u>3/</u>		PROGRAM TOTALS <u>5/</u>			OTHER
	PROGRAM ALTERNATIVE	REFERENCE SYSTEM	NO. OF UNITS <u>4/</u>	ACTIVE MILITARY	RESERVE COMPONENT	

B. Contractor support and depot workload (Annual manhours per and item deployed) 6/:

	DSARC SYSTEM	Reference System
Contractor Support (below depot)		
Depot Level Workload		

C. Net change in Total Force Manpower associated with the proposed system deployment:

	Active Force	Reserves	DoD Civilians
Number of Authorizations			

1. Not required at Milestone 1.
2. List each unit type that will operate the system/primary system elements, including unit types that provide intermediate maintenance of system components. Examples of unit types are "Tank Battalion," "Munitions Maintenance Squadron," "Avionics Intermediate Maintenance Department."
3. For each unit type, show the manning required to satisfy the most demanding mission (normally combat employment, but may be pre-combat readiness for certain naval vessels and systems on alert). Show total unit manning for operating units, organizational level direct support units, and dedicated intermediate support units. For units that provide intermediate level support to many primary systems, such as a naval shore based intermediate maintenance department, show manning equivalent of the man-years of work attributable to the program alternative. Denote manning equivalents with an asterisk.
4. Number of units of each type in the planned force structure for the program alternative.
5. Multiply number of units by unit manning, and equivalent manning by quantity of systems deployed, to obtain total manning required for units operating and/or supporting the program alternative system. Show how these requirements are expected to be satisfied as: active military authorizations, reserve component authorizations, and/or other to be identified in footnote. Unprogrammed requirements must be shown as "other".
6. Annual manyears of below-depot contractor support divided by the planned quantity of the system in the force structure, and the annual manyears for depot level maintenance of the system and its components divided by the planned quantity of the system in the force structure. Not required at Milestone 1.

Figure VI-9
IPS Annex D (DODI 5000.2)

K. EVENT C9.3: REVIEW BY ARMY SYSTEMS ACQUISITION REVIEW COUNCIL (ASARC III)

1. References

- a. AR 15-14 System Acquisition Review Council Procedures, dated 1 April 1978
- b. DA Pam 11-25 Life Cycle Systems Management Model for Army Systems, dated 21 May 1975

2. General Description and Content

The ASARC is a group of top Army managers that review major system acquisition programs and make appropriate recommendations to the Secretary of the Army for decision and subsequent forwarding to the Secretary of Defense. The purpose of the ASARC III is to make a recommendation for full scale production. A low-rate initial production could be recommended as an exception to policy. Such production is authorized for obtaining some of representative production items for OT III. Test, leadtime, and economic factors are considered in authorizing a low rate initial production of major systems.

3. Information Flow

After being reviewed by the Army Staff, the DCP and supporting documents are presented to the ASARC. Their recommendations are presented to the Secretary of the Army for his approval and subsequent forwarding to DOD.

L. EVENT 10.3: REVIEW BY DEFENSE SYSTEMS ACQUISITION REVIEW COUNCIL (DSARC)
III

1. References

- a. DODD 5000.1 Major System Acquisitions, dated
19 Mar. 1980
- b. DODI 5000.2 Major System Acquisition Procedures, dated
19 Mar. 1980

2. General Description and Content

The DSARC, acting as a top level DOD corporate body for system acquisition, advises and assists SECDEF in determining if a program is ready to proceed into the next phase of the acquisition cycle. The purpose of DSARC III is to confirm the full scale production recommendation (or low-rate initial production, if recommended). SECDEF approval of the recommendation releases funds to support the production or limited procurement.

3. Information Flow

A SDDM memorandum documents the Milestone III decision. This decision permits the release of funds to support initial production. The SDDM establishes program goals and thresholds and provides guidance for the next phase of acquisition, as applicable.

M. INFORMATION REQUIREMENT A.3: MANPOWER GOALS AND THRESHOLDS 3

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

Reference requires that manpower goals and thresholds--consistent with operational concept, force structure, projected activity levels, maintenance demand, and support concepts--be included in Annex A to the DCP for DSARC III. These estimates, based upon considerations including available OT evaluation results and current field experiences with similar equipment, are summarized in the DCP.

3. Information Flow

The DT/OT II test (Event 01.3), the updated TQQPRI (Event 05.3), the Draft Plan TOE, and the updated BOIP (Event 06.3) form the initial input to Manpower Goals. Threshold information is obtained from the SDDM promulgated after DSARC II. The DT report and TQQRI are prepared by the Materiel Developer. The Draft TOE and BOIP are prepared by the Combat Developer.

The information is subsequently refined and incorporated into the DP (Event 07.3) by the Materiel Developer. DSRDA prepares the Draft DCP (Event 08.3) from the DP and obtains DA staff approval (Event 09.3) before forwarding to OSD.

N. INFORMATION REQUIREMENT B.3: PERSONNEL FUNDING ESTIMATE 3

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

Personnel Funding Estimates are prepared for Milestone III. DCP Annex B requires that total operating and support costs for MILPERS be identified by fiscal year. IPS Annex B requires that these costs be identified by fiscal year in constant/current dollars.

3. Information Flow

The information required for Personnel Funding Estimate 3 is derived from DT/OT test results (Event 01.3), the TQQPRI (Event 05.3), and BOIP update (Event 06.3). DT test results and the TQQPRI are provided by the Materiel Developer, while the Combat Developer provides the BOIP.

The information is subsequently refined and incorporated into the DP (Event 07.3) by the Materiel Developer. DCSRDA prepares the Draft DCP (Event 08.3) from the DP and obtains DA staff approval (Event 09.3) before forwarding to OSD.

0. INFORMATION REQUIREMENT C.3: MANPOWER ESTIMATE 3

1. Reference

DODI 5000.2 Major System Acquisition Procedures, dated 19 Mar. 1980

2. General Description and Content

Reference requires that IPS Annex D (Manpower) contain a current manpower estimate for military force structure. The supporting discussion in the IPS explains changes from manpower estimates presented at Milestone II.

3. Information Flow

The information required for this event is provided from DT/OT test results (Event 01.3), the TQQPRI and tentative MOS decision (Event 05.3), and the Draft Plan TOE and BOIP update (Event 06.3). The DT test results and TQQPRI are prepared by the Materiel Developer. The Draft TOE and BOIP are prepared by the Combat Developer, while MILPERCEN makes the MOS decision.

OT test results are provided by the Operational Tester. The information is subsequently refined and incorporated into the DP (Event 07.3) by the Materiel Developer. DCSRDA prepares the Draft DCP (Event 08.3) from the DP and obtains DA staff approval (Event 09.3) before forwarding to OSD.

P. INFORMATION REQUIREMENT D.3: MANPOWER TRADE-OFF ANALYSIS 3

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

Reference requires that after Milestone 0, manpower requirements be subjected to trade-offs with system characteristics and support concepts. Trade-offs for maintenance effectiveness among manpower (numbers, occupations, and skill levels), support equipment, system design, and support structures are conducted.

A manpower requirements analysis is completed at Milestone III and included in the manpower paragraph of the IPS for Milestone III. This summary is used to support Manpower Estimate for military manpower force structure, contractor support, and depot workload. Estimates are required in IPS Annex D (Manpower).

3. Information Flow

The required information is provided from DT/OT test results (Event 01.3), the TQQPRI and Tentative MOS decision (Event 05.3), and the Draft Plan TOE and BOIP update (Event 06.3). The DT test results and the TQQPRI are prepared by the Materiel Developer. The Draft TOE and BOIP are prepared by the Combat Developer. MILPERCEN accomplishes the MOS Evaluation, while the Operational Tester prepares the OT test results.

The information is subsequently refined and incorporated into the DP (Event 07.3) by the Materiel Developer. DCSRDA prepares the Draft DCP (Event 08.3) from the DP and obtains DA staff approval (Event 09.3) before forwarding to OSD.

Q. INFORMATION REQUIREMENT E.3: MANPOWER SENSITIVITY ANALYSIS 3

1. Reference

DODI 5000.2 Major System Acquisition Procedures, dated
19 Mar. 1980

2. General Description and Content

Reference requires that the IPS for Milestone III contain an analysis that quantifies the sensitivity of manpower requirements to demonstrated reliability and maintainability levels and to system activity levels (including wartime surge). This is included in the manpower paragraph to the IPS.

3. Information Flow

The information required for this event is provided from DT/OT test results (Event 01.3), the TQQPRI and Tentative MOS decision (Event 05.3), and the Draft Plan TOE and BOIP update (Event 06.3). DT test results and the TQQPRI are prepared by the Materiel Developer. The Draft TOE and BOIP are prepared by the Combat Developer. MILPERCEN accomplishes the MOS decision after the Operational Tester provides the OT test results.

The information is subsequently refined and incorporated into the DP (Event 07.3) by the Materiel Developer. DCSRDA prepares the Draft DCP (Event 08.3) from the DP and obtains DA staff approval (Event 09.3) before forwarding to OSD.

R. INFORMATION REQUIREMENT F.3: MANPOWER REQUIREMENTS AND ASSETS 3

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

Reference requires the IPS for Milestone III to identify potential shortfalls in meeting system personnel requirements by occupation and to identify new occupations not yet approved and programmed into Army personnel and training systems. An assessment of the impact on readiness of failure to obtain essential personnel is also required. This is included in the manpower paragraph to the IPS.

3. Information Flow

The information required for this event is provided from DT/OT test results (Event 01.3), the TQPRI and Tentative MOS decision (Event 05.3), and the Draft Plan TOE and BOIP update (Event 06.3). DT test results and the TQPRI are prepared by the Materiel Developer. The Combat Developer prepares the Draft TOE and BOIP update, MILPERCEN accomplishes the MOS Evaluation, while OT test results are prepared by the Operational Tester.

The information is subsequently refined and incorporated into the DP (Event 07.3) by the Materiel Developer. DCSRDA prepares the Draft DCP (Event 08.3) from the DP and obtains DA staff approval (Event 09.3) before forwarding to OSD.

S. INFORMATION REQUIREMENT G.3: TRAINING REQUIREMENTS SUMMARY 3

i. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

Reference requires the IPS for Milestone III to provide an updated summary (developed for Milestone II) by fiscal year of all formal training requirements for the proposed system, identifying number of personnel to be trained and training cost. Net impact on special emphasis training programs shall also be identified. These requirements shall reflect DT/OT results and recent field experiences with similar equipment. This information shall be incorporated in to the training paragraph of the IPS.

The updated training study/plan, if available, shall be included in the project MRF. Previous training plans/studies used the MRF for past reviews may be a basis for any required update.

3. Information Flow

The Draft Training Program (Event 02.3) prepared by the Trainer (TRADOC), the Logistic Support Plan (Event 03.3) prepared by the Materiel Developer (DARCOM), and the updated Plan for Training (Event 04.3) prepared by TRADOC form the initial input for Training Requirements Summary 3.

The information is subsequently refined and incorporated into the DP (Event 07.3) by the Materiel Developer. DCSRDA prepares the Draft DCP (Event 08.3) from the DP and obtains DA staff approval (Event 09.3) before forwarding to OSD.

T. INFORMATION REQUIREMENT H.3: TRAINING PLAN SUMMARY 3

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. Content and Purpose

Reference requires that the IPS for Milestone III provide an updated summary of plans (developed for Milestone II) for:

...attaining and maintaining the required proficiency of operating and support personnel, quantifying the scope and duration of formal training, time in on-the-job and unit training use of simulators, and other major training devices in formal and unit training and use of other job performance and training aids. Anticipated savings from use of simulators or others training devices will be identified.

In addition the IPS:

- Summarizes plans and additional resources required to train initial operating and support personnel for unit conversion to fielded system.
- Summarizes plans for training reserve personnel who require system operation and/or support.
- References plans for validation of proficiency criteria and personnel performance.

This information will be included in the training paragraph of the IPS. The detailed study/training plan supporting this summary, if available, shall be included in the project MRF.

3. Information Flow

The Draft Training Program (Event 2.3) prepared by the Trainer, the Logistic Support Plan (Event 3.3) prepared by the Materiel Developer, and TKADOC's updated Plan for Training (Event 4.3) provide the initial input for the Training Plan Summary.

The information is subsequently refined and incorporated into the DP (Event 07.3) by the Materiel Developer. DCSRDA prepares the Draft DCP (Event 08.3) from the DP and obtains DA staff approval (Event 09.3) before forwarding to OSD.

U. INFORMATION REQUIREMENT I.3: MANPOWER EVALUATION SCHEDULES 3

1. Reference

DODI 5000.1 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The IPS for Milestone III summarizes plans for evaluating manpower requirements during follow-on test and evaluation. This is included in the manpower paragraph to the IPS.

3. Information Flow

The results of DT/OT test reports (Event 01.3), the TQQPRI and MOS Decision documents (Event 05.3), and the Draft Plan TOE (Event 06.3) form the input to Manpower Evaluation Schedules 3. DT test results and the TQQPRI are prepared by the Materiel Developer. MOS Decision is made by MILFERCEN and Draft TOE is prepared by the Combat Developer.

The information is subsequently refined and incorporated into the DP (Event 07.3) by the Materiel Developer. DCSRDA prepares the Draft DCP (Event 08.3) from the DP and obtains DA staff approval (Event 09.3) before forwarding to OSD.

CHAPTER VII
PRODUCTION AND DEPLOYMENT

A. INTRODUCTION

A favorable decision by the Secretary of Defense upon DSARC III review and a corresponding SDDM constitute the Milestone III decision. This decision provides approval for the Army to proceed into Phase III, Production and Deployment.

DODD 5000.1, Major System Acquisitions, and DODI 5000.2, Major System Acquisition Procedures, do not address a situation in which the Milestone III decision includes authorization for limited production with a follow-on review for full production and deployment. The Army LCSMM process, however, does provide for this contingency and prescribes events and procedures necessary to review the system at a follow-on ASARC/DSARC review (e.g. ASARC IIIA and DSARC IIIA).

The purpose of this chapter is to describe the LCSMM process from a limited production decision to another DSARC review (DSARC III A). The chapter provides a description of key events during the process. It further includes DOD manpower, personnel, and training requirements as previously prescribed for DSARC III. Figure VII-1 is a graphic display of the LCSMM process during the phase, including the key events. Events/documents which contain specific type manpower, personnel, and training information is keyed to the corresponding DOD information requirement category to display sources of information. It should be noted however, that such reviews beyond DSARC III may require specific considerations on a case-by-case basis and could vary depending on the course of the limited production decision. A summary of events and Information Requirements is found in Tables VII-1 and VII-2

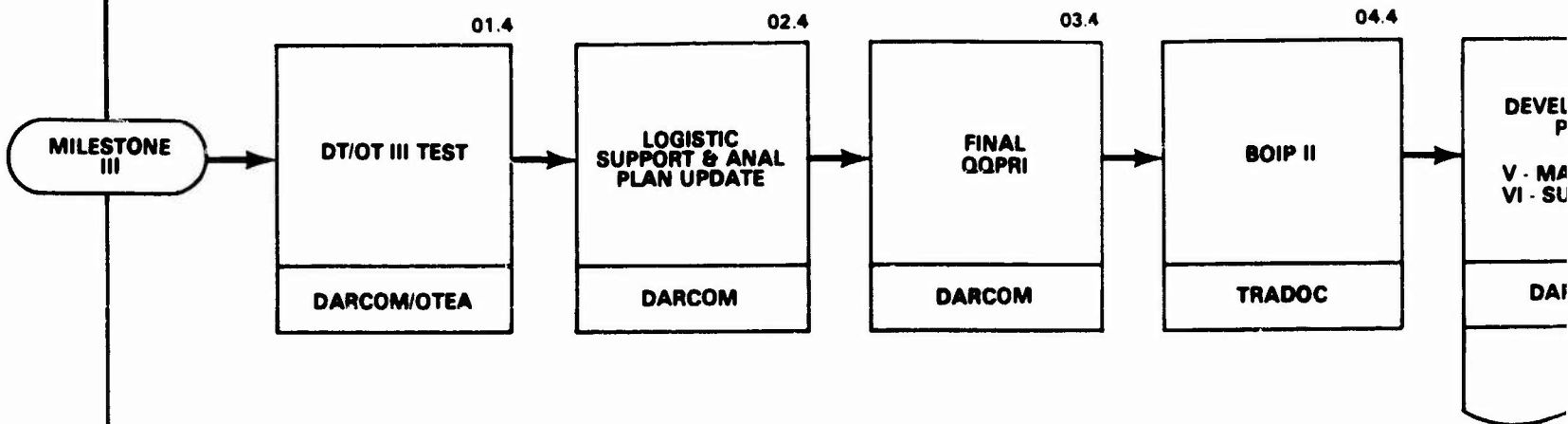
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TABLE VII-1
 SYSTEM ACQUISITION PROCESS
 MANPOWER-PERSONNEL-TRAINING
 EVENTS FOR MILESTONE III A

EVENTS	TITLE	AGENCY RESPONSIBLE FOR SUBMISSION	APPROVAL AUTHORITY	REFERENCES
01.4	DT/OT III	Materiel Developer- DT/Operational Tester	HQDA-DCSPARDA	AR 70-10, AR 71-3
02.4	Logistic Support Planning Summary	OT Materiel Developer	HQDA-DCSLOG	AR 700-127
03.4	Final QQPRI and MOS Decision	Materiel Developer	MILPERCEN	AR 71-2, AR 350-35, AR 611-1, AR 750-1
04.4	Preparation of BIOP II	Combat Developer	HQDA-DCSOPS/ DCSPER	AR 15-14 AR 71-2 DA Pam 11-25
05.4	Update Development Plan (DP)	Materiel Developer	HQDA-DCSRDA	AR 70-27
06.4	Draft DCP III A	HQDA-DCSRDA	SECARMY	AR 15-14 DODD 5000.1 DODI 5000.2
06.4A	Preparation of IPS III A	HQDA-DCSRDA	SECARMY	DODI 5000.2
07.4	Review by ASARC III A	HQDA-DCSRDA	SECARMY	AR 15-14 DA Pam 11-25
08.4	Review by DSARC III A	DAE	SECDEF	DODD 5000.1 DODI 5000.2

III

PRODUCTION AND D



THIS FIGURE PORTRAYS THE PROCESSING SYSTEM WHEN A LIMITED PRODUCTION DECISION IS MADE AND THE REQUIREMENT FOR ANOTHER DOD REVIEW EXISTS.

Figure
Production And I

DEPLOYMENT PHASE

IIIA

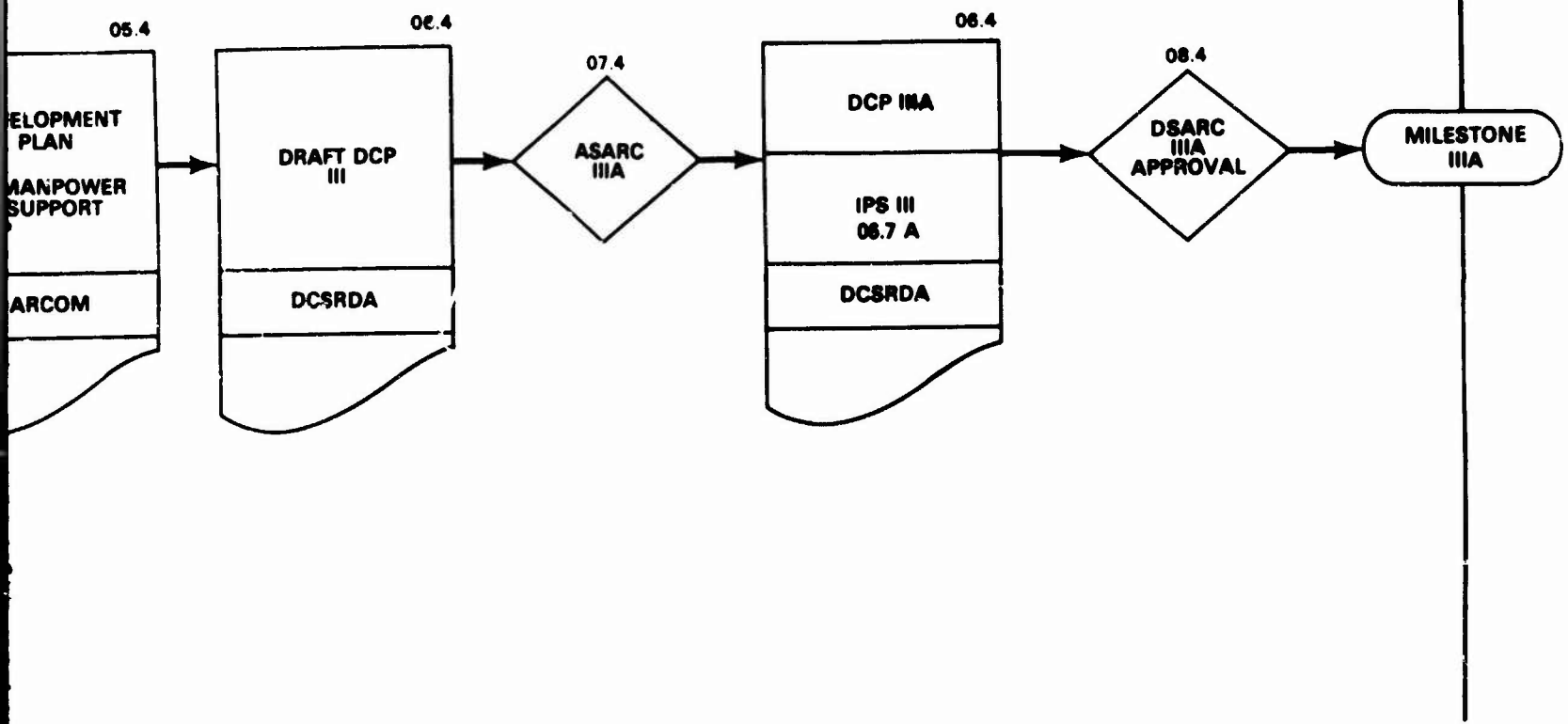


Figure VII-1
Deployment Phase

2

TABLE VII-2
SYSTEM ACQUISITION PROCESS
MANPOWER-PERSONNEL-TRAINING
INFORMATION REQUIREMENTS FOR DSARC III A

REQUIREMENTS	SUBJECT	REFERENCES
--------------	---------	------------

Requirements information data is dependent on what the DSARC may require on a case-by-case basis and can vary depending on the limited production decision.

B. EVENT 01.4: DEVELOPMENT TEST (DT)/OPERATIONAL TEST (OT) III

1. References

- a. AR 70-10 Test and Evaluation During Development and Acquisition of Materiel, dated 24 Aug. 1975
- b. AR 71-3 User Testing, dated 8 March 1977

2. General Description and Content

DT III is conducted on items delivered from the initial production run to verify that the materiel produced conforms to specifications. The DT III is of short duration, used to determine if transition from an engineering development prototype to production has been made, and that it meets DP specifications. The requirement for DT III may be waived if DT II satisfies that of DT III.

OT III is conducted on initial production items for the purpose of estimating operational suitability. Using the initial production item verification of tactics, training, supportability, and organization are addressed. After completion of DT/OT III the results are distributed to the Operational Tester, the Combat Developer, the Trainer, and the Materiel Developer for updating the BOIP II, the DP, and the ATP.

3. Information Flow

The Materiel Developer is responsible for conducting the DT and the Operational Tester conducts the OT. The results are provided to DA (including DCSOPS, DCSRDA, DCSPER, DCSLOG) and to each other. The results of the DT/OT III update the BOIP II, DP, and the ATP.

C. EVENT 02.4: LOGISTIC SUPPORT PLANNING SUMMARY

1. Reference

AR 700-127 Integrated Logistic Support, dated 11 April 1975

2. General Description and Content

The Logistic Support Planning Summary summarizes the concept of logistic support established to meet mission requirements planned for the programmed system, including maintenance data, environment considerations, technical data, support facilities, personnel, and training.

3. Information Flow

The Materiel Developer prepares the Logistic Support Planning Summary and provides it to DCSLOG-DA prior to ASARC III and ASARC III A review.

D. EVENT 03.4: FINAL QQPRI AND MOS DECISION

1. References

- a. AR 71-2 Basis of Issue Plan, dated 19 April 1976
- b. AR 350-35 New Equipment Training and Introduction, 15 Dec. 1979
- c. AR 611-1 Military Occupational Classification Structure Development and Implementation, dated 27 April 1976
- d. AR 750-1 Army Materiel Maintenance Concepts and Policies, dated 1 April 1978

2. General Description and Content

Eighteen months prior to deployment of a new item/system a final QQPRI report is prepared. The final QQPRI will reflect all the changes made in design; and organization, and the results of the DT/OT tests. The final QQPRI report will be used to reach a final MOS decision. The decision concerning a new or revised MOS required to support the item/system is made by DCSPER/MILPERCEN.

3. Information Flow

The Materiel Developer in coordination with the Combat Developer and the Trainer prepare the final QQPRI. DCSPER/MILPERCEN review and approve the QQPRI based on the recommendations of the Materiel Developer, Combat Developer, and the Trainer. The approved MOS decision is used to update TOEs and training plans.

E. EVENT 04.4: PREPARATION OF THE BASIS OF ISSUE PLAN (BOIP) II

1. References

- a. AR 15-14 Systems Acquisition Review Council Procedures, dated 1 April 1978
- b. AR 71-2 Basis of Issue Plan, dated 19 April 1976
- c. DA Pam 11-25 Life Cycle System Management Model for Army Systems, dated 21 May 1975

2. General Description and Content

The BOIP II explains what TOE organization will use the item (including its support equipment), where and in what quantities it will be used, and its personnel implications.

The BOIP II contains TOE, TDA, JTA, and CTA requirements in a more comprehensive and exact form, so that in program and budget planning administrative delays are avoided in procuring and introducing the proper quantities of equipment.

3. Information Flow

The Combat Developer prepares the BOIP II from data developed during the OT I, II, III, the updated TQPRI, and the BOIP I. The BOIP II is submitted to DCSOPS-DA for approval. The manpower data from the BOIP II updates the manpower and training portion of the DP.

F. EVENT 05.4 UPDATE DEVELOPMENT PLAN (DP)

1. Reference

AR 70-27 Outline Development Plan/Development Plan/Army Program Memorandum/Defense Program Memorandum/Decision Coordinating Paper, dated 17 March 1975

2. General Description and Content

The DP records program decisions and provides appropriate analysis of technical options and life cycle plans for development, testing, production, training support, and logistic support of materiel items. The updated DP incorporates the DT/OT III test results, plus input developed by the Trainer, Logistician, and the Operational Tester.

3. Information Flow

The updated DP is prepared by the Materiel Developer in conjunction with the Combat Developer, Logistician, and Trainer. The DP provides information for developing the DCP.

G. EVENT 06.4: DRAFT DECISION COORDINATING PAPER (DCP) III A

1. References

- a. DODD 5000.1 Major System Acquisitions, dated 19 Mar. 1980
- b. DODI 5000.2 Major System Acquisition Procedures, dated 19 Mar. 1980
- c. AR 15-14 Systems Acquisition Review Council Procedures, dated 1 April 1978

2. General Description and Content

The DCP (Figure VII-2) is a DOD acquisition management document which supports the decision making process throughout the acquisition cycle for major systems. At this stage of the acquisition cycle the DCP contains information for the optimum production quantities consistent with current guidance on readiness and modernization. The accompanying Annexes along with the IPS and the MRF are prepared for consideration by the Army and DOD Acquisition Review Councils.

The MRF is described in Event 09.1B in Chapter IV of this report. The IPS is described in detail at Event 06.7A in this chapter.

The DCP Annexes are as follows:

Annex A: Goals and Thresholds

This Annex reflect the goals and thresholds previously approved by SECDEF. It also reflects refinements that have been made to the system based on the experience gained to this point in the acquisition cycle. (see Figure VII-3).

Annex B: Resources--Preferred Alternative

The data from this Annex provides a refined statement of what the system will require relating to O&M and Military Personnel Costs (see Figure VII-4).

Annex C: Life Cycle Cost

This Annex provides dollar cost data for each alternative (see Figure VII-5).

3. Information Flow

DCSRDA prepares the Draft DCP based on updated information provided by the Materiel Developer. After obtaining DA staff approval the Draft DCP is submitted to the ASARC.

DECISION COORDINATING PAPER (DCP)--FORMAT

The DCP shall be prepared in the format shown below. The DCP shall not exceed 10 pages, including annexes. Supporting documentation should be referenced.

Part I: State the direction needed from the Secretary of Defense, including deviation from policy contained in DOD Directive 5000.1.

Part II: Describe the overall program. The Description and Mission statement contained in the "Congressional Data Sheets" may satisfy this requirement.

Part III: Revalidate the need.

Part IV: Summarize system and program alternatives considered and the reasons why the preferred alternative was selected.

Part V: Summarize the program acquisition strategy with emphasis on the next phase.

Part VI: Identify and assess issues affecting the SECDEF's Milestone decision.

ANNEXES

- A. Goals and Thresholds
- B. Resources--Preferred Alternative
- C. Life Cycle Cost

Figure VII-2
Format for Decision Coordinating Paper
(Wording reproduced exactly from document in DODI 5000.2)

GOALS AND THRESHOLDS

	Last Approved by SECDEF 1/		Current Estimate	Recommended to SECDEF at this Milestone 2/	
	Goal	Threshold		Goal	Threshold
	(a)	(b)	(c)	(d)	(e)
<u>Cost</u> 3/ 4/ RDT&E 5/ Procurement Flyaway					
<u>SCHEDULE</u> 4/ 5/ Next Milestone IOC					
<u>PERFORMANCE</u> 7/ Operational Availability 8/ 9/ Mission Reliability 9/ 10/ Weight Range Speed Sortie Rate 11/					
<u>SUPPORTABILITY AND MANPOWER</u> 7/ Manning 12/ Maintenance-related R&M 9/ 13/ POL Consumption Spares					

- 1/ Provide Goals and Thresholds from last SDDM.
- 2/ Explain any changes from columns (a) and (b) in a footnote.
- 3/ Provide values for total RDT&E and procurement appropriations and for flyaway/rollway/sailaway cost. Additional cost element may be appropriate for individual systems.
- 4/ Add additional stubs as appropriate. The stubs indicated are mandatory.
- 5/ Provide both a total RDT&E program goal and threshold. Fiscal year thresholds shall be displayed in a footnote to this Annex and shall total to the overall RDT&E threshold.
- 6/ Provide projected data for next milestone and for IOC. Define IOC by footnote. Additional schedule elements may be added, as appropriate.
- 7/ Select appropriate parameters that drive system effectiveness and costs. The stubs indicated are only examples.
- 8/ Use readiness-related R&M parameters that constitute operational availability if more appropriate.
- 9/ Provide goals and thresholds to be achieved by the next milestone. Predicted R&M growth shall be displayed in a footnote to this Annex as a series of intermediate thresholds capable of being measured during development, production, and deployment.
- 10/ Include mission maintainability if maintenance will be performed during the mission.
- 11/ Include combat utilization rate if different from peacetime utilization rate.
- 12/ Include both operators and maintenance personnel.
- 13/ Include separate parameters for depot maintenance.

Figure VII-3. DCP Annex A (DODI 5000.2)

RESOURCES--PREFERRED ALTERNATIVE
(Current Dollars in Millions)

	FY 19 PRIOR	FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	TO COM- PLETION	TOTAL PROGRAM
Acquisition Quantities Development Production Deliveries									
DEVELOPMENT Validation Phase Full-Scale Develop- ment Total Development cost <u>1/</u> RDT&E Funding (Approved FYDP)									
PRODUCTION System Cost <u>2/</u> (Long Lead Re- quirements) Initial Spares Total Procure- ment Cost <u>1/</u> Procurement Funding (Ap- proved FYDP)		(A non-add entry for each fiscal year)				()	()	()	()
MILCON During Develop- ment During Production Total MILCON MILCON Funding (Approved FYDP)									
Total Program Acquisition Cost <u>1/</u> NOTCF, Procurement and MILCON Funding (Ap- proved FYDP) Difference ()									
Estimated Other Resources Re- quirements <u>3/</u> During Development During Production									
OPERATING AND SUPPORT O&M MILPERS Procurement <u>4/</u> Total Operating and Support Cost <u>1/</u>									
TOTAL LIFE CYCLE REQUIREMENTS									

- 1/ Definitions should be in accordance with DOD Instruction 5000.33.
- 2/ Equal to Weapon System Cost as defined in DODI 5000.33 for Shipbuilding, Outfitting and Post Delivery Costs will be included
- 3/ Other Life Cycle related costs (i.e., Installation, Project Manager Office, Civilian Salaries, etc.) funded by other appropriations; e.g., O&M & MILPERS during Development and/or Production phase. Also, Production Base Support (Industrial Facilities), shore-based training facilities and other system peculiar costs identified as a separate line item, or as a portion of a separate line item, in another part of the Procurement Budget. Identify the content of this entry.
- 4/ Procurement costs associated with operation/owning a weapon system such as modifications, replenishment spares, ground equipment, etc.

Figure VII-4. DCP Annex B (DODI 5000.2)

LIFE CYCLE COST
CONSTANT DOLLARS (MILLIONS)

<u>ALTERNATIVE</u>	<u>DEVELOPMENT</u>	<u>PRODUCTION</u>	<u>O&S</u>	<u>TOTAL</u>
A 1				
A 2				
A 3				
o				
o				
o				

CURRENT DOLLARS (MILLIONS)

<u>ALTERNATIVE</u>	<u>DEVELOPMENT</u>	<u>PRODUCTION</u>	<u>O&S</u>	<u>TOTAL</u>
A 1				
A 2				
A 3				
o				
o				
o				

Figure VII-5
DCP Annex C (DODI 5000.2)

H. EVENT 06.4A: PREPARATION OF INTEGRATED PROGRAM SUMMARY (IPS) III A

1. Reference

DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The IPS is a summary of the implementation plan for the acquisition cycle of the system.

At this stage of the acquisition cycle all the updated information that has been developed from tests and experience gained by working with the system are incorporated into the IPS. Changes to the manpower and training requirements are identified.

Accompanying the IPS are five Annexes:

Annex A: Resources--Cost Track Summary.

This Annex provides the O&M and Military Personnel cost for the development and production phases (see Figure VII-6).

Annex B: Resources--Funding Profile

This Annex provides the cost of O&M, military personnel, operating, and support phases for each alternative (see Figure VII-7).

Annex C: Resources--Summary of System Acquisition Cost

This Annex reflects cost data by program element (see Figure VII-8).

Annex D: Manpower

This Annex provides the current manpower estimate for the military force structure to include unit type manning, depot workload, and net changes in the total force associated with the proposed system. (see Figure VII-9).

Annex E: Logistics

3. Information Flow

Data generated by the IPS goes to support the DCP. The updated data provided by the DP is used to compile the information contained in the IPS. The IPS along with the DCP is considered by the ASARC.

RESOURCES--COST TRACK SUMMARY 1/
(Millions of Dollars)

	FY Constant (Base Year)\$			Escalated \$
	Planning/ Development Estimate 2/	SDDM (Date) 3/	Current Estimate 4/	Current Estimate 4/
DEVELOPMENT PHASE				
RDT&E				
Validation Phase				
Full Scale Development				
Contractors (Provides one level of WBS indenture based on program requirements)				
In-House (Provide one level of WBS indenture based on program requirements)				
Contingency (Service)				
TOTAL RDT&E APPROPRIATION				
MILCON				
O&M 5/				
MILPERS 5/				
TOTAL DEVELOPMENT PHASE				
PRODUCTION PHASE				
PROCUREMENT				
System Cost 7/ Flyaway () 6/				
(Provide one level of WBS indenture based on program requirements)				
Other System Costs				
Initial Spares				
Other Line Item				
Procurement 8/				
TOTAL PROCUREMENT APPROPRIATION				
MILCON				
O&M 5/				
MILPERS 5/				
TOTAL PRODUCTION PHASE				
TOTAL OPERATING & SUPPORT PHASE				
TOTAL LIFE CYCLE REQUIREMENTS				
AVERAGE ANNUAL SYSTEM O&S COSTS				
No. of Systems: No. of Years:				

- 1/ Apply footnotes as required to explain the chart. Adjustments to format are authorized to accommodate program; stub entries will be decided on at the initial Milestone Planning Meeting. Definitions should be in accordance with DOD Instruction 5000.7
- 2/ Identify basis for estimates and date of SDDM.
- 3/ Add columns as necessary for each SDDM revision.
- 4/ The preferred alternative or the latest approved baseline cost estimates contained in the SDDM will be shown in constant and current (escalated estimate columns).
- 5/ Other Life Cycle related costs (i.e., Installation, Project Manager Office, Civilian Salaries, etc.) funded by O&M and MILPERS during Development and/or Production phase.
- 6/ Enter Quantity.
- 7/ Equal to Weapon System Cost as defined in DODI 5000.33.
- 8/ Production Base Support (Industrial Facilities), shore-based training facilities, and other systems peculiar cost identified as a separate line item, or as a portion of a separate line item, in another part of the Procurement Budget. Identify the content of this entry.

NOTE: Reasons for significant variations in estimates should be explained by footnotes (e.g., schedule slippage, Congressional funding, etc.).

Figure VII-6. IPS Annex A (DODI 5000.2)

RESOURCES--FUNDING PROFILE 1/
(Dollars in Millions)

Annex to be completed for each alternative:
1) In constant (base) year dollars
2) In Escalated dollars using current
FYDP rates and round rules

	PRIOR FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	FY 19__	TOTAL PROGRAM
Acquisition Quantities to be Procured <u>2/</u> Development Production Deliveries							
DEVELOPMENT PHASE RDT&E RDT&E Validation Phase Full Scale Development Flyaway, Rollaway, Sailaway Other System Costs TOTAL RDT&E APPROPRIATION MILCON O&M <u>3/</u> MILPERS <u>3/</u> TOTAL DEVELOPMENT PHASE							
PRODUCTION PHASE PROCUREMENT <u>4/</u> System Cost <u>5/</u> Flyaway, Rollaway, Sailaway Other System Costs Initial Spares Other Line Item Procurement <u>6/</u> TOTAL PROCUREMENT APPROPRIATION MILCON O&M <u>3/</u> MILPERS <u>3/</u> TOTAL PRODUCTION PHASE							
OPERATING AND SUPPORT PHASE MILPERS O&M Procurement <u>7/</u> TOTAL OPERATING AND SUPPORT PHASE							

- 1/ Apply footnotes as required to explain the chart. Adjustments to format are authorized to accommodate program; stub entries will be decided on at the initial Milestone Planning Meeting. Definitions should be in accordance with DOD Instruction 5000.33.
- 2/ Identify the number of Development and Production units to be acquired by fiscal year.
- 3/ Other Life Cycle Related costs (i.e., Installation, Project Manager Office, Civilian Salaries, etc.) funded by other appropriations; e.g., O&M and MILPERS during Development and/or Production phase.
- 4/ Enter the costs by appropriation e.g., Aircraft, Procurement, Missile Procurement, SCM or Other Procurement. If more than one applies, identify it separately.
- 5/ Equal to Weapon System Cost as defined in DODI 5000.33.
- 6/ Production Base Support (Industrial Facilities), shore-based training facilities, and other system peculiar costs identified as a separate line item, or as a portion of a separate line item, in another part of the Procurement Budget. Identify the content of each entry.
- 7/ Procurement costs associated with operation/owning a weapon system such as modifications, replenishment spares, ground equipment, etc.

Figure VII-7
IPS Annex B (DODI 5000.2)

RESOURCES - SUMMARY OF SYSTEM ACQUISITION COSTS (1)

<u>SOURCES OF FUNDING</u>	<u>CURRENT DOLLARS (MILLIONS)</u>
Department of the Army	\$XXXXX
Program Element XXXXX	\$XXXXX
Program Element XXXXX	<u>XXXXX</u>
Department of the Navy	
Program Element XXXXX	<u>\$XXXXX</u>
Department of the Air Force	
Program Element XXXXX	<u>\$XXXXX</u> XXXXX
Defense Agencies	
Program Element XXXXX	<u>\$XXXXX</u> XXXXX
Other U.S. Government	XXXXX
Other Foreign	<u>XXXXX</u>
TOTAL FUNDING	\$XXXXX

<u>APPLICATIONS</u>	<u>CURRENT DOLLARS (MILLIONS)</u>
Major System Equipment	\$XXXXX
System Project Manager	XXXXX
System Test and Evaluation	XXXXX
Peculiar Support Equipment	XXXXX
Training	XXXXX
Data	XXXXX
Operational Site Acquisition	XXXXX
Industrial Facilities	XXXXX
Common Support Equipment	<u>XXXXX</u>
TOTAL FUNDING	\$XXXXX

(1) Refer to DOD Instruction 5000.33

Figure VII-8
IPS Annex C (DODI 5000.2)

MANPOWER

The IPS will have a one page Manpower annex including the following:

A. Current Manpower Estimate for Military Force Structure: ^{1/}

2/ UNIT TYPE	UNIT MANNING 3/		PROGRAM TOTALS 5/			OTHER
	PROGRAM ALTERNATIVE	REFERENCE SYSTEM	NO. OF UNITS 4/	ACTIVE MILITARY	RESERVE COMPONENT	

B. Contractor support and depot workload (Annual manhours per end item deployed) ^{6/}:

	DSARC SYSTEM	Reference System
Contractor Support (below depot)		
Depot Level Workload		

C. Net change in Total Force Manpower associated with the proposed system deployment:

	Active Force	Reservas	DoD Civilians
Number of Authorizations			

1. Not required at Milestone 1.
2. List each unit type that will operate the system/primary system elements, including unit types that provide intermediate maintenance of system components. Examples of unit types are "Task Battalion," "Munitions Maintenance Squadron," "Avionics Intermediate Maintenance Department."
3. For each unit type, show the manning required to satisfy the most demanding mission (normally combat employment, but may be pre-combat readiness for certain naval vessels and systems on alert). Show total unit manning for operating units, organizational level direct support units, and dedicated intermediate support units. For units that provide intermediate level support to many primary systems, such as a naval shore based intermediate maintenance departments, show manning equivalent of the man-years of work attributable to the program alternative. Denote manning equivalents with an asterisk.
4. Number of units of each type in the planned force structure for the program alternative
5. Multiply number of units by unit manning, and equivalent manning by quantity of systems deployed, to obtain total manning required for units operating and/or supporting the program alternative system. Show how these requirements are expected to be satisfied as: active military authorizations, reserve component authorizations, and/or other to be identified in footnote. Unprogrammed requirements must be shown as "other"
6. Annual manyears of below-depot contractor support divided by the planned quantity of the system in the force structure, and the annual manyears for depot level maintenance of the system and its components divided by the planned quantity of the system in the force structure. Not required at Milestone 1.

Figure VII-9
IPS Annex D (DODI 5000.2)

I. EVENT 07.4: REVIEW BY THE ARMY SYSTEM ACQUISITION REVIEW COUNCIL (ASARC)
III A

1. References

- a. AR 15-14 System Acquisition Review Council Procedures, dated 1 April 1978
- b. DA Pam 11-25 Life Cycle System Management Model for Army Systems, dated 21 May 1975

2. General Description and Content

The ASARC is a group of top Army managers that review major system acquisition programs and make appropriate recommendations to the Secretary of the Army for decision and subsequent forwarding to SECDEF. The purpose of the ASARC III A is to recommend to the Secretary of the Army if a system should be placed in full production. Composition of the ASARC is found in Figure II-4, Chapter II of this report.

3. Information Flow

DCSRD. prepares the DCP and supporting documents. After DA Staff coordination, the DCP is presented to the ASARC III A. Their recommendations are presented to the Secretary of the Army for his approval and subsequent forwarding to DOD.

J. EVENT 08.4: DEFENSE SYSTEMS ACQUISITION REVIEW COUNCIL (DSARC) III A

1. References

- a. DODD 5000.1 Major System Acquisitions,
dated 19 Mar. 1980
- b. DODI 5000.2 Major System Acquisition Procedures,
dated 19 Mar. 1980

2. General Description and Content

The DSARC acting as a top level DOD corporate body for system acquisitions provides advice and assistance to SECDEF in determining if a program is ready to proceed to the next phase of the acquisition cycle. The purpose of DSARC III is to recommend to the Secretary of Defense if the system should go into full production. Composition of the DSARC is found in Figure II-3, Chapter II of this report.

3. Information Flow

The DSARC recommends to SECDEF if the system should go into full production. The SECDEF issues a SDDM authorizing the Army to proceed with full production.

CHAPTER VIII
DISCUSSION AND CONCLUSION

The preceding chapters describe the LCSMM process and relate it to the System Acquisition Cycle as contained in DODD 5000.1 (Major System Acquisitions) and DODI 5000.2 (Major System Acquisition Procedures). Information requirements are displayed and the source(s) and/or document(s) that should provide the required information are noted. This chapter discusses the adequacy of the currently documented Army procedures to provide the information now required by OSD at each milestone. It further reviews system and process interfaces to include Planning, Programming, and Budgeting Systems; Army Personnel Management System; and the Army Training System. The chapter ends with a summary, conclusions, and recommendations.

A. MILESTONE REVIEWS AND INFORMATION REQUIREMENTS

1. Milestone 0

Expanded Department of Defense policy directives require that the MENS forwarded to OSD for approval contain logistics and manpower considerations and a statement of manpower constraints to be considered during the developmental process. Current Army Regulations (AR 71-9, Materiel Objectives and Requirements) require that the Draft MENS (submitted to Headquarters, Department of the Army to start an acquisition program) contain this information. The DCSPER staffs the Draft MENS within the Army Staff. The DCSPER should review it prior to final approval and submission to OSD. The MENS was initiated in January 1977 (DODD 5000.1 dated 19 March 1980, Major System Acquisition); only limited experience has been gained with the procedural aspects of preparing and processing the document.

AR 1000-1 dated 1 April 1978 (Basic Policies for Systems Acquisition) requires use of the MENS for major systems within the Army. Firm responsibilities for providing the initial manpower policy and constraint guidance to the drafters of the MENS are not currently documented, nor is the substantive nature of the associated DCSPER review. Future revisions of regulations which institutionalize the DCSPER role in providing manpower guidance revisions should also elaborate on the current DOD requirements for additional emphasis on manpower considerations during program initiation. Such revisions are required if these regulations are to continue to be adequate for the future.

2. Milestone I

Current Department of Defense directives require that a DCP be forwarded by the Army to DOD for DSARC consideration and that it accompanied by a formal addendum, the IPS. These documents are required to address the following seven areas of manpower and training information for Milestone I reviews (DODD 5000.1 Major System Acquisitions and DODI 5000.2 Major System Acquisition Procedures):

a. Organizational and Operational Concept

- b. Manpower Goals and Thresholds
- c. Personnel Funding
- d. Manpower Estimates
- e. Manpower Sensitivity Analysis
- f. Training Implications
- g. Manpower Evaluation

The specific content of each of these areas and desired formats are described in Chapter IV of this report. Current Army regulations require a series of events to be performed during the Conceptual Phase of the LCSMM process which generate MPT information. Chapter IV also contains a detailed description of these events and the MPT information generated. An analysis of these events reveals, that if properly executed and documented in the sequence prescribed by Army regulations, they could provide the information required for DSARC I and subsequent milestone reviews. Army regulations should be updated, however, to reflect revised information input required by DOD. Figure IV-1 illustrates the sequence of events, the principal documents generated, and the ASARC/DSARC DCP information requirements they meet for Milestone I. It is during this phase that approximately 80 per cent of the decisions are made that impact the manpower requirements. Therefore, it is essential that proper attention be paid to manpower implications at this stage, and that techniques be developed to enable planners, designers, and R&D personnel to adequately assess and trade-off manpower quantity and quality.

3. Milestone II

Milestone II reviews are more comprehensive than Milestone I. Additional detailed manpower, personnel, and training information is required in the DCP. The IPS is required to address the following ten areas of manpower information for a Milestone II review:

- a. Manpower Goals and Thresholds
- b. Personnel Funding
- c. Manpower Estimates
- d. Manpower Trade-Offs
- e. Manpower Requirements Comparison
- f. Manpower Sensitivity Analysis
- g. Manpower Requirements and Assets

- h. Training Requirements
- i. Training Plan
- j. Manpower Evaluation

Chapter V, of this report outlines the desired content. Figure V-1 illustrates the sequence of events, the principal documents produced, and the ASARC/DSARC information requirements generated therein for Milestone II. An analysis of these events and documents reveals that if properly executed these documents should provide all required DSARC II information.

4. Milestone III

Milestone III reviews require the following areas of manpower, personnel, and training information to be covered in great detail:

- a. Manpower Goals and Thresholds
- b. Personnel Funding Estimate
- c. Manpower Estimate
- d. Manpower Trade-Off Analysis
- e. Manpower Sensitivity Analysis
- f. Manpower Requirements and Assets
- g. Training Requirements Summary
- h. Training Plan Summary
- i. Manpower Evaluation Schedules

Chapter VI of this report tabulates the specific data required in each of these areas. Figure VI-1 summarizes the sequence of events and principal documents generated or updated during the Full Scale Development Phase. The DSARC information requirements to be met for Milestone III are also displayed. No significant variation is apparent between the DSARC III manpower information requirements and the information that should be generated by documented Army procedures.

While the current system appears adequate to meet expanded DSARC I, II, and III information requirements, problems have arisen in implementing it. A recent survey conducted by the Chief, Army Force Modernization Coordination Office, dated 23 October 1979, revealed that approximately 50 per cent of the materiel systems that are to be fielded within the next three years have no EOIP. Fewer have QPRI available. These documents contain essential personnel and manpower data necessary to meet critical DSARC III (Production and Deployment Milestone Decision) information requirements.

Figure VIII-1, System Acquisition Process Timing, has been prepared from research of DOD and Army regulations noted in Chapters I through VII. It shows key manpower, personnel, and training events relative to DSARC II, DSARC III, and Initial Operating Capability (IOC) date. DSARC timing is notional and based on a goal to achieve IOC five years after DSARC II decision (AR 1000-1, Basic Policies for Systems Acquisitions). Accordingly, DSARC II is shown five years prior to IOC. QQPRI, BOIP, DP, and DCP timing was developed based on this goal. Assuming it takes six months to develop the TQQPRI, six months to develop the BOIP, and six months to develop and staff the DP and the DCP (all developed sequentially), development of the TQQPRI should commence approximately seven years prior to IOC. This emphasizes the need for adequate tools and techniques for early manpower requirements determination to use in Trade-Off Analysis and to meet DSARC II requirements. Additionally, it is noted that QQPRI and BOIP data for each alternative is needed nine months prior to DSARC II and III as input to BCE.

Further, as indicated in Figure VIII-1, AR 71-2 (Basis of Issue Plan) and AR 611-1 (Military Occupational Classification Structure Development and Implementation) require the BOIP and final QQPRI to be submitted prior to DSARC III and 36 to 40 months prior to IOC date. The sequence of events displayed in the LCSMM (DA Pam 11-25, Life Cycle System Management Model for Army Systems), however, shows the final BOIP and final QQPRI occurring after DSARC III. Although the sequence shown in DA Pam 11-25 shows a DSARC III decision for limited production with a follow-on decision for full production, there is a discrepancy between AR 71-2/AR 611-1 requirements and the LCSMM. Additionally, the LCSMM shows the final BOIP being completed and approved prior to the final QQPRI. This appears out of sequence, since the BOIP derives certain information from the QQPRI. The survey conducted by the Chief, Army Force Modernization Coordination Office, the early requirement for QQPRI information, and the apparent discrepancy between Army regulations and the LCSMM regarding the QQPRI and BOIP indicate a need for a detailed analysis of the QQPRI process. Further, the sequence and timing regarding the QQPRI and BOIP in DA PAM 11-25, and discrepancies between AR 71-2/AR 611-1 and the LCSMM review and update.

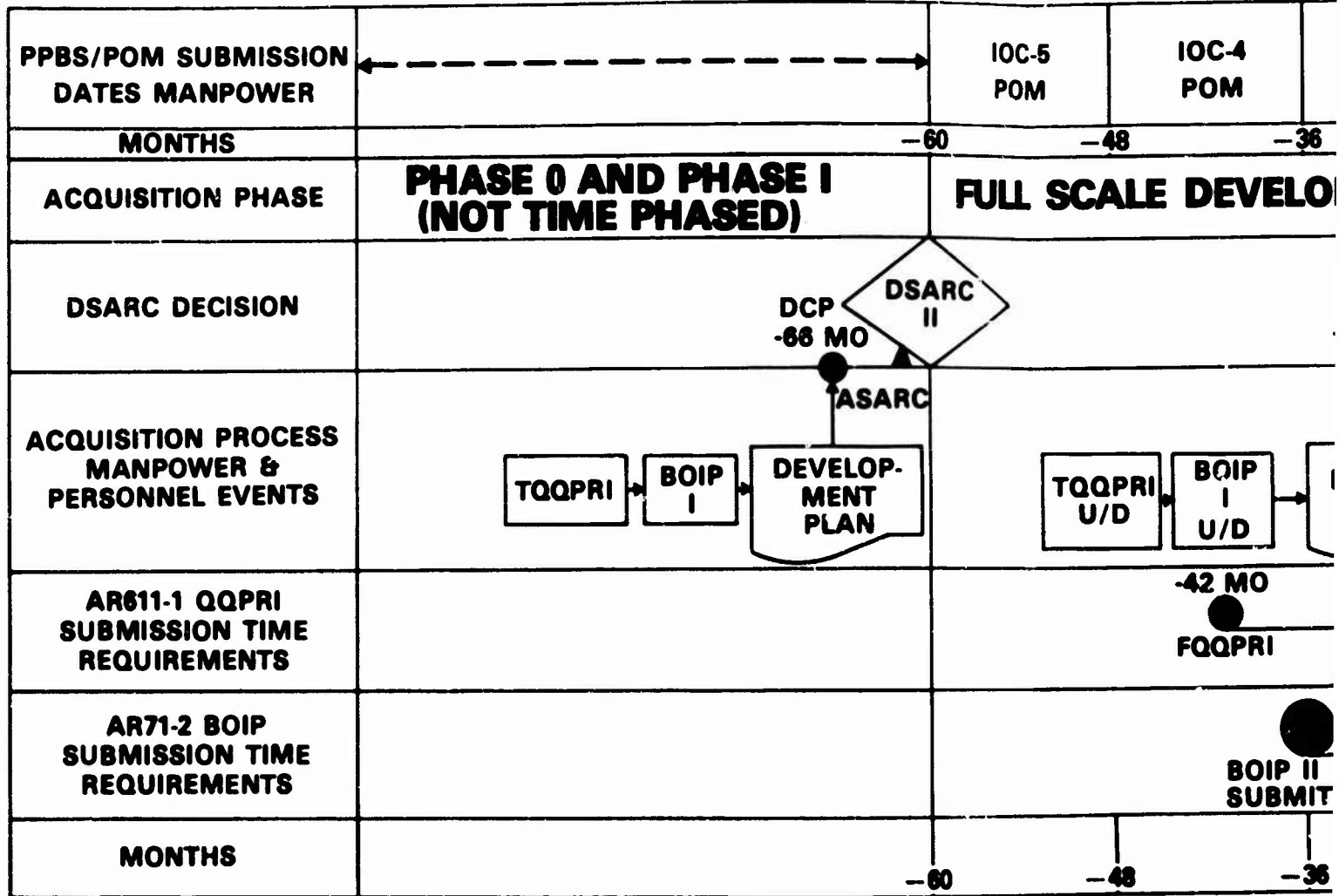
B. SYSTEM INTERFACES

Manpower, personnel, and training information developed during the LCSMM Process to meet DSARC requirements must also be utilized by internal Army planning systems to insure that effective, fully ready materiel systems are fielded when necessary. The following paragraphs describe the interface of manpower, personnel, and training information generated during the LCSMM process with three such critical Army planning systems.

1. Planning, Programming, and Budgeting Systems

The approval at each milestone by the ASARC and the DSARC does not provide for the allocation of resources (manpower or dollars) necessary to support the continued development and deployment of a materiel system. Current DOD regulations require that individual DSARC decisions be correlated with the Army Planning, Programming, and Budgeting System (PPBS).

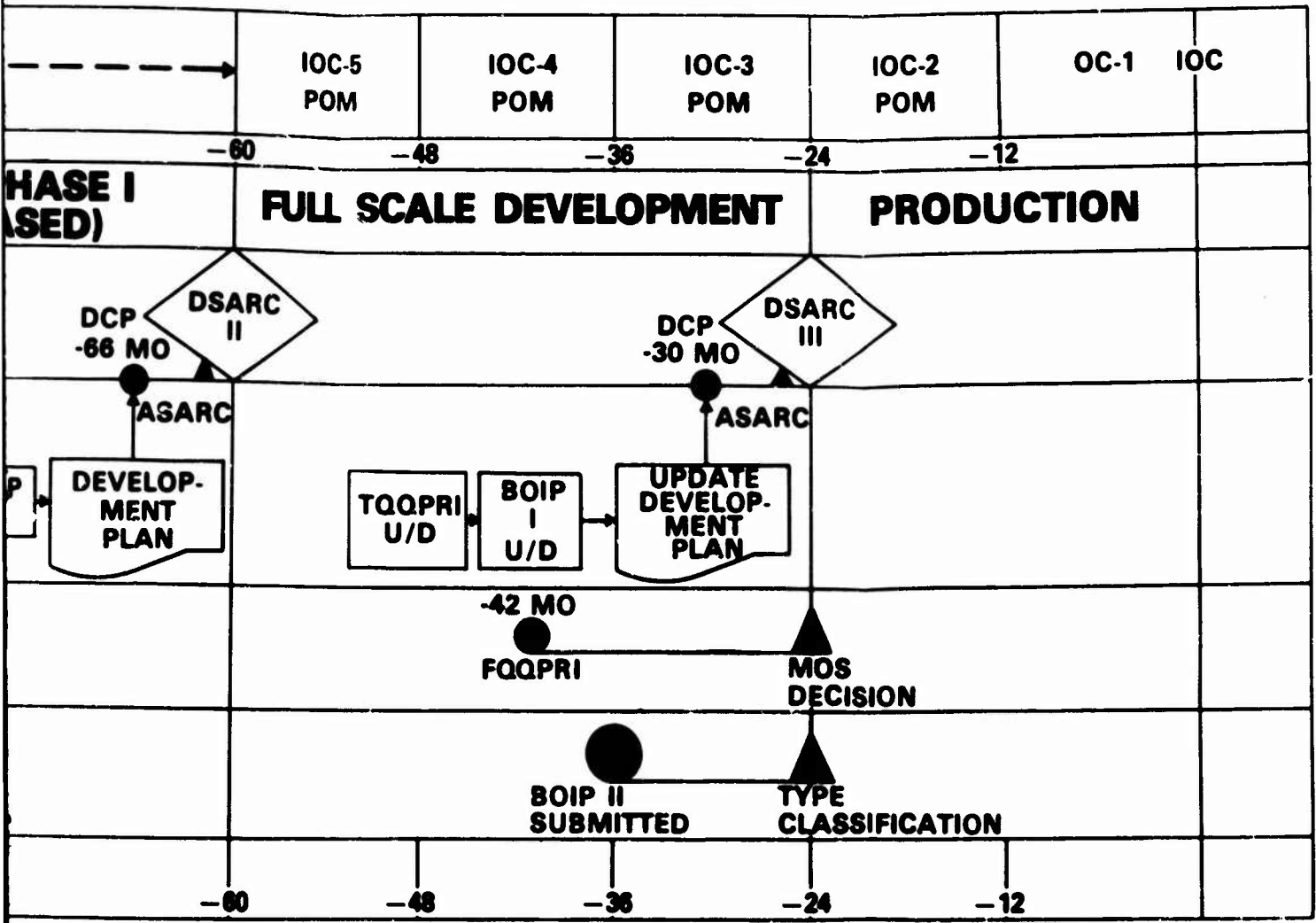
SYSTEM ACQUISITION PROCESS TIMING (NOTI



- DSARC II TIMING BASED ON GOAL OF IOC 5 YEARS AFTER DSARC II DECISION
 - DSARC III NOTIONAL TIME 2 YEARS PRIOR TO IOC—MAY VARY
 - CONCEPT EVALUATION AND VALIDATION PHASE—TIMING VARIES ACCORDING TO PROGRAMS. THEREFORE NOT TIME PHASED
 - U/D = UPDATE
 - FQQPRI SUBMITTED 30 MONTHS PRIOR TO FIRST UNIT DELIVERY OR 18 MONTHS PRIOR TO TYPE CLASSIFICATION (TC = 24 MONTHS)
- THIS IS A NOTIONAL PLAN BASED ON IOC BEING 5 YEARS AFTER DSARC II DECISION.
MPT TIMING EVENTS PROVIDE INPUT TO DCP AND ASSOCIATED DSARC REVIEWS.

Figure VIII-1
System Acquisition Process Timing

ACQUISITION PROCESS TIMING (NOTIONAL)



ISSION
 RDING TO
 MONTHS
 ECISION
 VIEWS.

2

Figure VIII-1
 System Acquisition Process Timing

Specifically DODD 5000.1 (Materiel System Acquisitions) stipulates that a system normally shall not proceed into the Full Scale Development Phase unless sufficient resources are, or can be, programmed over the remaining life of the system. It further states that affordability of a materiel system, which is a function of cost, priority, and availability of fiscal and manpower resources, shall be established and reviewed in the context of the PPBS process. The information requirements previously enumerated for each ASARC/DSARC identify the specific facets of manpower, personnel, and training affordability to be reviewed at specific milestone decision points. Supporting Army regulations and procedures, however, do not clearly define how manpower affordability of a system is to be established, or how decisions emanating from the LCSMM process Milestone reviews are integrated into the Army's annual PPBS cycle. Without such Department of the Army procedural guidance, manpower planners cannot ensure that adequate personnel resources can be made available to support continuance of the development effort and the fielding of the system. Difficulties in integrating forty-two major systems under development into the Fiscal Year 80-84 Army Program Objective Memorandum prompted the Director of Program Analysis and Evaluation, Office of the Chief of Staff, to convene a series of ad hoc conferences starting in January 1978, to address this problem. As a result of the first conference, a Chief of Staff Memorandum (78-4-7 dated 21 February 1978, Affordability Analysis and Review) was promulgated establishing a formal affordability analysis and review system. However, formalized procedures for manpower, personnel, and training assessments have not been issued to date.

2. Army Personnel Management Systems

Analysis reveals current Army Regulations have documented the need to translate manpower requirements as determined in the LCSMM process to personnel classification, grade, and skill level requirements for insertion into the Army's Personnel Management Systems.

The initial personnel determination is conducted early in the conceptual phase by TRADOC in development of the training plan. Personnel requirements are continually revised and updated throughout the submission to HQDA and the ultimate approval of the final QQPRI and BOIP II. However, prior to this action, the Department of the Army should specify broad manpower constraints in the MENS. In general, the iterative LCSMM procedures identify the agencies responsible for the development, processing, and approval of the personnel requirements data, but do not specifically identify the staff agencies responsible for the development and issuance of the personnel supportability guidance (e.g. selection criteria, recruiting, and MOS). Also, it has not been determined, within the context of the Army regulations as they apply to the LCSMM process, which agency(s) is responsible for evaluating the personnel constraints of one materiel system under development against others under development, as well as for evaluating current and projected total Army personnel requirements. Within total Army personnel requirements, can the Army correctly identify and recruit the type of personnel required to man the system and provide the proper training or retraining within the proper lead time to marry personnel with equipment at IOC?

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As previously stated, the Army regulations spell out adequate procedures to develop the existing manpower requirements, but it is apparent that these regulations are not being completely implemented, as evidenced by the Chief of Staff memorandum, dated 23 October 1979, which stated "BOIP and QQPRI documentation and for materiel systems to be fielded within the next three years is inadequate....Approximately 50% of these systems have no BOIP and an even greater number have no QQPRI."

The BOIP and the QQPRI are the key documents that identify personnel requirements by grade and specialty. Without these documents an analysis and evaluation of MPT at critical points (ASARC/DSARC) cannot be determined.

There also appears to be a lack of procedural guidance within Army regulations as to when and how the approved BOIP II is entered into the Army's M-Force. The entry of this data into the M-Force is critical to the transition of manpower data developed during the LCSMM process to manpower and personnel data in the PPBS cycle. Data regarding personnel aspects entered in the M-Force is subsequently translated to resource requirements (manning) data through the Personnel Structure and Composition System (PERSACS).

One area of MPT that is not well documented in Army regulations is the procedures for the determination of civilian manpower requirements associated with fielding a materiel system under development. In order to comply with current OSD requirements at each milestone review, civilian manpower must be more extensively addressed in the manpower documentation.

3. Army Training Systems

The introduction of the Training and Doctrine Command System Manager (TSM) to the development process for major Army systems in the mid 1970's did much to overcome previous problems associated with lack of coordination between the development of training support packages and the systems acquisition process. Army policies for System Acquisition (AR 1000-1, Basic Policies for Systems Acquisition) clearly delineate the TSM's responsibilities for integrating user and training requirements into the LCSMM process. Additional manuals and guidebooks have been published that provide further amplifications of the TSM's role and procedures for the orderly development of training systems (ARI Technical Report TR-78-A7, March 1978, TSM Guide to Training Development and Acquisition for Major Systems). Field reports suggest that TSMs on a daily basis are effectively addressing the myriad of issues associated with interfacing the Army's overall training system with the LCSMM process.

C. SUMMARY AND CONCLUSIONS

The Department of Defense has progressively enlarged the scope of the DSARC milestone decision reviews of materiel systems under development since their inception in the 1970's. Recently the Assistant Secretary of Defense (MRA&L) has expressed concern over the integration of manpower, personnel, and

training considerations into the materiel system development process and associated DSARC reviews. DOD directives have been revised, and currently require that extensive information be submitted to the DSARC to support manpower, personnel, training, and affordability assessments at each milestone review. Current Army regulations require manpower, personnel, and training planning to be closely integrated into the LCSMM process and considerable supporting documentation be submitted for each ASARC review. An analysis of the information required to be generated by the Army regulations reveals that if properly prepared in the sequence stipulated, it should generally meet the present DOD requirements for DSARC I, II, and III reviews. There is a need, however, to update a number of Army regulations to reflect the specific expanded report formats now required by DOD and recent Army Staff reorganizations, and to improve the method of considering civilian manpower requirements in the LCSMM process. No evidence was found that techniques (analytical, trade-off, models) exist to enable designers and planners to perform trade-offs. These may exist, but they need to be documented and made available and explicit. There is also a lack of definitive formalized guidance concerning assessment procedures necessary to determine the affordability/ supportability in such areas as recruitment, required skills, and skill inventory of a particular developing system as it pertains to the total Army personnel assets, both current and projected. Current guidance promulgated to the field lacks information concerning methods and standards for the development and review of personnel requirements for new systems. In the transition of system-approved requirements to FYDP-approved requirements, the Army does not appear to have set procedures for interfacing manpower, personnel, and training data approved during the LCSMM process with the PPBS cycle. These procedural shortcomings have been highlighted through experience gained by the Army staff with the forty-two emerging systems associated with modernizing the Army. Indications are that the information generated concerning manpower, personnel, and training for ASARC/DSARC reviews varies considerably in quality; the information has frequently been inadequate to support DSARC affordability assessments, PPBS programming, and personnel management planning actions. As a result of these inadequacies a number of ad hoc staff task groups have been instituted to resolve specific systems issues that, according to Army Regulations pertaining to the LCSMM process, should have been addressed and resolved earlier within the stated procedures.

There is a need for the Office of the DCSPER to participate in the LCSMM process earlier in the system development cycle in order to influence, monitor, and track the development of the QPPI and BOIP documents. Such participation would assist the systems planners in early determination of manpower, personnel, and training requirements, and thereby facilitate the timely submission of these documents. A representative from the Office of the DCSPER should attend critical developmental field reviews during all phases of the development process in order to assist the field in identifying potential major issues, to provide instantaneous guidance enabling early resolution of the major issues identified, and to enhance comprehensive trade-off analyses during the Conceptual and subsequent phases of system development.

This report addresses the process for ASARC/DSARC systems. MPT attention is considerably greater for high visibility systems, yet the MPT implications of other systems are significant. Examination of non-DSARC systems is recommended as a follow-on.

Based upon the results of this analysis and review of the Army's LCSMM process, an immediate requirement exists for a complete review and documentation of the manpower, personnel, and training requirements of the approximately forty-two major materiel systems to be fielded in the mid 1980's. As a follow-on to this review a long term plan based on the results of the study should be developed and implemented to correct deficiencies identified.

D. RECOMMENDATIONS

Chapters I through VII describe the System Acquisition Cycle as contained in DOD regulations and relate this cycle and associated requirements with the LCSMM process. The above discussion notes specific deficiencies which have become clear during the preparation of this report and analysis of the system. Based upon the results of this limited analysis the following actions are recommended:

1. Update Army regulations to include:
 - a. Revised MENS report formats
 - b. Required formats for DCP/IPS
 - c. Reflection of DCSOPS/DCSPER 1 October 1978 reorganization
 - d. Greater considerations of civilian manpower requirements in the Materiel Acquisition Process.
2. Develop and formalize assessment procedures within the LCSMM process to evaluate the impact of each individual system on the total Army MPT requirements, to include composite impact of all systems.
3. Provide additional guidance to the field on methods for timely development, promulgation, and review of personnel requirements for materiel systems under development.
4. Review and update the LCSMM process to reflect current requirements.
5. Institutionalize the interfacing of the LCSMM process with the planning, programming, and budgeting system.
6. Enforce better adherence to the Army regulations concerning the MPT aspects of the LCSMM process.
7. Review and analyze the QQPRI process to determine if and where deficiencies exist. Review should include tools and technique used to identify manpower requirements.

8. Monitor and track the development of the QQPRI and BOIP during all phases of the development process.
9. Require DCSPER representation during critical developmental field reviews to determine the MPT status of major systems.
10. Analyze the impact of equipment design on manpower, personnel, and training requirements and, if necessary, prepare alterations to Army regulations to provide for greater visibility of and control over that impact.
11. Review and document the current MPT status of the forty-two major systems scheduled for fielding in the mid 1980's. Prioritize by importance and IOC.
12. Develop a long term program to improve the quality and timeliness of MPT planning and programming during the LCSMM process utilizing the experience gained from the 42 major systems review.
13. Review actions at levels below DA level which are needed to produce specified information. Develop a step by step guide for actions to be accomplished (with time line) to insure MPT has been adequately and timely planned during the acquisition process. This guide should include requirements at all action and review levels.
14. Perform a survey of existing review procedures, models, trade-offs, etc., to ascertain if techniques exist to enable designers, planners and systems engineers to perform needed analyses during the various ASARC and DSARC milestones, to include composite impact of all new systems.
15. Examine procedures and MPT implications for acquisition of systems which do not require ASARC/DSARC exposure.

GLOSSARY OF ACRONYMS

ABCA	American, British, Canadian, and Australian	CFP	Concept Formulation Package
AD	Advanced Development	COA	Comptroller of the Army
AR	Army Regulation	COEA	Cost and Operational Effectiveness Analysis
ARTEP	Army Training Evaluation Program	CONOPS	Continuity of Operations
ASA	Assistant Secretary of the Army	CTA	Common Tables of Allowance
ASA (IL&FM)	Assistant Secretary of the Army for Installations, Logistics, and Financial Management	DA	Department of the Army
ASA (RDA)	Assistant Secretary of the Army for Research, Development, and Acquisition	DAE	Defense Acquisition Executive
ASARC	Army Systems Acquisition Review Council	DA Pam	Department of the Army Pamphlet
ASD	Assistant Secretary of Defense	DARCOM	Development Acquisition and Readiness Command
ASD (C)	Assistant Secretary of Defense (Comptroller)	DCP	Decision Coordinating Paper
ASD (PA&E)	Assistant Secretary of Defense, Program Analysis, & Evaluation	DCS	Deputy Chief of Staff
ATP	Army Training Programs	DCSLOG	Deputy Chief of Staff for Logistics
ATT	Army Training Tests	DCSOPS	Deputy Chief of Staff for Operations and Plans
BCE	Baseline Cost Estimate	DCSPER	Deputy Chief of Staff for Personnel
BOIP	Basis of Issue Plan	DCSRDA	Deputy Chief of Staff for Research, Development, and Acquisition
BTA	Best Technical Approach	DIA	Defense Intelligence Agency
CAIG	Cost Analysis Improvement Group	DOD	Department of Defense
CARDS	Catalog of Approved Requirement Documents	DCDD	Department of Defense Directive

GLOSSARY OF ACRONYMS

DODI	Department of Defense Instruction	LOA	Letter of Agreement
DP	Development Plan	LOG	Logistics
DPA&E	Director of Program Analysis and Evaluation	MENS	Mission Element Need Statement
DSARC	Defense Systems Acquisition Review Council	MILPERS	Military Personnel
DT	Development Test	MILPERGEN	Military Personnel Center
DTC	Design to Cost	MOS	Military Occupational Speciality
DUSA	Deputy Under Secretary of the Army	MPE	Mission and Performance Envelopes
ECH	Electronic Counter Measures	MPT	Manpower, Personnel, and Training
ED	Engineering Development	MRA&L	Manpower, Reserve Affairs, and Logistics
FM	Field Manual	MRP	Milestone Reference File
FQOPRI	Fiscal Qualitative and Quantitative Personnel Requirements Information	NATO	North Atlantic Treaty Organization
FYDP	Five Year Defense Plan	NET	New Equipment Training
HQDA	Headquarters of Department of the Army	ODP	Outline Development Plan
ILS	Integrated Logistic Support	O&M	Operating and Maintenance
IOC	Initial Operating Capability	OR	Operational Research
IPS	Integrated Program Summary	OSD	Office of the Secretary of Defense
JTA	Joint Table of Allowances	OT	Operational Test
JCS	Joint Chiefs of Staff	PA&E	Program Analyses and Evaluation
LCSM	Life Cycle System Management Model	PERSACS	Personnel Structure and Composition System
		PM	Project Manager

GLOSSARY OF ACRONYMS

POM	Program Objective Memorandum	TOA	Trade-Off Analysis
PPBS	Planning, Programming, and Budgeting System	'OD	Trade-Off Determination
QQPRI	Qualitative and Quantative Personnel Requirements Information	TOE	Table(s) of Organization and Equipment
RAM	Reliability, Availability, and Maintainability	TQQPRI	Tentative Qualitative and Quantitative Personnel Requirements Information
RCM	Reliability Centered Maintenance	TRADOC	Training and Doctrine Command
RDA	Research, Development, and Acquisition	TSM	Training and Doctrine Command System Manager
RDT&E	Research, Development, Test, and Evaluation	USD	Under Secretary of Defense
SAC	Study Advisory Group	USDR&E	Under Secretary of Defense for Research and Engineering
SDDM	Secretary of Defense Decision Memorandum	VCSA	Vice Chief of Staff, Army
SECDEF	Secretary of Defense		
SQT	Skill Qualification Tests		
SSC	Special Study Group		
STF	Special Task Force		
TAS	Tactical Automated Systems		
TDA	Table(s) of Distribution and Allowances		
TDR	Training Device Requirements		