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INTEGRATION OF MANPOWER, PERSONNEL, AND TRAINING ISSUES FROM THE MATERIEL SYSTEM ACQUISITION PROCESS INTO THE PLANNING PROGRAMMING AND BUDGETING SYSTEM

Fredrick L. Friedman, Alfred S. Rhode, and Francis E. O'Connor
Information Spectrum, Incorporated

SYSTEMS MANNING TECHNICAL AREA



U. S. Army

Research Institute for the Behavioral and Social Sciences

March 1981

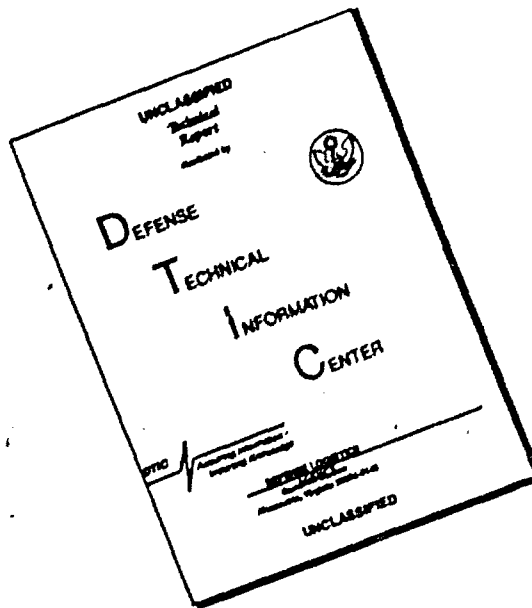
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Fredrick L. Friedman, Alfred S. Rhode, and Francis E. O'Connor
Information Spectrum, Incorporated

Submitted by:
James D. Baker, Chief
SYSTEMS MANNING TECHNICAL AREA

Approved by:

Edgar M. Johnson, Director
SYSTEMS RESEARCH
LABORATORY

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES
5001 Eisenhower Avenue, Alexandria, Virginia 22333

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FOREWORD

The Army, in implementing the most extensive modernization program in its history, is faced with the challenge of reconciling the need for more capable, sophisticated weapon and support systems, which increase the demand for personnel with greater skills and education, and the diminished supply, and increased cost, of its most valuable asset; people who must operate, maintain and support the systems.

To this end, the Army developed an elaborate materiel acquisition process and a number of regulations and instructions which address the manpower, personnel and training issues to be considered during system development and acquisition. The system life cycle costing and management processes require the development, on an iterative basis, of manpower, personnel and training requirements information throughout the acquisition process. This information is used, not only to guide technical and financial decisions within the system acquisition process, but to provide a basis for the Army-wide planning, programming and budgeting process; resource allocation.

A major concern is the timeliness, completeness and accuracy of manpower, personnel and training requirements information furnished by system acquisition managers and system developers to the Army resource planners. The weapon and support system acquisition process is complex, detailed, lengthy and event-driven. The resource allocation process is complex, much more general, cyclical and time-oriented. Yet, if effective equipment systems are to be acquired and fielded in a coordinated and efficient manner, and if sufficient numbers of qualified personnel are to be available for system operation, maintenance and support, the mutual informational and financial needs of the two processes must be satisfied in synchronous fashion.

The Systems Manning Technical Area of the Army Research Institute is concerned with the development of technology and methods for integrating manpower, personnel, training and human factors requirements of new systems, and with insuring that these are considered during the acquisition and resource allocation processes throughout the system life cycle so that the requirements can be met when the system is fielded.

The present effort identifies and describes the two processes and their mutual interface requirements. This research is in consonance with current efforts in the Office of the Secretary of Defense and at Headquarters, Department of the Army, to review and revise procedures for system acquisition. This report resulted from a contract with Information Spectrum, Inc., contract number MDA 903-79-C-0637.


JOSEPH ZEIDNER
Technical Director

INTEGRATION OF MANPOWER, PERSONNEL AND TRAINING ISSUES FROM THE MATERIEL SYSTEM ACQUISITION PROCESS INTO THE PLANNING PROGRAMMING AND BUDGETING SYSTEM

BRIEF

Requirement:

As part of the Army's Force Modernization effort, a requirement exists to determine how adequately current Army procedures develop manpower, personnel and training (MP&T) information during the materiel acquisition process. This entails an extensive examination of Army and Department of Defense regulations to isolate the MP&T information system boundaries, identify major components, and determine discrete space and time relationships.

Procedures:

Manpower, personnel and training requirements information products developed during the materiel system acquisition process and planning, programming, and budgeting events were mapped onto a common time-line. "Optimal" "latest" entry points for effective resource allocation decisions were determined for each information product. "Latest" entry point refers to the time interval during which the information product must be available to insure that equipment availability and human resource availability will coincide with the system delivery date. Based on an analysis of the two processes mapped onto the common time-line, methods for satisfying the requirements of both processes were recommended.

Findings:

The materiel system acquisition process is event-driven. The planning, programming and budgeting, or resource allocation, process which prioritizes and apportions funds for acquisition of new systems, on the other hand, is time-oriented. Major planning, programming and budgeting decisions for new systems rely heavily on life cycle cost data/estimates developed during the system acquisition process itself. To avoid costly acquisition process discontinuities, the acquisition effort must be adequately and continuously funded. It is essential then, to provide resource allocation decision makers with the most recent and accurate life cycle cost data available well in advance of the prescribed budgeting decision dates. If the cost estimates are low, the acquisition effort will be underfunded. If they are high, either the cost will become prohibitive, or other acquisition efforts will suffer. If the estimates are not available at the time the decision must be made, inadequate funding for the acquisition may result.

Utilization of Findings:

The orderly attention to the MP&T requirements information needs of the resource allocation decision makers will insure continued and adequate funds for the system acquisition effort. The result will be an affordable and coordinated system fielding with equipment, human resources, training and support needs continuously satisfied through the system life cycle. On the basis of a detailed analysis of the results of this examination, specific methods for satisfying the information needs during resource allocation are proposed.

PREFACE

This publication is a draft report describing the integration of the materiel systems acquisition process into the Planning, Programming, and Budgeting System (PPBS). The report discusses the manpower, personnel, and training (MPT) informational requirements of the materiel systems acquisition process as they relate to the entry points of the PPBS. The report also identifies timing for the integration of data and provides recommendations for updating procedures.

It is recognized that the procedures described herein are currently under extensive review and revision both in the Office of the Secretary of Defense (OSD) and at Headquarters, Department of the Army (HQDA). The Weapon System Acquisition Process (WSAP) and the Planning, Programming, and Budgeting System (PPBS) are depicted here as they existed in March of 1981. Consideration was given to delaying publication of this report until the current round of review was complete and revisions were in place; however it was decided that the descriptions of the essential relationships between WSAP and PPBS would be useful to those engaged in the current reviews. Therefore it was decided to publish the report at this time with the promise that the document will be revised early in 1982 to reflect the final action on changes such as those directed in the DEPSECDEF Memo of April 30, 1981; subject "Improving the Acquisition Process."

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.

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I. INTRODUCTION

A. BACKGROUND

The materiel systems acquisition process is both event and system oriented. It is directed toward satisfying materiel requirements which focus on mission needs, and incorporates management methods for making acquisition decisions at critical points during the development cycle. The materiel systems acquisition process also provides a structure for technical and financial management of a project and permissive authorization for acquisition to proceed, but it does not provide funds or commit other resources. An essential part of the acquisition process is the determination of operating and support needs and estimation of the life cycle costs of the system, a vital element of which is determination of the manpower needs to operate, maintain, and support the system. For most materiel systems this results in a phased plan for insuring that the proper numbers of trained personnel are available and in place when needed to field the system. Additionally, plans must insure that appropriate training facilities, devices, and support are available when needed to commence required training. Although the acquisition process provides the Army Systems Acquisition Review Council/Defense Systems Acquisition Review Council (ASARC/DSARC) with an excellent perspective of the individual system, it does not make visible the total materiel systems-related Army planning and programming requirements or the means to budget for the needed manpower and their training. This is properly the function of the resource allocation process (the Planning, Programming, and Budgeting System (PPBS)), wherein the cost of the support elements can be measured in relation to the procurement cost of the materiel system, and within which competing demands for funds can be ranked in order of priority of the needs which they address. Accordingly, it is essential that all manpower and funding requirements for new systems be planned and/or programmed in the PPBS and entered into the Program Objective Memorandum (POM) in a timely fashion, insuring that Army leadership support is translated into system resource priorities within the list of competing demands.

Since the acquisition process is event and system oriented rather than strategy and resource oriented, there must be a close relationship between the acquisition process and the cyclic PPBS process. Although decision milestones must be event oriented, acquisition strategies must consider the requirements and timing of the PPBS cycle and make accommodations for them. Means and methods must be made available for assuring timely integration of these complementary actions, which are essential to fielding a new system.

B. PURPOSE

The purpose of this report is to examine the means and timing with which manpower, personnel, and training (MPT) requirements are determined in the materiel systems acquisition process, describe methods by which this information is transferred to the PPBS, and identify areas for improvement in this process.

C. METHODOLOGY

A chronological mapping approach was employed in this analysis to determine the points in the linear materiel systems acquisition process at which MPT information is determined and the points in the cyclic PPBS process at which the MPT data can be inserted. Most of the information concerning the relationship between MPT and the materiel systems acquisition process was obtained from the Army Research Institute (ARI) Research Product, "Manpower, Personnel, and Training Requirements for Materiel Systems Acquisition."¹ Army regulations, Chief of Staff regulations, interviews, and Department of the Army instructions and memorandums provided the basic information used in the analysis and documentation of the MPT requirements of the PPBS. A comparative analysis of the two processes was conducted to determine the optimum and latest points in the PPBS at which manpower data could be entered, allowing Army asset managers sufficient time to bring the proper number of skilled personnel and equipment together at the specified time.

D. ORGANIZATION

The remaining sections of this report are organized in the following manner: Section II describes the Army materiel systems acquisition process, Section III describes the Army's PPBS process, Section IV provides a summary and analysis of the processes described in Sections II and III, and Section V summarizes the findings of the effort and presents conclusions and recommendations.

Figures and tables are found throughout this report to supplement the narrative. Some of the figures and tables were developed specifically for the study and others were reproduced from previously published documents, as noted.

¹Rhode, Alfred S., Skinner, Benjamin B., Mullin, James L., Friedman, Fred L., and Franco, Michele M., Information Spectrum, Inc., and Carroll, Robert M., Army Research Institute, "Manpower, Personnel, and Training Requirements for Materiel Systems Acquisition," Army Research Institute Research Product, RP 80-27, dated February 1980.

II. THE MATERIEL SYSTEMS ACQUISITION PROCESS

A. PURPOSE

The purpose of this chapter is to describe the Department of Defense (DOD) materiel systems acquisition process as it pertains to manpower, personnel, and training (MPT). The discussion centers around DOD Directive (DODD) 5000.1, "Major Systems Acquisitions," DOD Instruction (DODI) 5000.2, "Major Systems Acquisition Procedures," DOD Directive 5000.39, "Acquisition and Management of Integrated Logistic Support for Systems and Equipment," and associated Department of the Army (DA) directives.

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 could lead to initiation of a major systems acquisition program. A system acquisition may result from a deficiency in an existing system, 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 in dollars, manpower, or both.

Although DODD 5000.1 and DODI 5000.2 address major systems acquisition processes, they do not include all of the research and development efforts 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 (base year)) 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 go through the review and approval process 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. In any event, the requirement to develop MP&T requirements as a part of the ILSP is specifically mandated for all systems and equipments in DODD 5000.39.

C. MILESTONE DECISIONS AND PHASES OF ACTIVITY

The Office of Management and Budget (OMB), in OMB Circular No. A-109, describes the systems acquisition process as a sequence of acquisition activities starting from an agency's reconciliation of its mission needs with its capabilities, priorities, and resources, and extending through the introduction of a system into operational use or the otherwise successful achievement of program objectives.

The DOD major systems acquisition process consists of four milestone decisions and four phases of activity, as depicted in Figure II-1. Approval of a Mission Element Needs Statement (MENS) by the Secretary of Defense constitutes the Milestone 0 decision and authorization to proceed to Phase 0, Concept Exploration. The concept exploration phase includes solicitation, evaluation, and competitive exploration of alternative concepts. This phase culminates in a DOD review (Defense Systems Acquisition Review Council (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 to 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 to Phase II, Full Scale Development. This phase culminates in a DOD review (DSARC III) and subsequent approval by the SECDEF, constituting the Milestone III decision. The Milestone III decision provides authorization to proceed to Phase III, Production and Deployment. The decision at Milestone III (DSARC III) may be modified by the SECDEF to authorize limited production and 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 (DSARC IIIA). An example is the decision of the SECDEF after DSARC III review of the XM-1 Tank. As stated in an undated memorandum from the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics (ASD(MRA&L)) to the Assistant Secretary of the Army for Research, Development, and Acquisition (ASA(RDA)), Subject: XM-1 Manpower and Logistics 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.

ACQUISITION PHASES AND MILESTONES

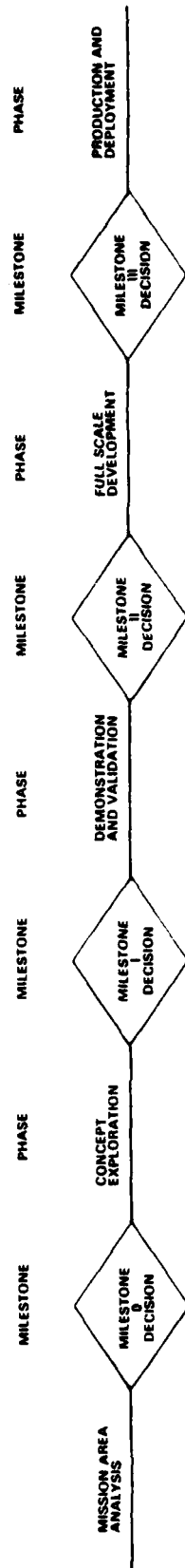


Figure 11-1
DOD Major System Acquisition Process

Figure II-2 graphically displays the four phases and milestones of the Department of Defense major systems acquisition process, noting key activities at each event.

At the end of each phase of the defense systems 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, as well as reaffirms already established needs and program objectives.

Major systems under development by the Army proceed through the DOD systems acquisition process; however, prior to each DSARC review, there is a corresponding Army Systems Acquisition Review Council (ASARC) review. The ASARC reviews establish a recommended position for the Secretary of the Army on the system under review. The Army uses the Life Cycle System Management Model (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. A detailed description of the MPT events in the LCSMM is contained in Army Research Institute (ARI) Research Product, "Manpower, Personnel, and Training Requirements for Materiel Systems Acquisition."

D. AFFORDABILITY

DODD 5000.1 states that affordability will be considered at every milestone within the DOD major systems acquisition process. A materiel system under development normally does not proceed to 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. The ability to provide adequate resources to acquire and operate a system is principally a determination of the Planning, Programming, and Budgeting System (PPBS) process. Specific information is required for individual milestone reviews, some of which may be used to measure affordability. Documentation requirements for DSARC reviews are described below. Figure II-3 displays the information and documentation flow for all four phases and milestones of the major systems acquisition process.

E. 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,

PHASE			CONCEPT EXPLORATION
MILESTONE	(MISSION AREA ANALYSIS)	0 (MENS APPROVAL)	
ACTIVITIES	● CONTINUING ANALYSIS OF MISSION AREAS — IDENTIFY DEFICIENCIES — TECHNOLOGICAL OPPORTUNITIES — REDUCTION IN COST (MANPOWER AND DOLLARS) ● DETERMINE ACQUISITION NEED ● DIA VALIDATED THREAT ● DATE SYSTEM IS TO BE FIELDDED ● 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	● 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	● DEVELOP AC STRATEGY ● INVESTIGATE COMPETITIVE ● EXPLORE AL ● DEVELOP TE EVALUATION ● DEVELOP TR PLANNING E ● DEVELOP FO GUIDANCE ● DEVELOP PL DEMONSTRATION VALIDATION ● UPDATE MI AND THREAT ● SUBMIT "FO DCP" AND H — OPERATING AND FOR — MANPOWER THRESHOLD — PERSONNEL ESTIMATE — MANPOWER ANALYSIS — TRAINING SUMMARY ● INCORPORATE COMMENTS AND IPS

DOD MAJOR SYSTEMS ACQUISITION PROCESS

OPT RATION		DEMONSTRATION AND VALIDATION		
	I (DSARC I)		II (DSARC II)	
ACQUISITION TE SOURCE FOR VE CONCEPTS ALTERNATIVES EST & N MASTER PLAN RAINING DOCUMENT ORCE LEVEL PLAN FOR ATION AND N PHASE SSION ANALYSIS AT OR COMMENT IPS TO DOD ONAL CONCEPTS CE STRUCTURE VER GOALS AND OLDS INEL FUNDING TE WER ESTIMATE WER SENSITIVITY IS NG IMPLICATIONS RY ATE DOD STAFF S IN "FINAL DCP"	• 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	• 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 — 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	• 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.	

Figure II-2
DOD Major System Aquisition Process

	FULL SCALE DEVELOPMENT		PRODUCTION AND DEPLOYMENT
ARC II)		III (DSARC III)	
COMMENTS ON "FOR COMMENT DCP" AND ARMY ELEMENT TASK ? SELECTED NEEDS? ANALYSIS WITHIN THE AND AS STATED IN DDM? NEXT PHASE	● 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 — 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	● 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	● 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

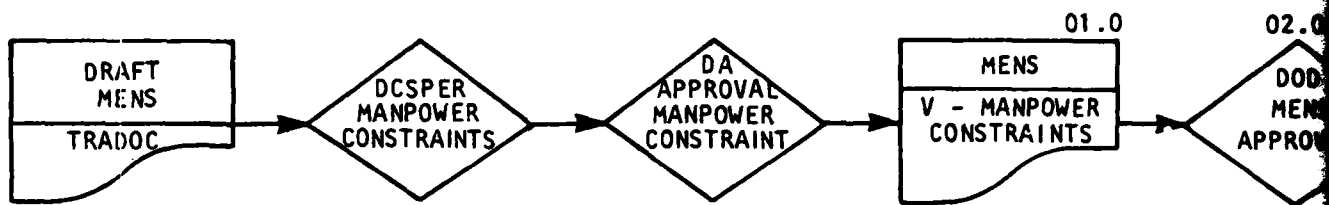
the continuation of a materiel system under development. Although the ability to provide adequate resources to acquire and operate a system is a PPBS process determination, the ability to provide sufficient resources to execute a program is a fundamental consideration during milestone reviews. The documentation normally required by the Army to fully justify SECDEF approval for continuation of the development of a system and authorization to expend funds is as follows:

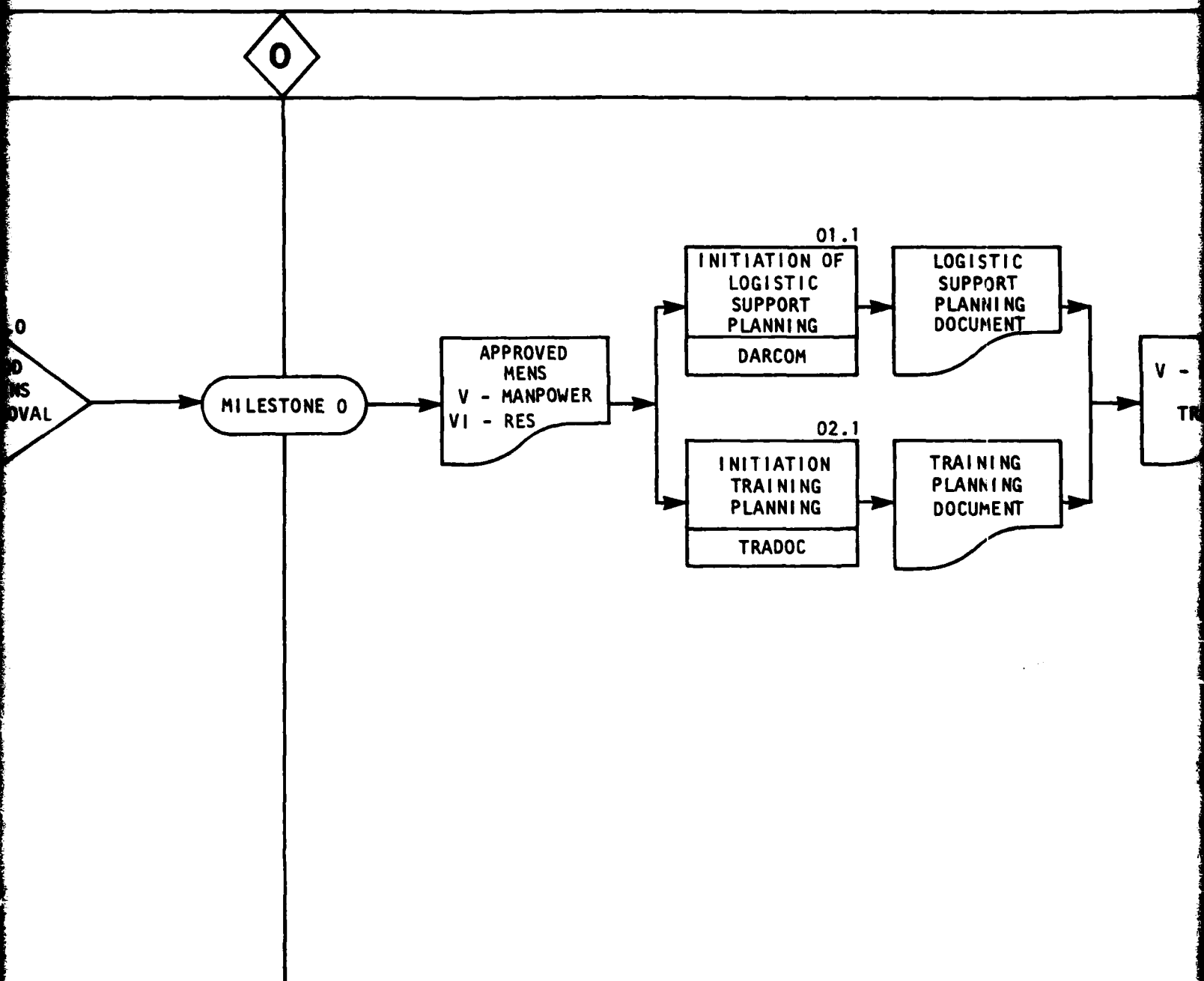
a. Milestone 0

The culmination of the Army's mission area analysis of the materiel systems acquisition process is the submission by the Army of a MENS. A MENS is the document upon which the Milestone 0 decision is based. The MENS identifies and defines: 1) 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; 2) the relative priority of the deficiency within the Army mission area; 3) the Defense Intelligence Agency (DIA)-validated threat forecast or other factors causing the deficiency; 4) the date the system must be fielded to meet the threat; and 5) the general magnitude of acquisition resources the Army is willing to invest. The MENS format includes mission threat or basis for need, planned capabilities, assessment of need, constraints, resources estimate, and schedule. New systems proceeding through mission analysis that may exceed a cost of \$100 million (constant dollars) in RDT&E funds or \$500 million (constant dollars) in production funds shall go through a MENS review. The Army must submit a MENS to the Defense Acquisition Executive (DAE), along with a recommendation as to whether or not the program should be designated as a major system. The DAE solicits comments from the DOD staff, the Joint Chiefs of Staff (JCS), other military departments, and DIA. If the DAE plans to recommend designation as a major system, comments received from the coordination of the MENS will be provided to the Department of the Army within 20 workdays after DAE receipt of the MENS. Upon receipt of DOD comments, the Army will revise the MENS and return it to the DAE within 20 workdays for approval action. If the DAE does not recommend designation as a major system, the MENS will be returned to the Army for assumption of responsibility for milestone decisions on the program.

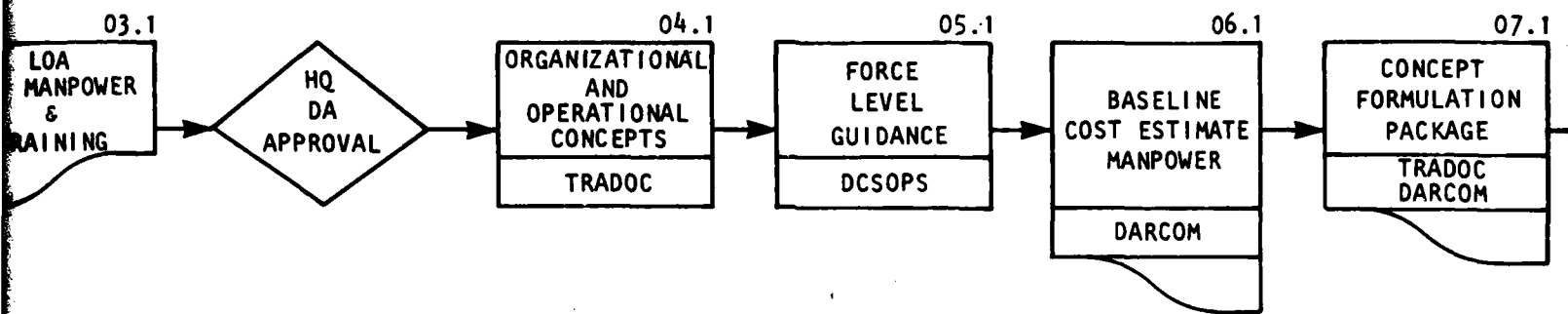
When the DAE plans to recommend approval of a MENS and "major system" designation, and after receipt of an updated MENS (DOD comments included) from the Army, the designated DOD action officer prepares a SDDM. After formal coordination within DOD (all permanent DSARC members and such advisors as the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

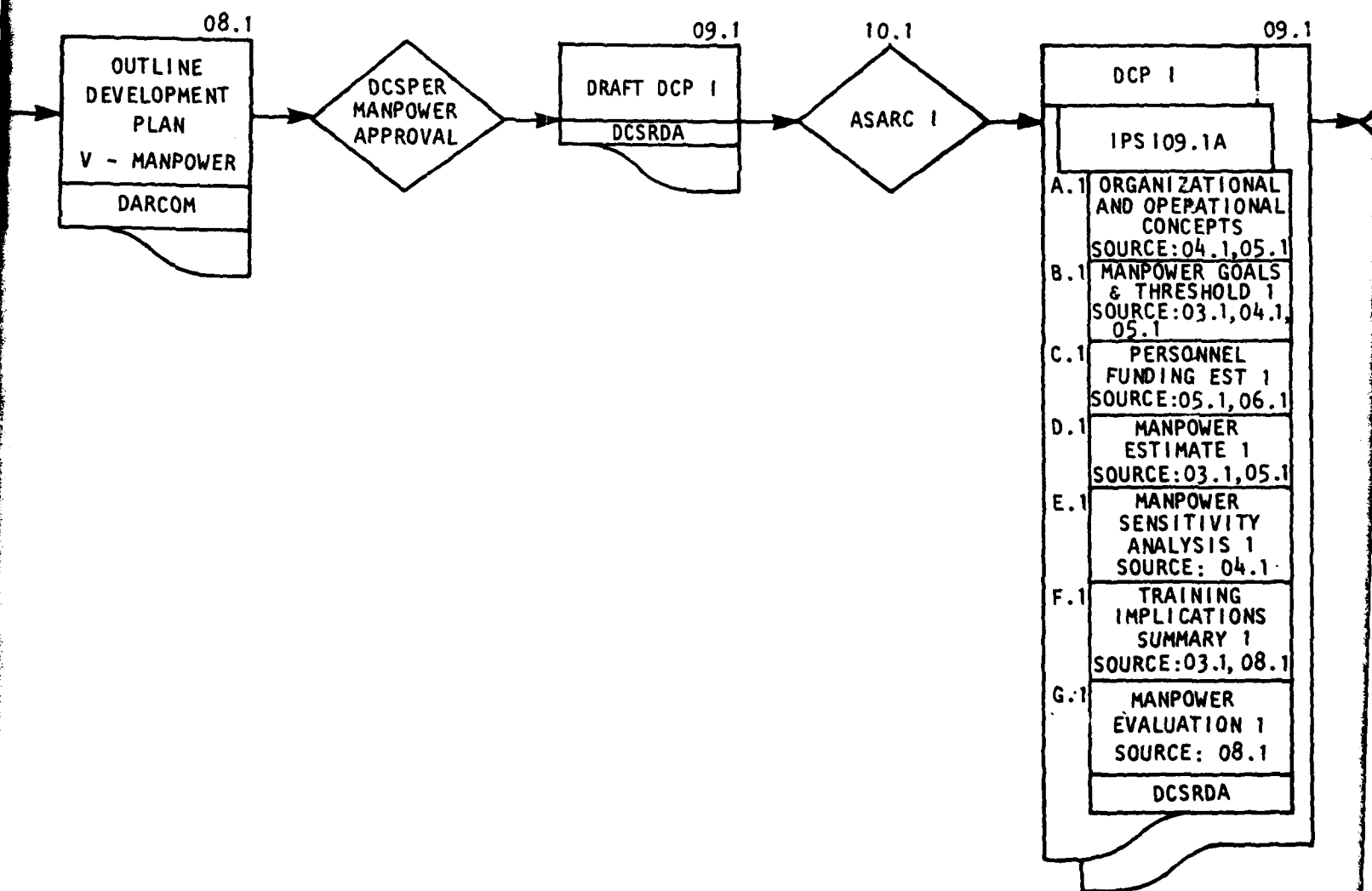
MISSION AREA ANALYSIS PHASE

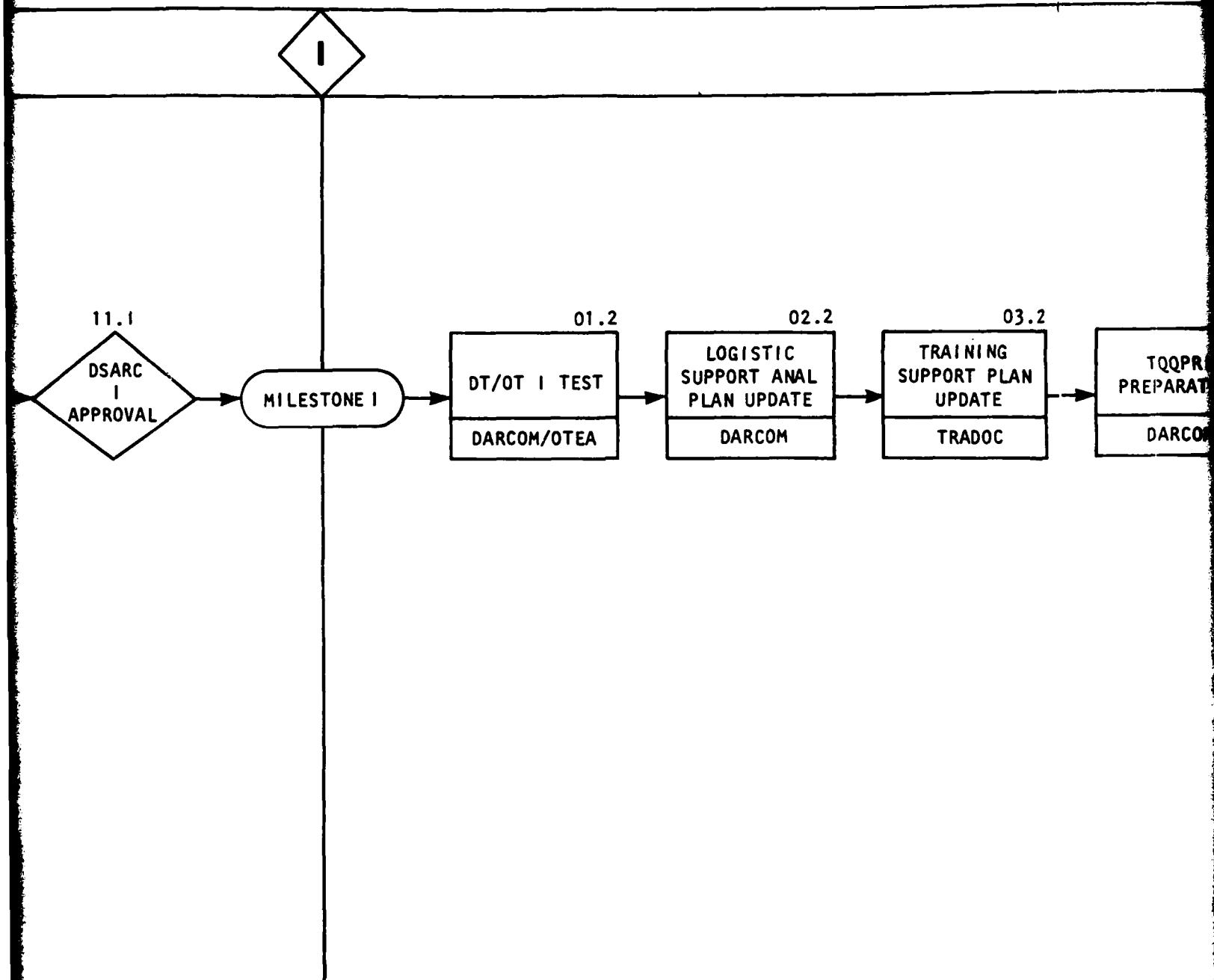




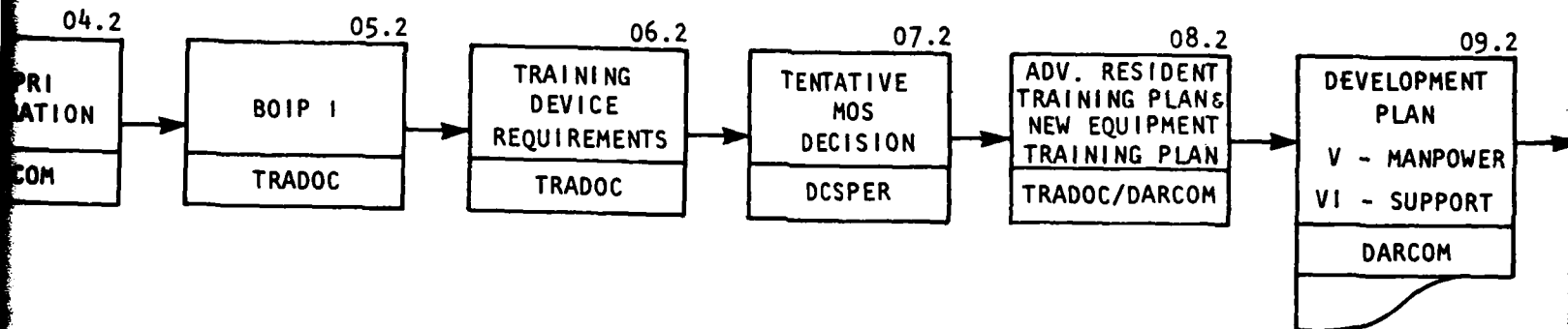
CONCEPT EXPLORATION PHASE



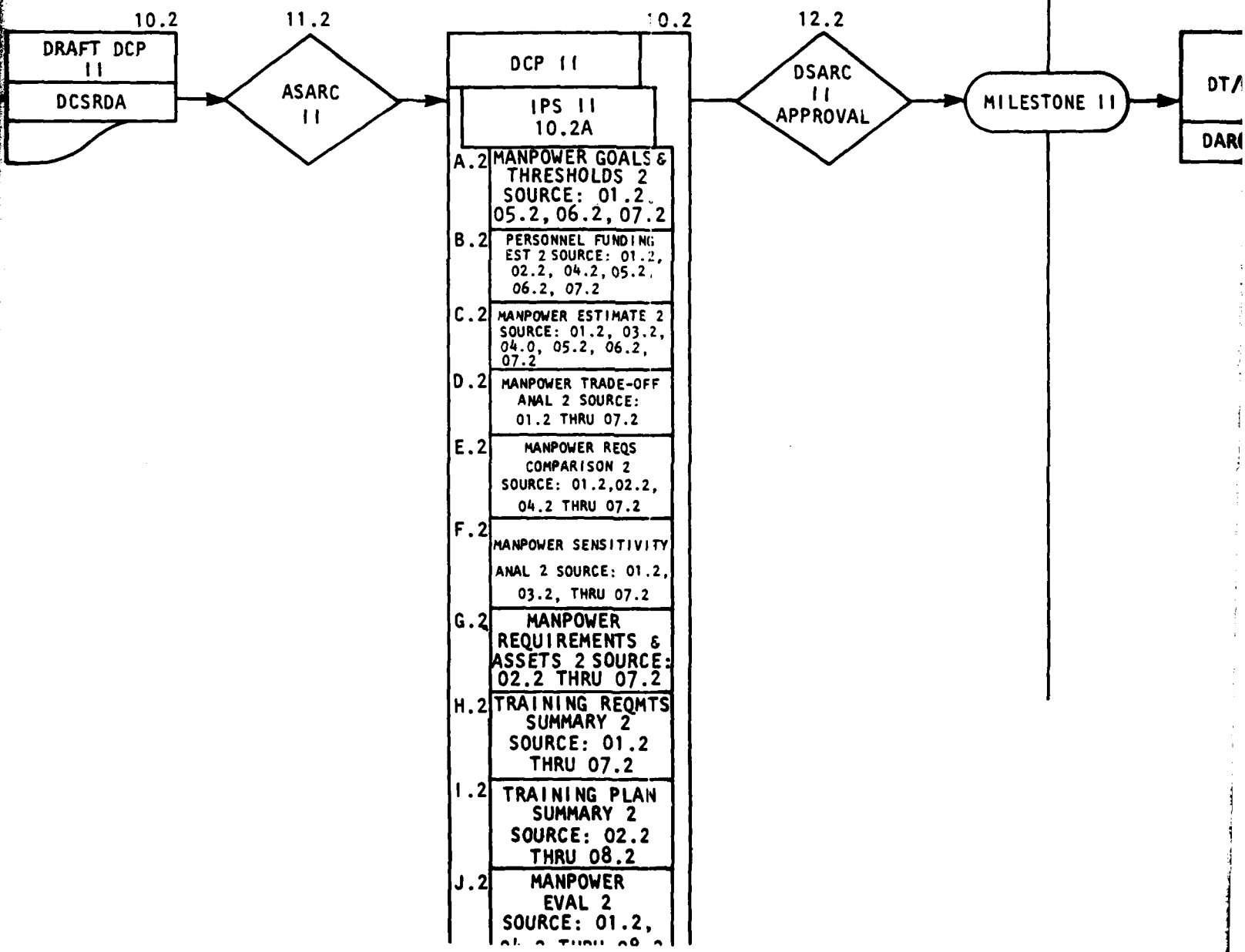




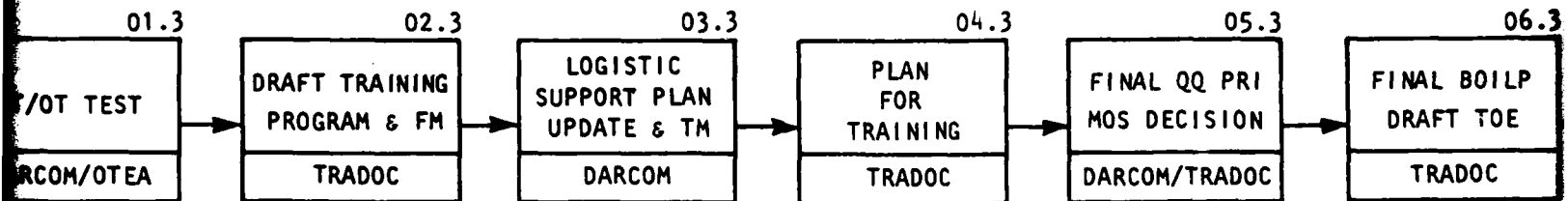
DEMONSTRATION AND VALIDATION PHASE



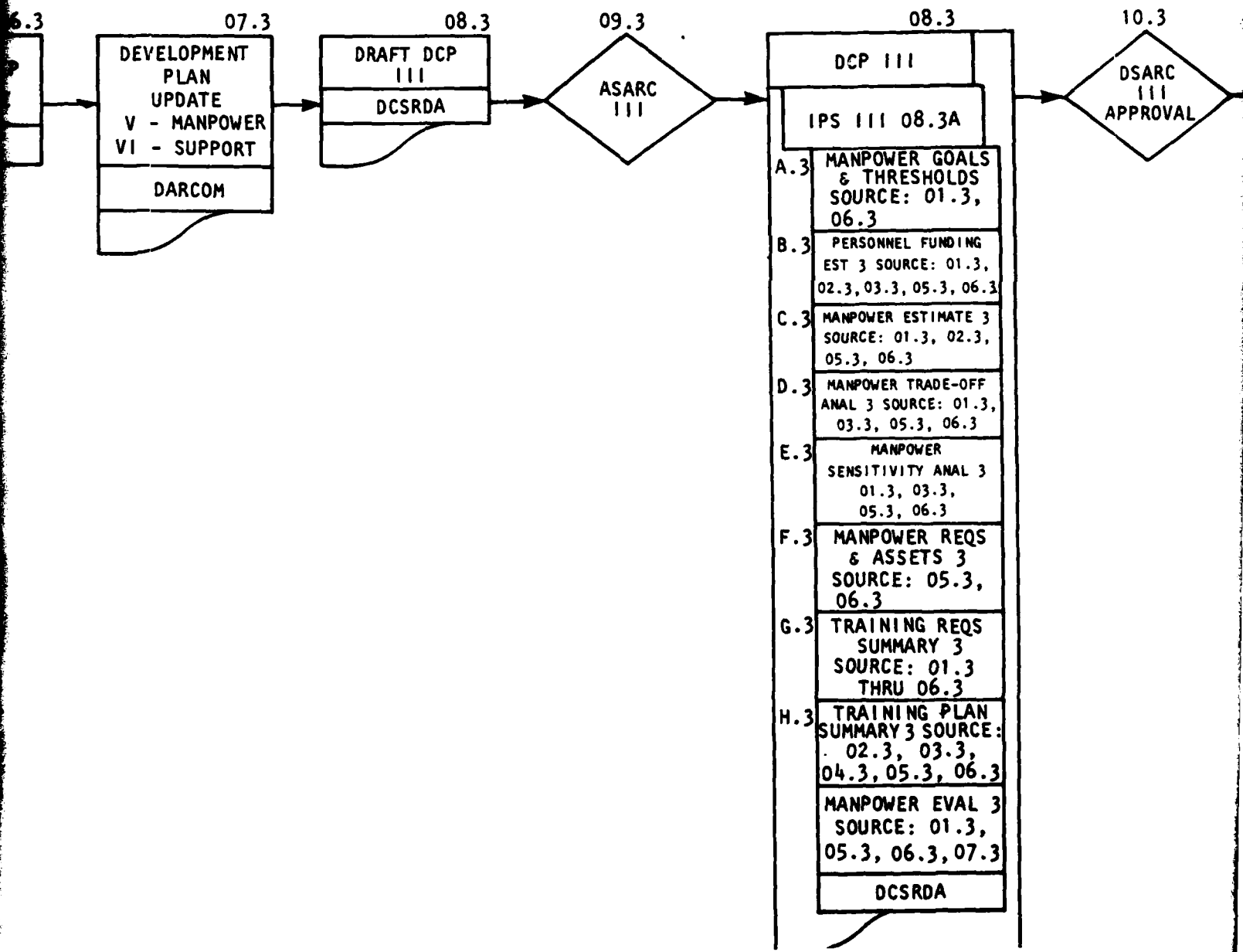
II



FULL SCALE DEVELOPMENT



DEVELOPMENT PHASE



III

PRODUCTION AND

MILESTONE III

01.4

DT/OT III
(IF REQUIRED)

DARCOM/OTEA

02.4

LOGISTIC
SUPPORT & ANAL
PLAN UPDATE

DARCOM

03.4

AMENDED
QQPRI

DARCOM/TRADOC

04.4

AMENDED
BOIP

TRADOC

D
V
VI

DEPLOYMENT PHASE

IIIA

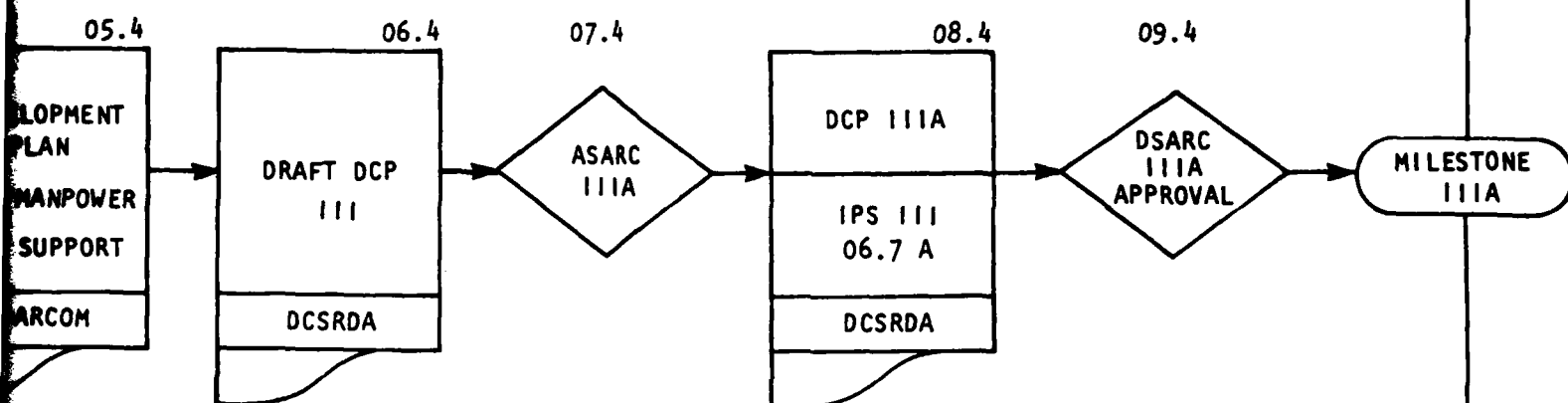


Figure II-3

Major Systems Acquisition Process

b. Milestones I, II, and III

After MENS approval and issuance of the SDDM, the defense systems acquisition process becomes a formal, structured procedure.

2. The Decision Coordinating Paper (DCP) and Integrated Program Summary (IPS)

Figure II-4 illustrates the DCP and IPS.

a. The DCP

The DCP is the primary documentation used 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 on 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 to include the mission and life cycle resource requirements.
- 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.

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 (50 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 B: Resources--Preferred Alternative.

This annex denotes the resources (costs in dollars only) required to support the Army's preferred alternative, including the operation 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. The various "Ownership Considerations"¹ involved in life cycle cost determination include important manpower and training components. Manpower and Training costs for each alternative are required.

- 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 fifty (50) pages, including all annexes except Annex B (Resources--Funding Profile). The format and content of the IPS are contained in DODI 5000.2, "Major Systems Acquisition Procedures."

- (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 pre-combat readiness), specifies the available hours per person per month used to compute numbers of people from workload estimates, and contains 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

¹Effectiveness of U.S. Forces Can Be Increased Through Improved Weapon System Design; The Comptroller General, General Accounting Office, Washington, D.C., January 29, 1981.

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-5
IPS Topics for Inclusion in Basic Document

under consideration and the operating and support personnel, on-the-job and unit training, use of simulators, number of personnel to be trained, and 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 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, with the manpower cost data being included.

- Annex C: Resources--Summary of System Acquisition Costs.

This annex displays the sources of funding, in constant dollars, by the Five Year Defense Program (FYDP) categories. In order to be consistent with Annexes A and B, the total manpower costs must be included in this annex.

- 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 "other" categories. This section is not required for Milestone I review.

- Section 2: This section contains the contract 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 which provides the backup 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 backup data in the MRF will accompany these

documents. The DAE maintains the MRF at one 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 the SDDM is issued.

F. ACQUISITION PHASES

As can be seen from a description of the materiel systems acquisition process and related documentation requirements for specific decision points, requirements for manpower, personnel, and training information exist relatively early in the acquisition process. This planning, coupled with cost estimates and life cycle cost requirements, should provide a basis for early input to the PPBS programming phase. The specific acquisition phases are described, in detail, in the following paragraphs. The purpose of these paragraphs is to describe those key actions that occur prior to initiating development of a new major system.

1. Mission Area Analysis

Although not labeled as such by either DOD or Army regulations, for clarity, this report designates this phase as the Mission Area Analysis Phase.

The services perform continuing analysis of mission areas; therefore, the mission area analysis phase consists of identification and definition, through analysis, of current and projected mission needs, capabilities, resources, and available technologies. When a need is identified, it is stated in terms of a task to be performed and a 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 to Phase 0, Concept Exploration.

Figure II-6 provides a graphic display of events within this phase. A summary of events is found in Table II-1. Table II-2 is a matrix and exhibits manpower information which could assist in early planning for input to the PPBS. At this point in the acquisition process, most information would be relative to the Extended Planning Annex (EPA) of the Program Objective Memorandum (POM). The EPA is a ten-year extension of the POM.

2. Concept Exploration

At the time of proceeding to the concept exploration phase, 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 is normally designated at Milestone I.

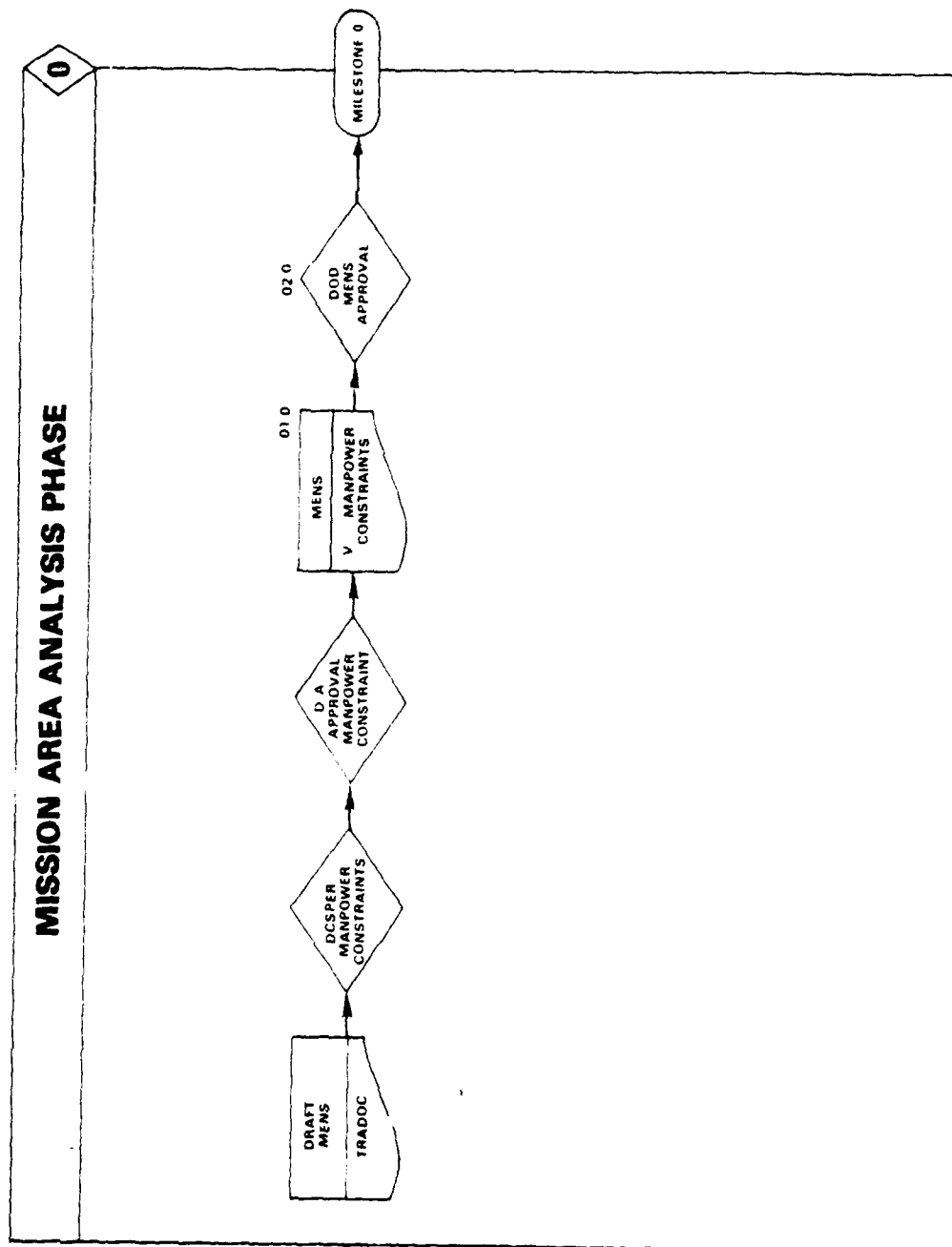


Figure II-6
MISSION AREA ANALYSIS PHASE

Table II-1
Systems Acquisition Process
Manpower-Personnel-Training
Events for Milestone 0

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

Table II-2
Mission Area Analysis Phase

Army System Acquisition → Process Document ↓ MPT Information	MENS Manpower Constraints X	
--	--	--

There are a number of key events during this phase related to manpower, personnel, and training. Figure II-7 is a graphic display of the key events of the LCSMM process during this phase. DOD information requirements for the DCP/IPS are also displayed. A summary of events is found in Table II-3. Table II-4 is a matrix displaying documents which must be prepared during concept exploration and relating them to specific information requirements which could assist in preparing input to the PPBS.

3. Demonstration and Validation

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 to Phase I, Demonstration and Validation.

Figure II-8 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 requirements category (contained in the DCP/IPS) to display sources of information. Events are summarized in Table II-5. The matrix in Table II-6 displays documents which must be prepared during this phase and relates them to specific information requirements which could assist in preparing input to the PPBS.

4. Full Scale Development

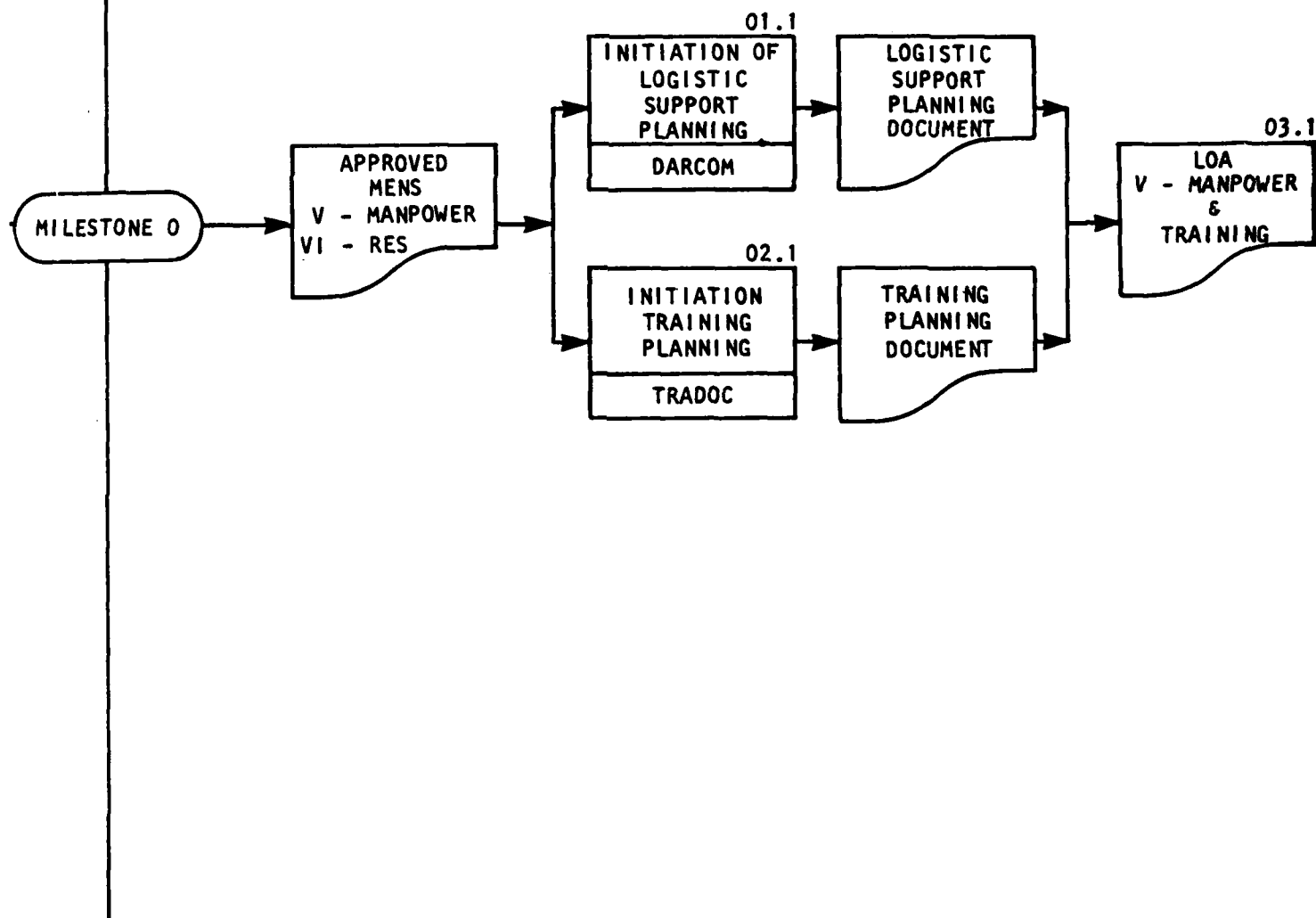
A favorable decision by the Secretary of Defense, upon DSARC II review, and a corresponding SDDM constitute the Milestone II decision. This decision provides approval for the Army to proceed to Phase II, Full Scale Development.

Figure II-9 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 requirements for the DCP/IPS. Events are summarized in Table II-7. The matrix in Table II-8 displays documents which must be prepared during this phase and relates them to specific information requirements which could assist in preparing input to the PPBS.

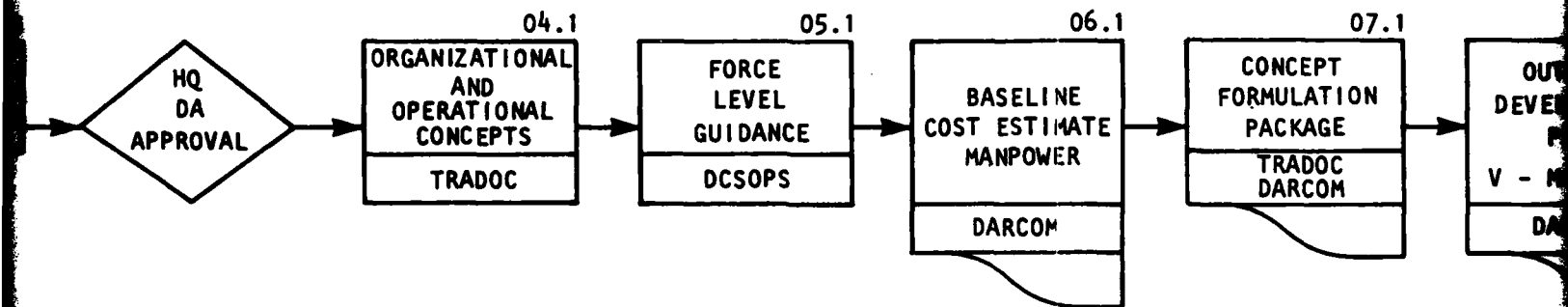
5. Production and Deployment

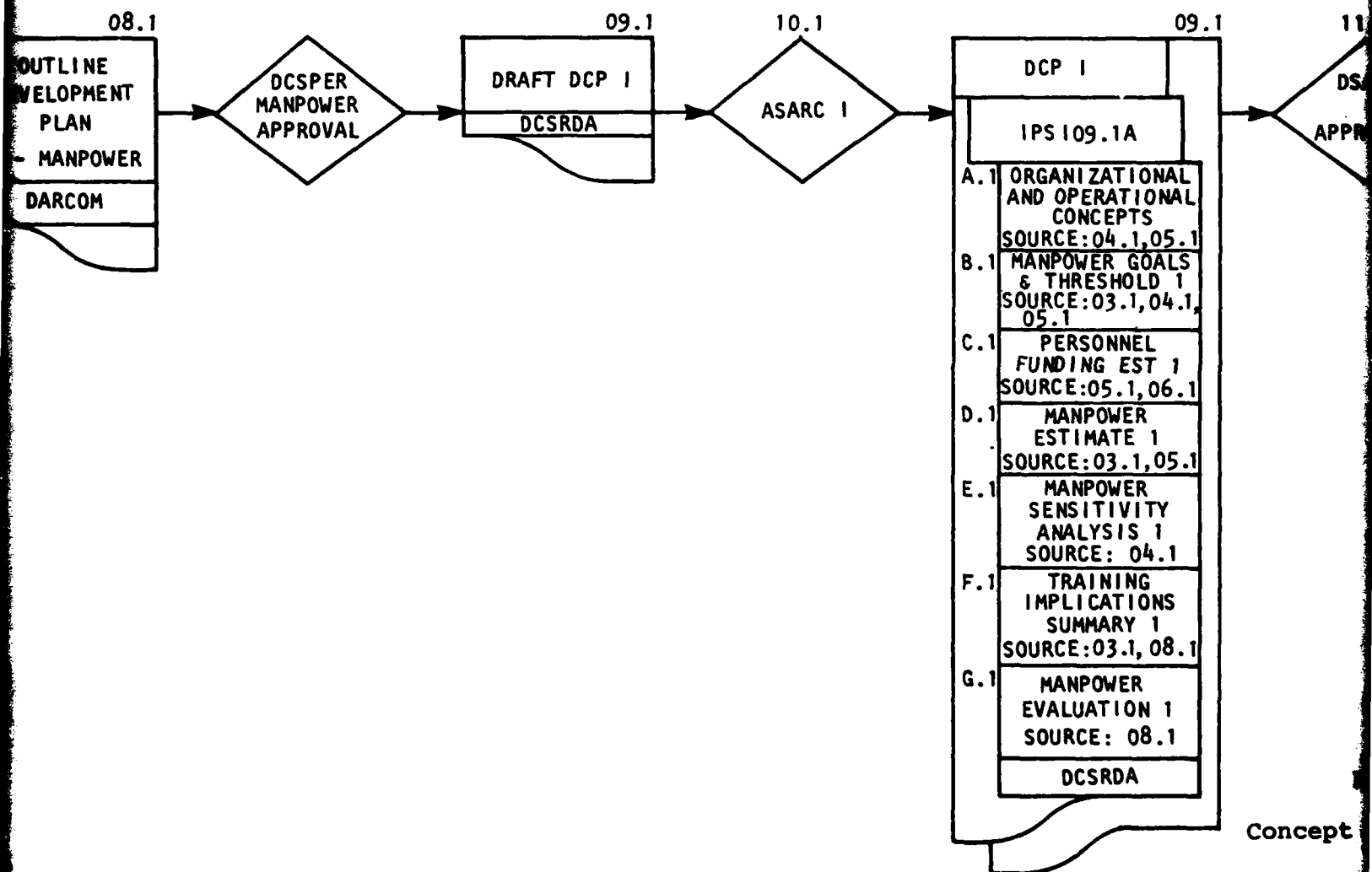
A favorable decision by the Secretary of Defense, upon DSARC III review, and a corresponding SDDM constitute the Milestone III decision. This decision provides approval for the Army to proceed to Phase III, Production and Deployment.

0



CONCEPT EXPLORATION PHASE





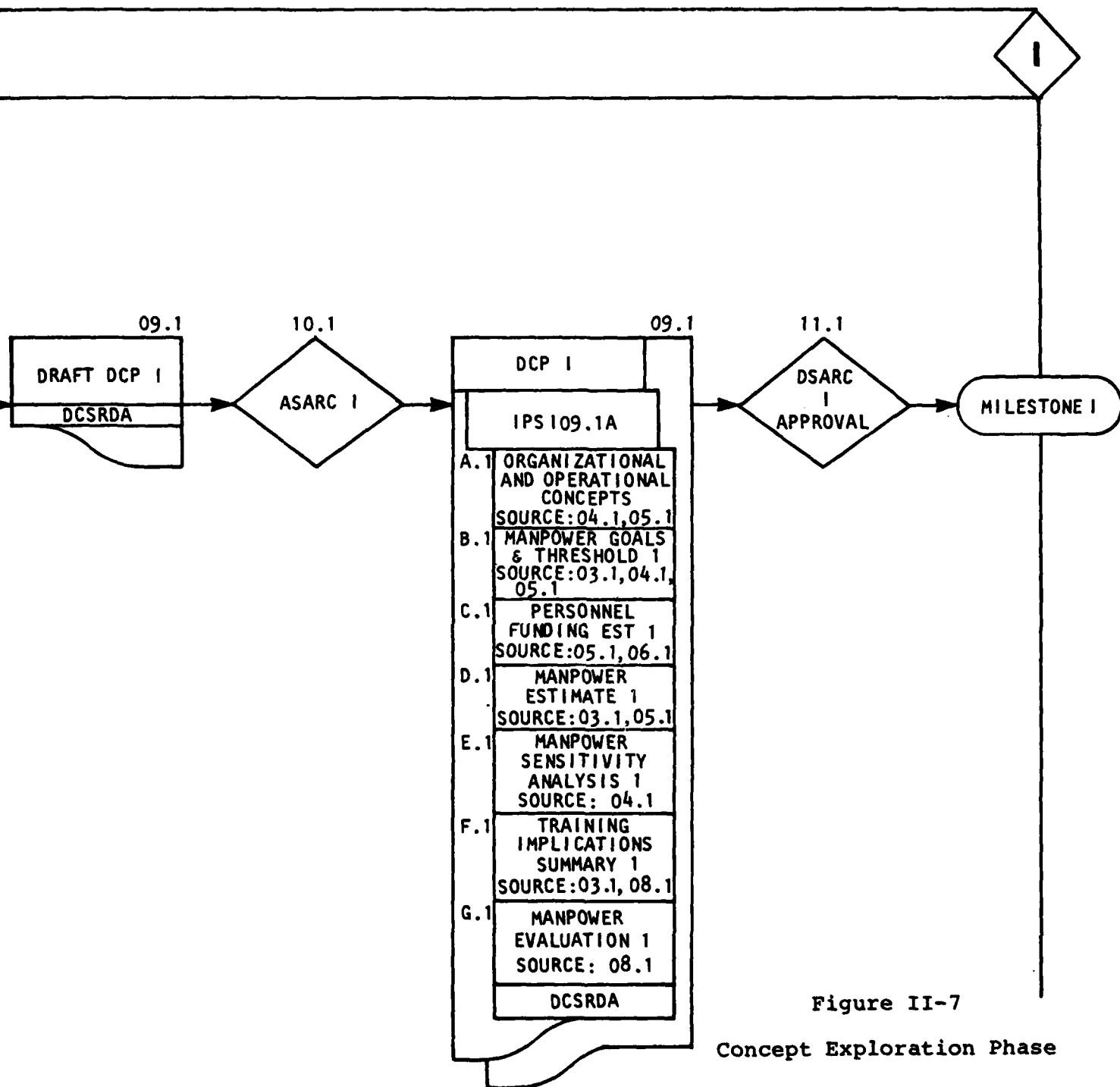


Figure II-7
Concept Exploration Phase

Table II-3
Systems Acquisition Process
Manpower-Personnel-Training
Events for Milestone 1

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 CE	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	SEC Army	AR 15-14 DODD 5000.1 DODI 5000.2

Table II-4

Concept Exploration Phase

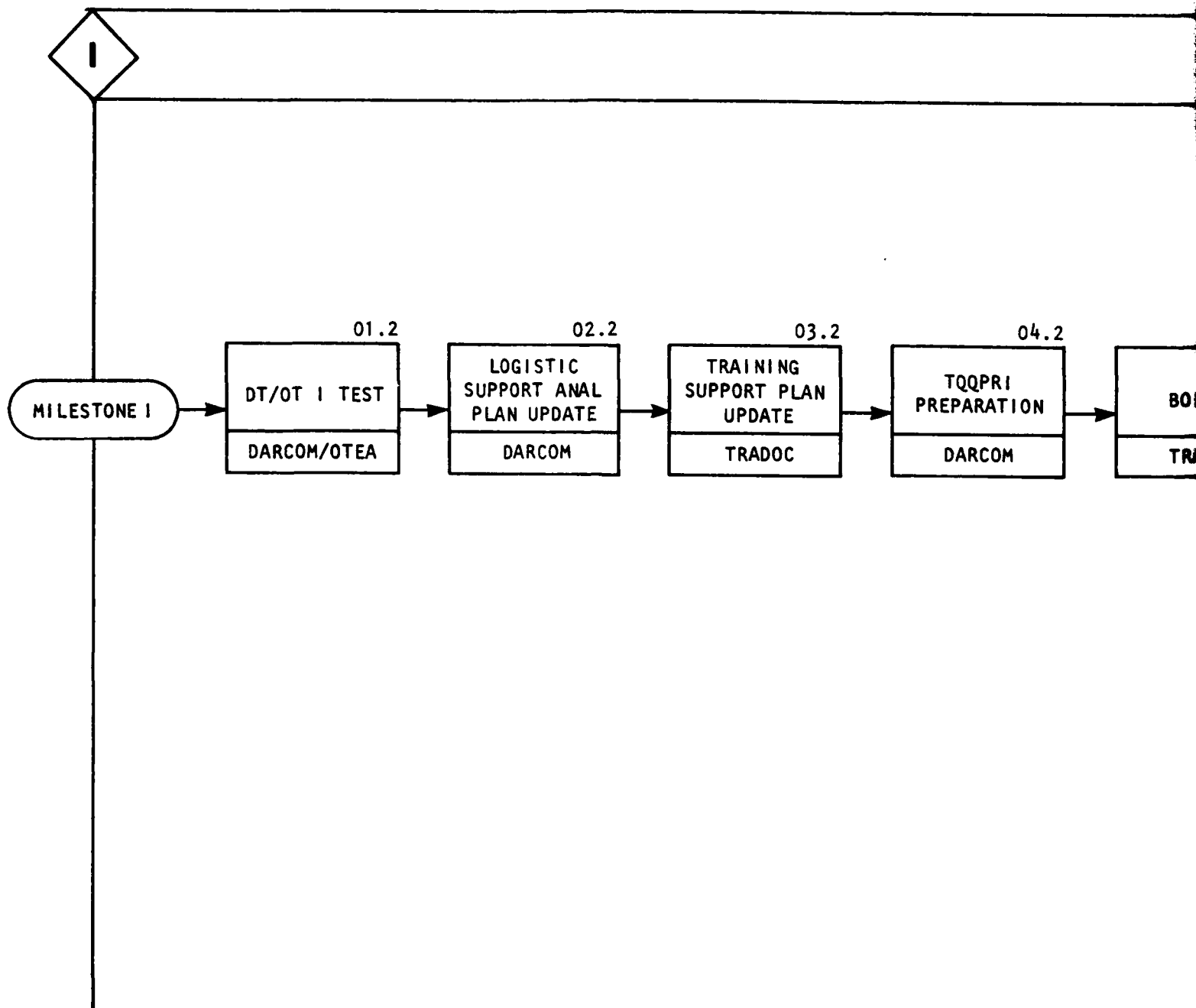
Army System Acquisition Process Document →		Letter of Agreement of						
MPT Information		Organizational Coordination	Force Level	Guidance	Base Line	Cost Estimate	Concept Formulation	Outline Package
Manpower Constraints	X							
Concept of Operation		X	1. X					
Mission		X	1. X					
Cost of Acquisition plus Operation (LCC)				X			X	
Manpower Cost				X			X	X
Manpower Requirements Estimate								X
Skill Requirements						X		
Training Devices						X		
Training Facilities						X		
Civilian Personnel Pay.							X	
Military Manpower O & M Cost							X	
Military Personnel Cost							X	
Training Cost							X	

1. Major Commanders may provide Comments to DCSOPS for consideration in POM development.

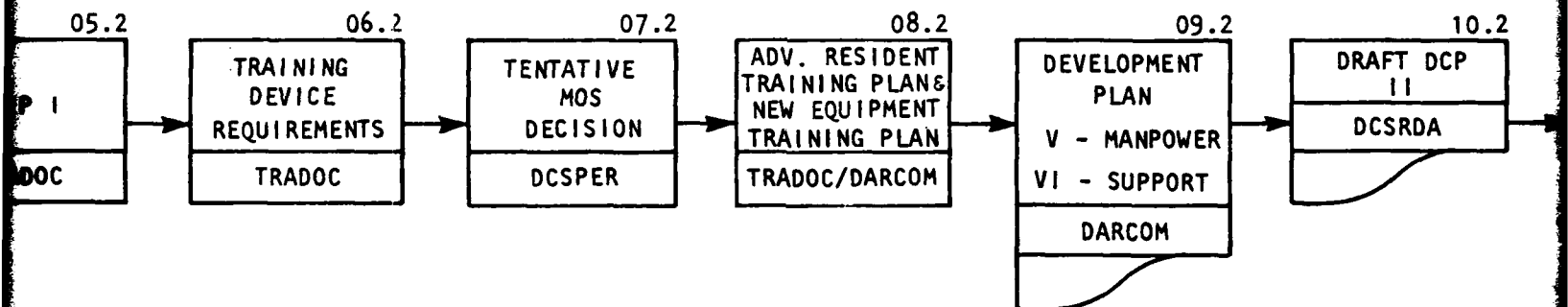
Table II-4 (Cont'd)

This matrix is designed to identify existing documents within the LCSMM process that include certain MPT information which could be useful in preparing input into the PPBS. The column headings of the matrix display the documents required during this specific acquisition phase. The row headings of the matrix include specific information contained in various documents which might provide useful input to the PPBS. Documents and information output relationships are identified.

Example: The DCP should include life cycle cost information, manpower requirements estimates, MILCON (approved FYDP), MILPERS (MPA), and training costs.



DEMONSTRATION AND VALIDATION PHASE



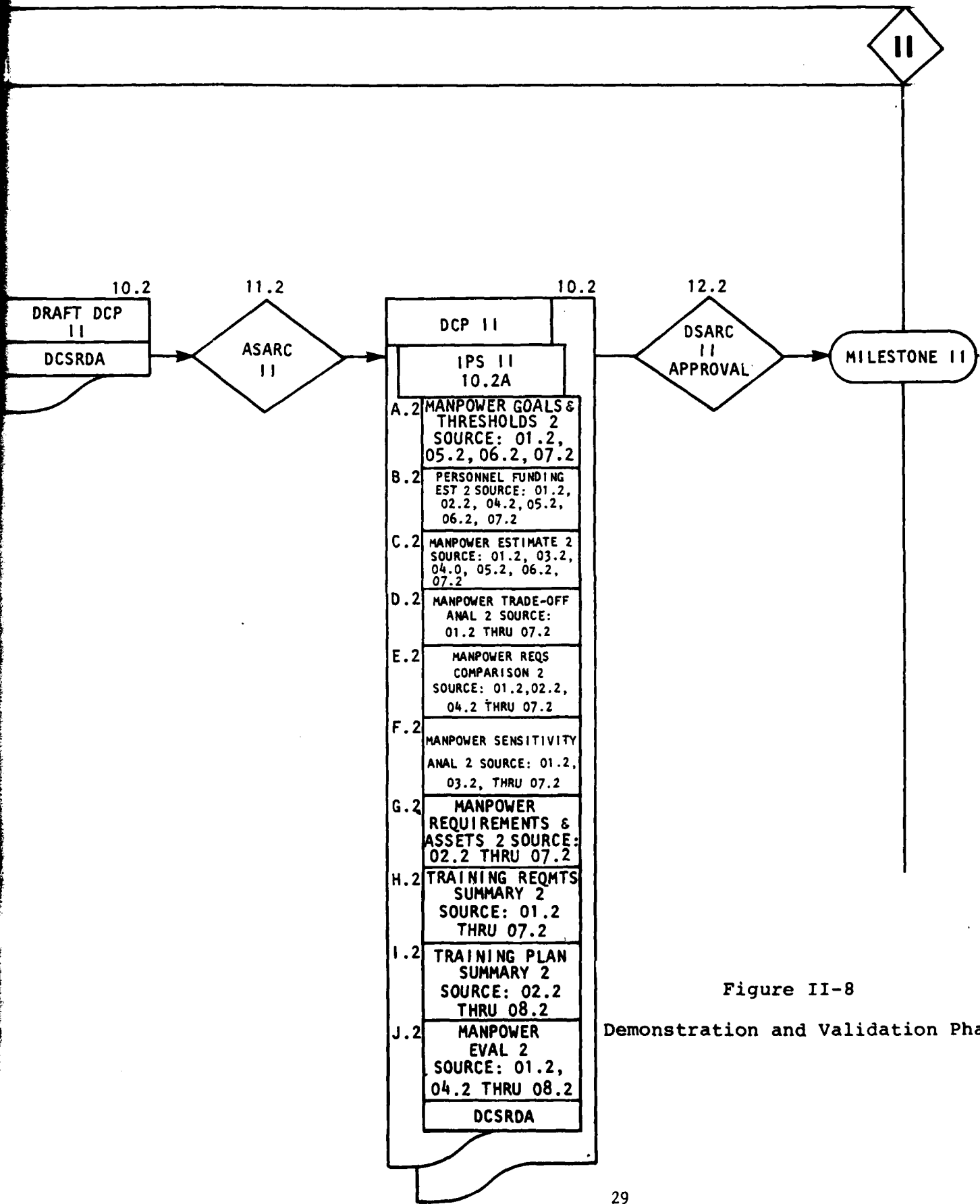


Figure II-8
Demonstration and Validation Phase

3

Table II-5
Systems 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 AR 602-1
02.2	Logistic Support Analysis Planning 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 Information	Material Developer/ TRADOC	HQDA-DCSPER/	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 70-1 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 Decision	TRADOC	DCSPER	AR 71-2 AR 611-1
08.2	Development of Advanced Resident Training Plan and New Equipment Training Plan	Trainer and Material Developer	HQDA-DCSOPS	AR 350-35 AR 71-7 AR 750-1

Table II-5 (Cont'd)
Systems Acquisition Process
Manpower-Personnel-Training
Events for Milestone II

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	SECARMY	AR 15-14 DODD 5000.1 DODI 5000.2
10.2A	Development of IPS	HQDA-DCSRDA		DODI 5000.2
11.2	Review by ASARC II	HQDA-DCSRDA	SECARMY	DA PAM 11-25
12.2	Review by DSARC II	DAE	SECDEF	DODD 5000.1 DODI 5000.2

Table 11-6

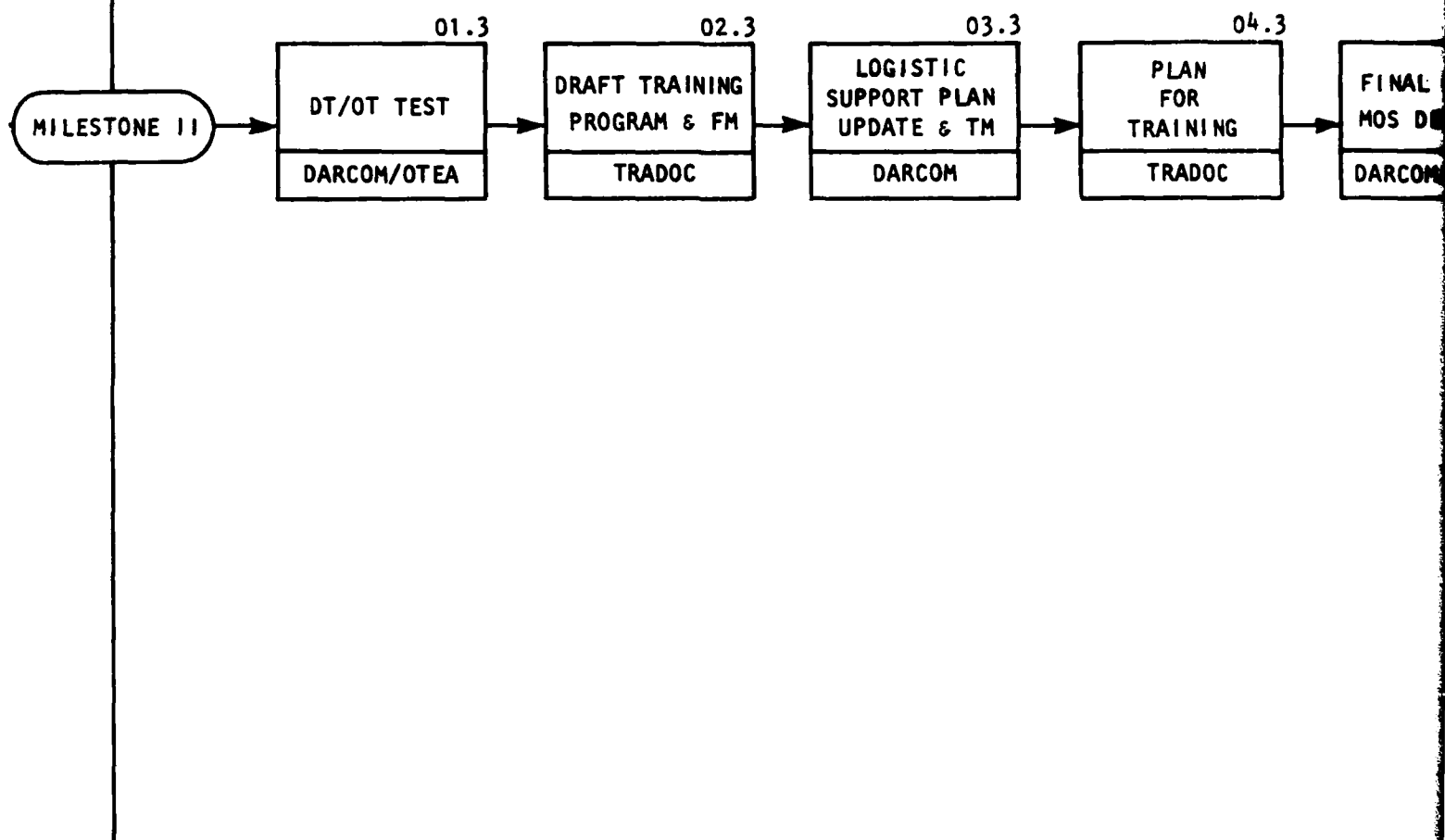
Demonstration and Validation Phase

Army System Acquisition Process Document →		Logistic Support Plan Update	TQOPRI	BOIP	Training Device Requirements	Training Support Plan Update	Advanced Resident Training Plan	New Equipment Training Plan	Development Plan	DCP
MPT Information										
Life Cycle Cost Assessments		X							X	X
Training Program Implications						X				
Manpower Requirements Estimate			X	X					X	X
Skill Requirements			X	X					X	
Training Devices					X	X			X	
Training Courses/Length						X	X		X	
Training Location						X	X		X	
Training Facilities/Equipment						X	X		X	
Personnel Training Requirements						X	X		X	
Initial Training for Maintenance/Instructor Personnel						X		X	X	
Training Costs										X
Milcon										X
Milders (MPA)										X

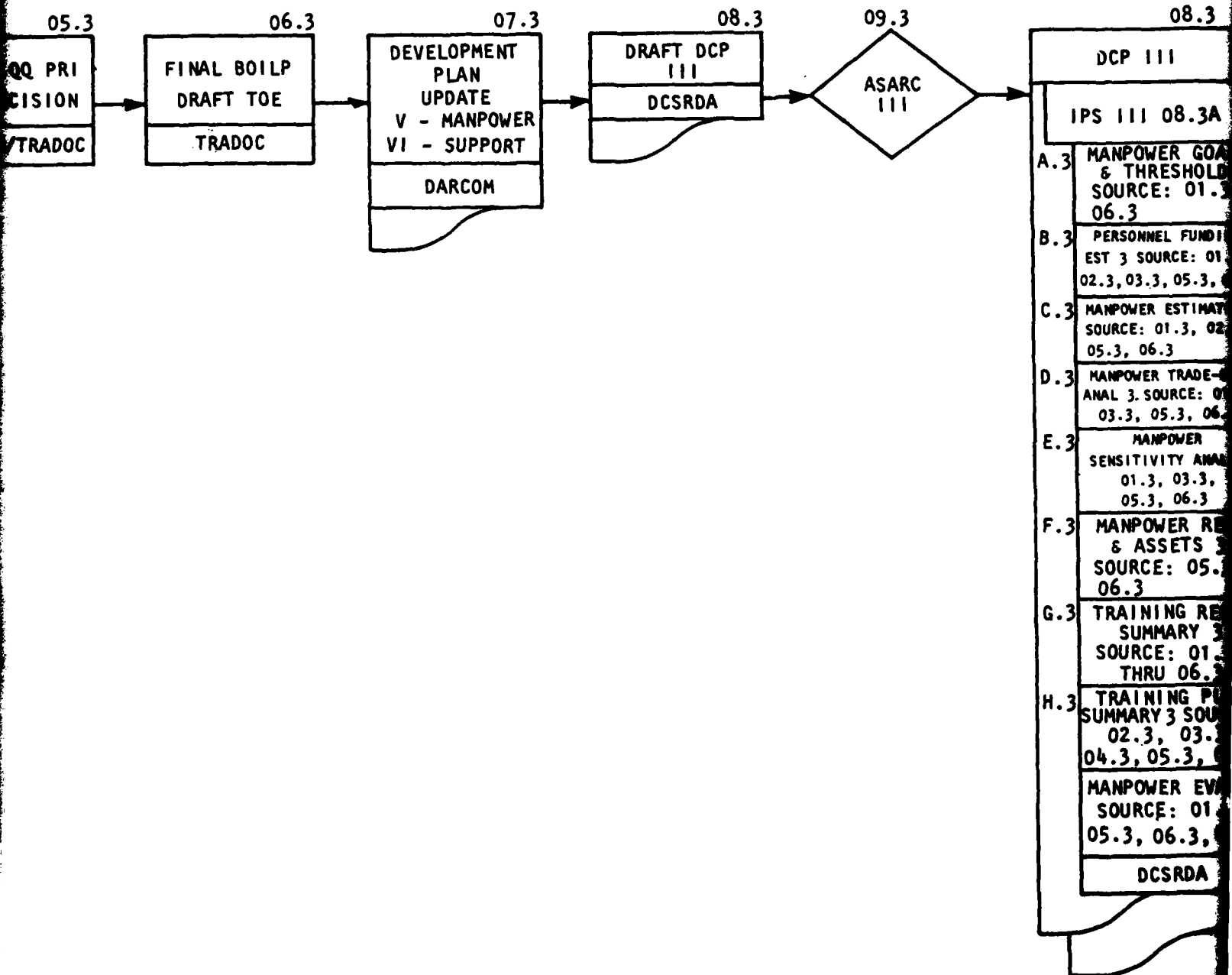
Table II-6 (Cont'd)

This matrix is designed to identify existing documents within the LCSMM process that include certain MPT information which could be useful in preparing input into the PPBS. The column headings of the matrix display the documents required during this specific acquisition phase. The row headings of the matrix include specific information contained in various documents which might provide useful input to the PPBS. Documents and information output relationships are identified.

Example: The DCP should include life cycle cost information, manpower requirements estimates, MILCON (approved FYDP), MILPERS (MPA), and training costs.



SCALE DEVELOPMENT PHASE



SE

III

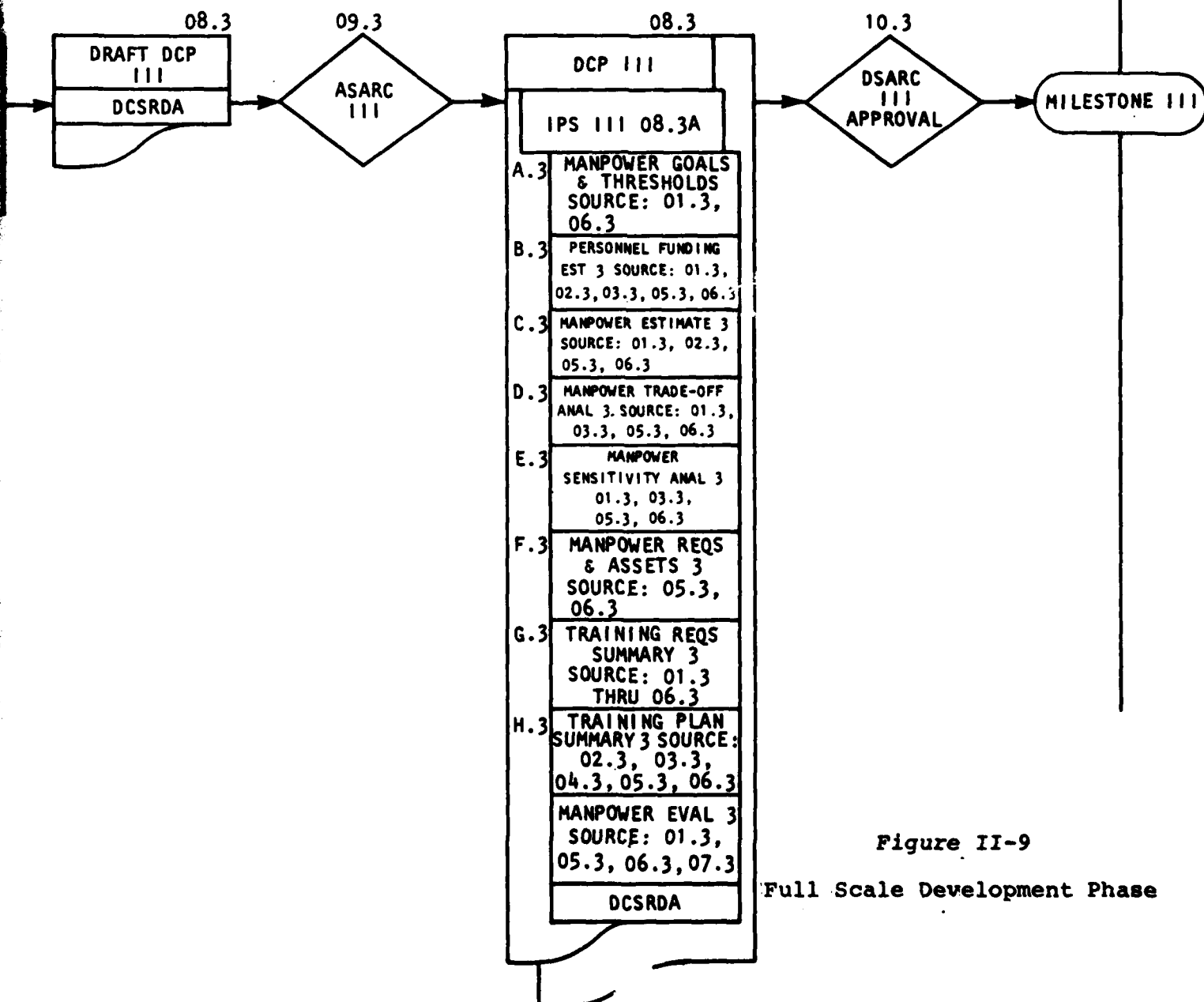


Figure II-9

Full Scale Development Phase

Table II-7
Systems 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 DCSPER	AR 71-2 AR 350-35 AR 611-1
05.3	Final QQPRI Final MOS Decision	Materiel Developer TRADOC	DCSPER	AR 71-2 AR 350-35 AR 611-1 AR 700-18 AR 750-1 DA PAM 11-25
06.3	Final BOIP	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/DCSOPS/	AR 70-27
08.3	Preparation of Draft DCP III	HQDA-DCSRDA	SECARMY	DODD 5000.1 DODI 5000.2 AR 15-14

Table II-7 (Cont'd)
Systems Acquisition Process
Manpower-Personnel-Training
Events for Milestone III

EVENTS	TITLE	AGENCY RESPONSIBLE FOR SUBMISSION	APPROVAL AUTHORITY	REFERENCE
08.3A	Development of IPS III	HQDA-DCSRDA	SECARMY	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 II-8

Army System Acquisition Process Documents		Development			
		ROPRRI Update	BOIP Update	DCP	Development
MPT Information					
Life Cycle Cost Assessments					
Manpower Requirements Estimate					
Training Support	X				
MILCON (Approved FYDP)					
MILPERS (MPA)					
Training Costs					

This matrix is designed to identify existing documents within the LCSMM process that include certain MPT information which could be useful in preparing input into the process. The column headings of the matrix display the documents required during the acquisition phase. The row headings of the matrix includes the documents in various documents which might provide useful information. The output relations are identified.

Example: The DCP should include life cycle cost information (approved FYDP), MILPERS (MPA), and Training Costs.

DODD 5000.1, "Major Systems Acquisitions," and DODI 5000.2, "Major Systems 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 (ASARC IIIA and DSARC IIIA).

Figure II-10 is a graphic display of the LCSMM process during this phase, including key events. Information requirements data are dependent on what the ASARC/DSARC may require on a case-by-case basis, and can vary depending on the limited production decision. The matrix in Table II-9 displays documents which reflect manpower, personnel, and training information. These documents are related to specific information requirements which could assist in preparing input to the PPBS.

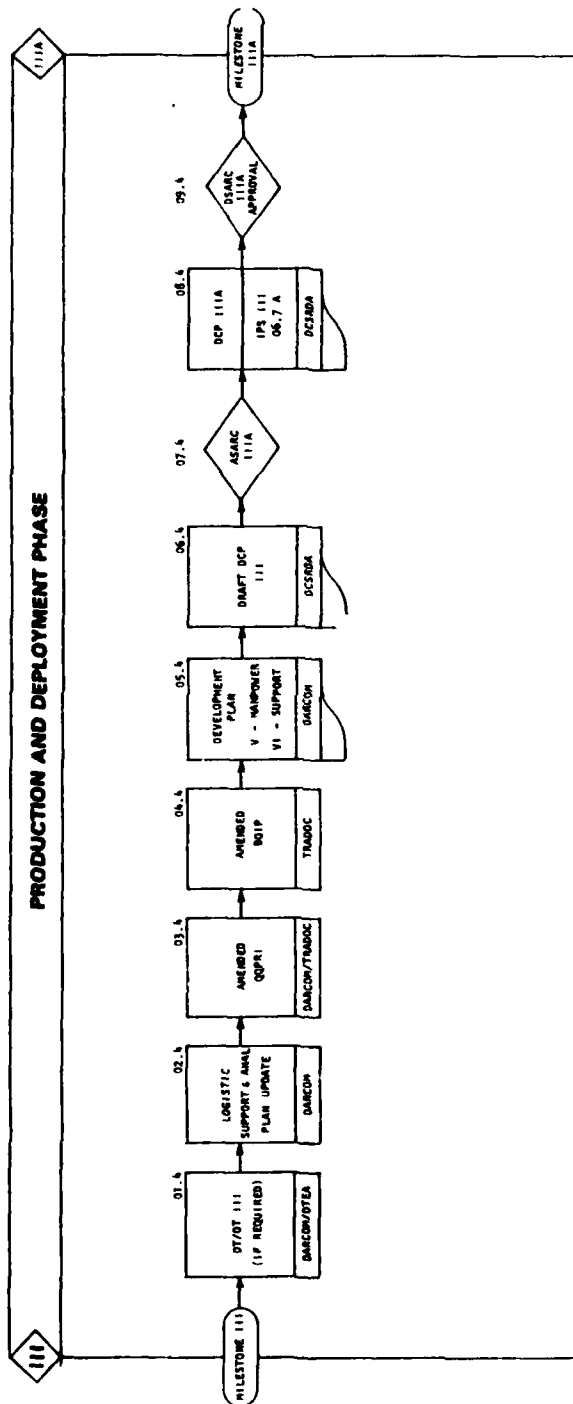


Figure II-10
Production and Deployment Phase

Table II-9
Production and Deployment Phase

Army System Acquisition Process Document →					
↓ MPT Information		Amended OOPRI	Amended BOP	Automated Unit Reference Sheet	Development Plan DCP
Life Cycle Cost Assessments					X
Manpower Requirements Estimate	X	X	X		X
Training Support				X	
MILCON (Approved FYDP)					X
MILPERS					X
Training Costs					X

This matrix is designed to identify existing documents within the LCSMM process that include certain MPT information which could be useful in preparing input into the PPBS. The column headings of the matrix display the documents required during this specific acquisition phase. The row headings of the matrix includes specific information contained in various documents which might provide useful input to the PPBS. Documents and information output relations are identified.

Example: The DCP should include life cycle cost information manpower requirements estimates, MILCON (approved FYDP), MILPERS (MPA), and Training Costs.

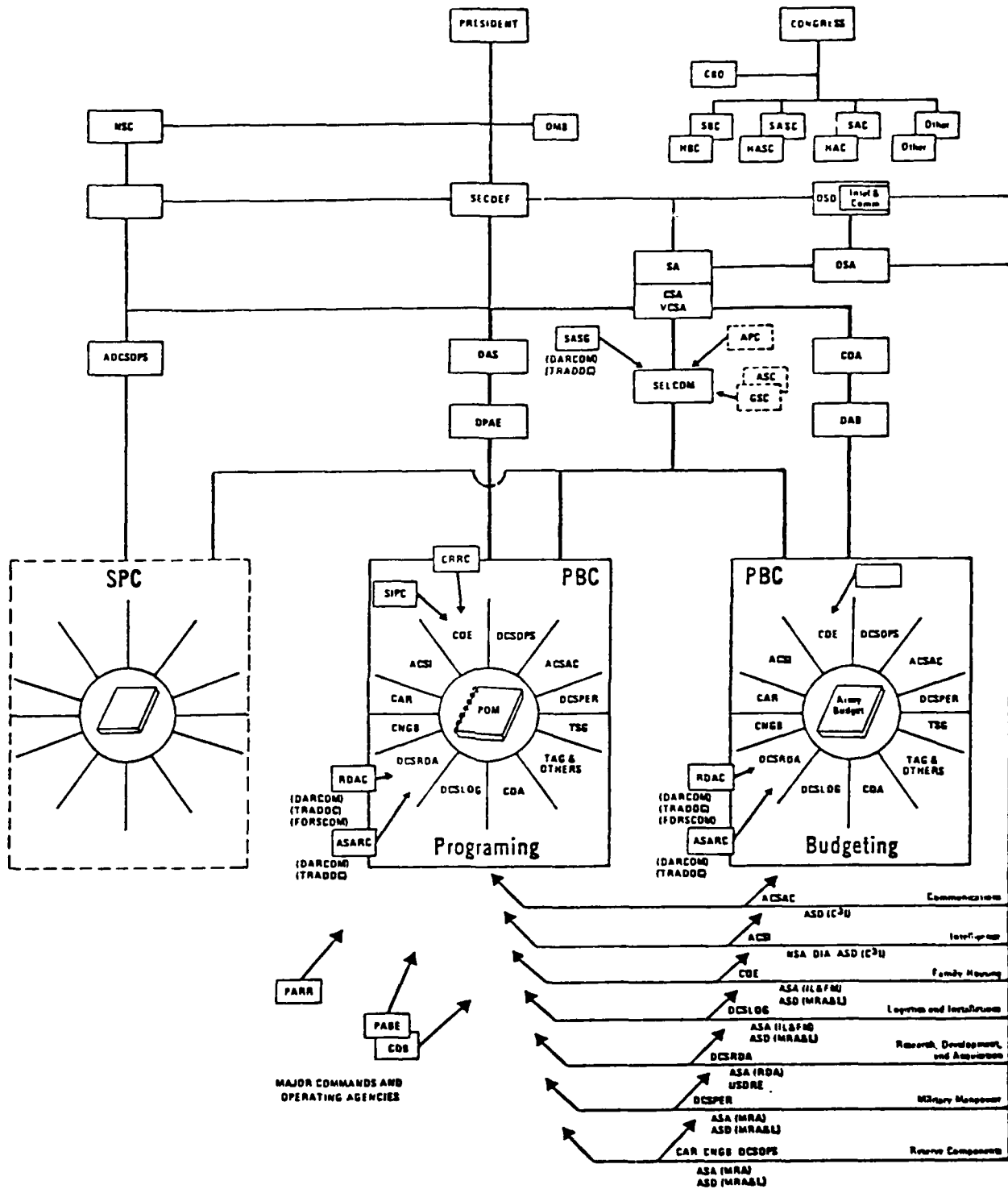
III. THE PLANNING, PROGRAMMING, AND BUDGETING SYSTEM

A. GENERAL

The Planning, Programming, and Budgeting System (PPBS) was initiated in the early 1960's by the Office of the Secretary of Defense (OSD). This system created a bridge between planning and budgeting, and provided OSD with a management and decision-making system which would enable resources adjustments within and among the military services and other defense agencies.

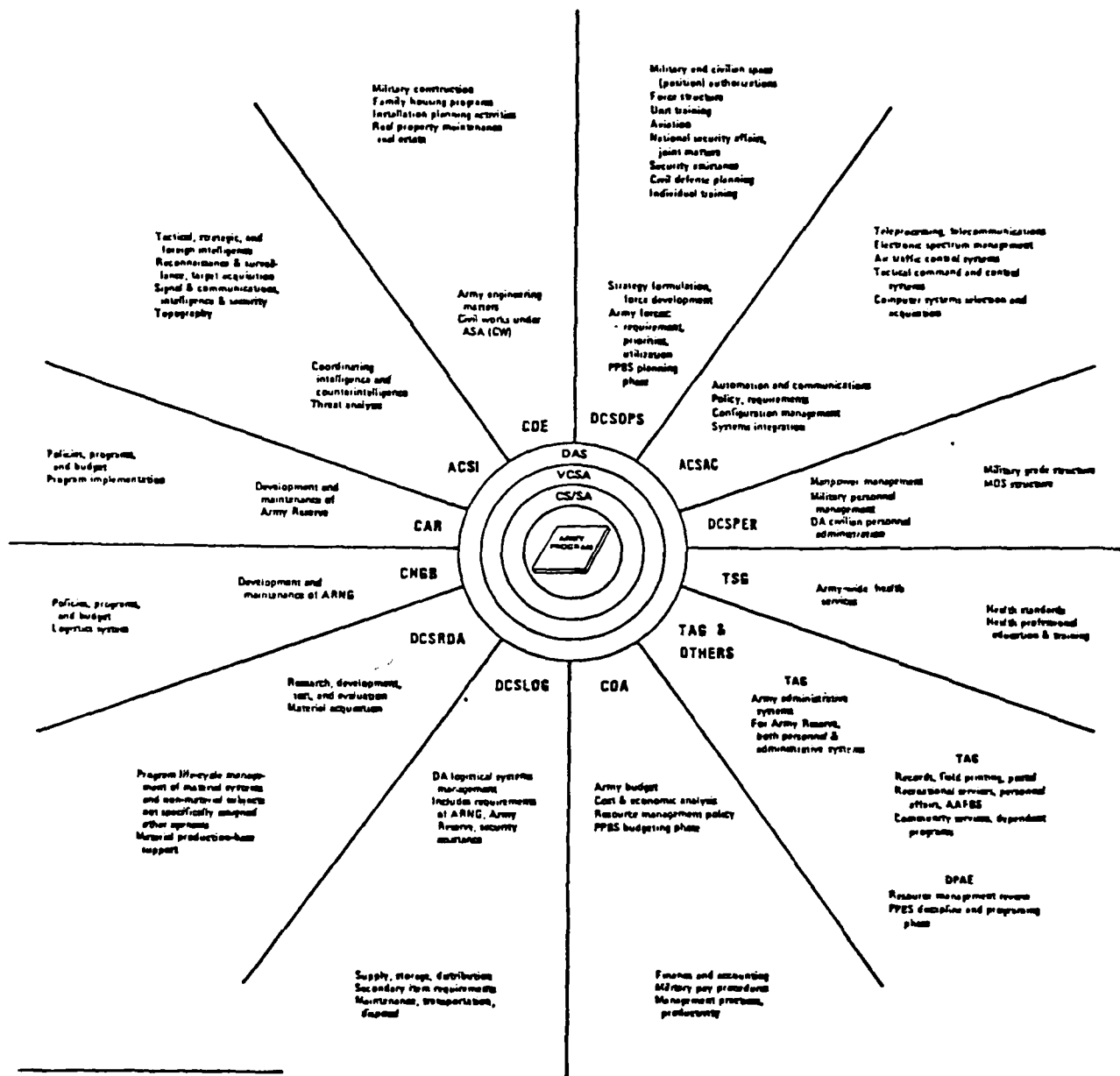
The Army PPBS follows Department of Defense (DOD) guidance and is a complex system designed to translate U.S. military strategy for the accomplishment of established national security objectives into Army force structure. It is the primary tool used to articulate the strategy, size, structure, equipment, and prioritization of resources to insure readiness of the total force. The PPBS is an evolutionary process which looks at national defense objectives and strategic planning, and develops and programs forces to meet these objectives. Finally, the selected programs are entered into the budget. Essentially, the process is a systematic way to arrive at an effective allocation of resources for accomplishing specific national defense objectives (Figure III-1). The most consistent aspect of the entire PPBS is the close interrelationships among the distinct phases of the process (planning/programming/budgeting) (Figure III-2).

During the planning process, concepts and objectives (missions, forces, readiness) are developed to support national defense objectives. The basic purpose of the programming phase of the PPBS cycle is to convert the approved concepts and objectives developed during the planning phase into a definitive structure of time-phased resource requirements (manpower, materiel, funds), as the basis for the Army's budget submission. Interactions result from overlap in the annual regeneration of an 18-month cycle, during which there is budgeting for one year, programming for the following year, and planning for the succeeding years. Planning, programming, budgeting, accounting, and reporting for the DOD must all be consistent with DOD guidance. The Five Year Defense Program (FYDP) is the management tool that records, summarizes, and displays the defense program resulting from military service recommendations and Secretary of Defense (SECDEF) decisions. It is the baseline from which all programs are evaluated and updated to obtain authorizations and Congressional appropriation of the funds necessary for program implementation. The following subsections describe each of the three functions of the PPBS--planning, programming, and budgeting. A summary of Army staff functions by principal PPBS participant is in Figure III-3.



Source: Adapted from PPBS Handbook, 1979

Figure III-1
Army Programming and Budgeting Framework



Source: AR 10-5, 1 April 1975; CSM 78-5-31, 22 August 1978

Figure III-3
Summary of Staff Functions by Principal PPBS Participant

B. PLANNING PHASE

The initial phase of each PPBS cycle is the planning phase (Figure III-4). During this phase, defense policies and military strategy to attain national security objectives, capabilities, and resources required for the execution of Army roles and missions in support of these objectives are determined.

Military planning is accomplished within the Joint Strategic Planning System (JSPS). The JSPS addresses all aspects of intelligence, strategy, requirements, and capabilities, and takes into consideration allied as well as U.S. forces.

The JSPS is comprised of a series of six (6) documents, as described in the following paragraphs.

1. Intelligence Priorities for Strategic Planning (IPSP)

The IPSP establishes military intelligence targets and priorities for both the short-range (0-2 years) and mid-range (2-10 years) periods. The document provides guidance and advice to the SECDEF and military services on the planning, collection, and production of intelligence. It includes guidance for the prioritized collection and production of intelligence to develop, update, and revise the Joint Intelligence Estimate for Planning and the Joint Long Range Strategic Appraisal. The IPSP also is used to inform the director of the Central Intelligence Agency (CIA) of intelligence priorities to support military strategy.

2. Joint Intelligence Estimate for Planning (JIEP)

This document focuses on the short- and mid-range periods; presents global and regional appraisals, including estimates of the internal and external threats to countries of importance to the United States; and estimates of the Warsaw Pact and major Asian Communist military forces.

3. Joint Long Range Strategic Appraisal (JLRSA)

The JLRSA provides intelligence estimates, U.S. strategic forecasts, broad force structuring implications, and probable issues. This document is published every four years, just preceding each Presidential election.

4. Joint Strategic Planning Document (JSPD)

The JSPD is the source document used by the Joint Chiefs of Staff (JCS) to advise the President, the National Security Council, and SECDEF on military strategy and force levels required to attain national military objectives.

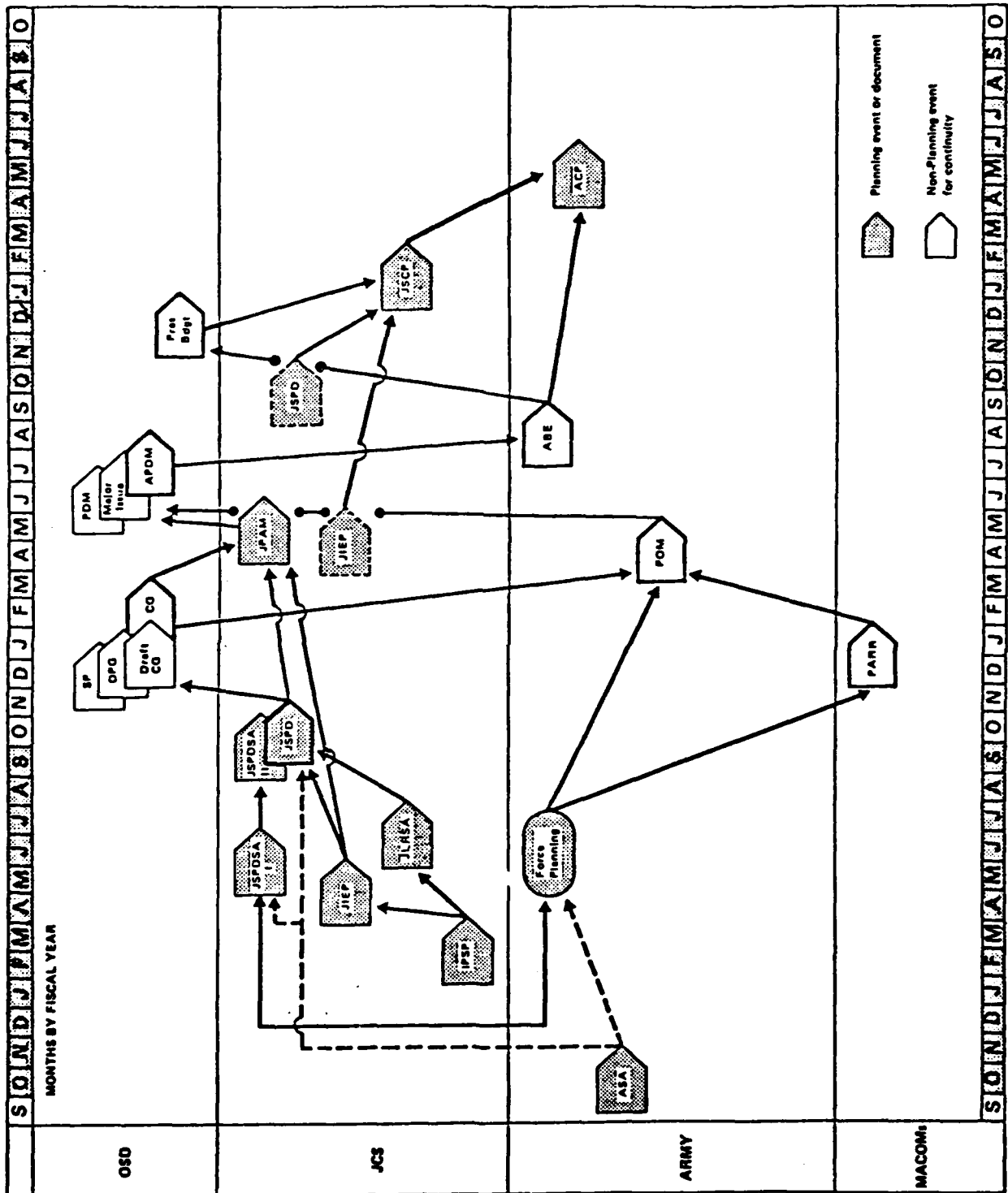


Figure III-4
Planning Events or Documents Showing Principal Interrelationships--Army PPBS Cycle

The planning force levels summarized in the JSPD constitute the baseline for assessing capabilities and associated risks of the force programmed to implement the national military strategy. This, along with an assessment of the current force capabilities, is the basis for JCS recommendations on DOD force planning guidance and for changes to the Consolidated Guidance (CG).

5. Joint Program Assessment Memorandum (JPAM)

The JPAM is published each year, approximately 30 days after the military services have presented their Program Objective Memoranda (POMs) to OSD. The JPAM provides the JCS's views on the adequacy of the composite force and levels of resources as presented in the services' POMs.

6. Joint Strategic Capabilities Plan (JSCP)

The JSCP provides JCS guidance to the chiefs of the military services unified and specified commanders. It outlines military tasks based on projected military capabilities and threat estimates during the short-range period, and provides current SECDEF guidance. The JSCP specifically assigns the unified and specified commanders' responsibilities for preparing contingency plans.

7. The Joint Security Assistance Memorandum (JSAM)

The JSAM contains an analysis of U.S. military interests, establishes security assistance objectives and identifies desired force levels for allied and friendly nations.

Each JSPS planning document applies to one or more specified planning periods and is published, updated, or reviewed annually. Table III-1 depicts the JSPS document and the planning period(s) of impact.

The Army provides mid-range planning input to the JSPD and short-range planning input to the JSCP through the Arm-Strategic Appraisal (ASA) and Army Mobilization and Operations Planning System (AMOPS) respectively.

Although not an approved, official Department of the Army position, the ASA, developed by the Strategic Studies Institute at the Army War College, presents an unconstrained view of mid-range trends and addresses strategy and force planning issues in the environment, projected 3 to 10 years into the future. The Army staff and major commands consider the issues identified in the ASA for possible inclusion in the PPBS and in forming the Army position when responding to joint and DOD papers. The ASA is a source document for Army input to the JSPD and the Consolidated Guidance (programming document).

Table III-1

JSPS Documents and Planning Periods

DOCUMENT	PLANNING PERIOD		
	Short-Range	Mid-Range	Long-Range
ISPS	X	X	
JIEP	X	X	X
JLRSA			X
JSPD		X	
JPAM		X	
JSCP	X		
JSAM	X		

The AMOPS provides mobilization and operational planning guidance to Army staff agencies, major commands, and Army component commands of unified commands for the employment and support of Army forces in the short-range period. The AMOPS uses the planning assumptions of the JSCP and reflects specific tasks and capabilities attainable within existing program and budget constraints.

C. PROGRAMMING PHASE

1. Documentation

Within specified constraints, the programming phase is a translation of JCS and Army planning into a comprehensive and balanced allocation of projected forces, manpower, materiel, and funds for a five-year period, and an additional ten-year extended planning period. The culmination of the programming phase is the publication of the detailed allocation of resources as the Army Program Objective Memorandum (POM). The POM is submitted to OSD, each May, for review in terms of overall defense needs. The POM, as approved by the SECDEF, establishes the five-year program (and

ten-year extended planning annex), the first year of which provides the basis for developing annual budget estimates (Figure III-5). Program formulation commences in early fall and continues for approximately nine months, until the POM is published in May. The following subparagraphs describe, in general terms, the required OSD and Headquarters, Department of the Army (HQDA) programming documents.

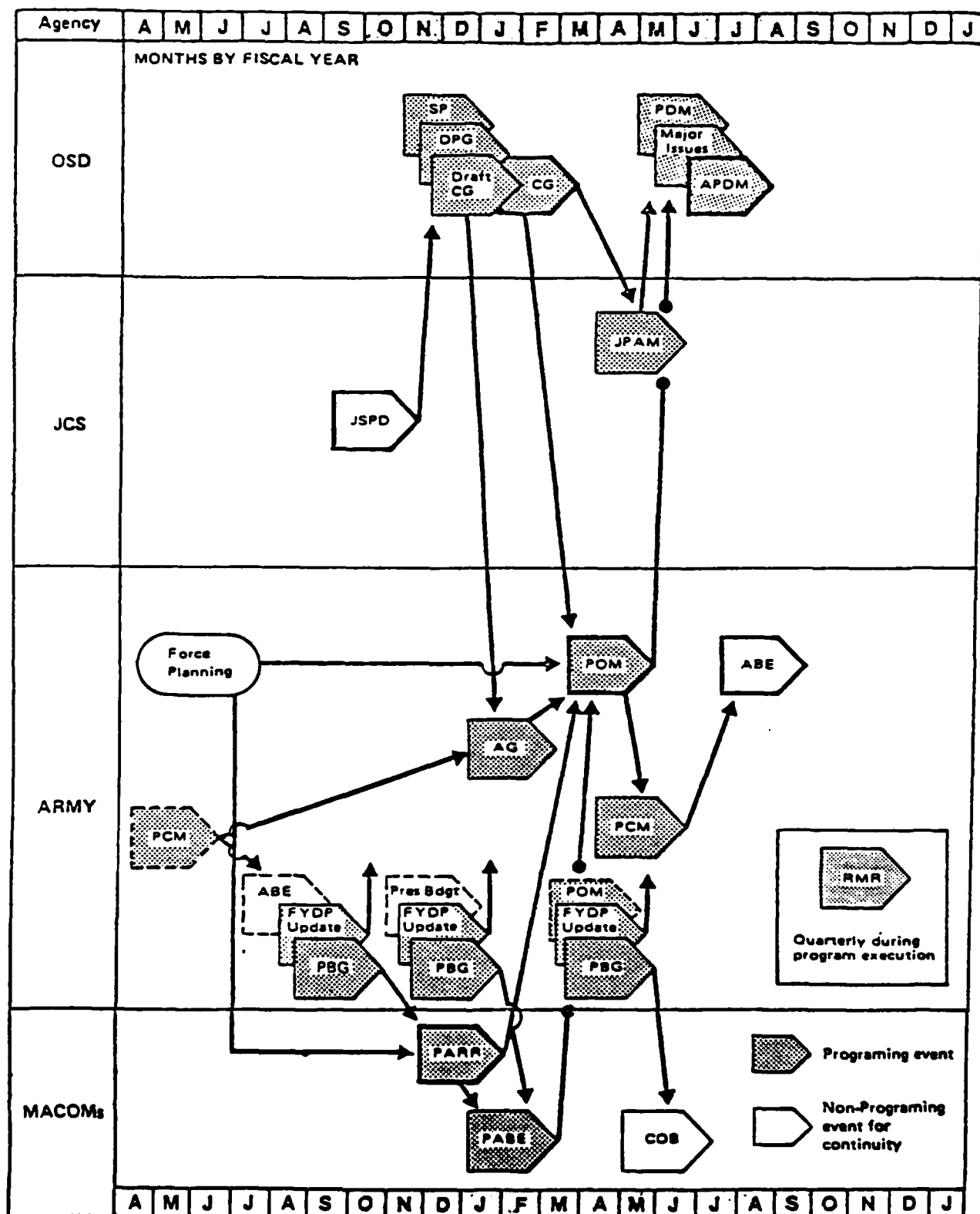
a. Defense Policy Guidance (DPG)

Each fall, OSD prepares the DPG, a document containing new or revised guidance for conducting operational and program planning, in sufficient detail to be of value to planners and programmers. The DPG establishes a bridge between broad objectives and specific policy; that is, it translates broad national goals and objectives into statements of policy and strategy that are sufficiently specific for initiating the development of the Consolidated Guidance (to be discussed in subparagraph b.).

The DPG assumes an intentionally distant time horizon in order to focus on near- and mid-range planning. This focus aids in the transition of the defense program from the current year program to the desired future year program. Due to resource limitations and because the force posture can only be changed marginally, certain specific goals and objectives are attainable during the program period only at high risk. Therefore, OSD intends that guidance emanating from the DPG be developed in congruence with the policies and objectives stated in the document, subject only to such near-term constraints as costs and manpower.

b. Consolidated Guidance (CG)

The CG constitutes a primary guidance document providing central policy and direction for program development. The CG articulates rationale for the defense program and identifies fundamental issues. The SECDEF uses the document not only to inform but also to encourage dialogue and debate. In the fall, prior to revision of the previous year's CG, the SECDEF solicits comments and suggestions from the chairman of the JCS and the service secretaries. Thus, in late January, when he issues the draft CG for review, service participation has already influenced its content. In early March, the Secretary holds a joint meeting with the services and chairman to discuss their further comments based on the draft. After the joint meeting, he revises the CG and, in late March, issues a final version, a summary of which is sent to the President for his review. The CG contains specific guidance on policy, military strategic concepts and objectives, planning and programming, force levels, manpower, support, and budget.



Source: Adapted from PPBS Handbook, 1979

Figure III-5
Programming Events Showing Principal Interrelationships--Army PPBS Cycle

c. Army Guidance (AG)

The Army Guidance (AG) consolidates planning, programming, budgeting and guidance from studies into a single document to be used by action officers and decision makers throughout the PPBS cycle. The AG is a relatively recent innovation having replaced the Preliminary Army Planning and Programming Guidance Memorandum (PAPPGM) and the Army Planning and Programming Guidance Memorandum (APPGM) in January of 1980. The first edition of the AG provided guidance for the FY82-86 POM and the FY82 Budget. In the future, the AG will be published in four volumes keyed to the timing of PPBS events.

d. Program and Budget Guidance (PBG)

In October the Comptroller of the Army (COA) issues the Program and Budget Guidance (PBG) to the more than 25 commands and operating agencies that provide information for the preparation of the POM. The October PBG contains detailed manpower and fiscal guidance based on decisions regarding the previous POM and the Army Budget Estimates (ABE). The October PBG addresses the current budget and the five program fiscal years. The manpower and fiscal data contained in the program years provide command and agency controls for the upcoming POM.

e. Total Army Analysis (TAA)

Concurrent with the issuance of the PAPPGM and the October PBG, the Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS) translates the gross aggregation of force structure requirements into more detailed elements of force content. This process, called Total Army Analysis, develops the program force in support of the PAPPGM. The program force lists the major combat, combat support, and combat service support forces; the ammunition and resupply requirements; and the associated manpower spaces needed to satisfy given scenarios.

f. Mission Area Analysis (MAA)

Eleven major mission areas have been defined in which mission needs are rank ordered. Incremental additions to these mission areas in the form of PDIPs are defined and become the basis for program definition and ranking across mission areas.

g. Operational Readiness Analyses

Concurrent with TAA, the Army utilizes operational readiness analyses (OMNIBUS), sponsored by ODCSOPS, to assess the Army's capability to mobilize, deploy, and sustain forces in combat. The technique parallels that of TAA; however, instead of describing the program force designed for the POM, OMNIBUS defines

the actual state of the existing force's readiness. The analysis is based on the readiness conditions of a unit's personnel, training, equipment status, and major weapon system fire power potential. By computer simulation, the analysis deploys the force to a theater of operations where it is programmed against the estimated enemy threat for the theater concerned.

h. Total Logistic Readiness/Sustainability (TLR/S) Analysis

The Army conducts a TLR/S analysis, sponsored by the Office of the Deputy Chief of Staff for Logistics (ODCSLOG), which complements the TAA and OMNIBUS. The TLR/S is designed to assess the capability of the Army to deploy logistically ready forces and sustain them in combat. TLR/S is conducted in conjunction with TAA, and then OMNIBUS, to provide data for both program and current year force evaluations. Figure III-6 displays the relationships among TAA, OMNIBUS, and TLR/S, and how they affect program development.

i. Program Analysis and Resource Review (PARR)

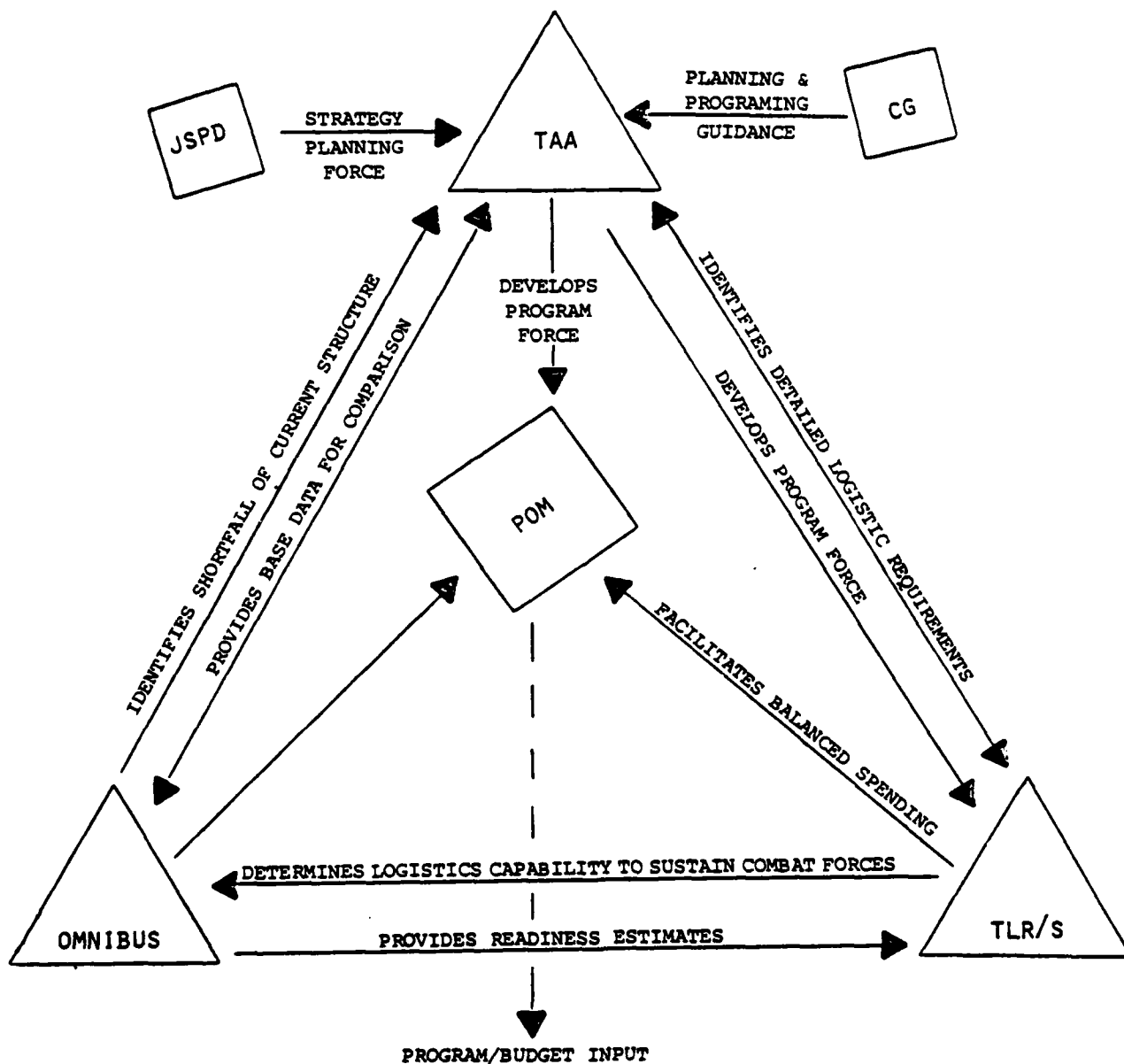
The Army major commands and agencies that receive the October PBG document from HQDA begin preparation of their PARR document in the November-December time frame. The PARR, forwarded to HQDA in January, represents the prioritized, zero base program of the command at appropriation/operation and maintenance, Army (OMA) program level of detail. The PARR discusses resource requirements and deficiencies in terms of both the command's ability to accomplish its mission and its need for manpower, equipment, and facilities, and recommends command-identified tradeoffs.

j. Program and Budget Estimate (PABE)

During the January/February time frame, the major commands and agencies that submitted PARRs to HQDA prepare their PABE, at Army Management Structure Code (AMSCO) level of detail, PABE. The PABE furnishes the budget-level detail supporting the command operating and programming requirements, which were approved during the Army staff evaluation of the PARRs, and any additional guidance received from OSD. This level of detail provides the Army staff the transitional link between the program and the upcoming budget estimate.

2. POM Submission

All of the aforementioned comments and actions lead to the final programming actions--production and submission of the Army's POM to OSD. The publication of the POM formally transmits



Source: Adapted from Appendix A, CSR 700-2, 29 April 1977

Figure III-6
Interrelationship of Force Readiness Analysis and POM Development

to the Office of the Secretary of Defense the Army proposals for resource allocation in consonance with program guidance. As a related action, the Army updates the FYDP to coincide with the POM resource allocations. The POM describes all aspects of Army programs, to include the Active Army, Army National Guard, and Army Reserves. It highlights forces, manpower, and materiel acquisition. Much of the POM is narrative and provides planning rationale for various aggregations of program data and some of the decisions which they support. The sections on forces, manpower, and materiel acquisition contain considerable detail because of the intensive management interest in these resource areas. A ten-year extension of the POM is provided to OSD as an annex to the POM. The Extended Planning Annex (EPA) has assumed increasing importance over the last several years. The EPA extends the five-year program an additional ten years. It displays the materiel acquisition profile for selected major systems and projects operating and support costs for both active and reserve forces in force structure, manpower, plans, and military construction. The value of the EPA as a PPBS document is in its influence on subsequent issues of the POM by highlighting program direction, potential affordability problems, and operating and support shortfalls.

Since OSD has been required to submit its budget to the Office of Management and Budget (OMB) in a zero base budget (ZBB) format, the Department of the Army has redesigned its programming format to a zero base program (ZBP), to enable a smooth transition from program to budget. The programming and budgeting framework is displayed in Figure III-1. Therefore, the POM is designed to display essentially three levels of resource requirements. The basic level is the resource (dollars and military and civilian manpower) level prescribed in the Consolidated Guidance, which provides that the Army sustain activities at the level programmed in the President's budget. The second, or minimum, level is lower than the basic level and is established by identifying specific functions that are to be unfunded. The third level is the enhanced level, which calls for resources greater than those expressed in the basic level.

a. Program Development Increment Package (PDIP)

The basic building block of POM development is the PDIP. The purpose of the PDIP is to associate all resource requirements with a particular mission or function, thereby promoting incremental development and facilitating leadership decisions on the Army program and budget. Each PDIP specifies the manpower and, by funding appropriation, the Total Obligational Authority (TOA) needed to produce a particular increment of capability. Figure III-7 is an example of a PDIP.

PDIPs are developed by either the Army staff or the major commands, and each PDIP competes for resources during the programming phase of the PPBS. In order for the Army to display

*ID-9X07	TITLE-ABC BATTALION	RIC	DU	PE	BND	U	FY-82	FY-83	MACOM-3			FY-85	FY-86	REMARK	NONE
AAEN	202613	0000	0000	0000	50	M	0	610	FY-84	FY-85	FY-86	FY-87			
AAOF	202613	0000	0000	0000	50	M	0	42	610	610	610	610	42	42	
MPA	202613	I000	I000	I000	39	D	0	51	103	161	193	240			
MPA	202613	P000	P000	P000	40	D	0	4572	4572	4572	4572	4572			
OMA	202613	I000	I000	I000	39	D	0	46	68	85	103	123			
CUDH	20269B	0000	0000	0000	50	M	0	4	4	4	4	4			
OMA	20269B	I000	I000	I000	39	D	0	6	8	11	14	18			
OMA	20269B	0000	0000	0000	50	D	0	111	111	111	111	111			
OMA	20269B	P000	P000	P000	73	D	0	69	69	69	69	69			
AAEN	20269C	0000	0000	0000	50	M	0	1	1	1	1	1			
CUDH	20269C	0000	0000	0000	50	M	0	4	4	4	4	4			

*ID-Identification Number
RIC-Resource Identification Code
PE-Program Element
DU-Decision Unit
BND-Band
U-M-Manpower and D-Dollars

Figure III-7
Sample Program Development Increment Package (PDIP)

the three levels of resource requirements (ZBP) in the POM, a brief discussion of the FY-81 to 85 POM is necessary.

The Army staff decided to develop a core resource position which would be below the OSD-prescribed minimum level by approximately 20%. The purpose of reducing the Army resource level to below the minimum level was to enable the Army programmers to gain flexibility in designing a prioritization scheme that would allow the movement of PDIPs above and below the minimum level. This meant that the Army could prioritize some missions and functions which would not be displayed to OSD in their submission of the POM.

In order to take the Army resource level down from the approved FY-80 to 84 POM basic level to the proposed core, the Army staff developed a number of PDIPs that decremented the Army program. These PDIPs were transmitted to the field and the major commands were instructed to include the decrementing PDIPs in their PARR submission to achieve their core level. The major commands also were instructed to develop PDIPs in support of new initiatives, prioritize their new PDIPs, and add back the decrementing PDIPs in building their PARR from the core to their enhanced level.

Upon HQDA receipt of the major commands' PARR and the Army staff-developed PDIPs (new initiatives and CG direction), the Army programmers prioritized all of the PDIPs, making it a viable and attainable program, and submitted the final product (the POM) to OSD. The FY-82 to 86 POM development was based on the FY-81 to 85 POM submission (that is, the PDIPs developed from the core through the enhanced level), new initiatives, CG direction, and a complete prioritization review.

3. POM Approval

The POM is officially transmitted to OSD in May, and the POM approval cycle begins. The approval process begins with the issue paper cycle. During the course of the program review by OSD, alternatives emerge and are expressed as issue papers, each dealing with a specific PDIP. As these issues arise, working level meetings are held between the Army and OSD staff in an attempt to resolve or clarify the issues. The formal (unresolved) issue papers begin to arrive in June and usually continue through July, each requiring an immediate, formal response. The Army's responses to the issue papers are considered by the Secretary of Defense as he formulates his Program Decision Memorandum (PDM).

In early August, SECDEF issues a PDM approving the POM with specific changes. The Army staff reviews the PDM and determines which decisions the Army should reclaim, identifying those that warrant the personal attention of the Chief of Staff or Secretary of the Army. These latter decisions become major issues and result in a meeting of the Chief of Staff, Secretary

of the Army, and Secretary of Defense for a personal discussion of the issues.

Following the major issues meeting, the Secretary of Defense publishes an Amended Program Decision Memorandum (APDM) in late August or early September. This document approves the POM with the specific changes identified in the PDM and amendments in consideration of the Army reclame made.

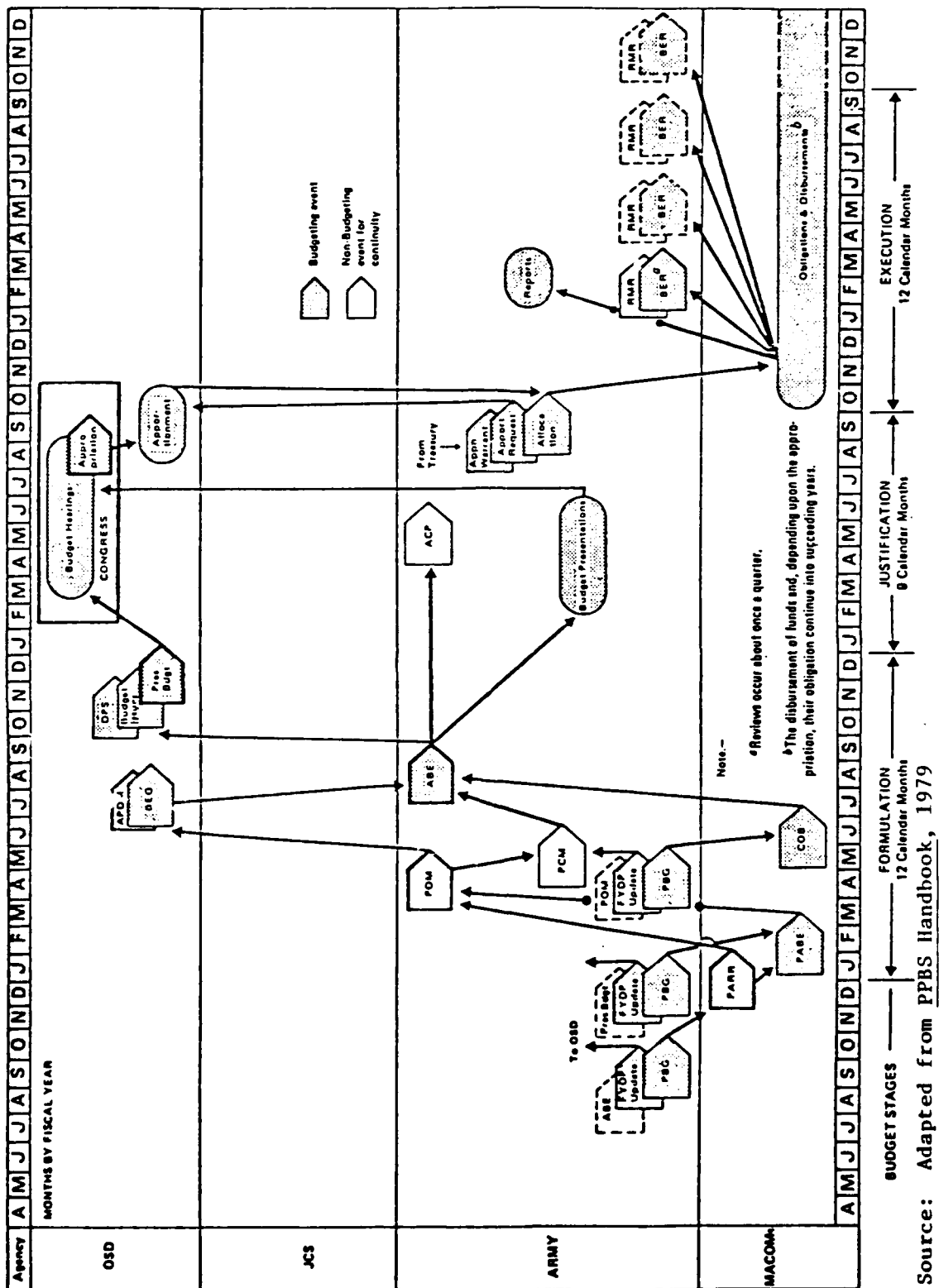
Upon publication of the APDM, the SECDEF reports to the President on the status of the overall program, and the APDM then is used by the SECDEF to finalize earlier budget instructions. In a separate communication to the Army, SECDEF transmits control totals for TOA and instructions for using the minimum, basic, and enhanced programs of the approved POM to adjust the FYDP and, at the same time, construct budget estimates for the forthcoming budget submission.

D. BUDGETING PHASE

Programming translates planning into a balanced allocation of forces, manpower, materiel, and funds for a five-year period. Budgeting expresses resource requirements as needed manpower and dollars categorized by Congressional appropriation, placing emphasis on the first year of the approved POM. Obtaining the manpower and funds necessary to carry out approved plans and programs is a primary function of the Army budget. Other primary functions of the Army budget are to promote both efficient program management and effective financial control.

There are three distinct stages of Army budgeting: formulation, justification, and execution (Figure III-8). The COA has statutory responsibility for Army budgeting. Acting for the COA, the Director of the Army Budget (DAB) is responsible for overall supervision of the formulation, presentation, and execution of the Army budget.

Budget formulation begins with the approved POM, as modified by the APDM, which establishes dollar amounts and military and civilian manpower strength constraints. The May PBG displays the positions and decisions emerging from internal POM review and the adjustment of earlier resource guidance. Publication in May permits timely development of annual budget estimates. The advance data precedes, by several months, formal Budget Estimates Guidance (BEG) received from OSD. However, this document, by virtue of translating the POM data into budget data and close coordination with OSD, fairly accurately reflects the resource targets and fiscal guidance that will apply for the Army's September budget submission. The major commands receive both the POM and PBG immediately following their submission and, based on those documents, formulate command requirements. In the commands submit these requirements to HQDA in a Command



Operating Budget (COB) which provides the appropriation directors with budget and workload data needed in developing and evaluating their budget estimates.

Following SECDEF issuance of the APDM, OSD prepares a BEG relevant to the submission of the Army budget. Usually issued in early September, the BEG formalizes essential information already available to the Army through advance coordination. The BEG explains new requirements initiated by Congress and any requirements imposed by either OMB or OSD. The DAB disseminates the BEG changes to the Army appropriation directors.

Once the appropriation directors have developed their proposed budgets, they present them to various Army authorities for review to assure implementation of approved plans and programs. The PBC serves as the principal forum for internal review of the Army budget. During the review, the PBC discusses issues prepared by the DAB and alternatives to the proposals of the appropriation directors. Following PBC revision of the budget estimates (September), the appropriation directors present the proposed budgets to the Comptroller of the Army and the Assistant Secretary of the Army for Installations, Logistics, and Financial Management for review. Subsequently, the DAB develops a summary budget which is presented to the Select Committee (SELCOM), the Chief of Staff, and the Secretary of the Army for review and decision.

Approval of the consolidated Army budget estimates by the SELCOM, Chief of Staff, and Secretary of the Army paves the way for the OSD budget "submit." Immediately following the Army budget submission, analysts from OSD and OMB hold discussions (hearings) jointly with the Army appropriation directors. The purpose of these discussions is to conduct a detailed and analytical review of the budget to insure that it complies with restraints imposed by the BEG and that resources are allocated so that programs approved by the APDM are realistically supported.

The products of the above review are scores of Decision Package Sets (DPSS) either approving or revising specific programs. The flow of DPSS begins in late October and continues until approximately mid-December. The DPSS flow through the office of the DAB and are assigned to appropriate functional staff agencies for action. The DPS then is coordinated with the appropriation director to determine if appeal is warranted. Each successful appeal results in a revised DPS documenting final decisions by OSD. Also during December, the Chief of Staff and the Secretary of the Army meet with the SECDEF to discuss those major budget issues on which decisions limit the capability to execute Army programs. SECDEF and Presidential decisions resulting from this meeting appear as revisions to previously issued DPSS.

The final DPSs are integrated into the Army budget, which is submitted to OSD for incorporation into the OSD budget that the President submits to Congress in January. Concurrently, the FYDP is updated. The Army portion of the President's budget is accompanied by supporting books (justification books) containing descriptive summaries and justification documents prepared by appropriation directors.

Immediately following budget submission to Congress, the justification phase begins. The Secretary of the Army and Chief of Staff are called before Congressional committees to justify the Army's budget. Posture statements are presented, either jointly or separately, which cover different program aspects and make reports on the status of current programs, objectives, and capabilities of the Army. Questions posed by various committee members are then answered. The Secretary of the Army and Chief of Staff are followed by the DAB and appropriation directors, who also present statements and testify before the Congressional committees. The culmination of the justification phase of the budget process is the military authorization and follow-on appropriation bills which lead to the budget execution phase.

Budget execution constitutes the last of the three stages of the budgeting process. Complementing budget formulation and justification, budget execution entails apportioning and allocating funds to carry out approved programs, obligating and disbursing these funds, and associated reporting and review.

IV. ANALYSIS OF THE MATERIEL SYSTEMS ACQUISITION/PLANNING, PROGRAMMING, AND BUDGETING SYSTEM PROCESSES

A. GENERAL

It is evident that the materiel systems acquisition process is event (Army Systems Acquisition Review Council (ASARC), Defense Systems Acquisition Review Council (DSARC)) oriented; that is, time sensitive only to the extent that the timing of the next event is dependent upon the time needed to complete the tasks required for that event, whereas the Planning, Programming, and Budgeting System (PPBS) is time sensitive to the extent that, at a specific time each year, the planning, programming, and budgeting phases must commence.

ASARC/DSARC approval at each milestone (event) does not provide for programming or allocation of the resources (manpower or dollars) necessary to support the continued development and deployment of a materiel system in the acquisition process. Department of Defense Directive (DODD) 5000.1 (paragraph D.2.d) explicitly states that a program normally shall not proceed from one acquisition phase to another unless sufficient resources are or can be programmed. Thus, a programming action must be accomplished in a minimum of 16 months in order to become a current year budget action (Figure IV-1). Normally, 16 months does not allow enough time for the recruiting, training, and personnel managers to implement the resource requirements to adequately support the acquisition action; therefore, longer lead times are required to match man and machine at the proper place and time.

B. ANALYSIS OF THE MATERIEL SYSTEMS ACQUISITION PROCESS

Department of Defense Instruction (DODI) 5000.2 (paragraph F.8.d) states that "new systems shall be designed to minimize both the numbers and the skill requirements of people needed for operation and support, consistent with system availability objectives. Manpower and personnel factors (to include numbers, occupations, and skill levels of manpower required) shall be included as considerations and constraints in system design. Integration of manpower and personnel considerations with the system shall start with initial concept studies and shall be refined as the system progresses to form the basis of crew station design, personnel selection and training, training devices, simulator design, and other planning related to manpower and personnel."

With this statement in mind, the first decision point is the Milestone 0 decision, which is based on the Mission Element Needs Statement (MENS) submitted by the Army. The purpose of the MENS is to request Office of the Secretary of Defense (OSD) approval to proceed to Phase 0, Concept Exploration, in order to overcome

CY 1980*		CY 1981		CY 1982
FY-80**		FY-81		FY-82
JAN FEB MAR APR MAY	JUNE JULY AUG SEPT	OCT NOV DEC	JAN FEB MAR APR MAY JUNE JULY AUG SEPT	OCT NOV DEC JAN FEB MAR
Acquisition Action ^{1/} For FY-82 Column of the FY-82-86 POM		POM ^{2/} FY-82-86	OSD ^{3/} Budget FY-82	Presidents ^{4/} Budget FY-82
				FY-82 ^{5/} Becomes Current Fiscal Year
16 Months From PPBS Entry Until Becomes A Current Fiscal Year Action				

*CY - Calendar Year

**FY - Fiscal Year

- 1/ Resource Requirements For a New Materiel System Packaged into a PDIP.
- 2/ Acquisition Action (PDIP) Competes With Other Army Programs After Prioritization if PDIP is Entered into the Program Below the Basic Level The Resources Are Then Programmed into the POM.
- 3/ The Acquisition Action For FY-82 is Transitioned into Budget Language and Becomes Part of the Army's October Budget Submit to OSD For FY-82.
- 4/ If the Acquisition Action survives the OSD/OMB Budget Review the Resources are Included in the President's FY-82 Budget Submission to Congress.
- 5/ If the Acquisition Action Remains Unchanged during the Congressional Review, and Congress, with the President's Approval, inacts Appropriation and Authorization Legislation, the Army is then authorized to implement the FY-82 Budget through the Apportionment Process.

Figure IV-1

Minimum Time from Programming to Current Fiscal Year

a deficiency or capability shortfall, or to provide a more effective means of performing the Army's assigned mission. The format of the MENS is displayed in Enclosure 2 of DODI 5000.2. Paragraph E. of the MENS format requires identification of key boundary conditions (constraints), which includes an order of the magnitude of resources the Army is willing to commit to satisfy the identified need and manpower considerations. In order for the Army to satisfy this requirement, an estimate of the manpower required to test, train, operate, and maintain the developing system must be made. The estimate need not be more specific than the number of officers, warrant officers, enlisted personnel, and Department of the Army civilians required, per fiscal year, through the life cycle of the system.

Throughout the remainder of the formal acquisition process (DSARCs I, II, III, and IIIA, if required), manpower, personnel, and training (MPT) data are required in the Decision Coordinating Paper (DCP) and the accompanying Integrated Program Summary (IPS). These documents will require progressively more specific definition of the numbers and skill requirements needed to operate and support the proposed new system. The DCP and IPS are required by OSD at each milestone review following MENS approval.

Annex A (Goals and Thresholds) of the DCP requires the identification of manpower requirements as they were approved by the Secretary of Defense (SECDEF) in the last milestone decision, a current estimate based on refinements, identification of trade-offs and support concepts and, finally, the Army's recommendation for new goals and thresholds.

Annexes B and C of the DCP are dollar-oriented and both must include the operation and maintenance, Army (OMA) cost of manpower (military and civilian). In order to cost manpower, its various categories must be identified (e.g., officer, warrant officer, enlisted, direct hire U.S. civilians, direct hire foreign national civilians, and indirect hire civilians). Thus, the manpower data identified to fulfill the DCP requirements can be considered general in nature, whereas the manpower data requirements in the IPS are more specific and should be used as a building block for the manpower data required in the DCP. The DCP does not address training except in the overall context of manpower.

In general, the IPS requires data concerning the system activity level used to estimate and compute system manpower requirements and to indicate whether the activity level represents a combat surge, sustained combat, precombat readiness, or other posture. Also, the IPS requires data concerning the available hours per person, per month used to compute numbers of people from workload estimates and any other critical assumptions that have a significant bearing on manpower requirements.

Specifically, at Milestone I, the Army must summarize manpower sensitivity to alternative employment concepts being considered. They also must identify parameters and innovative

concepts to be analyzed during the next phase, such as new maintenance concepts and organizations or new concepts or technologies to improve personnel proficiency and performance.

At Milestone II, the Army must summarize the significant manpower implications of tradeoffs conducted among hardware design. It must explain the significant manpower differences in comparison with a reference system, quantify the sensitivity of manpower requirements to the proposed maintenance-related reliability and maintainability goals and system activity rates, describe the sources of manpower for the new system, and identify new occupations. In addition to this, the Army must portray schedules for further tradeoff analysis among design and support elements as well as schedules for job task identification, manpower analysis planning during the next phase, and planned test and evaluation to verify the manpower estimates and assumptions.

At Milestone III, the Army must explain the changes from manpower estimates presented at previous milestones and quantify manpower sensitivity to the maintenance-related reliability and maintainability levels and system activity rates demonstrated. The Army also must identify shortfalls in meeting requirements by occupation, assess the impact on system readiness, assess the impact of a failure to obtain the required personnel, identify new occupations not yet approved and programmed into the personnel and training systems, and summarize plans for evaluating manpower requirements during follow-on test and evaluation.

It is obvious from the above that, at the MENS and each succeeding milestone review, OSD requires more detailed manpower and/or personnel data.

C. ANALYSIS OF THE PPBS PROCESS

The initial entry of a new resource requirement into the PPBS can be in either of the three phases (Planning, Programming, or Budgeting). Initial entry into the planning phase is through the Army Strategic Appraisal (ASA) and the Army Capabilities Plan (ACP). A resource requirement entry into the planning phase of the PPBS allows the Army's planners, programmers, and budgeters the longest lead time to implement the new or revised requirement. Initial entry into the programming phase of the PPBS is accomplished through the Program Objective Memorandum (POM) and the Extended Planning Annex (EPA) of the POM process. For entry of a resource requirement into the POM or EPA, the Army staff or a major Army command must initiate a Program Decision Increment Package (PDIP). The data required to initiate a PDIP are all of the known resource requirements, to include but not be limited to:

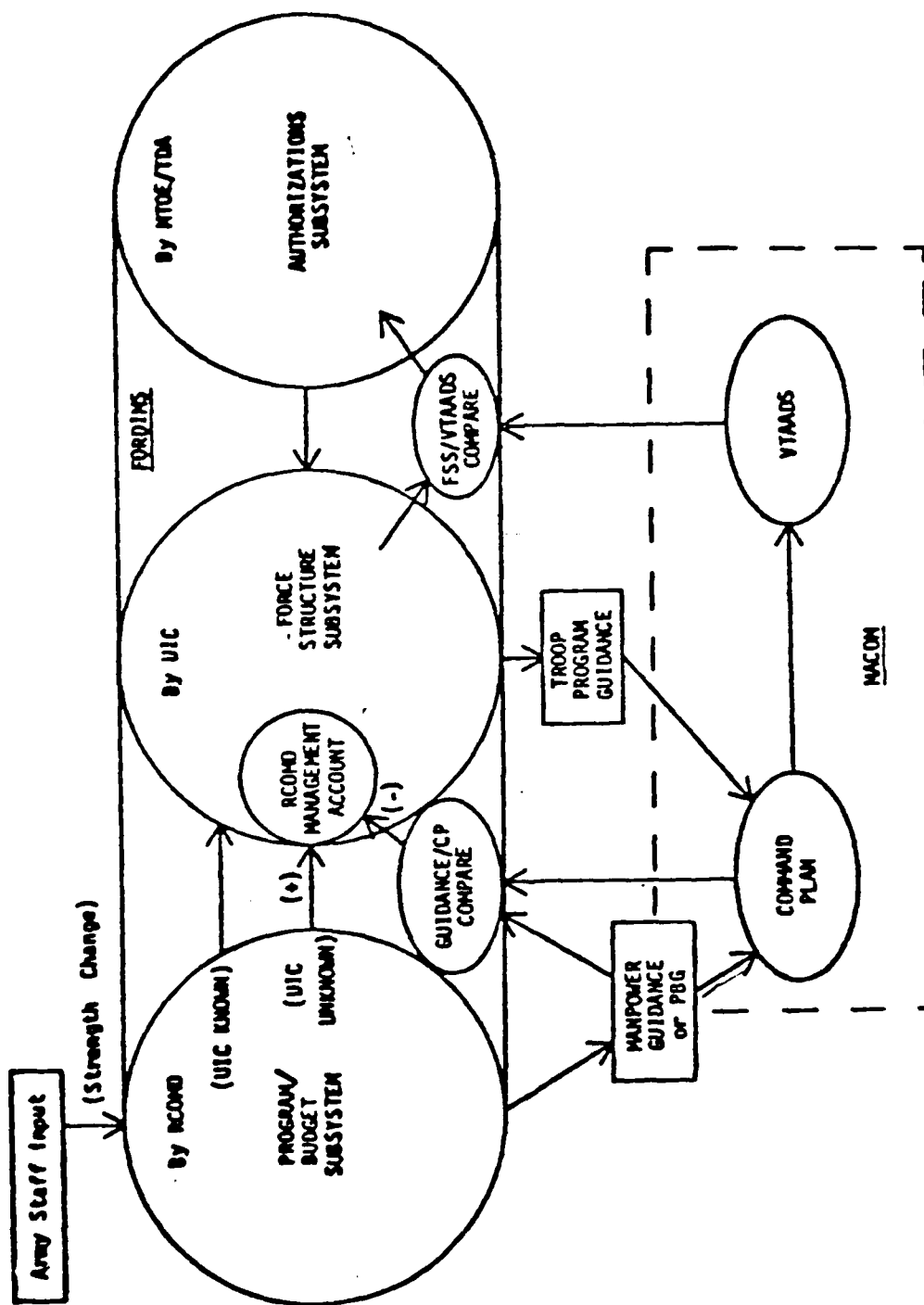
- Military Manpower by Program Element, Fiscal Year, and Active and Reserve Component
- Officer

- Warrant Officer
- Enlisted
- Civilian Manpower by Program Element and Fiscal Year
 - Direct Hire U.S.
 - Direct Hire Foreign National
 - Indirect Hire
- Funding by Program Element/Appropriation and Fiscal Year
- Narrative Description
- Rationale and Analysis

The initial entry of a new resource requirement into the budgeting phase of the PPBS is an exception rather than a standard practice. The reason for this is twofold: first, time of entry into the PPBS through implementation is so short that the resources (personnel and training) may not be available when required, and, second, in order to provide the required resources for the new start, some other mission or function must be decremented or delayed. Initial entry into the budgeting phase is through the Command Operating Budget (COB) submission or through a budget appropriation/program director. The budget (COB) review is initiated in July and August, followed by budget approval in January and budget implementation in October.

An adjunct to the PPBS is the Force Development Integrated Management System (FORDIMS) (Figure IV-2). FORDIMS is a major Headquarters, Department of the Army (HQDA) management information system (MIS) that provides accurate and timely force and manpower management and civilian manpower costing data to the Army staff throughout the PPBS process. The civilian and active military force structure manpower data for each approved PDIP (within the approved basic level) are entered into the Program and Budget Subsystem (PBS) by the Office of the Deputy Chief of Staff for Personnel (ODCSPER) (Manpower Data) and the Comptroller of the Army (COA) (Civilian Cost Data). The type of manpower data entered into the PBS is as follows:

- Purpose of the action
- Action number
- Effective date--that is, the date manpower is expected to be on station to perform the mission or functional requirement
- Major command(s) of assignment



Source: FORDIMS User's Guide, Vol. 1, HQDA, July 1979

Figure IV-2
The Force Development Integrated Management System (FORDIMS)

- Active Military Force Structure by identity (officers, warrant officers, and enlisted)
- Civilian manpower by type (see Table IV-1)
- Army Management Structure Code (AMSCO)--An 11 position code used for each line entry to allow the identification of manpower with an OSD program element code (Five Year Defense Program (FYDP) code)

Through automation, the above data are transmitted to the Force Structure Subsystem (FSS), which is, in essence, the Army's master force or troop list, and represents, at a unit aggregate level (manpower by required and authorized officers, warrant officers, and enlisted), the approved and planning force structure of the Army as a force continuum. One area within the FSS that is not unit-oriented is designated as a "holding area" (undistributed manpower); that is, designed to accept the transactions from the PBS (non-unit-oriented) and hold them until either the Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS) or the major command of assignment designates the unit(s) to which the manpower is to be assigned. It is important to note that the military and civilian manpower in the FSS does not contain data on grades or skill levels, only numbers of officers, warrant officers, and enlisted and civilians by category (Direct Hire U.S., Direct Hire Foreign National, and Indirect Hire).

The third and last subsystem of FORDIMS is the Authorizations Subsystem (AS). The AS is essentially a file of documents, each one of which is supposed to display detailed manpower, personnel, and equipment information (required and authorized) for a unit at a specific time in the FSS. Each approved unit (not the planning force units) in the FSS should have a document on file in the AS. The documentation contained in the AS for those units currently (current year) in the master force and those entering the force in the budget year is submitted by the major command to which the unit is assigned. ODCSOPS is responsible for maintenance and operation of both the FSS and AS. There does not appear to be an Army agency responsible for entering documentation into the AS for new types of units approved in the POM and EPA where a table of organization and equipment (TOE) has not been developed.

The transition of manpower authorizations to personnel requirements is accomplished through the Structure and Composition System (SACS). The SACS is the primary vehicle used to translate the approved master force from its aggregate level of detail (using a combination of data from the FSS and AS) to a resource requirements level of detail for the Army's asset managers. There are two types of SACS output data supporting Army asset managers. The Personnel SACS (PERSACS) provides ODCSPER, ODCSOPS, and MILPERCEN with personnel data for the following:

Table IV-1

Sample of Civilian Manpower by Category and Type

CATEGORY	TYPE
Direct Hire US	-Graded US Citizens -Wage Grade US Civilians -US Citizens Paid From Deutschemark -Rate Instructors -US Dependents
Direct Hire Foreign National	-Graded Panamanians -Wage Grade Panamanians -Korean -Korean Service Corps -Italians -Ryukyuan
Indirect Hire Foreign National	-German National Personnel -German National Personnel Paid From Deutschemark -German Labor Service -Japanese

- development of personnel accessions
- distribution programming
- personnel assignments
- training requirements

The Logistics SACS (LOGSACS) provides logistic data for:

- the Office of the Deputy Chief of Staff for Logistics (ODCSLOG), for use in the development of materiel distribution programs.
- the Office of the Deputy Chief of Staff for Research, Development, and Acquisition (ODCSRDA), for the development of materiel acquisition programs.
- the Army Materiel Development and Readiness Command (DARCOM), for use in the development of the Army Materiel Plan and ammunition requirements computations.

In summary, the determination of manpower, personnel, and training data from the materiel systems acquisition process is accomplished in stages. For the MENS, only manpower (officers, warrant officers, and enlisted) constraints need to be identified. At Milestone I, a summary of manpower sensitivity to alternate employment concepts is to be considered. Essentially, this is little more than a requirement to update the MENS data. At Milestones II and III, not only is there a requirement to update the manpower data, but there are requirements to:

- identify manpower implications of hardware tradeoffs.
- identify manpower differences in comparison to a reference system.
- describe the manpower sources for the new system.
- summarize projected requirements in critical career fields.
- identify new occupations.
- summarize training plans for acquiring and maintaining the required proficiency of operating and support personnel.
- identify the scope and duration of formal training and time in on-the-job training.
- provide a summary, by fiscal year and occupation, of all formal training requirements, identifying numbers of personnel trained and training costs.

The above manpower, personnel, and training information requirements are to be included in the documentation presented to OSD in the MENS and to the DSARC at Milestones I, II, and III. DODI 5000.2 (para. E.5.g) also requires the Army to provide the following affordability information in the briefing presented to the DSARC:

- Comparison of program resource estimates with the latest PPBS projections (including the Extended Planning Annex).
- Identification of the relative ranking of the system with the Army's other major systems in the same mission area and time frame.

The manpower requirements for developing materiel systems can be entered into the PPBS during any phase of the PPBS process. The entry of data in the planning and programming phases of the PPBS will allow the asset managers of the Army the longest lead time for the timely procurement and assembly of non-systems equipment (e.g., individual weapons, government furnished equipment, etc.).

Entry of data in the planning phase of the PPBS is through the ASA or ACP, and entry in the programming phase is through the POM process. Entry in the budgeting phase is through the Command Operating Budget process.

V. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

Managers at all levels of the materiel systems acquisition process must be intimately aware of the procedures and timing of the Planning, Programming, and Budgeting System (PPBS) in order to justify and obtain the resources required to insure the continuation and smooth transition through each developmental phase of the materiel systems acquisition process they have been designated to manage. As can be seen throughout this document, the materiel acquisition process is event oriented and lacks the regulatory authority to allocate resources. On the other hand, the PPBS is the authoritative system designed to prioritize and allocate resources for all Army missions and functions for current and future years.

The materiel systems acquisition process and procedures have been institutionalized within the Department of Defense (DOD) and the Department of the Army (DA) for a number of years, but only recently has there been a concerted effort to identify and project manpower, personnel, and training resource requirements early in the acquisition process. DOD also has placed greater emphasis on the interface between the materiel systems acquisition process and the PPBS. Retired Generals Walter T. Kerwin and George S. Blanchard in their Discussion Paper #2 for the Chief of Staff, "Army Top Problem Areas," dated August 1980, stated:

The U.S. Army has a major man/machine interface problem. There are not enough qualified people to perform the tasks required to effectively operate, support, and maintain the current Army systems. Force structure changes and organizational realignments such as those prompted by Division 86 will create additional requirements. The problem is severe and will continue to get worse. Increasing weapon complexity, the large number of new systems being developed, insufficient formal school training, a declining manpower pool, disproportionate numbers of CAT IIIB and CAT IV personnel, recruiting and retention problems, and unit turbulence - all will continue to strain the already overburdened personnel, training, and development communities....The severity of this man/machine crisis and its impact on force readiness, reconstitution, and sustainability requires that immediate and extraordinary action be taken to remedy this complex interrelated problem.

Since 1978 (Program Objective Memorandum (POM) 80-84), the Army has been actively attempting to capture the total life cycle

resource requirements of each materiel system under development as well as assess and prioritize each system within the PPBS. This was accomplished by identifying all resource requirements for one materiel system in a single Program Development Increment Package (PDIP) (PDIP discussion in Section III). During the succeeding POM submissions (POMs 81-85 and 82-86), the Department of the Army has made considerable progress in updating, refining, and including life cycle cost data of the systems under development in the PPBS process.

The key issue, then, concerning the interface between the materiel systems acquisition process and the PPBS process is the timing of the data entry into the PPBS. It is obvious that the earlier the materiel systems data are entered into the PPBS process, the more visible the acquisition system becomes, the longer is the lead time provided for affordability/supportability assessment, and the better is the opportunity for planning afforded to Army asset and training managers.

In order to accomplish the above, the materiel systems developers must be able to initially determine, at the point of initial program definition ("For comment DCP") a "best guess" of the manpower and military occupational specialty (MOS) (skill) requirements for their system for entry into the next POM and Force Development Integrated Management System (FORDIMS) (program/budget and authorization subsystems). Each year thereafter, the manpower and personnel data entered into the POM and FORDIMS should be refined and updated with the latest data determined by the acquisition managers.

After each POM submission to the Office of the Secretary of Defense (OSD), personnel and logistics Structure and Composition Systems (SACSS) (described in Section IV) are computed, based on the master force supporting the POM decisions. The Personnel SACS (PERSACS) will describe, for each of the POM years, the number, type, and skills of personnel required to implement the POM programs and systems. This will allow the personnel, recruiting, and training managers to analyze the total active Army requirements for each POM year in view of affordability and supportability in relation to a decline in the recruiting manpower pool, the proportion of CAT IIIB and CAT IV enlistees, retention forecasts, and unit turbulence. If, through the above process, the personnel or training managers determine certain skills (MOSs) are not supportable, then personnel and/or training constraints (man/machine tradeoff) can be placed on those materiel systems under development causing the unsupportability.

B. RECOMMENDATIONS

o The acquisition system combat developer (normally, the U.S. Army Training and Doctrine Command (TRADOC)) should determine, as accurately as possible, the total military and civilian manpower requirements for the life cycle of the system and

provide a document to the FORDIMS manager at Headquarters Department of the Army (HQDA) designating the grade and MOS of the military manpower required to operate and support the system throughout its life cycle. It is understood that an MOS decision for the system operators and maintainers will not have been made at this time, but the career management field (CMF) and the skill levels should be known or at least estimated. Therefore, only the third character of the MOS should be unknown (e.g., 13X20). The number 13 represents the field artillery CMF; the X represents the unknown or undesignated system; the 2 represents the skill level which describes the difficulty of the tasks to be performed and equates to an enlisted grade of E-5; the 0 signifies that the position does not require special qualifications, such as a parachutist. The above should be provided to HQDA prior to submission of "For Comment DCP" to DOD.

- A single point of contact (POC) on the DA staff should be appointed for each system obtaining MENS approval from the Secretary of Defense. The system POC would be responsible for the development and annual update of the system PDIP. He also would be responsible for assuring that the approved (HQDA) system data are properly entered and displayed in FORDIMS.

- A pre-POM SACS should be computed and distributed to the Army asset and training managers based on the President's budget submission plus the Total Army Analysis (TAA). This would allow affordability/supportability analysis prior to the final decisions on prioritization of the POM. These decisions will assist managers in the acquisition, personnel, and training processes in determining the impact materiel acquisitions will have on future Army posture.

GLOSSARY

ABE	Army Budget Estimates
ACP	Army Capabilities Plan
AMSCO	Army Management Structure Code
APDM	Amended Program Decision Memorandum
APPGM	Army Planning and Programming Guidance Memorandum
ARI	Army Research Institute for the Behavioral and Social Sciences
AS	Authorizations Subsystem
ASA	Army Strategic Appraisal
ASARC	Army Systems Acquisition Review Council
ASA(RDA)	Assistant Secretary of the Army for Research, Development, and Acquisition
ASD(MRA&L)	Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics
BEG	Budget Estimates Guidance
CG	Consolidated Guidance
CIA	Central Intelligence Agency
CMF	Career Management Field
COA	Comptroller of the Army
COB	Command Operating Budget
DA	Department of the Army
DAB	Director of the Army Budget
DAE	Defense Acquisition Executive
DARCOM	Army Materiel Development and Readiness Command
DCP	Decision Coordinating Paper
DIA	Defense Intelligence Agency
DOD	Department of Defense
DODD	Department of Defense Directive
DODI	Department of Defense Instruction
DPAE	Director of Program Analysis and Evaluation
DPG	Defense Policy Guidance
DPS	Decision Package Set
DSARC	Defense Systems Acquisition Review Council
EPA	Extended Planning Annex
FORDIMS	Force Development Integrated Management System
FSS	Force Structure Subsystem
FYDP	Five Year Defense Program
HQDA	Headquarters, Department of the Army
ILSP	Integrated Logistics Support Plan
IOC	Initial Operating Capability
IPS	Integrated Program Summary
ISPS	Intelligence Priorities for Strategic Planning

JCS	Joint Chiefs of Staff
JIEP	Joint Intelligence Estimate for Planning
JLRSA	Joint Long Range Strategic Appraisal
JPAM	Joint Program Assessment Memorandum
JSCP	Joint Strategic Capabilities Plan
JSPD	Joint Strategic Planning Document
JSPS	Joint Strategic Planning System
LCSMM	Life Cycle System Management Model
LOGSACS	Logistics Structure and Composition System
MENS	Mission Element Needs Statement
MILPER	Military Personnel
MIS	Management Information System
MOS	Military Occupational Specialty
MPT	Manpower, Personnel, and Training
MRF	Milestone Reference File
O&M	Operation and Maintenance
ODCSLOG	Office of the Deputy Chief of Staff for Logistics
ODCSOPS	Office of the Deputy Chief of Staff for Operations and Plans
ODCSPER	Office of the Deputy Chief of Staff for Personnel
ODCSRDA	Office of the Deputy Chief of Staff for Research, Development, and Acquisition
OMA	Operation and Maintenance, Army
OMB	Office of Management and Budget
OSD	Office of the Secretary of Defense
PABE	Program and Budget Estimate
PAPPGM	Preliminary Army Planning and Programming Guid- ance Memorandum
PARR	Program Analysis and Resource Review
PBC	Program and Budget Committee
PBG	Program and Budget Guidance
PBS	Program and Budget Subsystem
PDIP	Program Decision Increment Package
PDM	Program Decision Memorandum
PERSACS	Personnel Structure and Composition System
POC	Point of Contact
POM	Program Objective Memorandum
PPBS	Planning, Programming, and Budgeting System
RDT&E	Research, Development, Test, and Evaluation
SACS	Structure and Composition System
SDDM	Secretary of Defense Decision Memorandum
SECDEF	Secretary of Defense
SELCOM	Select Committee
TAA	Total Army Analysis

TLR/S	Total Logistic Readiness/Sustainability
TOA	Total Obligational Authority
TOE	Table of Organization and Equipment
TRADOC	U.S. Army Training and Doctrine Command
ZBB	Zero Base Budget
ZBP	Zero Base Program

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