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Reports to Congress relative to major weapon systems acquisition: their impact on the acquisition process.

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THESIS

REPORTS TO CONGRESS RELATIVE TO
MAJOR WEAPON SYSTEMS ACQUISITION:
THEIR IMPACT ON THE ACQUISITION PROCESS

by

Virginia L. Wydler

September 1986

Thesis Advisor: David V. Lamm

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The study reviews the acquisition and budget processes and addresses the Selected Acquisition Report (SAR), the Unit Cost Report (UCR), and the Acquisition Strategy Report legislated by Congress. The study further examines the use of the report data by Government agencies and presents problems and recommended changes identified by those users.

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Acquisition Strategy Report is a compliance report to ensure enhanced competition reduces cost and shows no potential expansion through legislation.

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Reports to Congress Relative to Major Weapon Systems Acquisition: Their Impact on the Acquisition Process

by

Virginia L. Wydler
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I. INTRODUCTION

A. GENERAL

There is a concern within the Department of Defense (DoD) that Congress is increasing its role of oversight of Defense acquisition to the point of micromanagement. This concern was expressed by Defense Secretary Casper Weinberger in his statement at the hearings for the Fiscal Year 1986 Authorization of Appropriations [Ref. 1:p. 33]. More and more reporting requirements are being imposed by Congress through legislation, supposedly to obtain sufficient data upon which to base their decisions on procurement matters [Ref. 1:p. 33].

Since 1970, the number of reports and studies requested by Congress has gone from 36 to 458 reports, an almost 1200 percent increase [Ref. 1:p. 32]. Also, the number of general provisions enacted by Congress into law relative to Defense has gone from 64 to 213 provisions, or a 233 percent increase [Ref. 1:p. 32]. All of these provisions are legally binding and often result in increased costs. Secretary Weinberger requested that Congress minimize the burden imposed on the Defense Department by excessive reporting requirements and legislative provisions. [Ref. 1: p. 33].

Most of the reports addressed above are generally one-time feasibility studies or reports for a specific purpose or program. These reports are submitted through the hearing process, Congressional inquiries or the Planning, Programming and Budgeting System (PPBS) process. Very few reports that Congress receives from the Defense Department relative to the acquisition of major weapon systems are of a recurring nature.

Congress receives information on weapon systems procurement through the Selected Acquisition Report (required since 1968) [Ref. 2:p. 1-1] and the Unit Cost Report (required since 1982) [Ref. 3:p. 1]. With the FY86 Authorization Act, Congress will now see the Acquisition Strategy Report on all major weapon systems [Ref. 4:p. 345]. This research will focus on these recurring reports submitted to Congress by DoD and their use by Congress.

B. OBJECTIVES OF THE RESEARCH

The objectives of this research were to examine the recurring reports that are submitted to Congress relative to major weapon systems and evaluate the use of the information by Congress. This research reveiwed, in particular, the Selected Acquisition Report (SAR), the Unit Cost Report (UCR) and the Acquisition Strategy Report. The thesis examines whether these reports could be modified to reduce Congressional requests for one-time reports and whether

these reports could be replaced by reports which are more efficient and effective to Congress and other agencies which use the information.

C. RESEARCH QUESTION

The primary research question was: How are major weapon systems acquisition reports utilized by Congress, and how might these reporting requirements be accomplished more efficiently and effectively?

The following subsidiary questions were addressed:

1. What is the effect on the development, execution and change of major weapon systems acquisition because of the reporting requirements to Congress?
2. What are the major issues and policy decisions surrounding the reporting requirements?
3. Are the reports in fact submitted, and are they timely and accurate?
4. Should the reports be enhanced or eliminated?

D. SCOPE, LIMITATIONS, AND ASSUMPTIONS

The thesis defines the various recurring reports that are submitted to Congress and analyzes what is done with the information. The thesis evaluates how the preparation of the reports is impacted by the fact that they are submitted to Congress (e.g., generalization, vagueness, limited alternatives).

Two major weapon systems were reviewed (the F-14 and the T45TS (VTXTS) aircraft) with a focus on how the Congression-

al reports have been processed. Updates and changes to the reports were addressed as a result of program changes and funding shifts.

The thesis did not consider one-time Congressional reporting requirements relative to major weapon systems, either from Congressmen or Committees. The research was limited to Navy programs and reports, rather than all the Services.

It is assumed that the reader has a basic understanding of the Federal acquisition process, program management functions, DoD terminology, and the legislative and budget processes.

E. RESEARCH METHODOLOGY

The information used in this thesis was obtained by several methods. A search of current and past literature was performed from the Congressional Record, DoD Directives and Instructions, reports from the Secretary of Defense, Congressional Budget Office and General Accounting Office. Personal interviews were held with program managers, budget analysts, management analysts, military members and Congressional staffers. Literature was also obtained from the Naval Postgraduate School Library and the Federal Contract Report Service.

F. ORGANIZATION OF THE STUDY

This thesis is organized into five chapters. Chapter II describes the major weapon systems acquisition process, the budget process and defines the recurring report requirements for the Defense Department. Chapter III presents the users of the report from DoD to Congress. Chapter IV analyzes the issues and problems associated with submission of the reports. Chapter V provides conclusions and recommendations based on this research effort.

II. FRAMEWORK AND BACKGROUND

A. INTRODUCTION

The purpose of this chapter is to provide a definition of the major weapon systems acquisition process and show its relationship to the various pieces of information that are provided to Congress from the Defense Department. Included will be a discussion of the acquisition process, the budget process and the three significant reports submitted to Congress, primarily the Selected Acquisition Report (SAR), the Unit Cost Report (UCR) and the Acquisition Strategy report. Each section will present the policies, the objectives and the process. The chapter will set the framework for subsequent chapters which present and analyze research data.

B. THE MAJOR WEAPON SYSTEMS ACQUISITION PROCESS

It is necessary to understand the major weapon systems acquisition process so that the reader is aware of when and why information is communicated to Congress. Since Congress authorizes and appropriates funds for defense programs, they have a direct interest in the acquisition process. They have become more involved in the details and have added constraints and objectives to individual programs through authorizations and appropriations. [Ref. 1:p. 32]

Acquisition policy for Executive Branch agencies is prescribed in Office of Management and Budget Circular A-109, Major System Acquisitions. The policies are designed to assure effectiveness and efficiency of the process of acquiring major systems [Ref. 5:p. 3]. It requires agencies to communicate with Congress early in the system acquisition process by relating programs to agency mission needs through the budget process. Needs and program objectives are to be expressed in mission terms and not equipment terms. Alternative system design concepts, as well, are to be expressed in mission terms and not equipment terms and are to be explored to generate innovation and competition from industry.

Beginning with the FY79 budget, agencies were to inform Congress in the normal budget process regarding agency missions, capabilities, deficiencies, and needs and objectives related to acquisition programs [Ref. 5:p. 11].

DoD Directive 5000.1, Major System Acquisition, and DoD Instruction 5000.2, Major System Acquisition Procedures, provide specific policy and guidance to the Military Departments for major system acquisitions. Management responsibility is decentralized and delegated to the lowest level, except for decisions specifically retained by the Secretary of Defense [Ref. 6:p. 1]. Designation of a certain program as a major system may be done by the Under Secretary of Defense for Research and Engineering (USDR&E)

or the Assistant Secretary of Defense (Acquisition and Logistics) (ASD(A&L)) at any point in the acquisition process [Ref. 7:p. 2].

There are four distinct phases and milestones in the system acquisition process. They are illustrated in Appendix A and also described below.

1. Mission Need Determination (Milestone 0)

DoD Components may identify a major system acquisition program to the SECDEF because of an identified deficiency in an existing capability, a decision to establish a new capability in response to a technologically feasible opportunity, an opportunity to reduce DoD cost of ownership or in response to a change in national defense policy. This need is identified by the department in the Justification of Major System New Start (JMSNS). This document is submitted with the Program Objective Memorandum (POM) as part of the Program, Planning and Budgeting System (PPBS) process. The POM process usually occurs during the month of May of each year. SECDEF may sanction the JMSNS in the Program Decision Memorandum (PDM) which completes Milestone 0 and authorizes the Component, when funds become available, to initiate the next acquisition phase [Ref. 6:p. 4].

2. Concept Exploration (Program Initiation)

In this phase alternative concepts are solicited from industry. The designated Program Manager (PM) makes his recommendation for those concepts which can be further

developed and evaluated. This recommendation is documented in the System Concept Paper (SCP). At this point he also prepares the acquisition strategy for the program.

The SCP is submitted to the Joint Requirements and Management Board (formerly the Defense System Acquisition Review Council) and then forwarded, if approved, to the SECDEF. The authority to proceed to the next phase is provided in the Secretary of Defense Decision Memorandum (SDDM).

3. Demonstration and Validation (Milestone I)

A Milestone I decision allows the system to enter the Demonstration and Validation phase. This phase is a validation of the requirement based on preliminary evaluation of concepts, costs, schedule, readiness objectives and affordability [Ref. 6:p. 4]. At this point engineering development is required to bring the concept to fruition. Mission and performance parameters are defined and performance/cost tradeoffs are made [Ref. 9:p. 3-27]. The PM will document the results of this phase in the Decision Coordinating Paper/Integrated Program Summary (DCP/ISP) and submit the document through the JRMB to the SECDEF who approves this phase also using the SDDM [Ref. 8:p. 2-10].

4. Full Scale Engineering Development (Milestone II)

A Milestone II decision allows the system to enter Full Scale Engineering Development. This phase is divided into three subphases: engineering, prototype and pilot-

production/transition to production. It produces a fully designed, tested and documented prototype [Ref. 9:p. 1-15]. A formal technical evaluation (TECHEVAL) and operational evaluation (OPEVAL) are performed in order to certify readiness for the production phase. The PM documents his recommendations in an updated DCP/IPS through the JRMB to the SECDEF or as delegated by the Service Secretary, provided the thresholds established at Milestone II are met.

5. Production and Deployment (Milestone III)

A Milestone III decision allows the system to enter the Production and Deployment phase. One or more contractors are awarded a production contract for either low-rate or full-rate production. The system is introduced to the Fleet and the system acquisition process is complete.

Navy programs are classified by Acquisition Categories (ACATs) which determine the level of review. A program is assigned an ACAT when first authorized based on its estimated cost, criticality and political sensitivity. A program may be redesignated any time thereafter. Documentation supporting the program initiation and milestone decisions include appropriate ACAT recommendations. ACAT I requires review and approval by the SECDEF. Normally this designation is made when the new start is authorized in the Program Decision Memorandum (PDM).

The decision to designate any system as major may be based upon (1) development risk, urgency of need, or

other items of interest to the SECDEF; (2) joint acquisitions; (3) the estimated funding requirement (thresholds of $200 million in RDT&E funds or $1 billion in procurement funds (both in FY80 dollars); and (4) significant congressional interest. ACAT II, III and IV designated programs are delegated to the Navy for approval and represent lower dollar thresholds and individual needs or interests. [Ref. 9:p. 1-4]

The major weapon systems acquisition process is long and complex with many decision points and many players. At no time in the process is information passed directly to Congress that identifies total acquisition cost by year through the life of a program. Also, at no time in the acquisition process are schedule or performance changes passed on to Congress, which could impact total costs of the program in out years.

C. THE BUDGET PROCESS

Understanding and adhering to the budget process is critical to those in the major weapon systems acquisition process. Successfully passing a milestone decision is no guarantee of full funding [Ref. 9:p. 3-10]. The PM must concern himself with the status of the budget and ensure that submissions are timely for the next milestone in the acquisition process. Otherwise, the program may be delayed, lose momentum and potential political favor.

The acquisition process operates under milestone decisions; the budget process runs on a tightly structured schedule. The Federal budget process has four main phases: (1) executive formulation, (2) Congressional enactment, (3) budget execution, and (4) audit. The first phase includes the planning, programming and budgeting stages of the DoD budget formulation. The first phase will be reviewed since it plays a major role in developing and defining information which is provided to Congress for weapon systems acquisition. It takes two years to complete the first two phases, from Planning through signing of the Appropriation Act. As a result, there are always three different fiscal budgets active in the process. [Ref. 10:p. A-3]

Beginning with the FY79 Budget, all agencies in the Executive Branch present their budgets in terms of agency mission in consonance with the Budget and Accounting Act of 1921, as amended by Section 601 of the Congressional Budget and Impoundment Control Act of 1974 [Ref. 5:p .11]. In keeping with that policy and the principles of controlled decentralization, the mission need determination has been incorporated into the PPBS process.

PPBS is a management decision-making tool which had its birth in the DoD under Secretary of Defense Robert McNamara in the 1960's. It is a system which assists SECDEF in making allocation of resources among competing programs and alternatives to satisfy specific objectives in our

national defense. PPBS can be summarized as follows: Based on the anticipated threat, a strategy is developed, Requirements of the Strategy are then estimated and programs are developed to package and execute the strategy. Finally, the costs of approved programs are budgeted in detailed submissions to Congress [Ref. 9:p. A-9]. Appendix B illustrates the planning, programming and budgeting cycle.

Planning, the first phase, starts with the assessment of the threat and results in development of force objectives to meet national security policies. Planning is initiated with the Joint Strategic Planning Document (JSPD) submitted to the SECDEF, who issues the Defense Guidance (DG). The JSPD and DG provide advise to the President and the National Security Council on military strategy required to obtain security objectives. [Ref. 9:p. A-10]

The Programming phase translates strategy into program force structure in terms of personnel, dollars and material by "costing out" force objectives for five years into the future. The critical document during programming is the Program Objective Memorandum (POM), which is prepared by each Service in response to DG policy from SECDEF [Ref. 9: p. A-11]. There is a direct interface with the acquisition process, since the JMSNS is submitted with the POM for the Mission Need Determination (Milestone 0).

The Five Year Defense Plan (FYDP) is the summary of the programs approved by SECDEF. The FYDP serves as the

controlling internal working mechanism of the DoD PPBS. The detailed information in the FYDP is used exclusively within the Executive Branch and is not provided to Congress since it contains information used for internal planning. Congress, therefore, does not have visibility into the decision-making process or the aggregate funding that may be required to support a given program [Ref. 11:p. 4]. SECDEF decisions resulting from the review of the POM and FYDP are promulgated in the Program Decision Memorandum (PDM). As stated in Part B of this chapter, PMs are authorized at this point to proceed with the acquisition process, based on the JMSNS submittal, to the Concept Exploration phase.

Budgeting, the final phase of PPBS, expresses the financial requirements necessary to support approved programs and translates these into annual funding requirements. The budget is submitted to SECDEF, hearings are held jointly with the Services, Office of Management and Budget (OMB) and Office of the Secretary of Defense (OSD). These hearings are used to formulate the Program Budget Decision (PBD) issued by SECDEF, and the Budget Estimate, the final budget request submitted to OMB and incorporated into the President's Budget. [Ref. 9:p. A-14]

The budget is presented in two ways: (1) in terms of input, by appropriation, and (2) in terms of output, by program format. Input involves expense dollars (for annual operations and maintenance, military pay and some research)

and investment dollars (for procurement, construction and research). Appropriations have an obligation period, either single year or multiple year. Output involves budgeting by program. Currently, the DoD budget identifies ten broad areas of both mission (force related) and support. [Ref. 9:p. A-8]

Because the budget is broken down into many parts, Congress does not have a clear picture of the aggregate cost of a program. For example, procurement cost of the Polaris Missile will be included under Program Cost 1, Strategic Forces; however the research and development costs for the Missile will be assigned to Program Code 6, Research and Development.

D. RECURRING REPORTING REQUIREMENTS

1. Selected Acquisition Report

The SARs are quarterly status reports from the DoD to the Congress on major acquisition programs. The reports include each PM's best estimate of key cost, schedule, and technical information for the program. They provide a useful basis for comparing current estimates with earlier planning, development, or production estimates (the baseline estimates) and explain any variances. In addition, the SARs are the only documents given to the Congress that identify acquisition costs by year through the end of the current program. [Ref. 11:p. 1]

The annual report submitted for the December quarter is typically the most informative because it reflects decisions to change the programs in keeping with the Administration's annual budget submission [Ref. 11: p.1]. Current law and the DoD's reporting guidelines also require the December SAR to be comprehensive and include more data on the technical and operational characteristics, schedule milestones, and program acquisition costs than the other quarterly SARs. The other three submissions occur on an exception basis; that is, when there has been at least a five percent change in total program costs or a three-month change in any schedule milestone. [Ref. 11:p. 1]

The SAR was not designed by DoD to be a decision document, but was intended to report on the progress in meeting designated cost, schedule and performance targets of a program, to focus management attention primarily on changes to the plan, and to highlight breaches of program thresholds (e.g., the quarterly exception reports). By reflecting the plans and goals established by the Department and providing feedback by comparing actual with planned accomplishments, the SAR is consistent with the current DoD philosophy of controlled decentralized management, whereby, the Military Departments are given the necessary authority and responsibility to perform effectively and are held accountable for the results [Ref. 12:p. 1]. However, the SAR is used by other organizations, like the Congressional

Budget Office, to gain insight into the DoD decision-making process and to highlight changes from planned to actual results for weapon systems [Ref. 13].

In 1967 the DoD instituted a reporting system to summarize the cost, schedule and technical information on its major programs. This report, then called the SAR, was to reflect consistent, reliable data on the status of major defense acquisition programs. In February 1969, the Chairman of the Senate Armed Services Committee (SASC) asked the SECDEF to provide him with a periodic status report on major weapon systems. The Secretary decided in April 1969 to use the SAR to satisfy the SASC requirement. In 1975, the FY76 and FY7T Defense Authorization Act established the SAR as a legal reporting document to the Congress under Section 139(a) of Title 10, United States Code. However, the legislation did not prescribe any required format or content [Ref. 12:p. 1].

Over the 19 years of selected acquisition reporting, the content of the report has changed numerous times, three of which involved legislative changes. On each occasion these changes tried to satisfy both DoD management and Congressional needs. In almost all cases, these changes have led to adding information rather than tailoring it to meet the oversight needs of DoD management and the Congress. [Ref. 12:p. 1] The SAR, according to Senator Nunn, became so voluminous and unintelligible that in 1982 the Congress

created a new reporting system based on unit costs, the Unit Cost Report. The report provides minimal information for those programs breaching established unit cost thresholds. The unit cost reporting system includes internal DoD and external Congressional exception reporting based on unit cost increases and contract execution. [Ref. 12:p. 1]

DoD restructured the SAR in 1983 to be more readable and to serve as a useful summary status report for those charged with management and broad oversight of major weapon programs. Major deletions included description of the system and mission, and ceiling prices on current costs which define the Government's liability [Ref. 14:p. 1]. This redesign was discussed by OSD representatives with members and staffs of both the House and Senate Armed Services Committees. However, these streamlining efforts were not discussed with the CBO or the General Accounting Office (GAO), two primary users of the SAR [Ref. 13]. Legislation was passed which prescribed the reduced format in accordance with DoD recommendation.

As a result of this effort, the December 1984 SARs were reduced from an average of more than 20 pages to approximately nine pages per report, with content focused on more concise explanations of changes since the last report. Detailed explanations of previous changes and most of the historical narrative were eliminated to make the report more prospective, but original baseline estimates

were still retained to assess the context of the original plans. The SAR was revised to permit use of computers and word processors in report preparation. [Ref. 12:p .2]

The CBO and GAO objected to the deletion of data and expressed their concern to the members and staffs of the House and Senate Armed Services Committees [Ref. 13]. As a result, the FY86 DoD Authorization Act (Public Law 99-145) required reinstatement as of December 1985 all information previously contained in the December 1983 SARs and added more data relative to production rates and operation and support (O&S) costs [Ref. 14:p. 1]. Also, the conference report accompanying the DoD Authorization Act of 1986 required the DoD, CBO and GAO to provide comments and recommendations for improving the SARs [Ref. 12:p.4]. The Secretary of the Navy chose to submit a separate report to Congress which recommended that the SARs and UCR be completely replaced by the Development Acquisition Report/Production Acquisition Report (DAR/PAR), a report generated within Department of the Navy only since 1983 [Ref. 16].

Congress has legislated the format of the report and requested comments and recommendations from all interested parties in hopes of bringing the issue to full debate and resolution [Ref. 13]. All reports have been submitted and are currently under review.

DoD Instruction 7000.3 of April 17, 1986 prescribes the procedures to prepare the SARs and incorporates the

provisions of the current legislature in the FY86 Authorization Act [Ref. 15:p. 1]. The Assistant Secretary of Defense (Comptroller) (ASN(C)) administers the SAR, and Heads of the DoD Components ensure that program managers prepare the SAR in accordance with the instruction.

Baseline technical and operational characteristics, schedule milestones, and cost estimates are established in the initial SAR. Depending on the phase of the acquisition cycle at the time the initial SAR is submitted, these baseline values are represented by a planning estimate (PE), a development estimate (DE), or a production estimate (PdE). The PE reflects information developed up to the FSED (Milestone II) decision; the DE reflects information developed up to the Production (Milestone III) decision; and the PdE reflects information after the production decision. Baseline changes may be requested by the DoD Components within 60 days after Milestone II and the first Milestone III approval, and the information is reflected in the next SAR reporting period (annual or quarterly). [Ref. 17:p. 5]

The SDDM will normally be the source of the baselines. However, the SCP, DCP, PBD or the FYDP may be used. When only goals have been established in a SDDM, baseline values shall be expressed in terms of goals rather than thresholds. [Ref. 17:p. 4]

Major weapon systems may be deleted from the SAR when 90 percent of expected deliveries or 90 percent of planned acquisition expenditures have been made. Termination is not automatic, but must be requested by the DoD Component and approved by the ASD(C).

The formal submission of the annual SAR in December of each year by the DoD Components is provided to the ASD(C) on the working day immediately preceding the 30th calendar day after the President sends the budget to the Congress for the following fiscal year. Preliminary copies are sent by the ASD(C) to the appropriate congressional committees on the next working day. Following review and processing by OSD, the annual SAR is sent to the appropriate Congressional committees 60 days after the President sends the budget to Congress. Quarterly reports are provided to ASD(C) by the DoD Components on the working day immediately preceding the 28th calendar day after the end of each reporting period. Following review and processing by OSD, the quarterly SARs are sent to the Congressional committees 45 days after the end of the reporting period. [Ref. 17: p. 7]

The SAR format contains 19 reporting sections, 18 of which are forwarded to the Congress. Section 19, Cost-Quantity Information, is for internal DoD use only. Normally, a SAR will be limited to 20 pages [Ref. 17:p. 3-1]. All cost information throughout the SAR is designated

by type of appropriation (RDT&E, procurement, MILCON, and O&M). The procurement and program acquisition unit costs are computed in base-year and then-year dollars for the PE, DE, or PdE, whichever is applicable. The procurement costs are displayed in three increments: (1) flyaway, rollaway, or sailaway costs; (2) other weapon system cost; and (3) initial spares. [Ref. 17:p. 3-5]

All narrative and cost information is presented in terms of past estimates, current estimates and reasons for the change, whether it cost, schedule or performance parameters that are being discussed. The changes to cost are written in terms of economic or program changes. These cost variances must be categorized by one of seven types (economic, quantity, schedule, engineering, estimating, support or other). [Ref. 17:p. 3-2]

Section 12 of the SAR details the unit cost reporting requirements. Unit costs are reported by total program acquisition costs and the current procurement costs by the estimate for the current year and the budget year.

The SAR requires other items of data such as mission description, program highlights and significant developments since the last report. The SAR also requires a listing of the six largest contracts exceeding $2 million, a program funding summary, production rate data, and operating and support data.

The SAR is a very detailed document which requires data to be categorized into variances with extensive explanations for changes. The SARs are submitted for designated major weapon systems, but they have a direct correlation with the budget process, since they must match the President's budget submission for the next fiscal year. Working from that budget the annual December SARs extend the cost estimates for each system to the end of that program as it is planned at the present time. This extension of costs provides a more complete picture of the Administration's defense plans for the weapon systems than does the annual budget. [Ref. 18:p. xi]

2. Unit Cost Report

Significant increases in budget authority and outlays for Defense investment programs in the President's budgets have brought increased Congressional concern about cost overruns in the acquisition of weapon systems [Ref. 18:p. 1]. The FY82 Defense Authorization Act (Public Law 97-86) contained the Nunn-McCurdy Amendment, which required the Service Secretaries to submit unit cost exception reports to the Congress when unit costs addressed in the FY82 SARs increased by 15 percent over annually established baselines. This information was extracted from Section 12 of the SAR. The FY83 Defense Authorization Act (Public Law 97-252) extended the requirement indefinitely. The Act established a three-tiered reporting requirement to identify

programs that have significant cost growth. The purpose is to provide a means by which the Congress can become aware of cost growth early enough to take remedial action [Ref. 18:p. 19].

The Act requires that the Service Secretaries notify the Congress of programs in which: (1) the program acquisition unit cost (PAUC) is more than 15 percent above the baseline; (2) the current procurement unit cost (CPUC) is more than 15 percent above the baseline; or (3) cost or schedule variances of a major contract have resulted in an increase in the cost of the contract of at least 15 percent over the initial cost of the contract. The Service Secretaries must notify Congress within 30 days after the date on which the unit cost report is submitted, either as a part of the annual or quarterly SAR. [Ref. 18:p. 19]

If unit cost growth exceeds the baseline by 25 percent or more, the SECDEF must certify in writing to Congress that the system is still required. The SECDEF must provide certification to Congress of the 25 percent breach within 60 days of his determination. If the reports are not provided to Congress, any further obligation of RDT&D, procurement or MILCON funds for major contracts is suspended. [Ref. 3:p. 7]

Under the current procedures, unit cost can increase as much as 15 percent annually without a unit cost exception report being required. This increase allows for a combina-

tion of inflation and real cost growth. During periods of high inflation, a unit cost exception report would be triggered by a small increase in real cost growth. Conversely, when inflation is low, a large increase in real cost growth would be required before a unit cost exception report is issued. [Ref. 14:p. 25] The unit cost threshold of 15 percent was established in 1981 when inflation was much higher than it is now. Current inflation rates of less than four percent allow real cost growth to increase more than 11 percent before a unit cost exception report is issued.

For the purpose of measuring unit cost growth in accordance with the Nunn-McCurdy amendment, the unit cost is defined to be the cost per full-equipped weapon system. This cost includes and amortizes RDT&E and MILCON costs across the program procurement quantity and includes prototype costs. For most systems, DoD uses the number and type of units that Congress authorizes each year (e.g., aircraft, missiles, ships). For some systems, however, DoD uses battery equivalents, fire control sections, and self-propelled-loader-launchers for these calculations [Ref. 11: p. 8]. This makes the unit of measure different, thereby making comparisons with prior years and prior programs indirect.

DoD Instruction 7000.3, Selected Acquisition Report, prescribes the requirements within the SAR for the

Unit Cost Report requirements. DoD Instruction 7220.31, Unit Cost Reports, provides the procedures and assigns responsibilities for unit cost reporting [Ref. 3:p. 1].

As with the SAR, Congress legislated the format of the UCR with the FY86 Defense Authorization Act and requested comments and recommendations from OSD, CBO and GAO for improving the report.

3. Acquisition Strategy Report

Acquisition strategy has become a critical element in the weapon system acquisition process. OMB Circular No. A-109 addresses the tailoring of the acquisition strategy as a management objective for each program as soon as the agency decides to solicit alternative system design concepts that could lead to the acquisition of a new major system, and to refine the strategy as the program proceeds through the acquisition process [Ref. 5:p. 5]. DoD Directive 5000.1 requires DoD Components to develop an acquisition strategy at the inception of each major system acquisition that sets forth the objectives, resources, management assumptions, extent of competition, proposed contract types, and program structure and then tailor the steps in the acquisition decision-making process to this strategy [Ref. 6:p. 2]. The Federal Acquisition Regulation (FAR), implemented in April 1984 addressed acquisition planning and the requirement for an acquisition plan in Part 7. The flow-down regulations (the DoD FAR Supplement and the Navy

Acquisition Regulation FAR Supplement (NARSUP)) contained additive language for an acquisition plan.

The acquisition strategy, the acquisition plan and acquisition planning are used interchangeably in the literature and in conversation; however, they are separate concepts and documents. The acquisition strategy is a conceptual basis for the overall plan that a Program Manager follows in program execution. It is the framework for planning and directing the program [Ref. 8:p. 1-1]. The strategy considers the weapon system from the embryonic stages of program formulation through the critical phases of demonstration and full scale development to production [Ref. 19:p. 2].

The acquisition plan, however, specifically addresses the immediate procurement action. [Ref. 8:p. 4-5] It integrates information from other functional plans, such as integrated logistics support (ILS) or test and evaluation (T&E), and is updated as the process continues for that contract.

Acquisition planning is a process by which the efforts of all personnel responsible for an acquisition are coordinated and integrated through a comprehensive plan for fulfilling the agency need in a timely manner and at a reasonable cost. It includes developing the overall strategy for managing the acquisition [Ref. 20:p. 7-1].

During the early 1980's there was a major thrust within the Navy to use the acquisition strategy as a separate summary document. However, the report ran contrary to the Paperwork Reduction Act since it was considered the same as the acquisition plan, and it was not accepted by the PM's as a useful document. Therefore, the acquisition strategy reverted to a concept rather than a document. [Ref. 21]

The FAR decentralized the acquisition plan to the Federal agencies and allows variances of specific plan content. The Agency Heads may write the plan on a system basis or an individual contract basis; they may establish criteria and thresholds for the plans and establish standard formats for the plans; they may also review and approve the plans within various echelon levels.

The FAR requires two sections in the acquisition plan. The acquisition background and objectives section contains seven parts, including needs statements, cost goals performance parameters, risks, and other general information. The plan of action section contains 19 parts relating to specific business and technical decisions, such as competition, sources, funding specifications, testing, logistics, government property, environmental and security considerations and milestones.

Since the FAR has been implemented, the Navy uses the acquisition plan for documentation purposes and not the

acquisition strategy [Ref. 21]. The ASN(S&L) and ASN(RE&S) consider it a vehicle to control the major weapon system process. The NARSUP was revised in January 1986 to establish stricter thresholds and to create the approval document, the Program Endorsement Memorandum (PEM), by the Assistant Secretaries. Currently, SECNAV personnel are redrafting the requirements of the acquisition plan to simplify, streamline and redefine the acquisition plan. Business issues, such as how the PM plans to buy the weapon system, will be emphasized; and the technical issues, such as ILS and T&E, will be minimally addressed. The Assistant Secretaries will also use the document to assure compliance with the Competition in Contracting Act [Ref. 21]

Congress has expressed a concern over the high cost of weapon systems and the related lack of competition. As a result, major initiatives such as the Competition in Contracting Act, have been instituted to reduce costs through competition. Under the FY86 Defense Authorization Act, Congress required the SECDEF to prepare an acquisition strategy for a major program at the point of full-scale engineering development and submit a report with the President's budget for the fiscal year for which the initial request is made for full scale engineering development funding.

As part of the acquisition strategy, SECDEF must provide for competitive alternative sources for the system,

whether one or several designs, from the beginning of FSED through the end of production. The SECDEF may waive the requirement for alternative sources with notice to Congress if its application would result in increased total costs, unacceptable delays or would be adverse to the national security. [Ref. 22:p. 264]

To date, no reports have been submitted to Congress from the Navy. [Ref. 21].

In conjunction with the Congressional requirement, SECNAV Instruction 4210.6, Acquisition Policy, was issued on 20 November 1985. It directed that all major weapon systems have a minimum of two concurrent but separate contractors eligible to produce at any time in the process, from FSED through production [Ref. 21]. Accordingly, this policy is addressed in all acquisition plans for major systems for the Navy and considered a key element in the PEM approval process by the Assistant Secretaries.

The acquisition plan is an internal decision document prepared by and maintained by the Military Services. It is not used to compile any data bases, nor is it a management report forwarded to upper level echelons, such as SECDEF. It contains information in great detail and has many advocates (e.g., reliability and maintainability, testing, competition, specifications, etc.). It represents a contract between the PM and SECNAV on the operation of a

major weapon system, but is continually updated and increased in scope. [Ref. 21]

Since no report has been submitted by SECDEF to Congress relative the competitive alternate sources in the acquisition strategy, there is no prescribed format. However, SECNAV personnel expect that the report will be a synthesized one or two-paragraph document relating plans for competition only and no other information. [Ref. 21]

E. SUMMARY

Chapter II has defined two major processes relevant to information which is provided to Congress: the major weapons system acquisition process and the budget process, specifically the PPBS process. Three reports required by Congressional legislation, the SAR, the UCR and the acquisition strategy report, have been described regarding policy issues, program objectives and existing procedures for compliance. The SAR and UCR are already being provided to Congress; the acquisition strategy report has not yet been submitted.

Chapter III will discuss the users of the report, from the PMs who often generate the information through the various echelons within DoD, and through the Congress and its agencies, the CBO and GAO. The chapter will address who uses the information, how they use it and how they

think it may be changed. Chapter IV will address issues and problems inherent with submitting and using the reports.

III. DATA PRESENTATION

A. INTRODUCTION

This chapter will review the uses of the SAR, UCR and Acquisition Strategy Report prepared by DoD. The reports are prepared for Congress, as dictated by legislation, and are primarily used by Congress. However, that information is also used by several other organizations. In order to gain insight into the preparation of the reports and their evolution to present any format, this chapter will identify the users of the reports, when and how they use report data, and in some cases, how they would change the data submission, if possible.

This chapter will consider all three recurring reports: SAR, UCR, and Acquisition Strategy Report. As of the writing of this thesis, the Acquisition Strategy Report has not yet been submitted to Congress; therefore, any use by agencies besides the PM or SECNAV will be prospective.

1. Program Managers

Program managers generate the SAR, UCR and acquisition strategy. However, they also use the information contained in the reports.

a. SAR and UCR

Those people interviewed for this thesis research indicated that the SAR and UCR are lengthy and

complex reports, and they are very time-consuming to prepare. As a result, valuable time is taken away from the PM's primary responsibility - running a successful program. The PM perceives the SAR and UCR as management reports rather than decision-making tools [Ref. 23]. Because the reports are submitted to Congress, the formats are highly structured. The PM is responsible for ensuring the accuracy and structure of the data.

The PM establishes the baseline estimate with the initial SAR and may request that the baseline be changed as the system passes through the various acquisition milestones. Changing from the PE to DE to PdE baseline requires justification and additional variance analysis to OSD before the baseline estimates can be changed in the SAR. Termination of the SAR is not automatic; the PM must justify its deletion to OSD before he is released from the reporting requirement.

Any changes to the program must be addressed in the annual SAR submission. The changes can be in narrative form, relative to mission or technology changes, or quantitative form, where cost variances must be categorized into seven areas and balanced with overall program costs. Quarterly reports are submitted to Congress if total program costs or schedules exceed designated thresholds.

The SAR is submitted to OSD in March of each year for the preceding year ending 31 December. Quarterly

reports for breach situations are provided to OSD by the 28th of the month after the end of the previous reporting period. Since the PM must submit his report through several approval levels of his own systems command and SECNAV before it reaches OSD, his time to prepare the report is compressed.

The UCR is extracted from Section 12 of the SAR and is submitted to OSD by the PM annually. The Program Manager's Report contains information relative to the UCR and is submitted to the Military Department Secretary within seven days after the President sends his budget to Congress. If there has been a unit cost breach, the Service Secretary reports it to Congress [Ref. 3: p. 3]. Congress intended the UCR to be an exception reporting requirement only. However, the PM must submit a report to SECNAV whether or not a breach has occurred.

People who are assigned to the Program Management Office for two Navy programs were interviewed to determine how they generate the SAR and UCR information and how they also use that information.

The T45TS Navy Undergraduate Jet Flight Training System will replace the T-2C and TA-4J trainers to provide training for prospective Navy and Marine Corps pilots to meet aircrew requirements in the 1990's. The T45TS is a derivative of the British Aerospace HAWK. The SDDM was

issued in October 1984, authorizing the T45TS program to enter FSED. [Ref. 24:p. 2]

Since the T45TS Program is new, it uses estimates and goals versus concrete, well-defined information for its program data. Historical cost and performance data have not been accumulated because it is a new program. As a result, the PM must make performance assumptions and use cost estimates. The most difficult problem is deriving reasons for cost variances. The variances must be categorized into the seven areas identified in the SECDEF instruction. Without historical cost information, it is very difficult for example to attribute separate dollar figures to schedule slippage and technical changes.

The interviewees felt that the PM has a tendency to put most of the cost variances into the easily explainable categories, such as revised escalation indices or changed quantities [Ref. 23]. Justification is minimal for any remaining cost variances which cannot be clearly categorized. Statements such as "revision to the methodology for estimating engineering hours" or "more refined estimate of ILS requirements" were given in the SAR for the T45TS [Ref. 24:p. 8]. Preparing the SAR can become creative accounting because cost adjustments may not fit neatly into seven economic or operational categories [Ref. 23].

The F-14A/D is a well-established aircraft program. the F-14A has been in production for several

years and the F-14D is currently in FSED. The F-14 has a program base year of 1969 and has accumulated much historical cost and performance data. The technology is well-defined and therefore, the F-14 has less uncertainty than the T45TS program. However, the PM still has the same problems of defining and categorizing the cost variances [Ref. 25].

For example, the PM must incorporate engineering change proposals into the seven categories. Again, the larger variances are listed in the obvious categories, and any remaining variances applied to estimating categories with minimal explanation for the increase or decrease.

The interviewee indicated that the PM of an established program has to coordinate with other functional areas in preparing the reports. He has to consider military construction for operational facilities; become more involved with the Contracting Officer for contract administration; and interact with the operations research people for statistical analysis and models, such as learning curves. Therefore, the SAR and UCR are not perceived solely as a PM document. [Ref. 25]

According to the interviewees, the SAR or UCR are not used as a decision document or a management tool [Ref. 23]. The various acquisition milestone and budget documents are used as decision documents. Contractor progress reports, program design reviews and Cost/Schedule

Control System Criteria Reports provide management tools for the PM during program operation. However, the SAR and UCR are used as benchmarks for cost and performance analysis. They provide a red flag for the PM where actual events vary from planned actions.

The SAR and UCR are also used as a ready reference by the PM for inquiries from OSD or Congressional staffers. The PM can quickly identify the current unit cost or total cost of the program. The two interviewees felt that the SAR was not used by Congressional staffs. Rather than read the SAR, the staffers would obtain information from PMs over the phone.

There are three common areas where change could make the SAR and UCR easier to generate and more useful, according to the interviewees. [Ref. 23, 25]

First, the reports are lengthy and complex, and there is a major learning process required by those responsible for their preparation. The PM and BFM positions experience a high turnover, and the support staff is not at the level of expertise to prepare the report independently. Some PMs use contractor support to assist with the function. In-house expertise is then lost, and there is still a problem of contractor personnel turnover. Both interviewees recommended streamlining the report process to minimize learning loss from personnel turnover.

Second, because the report is submitted to Congress, format and appearance is critical. The DoD instruction is very specific as to format. As a result, there is a major emphasis on the administrative and clerical portion of preparing the report. Currently, reports are prepared manually. Both interviewees recommended automation to solve the preparation problem. The format could be programmed. Standardized mathematical models could be used by the operations research personnel to minimize updating cost variances due to inflation or other standard cost adjustments.

Third, both interviewees felt that the baseline estimates become old and irrelevant. The T45TS, which uses a PE baseline, has gone into FSED and qualifies for a DE baseline; however, the PM requested approval to update the baseline in November 1984 and was denied in January 1985. The F-14 has been in production for many years, but since the "D" version is being used by the PM, they use a DE baseline. Both interviewees felt the baseline should be updated more often. Historical data, such as previous change explanations, are never deleted from the report; they remain in the report and are continually explained with each report submission.

b. The Acquisition Strategy Report

The acquisition strategy or acquisition plan is prepared by the PM at Concept Exploration (Program

Initiation). The PM must address how he intends to operate during the acquisition process. The plan addresses risks, such as concurrency in testing, and production choices, such as maintenance philosophies. Problems inherent with planning any weapon system include unsettled technological issues, unknown sources of supply and fluctuating budgets. The PM must make a best-guess of his needs for the future.

The plan is submitted by the PM through the Commander of the Navy Systems Command to the ASN(S&L) prior to any solicitation or contracting actions. The PM must coordinate information from many functional disciplines, such as logistics, comptroller, test and evaluation, and research and development. The PM will then produce a document which addresses technical as well as management and business issues.

The acquisition plan is used internally by the Military services. However, with the new legislation, Congress will see a portion of the plan regarding the use of multiple sources in FSED as well as Production and Deployment. [Ref. 22:p. 264]

The PM uses the acquisition strategy as a planning vehicle, which is changed and updated as the weapon system proceeds through the acquisition process. The Federal Acquisition Regulation has expanded the content of the acquisition plan, and the Services have established stricter thresholds for submitting the plan [Ref. 21]. The

program office interviewees felt that the acquisition plan could expand, especially if it were provided as written to the non-management agencies within Congress, such as the Congressional Budget Office or the General Accounting Office. [Ref. 23, 25]

The interviewees recommended that the acquisition plan remain as is, without additional quantitative analysis or planning estimates. In order to respond to the new legislation, PMs should provide only a general statement to SECDEF for Congressional review which presents the intent to compete with alternative sources in FSED.

2. Secretary of Defense/Secretary of the Navy

The SAR, UCR and acquisition plan are forwarded from the PM to the Secretary of the Navy. The SAR and UCR are forwarded through OSD to Congress. Currently, the acquisition plan goes no further than OSD. However, under the FY86 Authorization Act the Acquisition Strategy Report, based on acquisition plans, will be submitted to Congress by the Secretary of Defense. Therefore, reports relative to acquisition strategy and multiple sourcing in FSED will be provided by the Secretary of the Navy to the Secretary of Defense.

a. SAR and UCR

The Secretary of the Navy coordinates the submission of the SAR and UCR to OSD. The Secretary of Defense is responsible for administering the SAR and UCR

and submitting them to Congress. The SAR is submitted by the Military Services to OSD within 30 days after submission of the President's Budget to Congress. OSD has 30 days to review, verify, and coordinate the annual SAR submission to Congress. Quarterly reports are submitted to OSD within 28 days after the end of the quarter, and OSD has 17 days to review and correct the report before submission to Congress. [Ref. 17:p. 7]

Senior DoD management are a relatively small user group requiring summary status information rather than detailed data for analysis [Ref. 12:p. 4]. According to an interviewee with the office of the ASD(C), the SAR and UCR are both used as a source of information for Congressional inquiries, DSARC reviews, and POM reviews. The SAR does provide discipline for the total program and explains variances from original estimates. It can also provide consistency for DoD when explaining to Congress or the Press about major programs under scrutiny. [Ref. 16]

According to the interviewee, the SAR is never late. The bulk of the over 100 program reports are submitted to Congress. On occasion one or two programs are submitted after the total report. [Ref. 16]

The interviewee did say that submission of the UCR is extremely tight. Therefore, OSD has requested in their report to Congress, that submission of the UCR be based on working days versus calendar days, which would

provide relief, especially when the due date falls on a weekend. [Ref. 12:p. 8]

The interviewee felt that the SAR provides information too late to have any impact on the acquisition process. Therefore, it cannot be used in a prospective manner. However, it does provide progress information for the program more often than the milestone reviews.

Congress objects to re-baselining, since they want a benchmark for comparison of progress, good or bad. Before 1984, the PM was not allowed to change the baseline. With the DoD instruction issued in 1984 they can update the baseline to align the SAR with the acquisition milestone process. [Ref. 16]

Before discussing the various changes OSD would recommend, it is worthwhile to address the Secretary of the Navy's position on the SAR and UCR. As stated in Chapter 2., the SECNAV chose to submit a separate report to Congress in response to the FY86 Authorization Act. SECNAV acknowledged that there are several agencies that can use the SAR and UCR information, primarily senior DoD managers, Congress, the CBO and GAO. All are concerned with various aspects of management: oversight, decision-making and resource allocation. [Ref. 26:p. 1]

SECNAV pointed out that the SAR and UCR are too lengthy, force creative accounting due to the categorization of variances and extend reporting into the "almost always

fictitious out-years". Therefore, according to SECNAV, the SAR is of no use in managing Navy programs [Ref. 26:p. 4].

The UCR measures unit costs based on total program costs including development and production. Because it does not separate research and prototype from recurring production costs, the UCR is of no use in managing the Navy's acquisition program [Ref. 26:p. 5].

SECNAV recommended the Development Acquisition Report/Production Acquisition Report (DAR/PAR) as a substitute for the SAR and UCR. It separates development costs in the DAR from production costs in the PAR. It also focuses on the FYDP period rather than the out-years. It uses constant dollars to eliminate inflation distortion and provides a quick-look status report for senior management. [Ref. 26:p. 5] The DAR/PAR is an internal report developed exclusively by the Navy for monitoring major weapon systems.

The general opinion of the interviewee was that Congress would not accept the DAR/PAR because it was limited to the FYDP and provided minimal trend data and baseline information.

The interviewee addressed several problems with the SAR and UCR at the OSD level and recommended some changes based on the report submitted by OSD to Congress.

The SAR can be likened to a "Snapshot" of a program taken at the end of each reporting period. However,

that snapshot seems to be taken with a wide-angle lens. The SAR has become an additive report. There have been increased data requirements, stricter thresholds, and repetitive information.

OSD recommended that the UCR be eliminated since it duplicates information already in the SAR. The exception report for unit cost growth could be added to the criteria required for the quarterly SAR report, which is over a five percent change in program costs or a three-month change in a schedule milestone. OSD also recommended that these thresholds be increased to a ten percent increase in program costs and a six-month change in schedule milestones.

To combat the irrelevant baseline problem and repetition in the report, OSD recommended that the SAR program reporting be deferred until after Milestone II. The rationale is that prior to Milestone II, programs are not sufficiently well defined for meaningful reporting purposes. Estimates are often little more than planning wedges, with undefined program quantities and alternatives [Ref. 12:p. 5].

The second problem OSD addressed was that one report tries to meet the needs of too many users. DoD managers and Congressional staffs have a wide spectrum of responsibilities ranging from detailed analysis to broad oversight. The desires of staffs to have all possible data cannot be reconciled with the needs of OSD management to

have an information system that provides concise summary information on the cost, schedule and technical status of a weapon system [Ref. 12:p. 2]. When OSD made their reductions to the SAR in 1984, they were trying to respond to the needs of DoD management. However, the reduced report did not meet the needs of the non-management Congressional users, the CBO or GAO. OSD stated in their report to Congress that designing one output to meet the needs of several users with diverse interests, motivation and responsibilities is not practical [Ref. 12:p. 3].

OSD did recognize, however, that the needs of Congress predominate. Therefore, they recommend in their report that the format prior to 1983 be used, with the additional production rate and operation and support data. These ideas seem to be "popular" with Congress because of the attention to life cycle costs and economic ordering quantities. [Ref. 16]

A third problem OSD addressed was coordination of the SAR. Since the SAR is prepared by approximately 100 different program offices rather that through a central office, ensuring uniformity and accuracy is extremely difficult. In the course of the review process, OSD will discover errors in tabular data and mathematical computations. PMs are not necessarily consistent in their interpretation and application of cost variance categories.

Therefore, OSD has a difficult job coordinating the SARs into one uniform submission.

Graphs have been recommended in years past by GAO as a means of presenting data, but OSD felt that correcting the graphs could not be done within the statutory period for submitting the SAR. [Ref. 16]

The interviewee recommended a better overall training program for PMs and automation to allow uniformity and standardization. The interviewee stated that the Senate Armed Services Committee had offered to dedicate funds for automation of the SAR, but OSD had not yet taken advantage of the offer [Ref. 16].

b. The Acquisition Strategy Report

The researcher interviewed a member of the Clearance Division, ASN(S&L), relative to the acquisition plan and the new reporting requirement. Several Changes have occurred within SECNAV recently concerning acquisition plans and may effect their submission to Congress.

The Competition in Contracting Act (CICA) required several changes in the method of contracting and placed emphasis on full and open competition at all phases of the acquisition process [Ref. 21]. SECNAV selected the acquisition plan as the principal document for program review and oversight regarding compliance with CICA. This avoids a requirement for new documentation and also confirms

implementation of the SECNAV policy for dual sourcing in FSED [Ref. 27:p. 1].

The Navy uses the acquisition plan as a control document for the weapon systems acquisition process [Ref. 21]. In order to ensure compliance with the new thrust for competition, the acquisition plan is being used as a review and oversight document. It establishes a baseline and acts as a contract between the PM and management. However, it is a very fluid planning document and is changed and updated as the process continues.

The interviewee addressed several problems with the acquisition plan. The plan has become additive because of advocates, such as reliability and maintainability or streamlining. ASN(S&L) is currently reviewing the plan content for consolidation or reduction of reported information. One recommendation has been to eliminate information as it becomes irrelevant. For example, testing results can be eliminated as a program goes into production. It is no longer necessary to address design or operational testing once a system has been approved for service use.

The acquisition plan is not currently used as a data base; however, it could be very easily. The interviewee said that since SECNAV has identified the plan as a oversight document for CICA, data are being compiled relative to receipt, processing and approval of plans from the various Navy headquarter commands. Average approval

leadtimes are being computed. Once various advocates learn of a data base being developed, they may require input to the statistical data. This has the potential to expand into an additional management report requirement at the Navy, OSD or Congressional levels [Ref. 21].

Currently, the plan contains detailed information internal to DoD. If the plan as written is submitted to Congress, the interviewee felt that future plans may be written with minimal information and contain conditions and caveats. In its current form, the acquisition plan is too specific for Congressional oversight use. [Ref. 21]

3. Congress

The Constitution enumerates powers granted to the Congress. Those relating to national defense include the power to declare war, to raise and support the armed forces, to make rules for the government and regulation of the armed forces, to provide for calling for the militia to organize, arm and discipline the militia, and to appropriate money [Ref. 28:p. 569]. Both the Senate and House of Representatives have created standing committees for managing national defense. The Senate Committee on Armed Services and the House Committee on Armed Services have developed a formal subcommittee structure and comprehensive responsibilities for defense authorization. [Ref. 28:p. 570]

The SAR, UCR and prospective Acquisition Strategy

Report are submitted to Congress by way of the Senate Armed Services Committee (SASC) and the House Armed Services Committee (HASC). Staffs working for the various subcommittees or specific members of either Houses review and synthesize the data for the Congressmen [Ref. 29]. As a result, staffers have an inherent potential to influence Congressional decisions on weapon systems acquisition. The amount of influence can be measured to a great extent by the amount of information that the staffer can obtain. Congressional inquiry is a popular channel for information flow, either through verbal contact with liaison offices or a written position paper or fact sheet. [Ref. 30:p. 38]

a. SAR and UCR

The SAR and UCR provide continuous information for staffers on weapon systems acquisition. However, even the staffers admit that the reports are too voluminous to use in the Congressional oversight role [Ref. 29]. The researcher interviewed a staff assistant for Senator Samuel Nunn, a member of the SASC. He felt that the SAR and UCR are used primarily as a research tool by the non-management portion of the Congress (CBO and GAO) and as a political tool by the members of Congress.

The SAR and UCR are important as management control devices for the Military Services, according to the interviewee. Senior DoD managers are forced to monitor their programs, especially in the areas of cost growth and

performance and schedule changes. However, the SAR and UCR are not generally used as a source of direct information by the staffs within Congress. Congress needs highly refined data with highly aggregated analysis in order to make decisions relative to national defense [Ref. 29]. As they are written, the SAR and UCR are too detailed for oversight data.

Fundamentally, Congress has too much to do and insufficient time to do it [Ref. 28:p. 594]. There has been a tendency in Congress to control policy through control of details [Ref. 28:p. 593]. The previous and current era of policy decisions and issues was one of "more data". Now, Congress is saturated. The interviewee felt that a new era was approaching, one of "data on an exception basis". The PM receives guidance through baselining and only reports to senior DoD managers or Congress when he varies from the baseline to any "significant" degree. [Ref. 29] The approach coincides with the recommendations in the Packard Commission for program stability through baselining. [Ref. 31:p. 59]

The SAR is perceived as too massive to be used directly by Congressional members and staffs. The interviewee confirmed what PMs have said relative to reading the SAR or UCR. If a staffer has a question on a weapon system, he will tend to call the PM or the Military Service liaison office, rather that read the reports held by his office.

The SAR is used, however, as a research tool by the CBO and GAO. These non-management arms of Congress synthesize the data and respond to many "what if" requests by Congress. The SAR and UCR are used for quantitative and cost benefit analysis and then generalizations of the findings are reported to Congress. Both the SAR and UCR are used as a political hammer by Congress for choices during the budget process for competing programs [Ref. 29].

Congress is concerned about too many new starts, program stretch outs and inefficient production rates. They also have a concern for total system cost growth. The UCR as an exception report provides Congress with an indication of cost growth and is directly tied to the weapon system unit cost.

If DoD chooses to stretch out a program over a longer period of time, it will buy in less than economic ordering quantities. Therefore, the production rate is lower and unit costs usually rise. This is due to learning curve adjustment, inefficient use of capital equipment, idle time, and lost quantity discounts. As a result, the total system cost goes up. Congress is alerted to this cost growth through the UCR. [Ref. 29]

DoD has a tendency, according to Congress, to have too many programs started at once and not being able to afford them all to the point of efficient production rates. In February, 1986, the SASC asked the CBO to

examine what would occur if all new starts were held to their current funding level and the savings applied to existing weapon systems to bring them to full production rates? The CBO reported that over $49 million would be saved and over 19 systems that were currently in production could be fully funded to efficient production rates. [Ref. 32:p. 2] The CBO used the SAR and UCR to perform their data analysis for Congress.

Congress uses information from the SAR and UCR, but usually only after a highly aggregated analysis by their quantitative organizations, the CBO or GAO. Congress uses summary information, but their supporting organizations need very detailed data to provide the alternative data analysis requested by Congress. [Ref. 29]

This interviewee recommended changes in the timing and procedure for submission of reports to Congress. Because Congress is inundated with data, they do not need information any sooner than absolutely necessary. He suggested that DoD be free to deal with national security and the threat through Milestone 0 without reporting to Congress. The information is too ill-defined and subject to change. This recommendation would serve to eliminate unnecessary data and provide more accurate data with which to work.

The interviewee also recommended automation to standardize the report process from the Services. He had

offered to recommend to Senator Nunn that an appropriation of $1,000,000 be authorized to OSD to procure hardware and software to automate the SAR submission. OSD has not yet accepted the offer.

b. The Acquisition Strategy Report

The Acquisition Strategy Report is perceived as another way for Congress to direct more efficient buying practices by DoD. The interviewee felt that the acquisition plan was too sophisticated for members of Congress to use; therefore, only a generalized report was required from SECDEF addressing alternative sources in FSED. He did not see this as a growing or potential additive report requirement by Congress or its support organizations.

Congress will use the Acquisition Strategy Report as an assurance that DoD is complying with CICA and becoming more efficient in the acquisition process. The interviewee saw no changes that would be necessary with the report as required in the current legislation. Therefore, he recommended no modifications to the requirement for the Acquisition Strategy Report.

4. Congressional Budget Office

The Congressional Budget Office (CBO) is an analytical, non-management arm of Congress. They perform quantitative analysis and synthesize data into generalizations for Congress to use in their oversight role.

The CBO deals only with the cost portion of the SAR and UCR. They do not analyze performance or schedule data. Also, as part of their primary responsibility, they only provide alternatives or options to Congress, rather than making recommendations.

The CBO reviews the SARs and presents a report to the Armed Services Committees. CBO uses the information in order to perform other basic analyses: (1) computing the costs of alternative program sizes and schedules, and (2) estimating five-year aggregate funding needs. [Ref. 11:p 3]

In the first instance, the CBO is frequently asked by the oversight committees to price alternative levels and rates of procurement. An example was cited earlier in this chapter regarding the decision to fund new starts or apply savings to full rate production. These estimates may be used by the committees to mark up the budget; that is, to test the reasonableness of the Administration estimates for requested quantities or to substitute funding for the committee's preferred procurement levels. Only the SAR provides enough detail to allow CBO to compute readily the learning curve assumptions inherent in Administration estimates and then to calculate the cost of alternative procurement quantities and schedules. [Ref. 11:p. 3]

In the second instance, CBO analyzes the Defense Budget using the SAR and UCR. The detailed information in the FYDP is used exclusively by the Executive Branch and is

not provided to Congress. CBO is able to model the FYDP by using various budget justification materials, including the SARs. CBO's analysis indicates how much aggregate funding may be required to support a given program and offers detail to support aggregate budget projections. The SARs provide the data for the analysis and model. [Ref. 11:p. 4]

The researcher interviewed a member of the CBO who works directly with the SAR and UCR when performing data analysis for Congress. He commented that the SAR is not a perfect document because it is written for too many users. The reports must satisfy Congress and its oversight role, and it must satisfy the analysts and their quantitative role. Without the detail, CBO cannot perform their function for Congress. [Ref. 13]

However, the interviewee felt that the SAR and UCR were the best documents available. They provide total program and cost variance information.

The largest problem with the SAR and UCR is that they do not match with other cost information that is provided by DoD. For example, the SAR will differ from Congressional Data Sheets, which are part of the budget justification and support the President's Budget to Congress. This can be caused by changes in assumptions, such as inflation, or computation errors in the program office.

He concurred that the cost variance categories are not always clear. They do not highlight cost overruns and they do not indicate trends in cost growth in any given area. The PMs can disguise many problems within the seven cost variance categories.

The interviewee discussed the background for the FY86 legislation. OSD made reductions in the SAR submission in 1983 without discussing the changes with CBO and GAO. OSD said they were making the changes to save time. However, the perception was that DoD was attempting to limit information to Congress. The result was that CBO and GAO convinced Congress to require all the original information and add production rate and operational/suppport data also. By asking for recommendations from all relevant parties, Congress hoped to resolve the problems with the SAR and UCR submissions.

The interviewee made some general comments that coincided with previous recommendations made by PMs, SECNAV, OSD, and the Congressional staffer. He recommended automation to streamline the administrative process of submitting the SAR and UCR. It would reduce the frustration level in updating such detailed accounting data and provide a standard format for all Services to use. He recommended deleting unnecessary and repetitive data. As data become irrelevant, it should be deleted.

The CBO report to Congress contained several recommendations which would improve the completeness, usefulness, accuracy and timeliness of the SAR and UCR. [Ref. 11;p. 4]

The SARs have excluded certain costs which should be considered part of the total system. For example, the December 1984 SAR excluded costs for the MX Missile (to develop flight test missiles, purchase all equipment for flight testing and research of base missiles totalling $4.6 billion) and the M-1 Tank (research and development costs for gun enhancement and armor-piercing cartridge development totalling $1.8 billion). The amounts were found by comparing the estimates in the SARs with footnotes in old SARs, and the Congressional Data Sheets and RDT&E Descriptive Summaries. Because such costs directly relate to the weapon system and are normally included in the SAR estimate for other weapons, the excluded costs should have been in the SAR for the MX Missile and M-1 Tank. [Ref. 11: p. 5]

Currently the SARs reflect the Navy ship programs only through the FYDP. They do not contain total system cost through the expected life of the program, as required by the SAR instructions. The Congressional Data Sheets for the Trident II Submarine, SSN-21 Submarine, SSN-688 Submarine and DDG-51 Destroyer contain $2.4 billion in advance procurement funds for ships to be procured in fiscal years beyond the FYDP, but the SAR does not reflect that cost. To

be consistent the SAR for ship programs should contain total program costs. [Ref. 11:p. 5]

The estimates in the SARs do not represent the current Administration budget. For example, on May 3, 1984, the Administration revised the budget submitted in February for fiscal year 1985. The revisions were not included in the SARs until a year later with the annual report. These changes could have been provided in the SARs to Congress on July 30, 1984 with a quarterly report. Therefore, cost estimates should be updated to reflect significant changes in estimates or policies relating to the annual budget approval. [Ref. 11:p. 7]

Unit cost threshold breaches of more than 15 percent above the baseline estimate of a given year were established in 1981 when inflation was much higher than it is now. The thresholds should be reconsidered, according to CBO, to reflect the decline in inflation rates. If a program estimate grew at a rate of 15 percent each year, the estimate would double in five years, quadruple in 10 years, and never exceed the thresholds for reporting unit costs. CBO recommended that the threshold be lowered to 10 percent or more, to reflect exception reporting for significant cost growth. [Ref. 11:p. 9]

The December SARs are submitted to Congress in two stages, an advance copy 30 days after submission of the President's budget and a final version within 30 days after

the preliminary submission. The advance SARs are often changed as a result of DoD and Service reviews of the data. Therefore, any analysis of the advance SARs has to be redone when the final versions are released. The interviewee recommended that the preliminary report be deleted and only a final copy be submitted 45 days after the President's budget. [Ref. 11:p. 10]

The interviewee felt that the CBO would not become involved with the Acquisition Strategy Report. Therefore, he provided no comments on its use or potential change.

5. General Accounting Office

The General Accounting Office (GAO) perceives the SAR and UCR as largely historical documents based on the official approved program. Thus, they do not reflect anticipated, cost estimate changes or show quantity changes under consideration.

The GAO uses the SAR and UCR in their auditing function for Congress. In that role, they would like to have more insight into the planning and decision-making process of DoD. Accordingly, they promote prospective information to included in the SARs and UCRs.

In their report to Congress in response to the FY86 legislation, they recommended that DoD disclose the total number of units it is considering for a program by providing a footnote when that number is different from the approved program reported in the SAR. UCRs should disclose any

anticipated cost growth that has not been included in the latest officially approved estimates. [Ref. 14:p. 2] DoD maintains that such estimates are likely to change and that several estimates related to the same anticipated change may exist within DoD at the same time. GAO suggested that DoD continue to report the approved program but provide a narrative section which describes matters under consideration which are likely to result in significant cost, schedule, or quantity changes. This would provide Congress with a better perspective on how firm the official approved program estimates are. [Ref. 14:p. 2]

GAO made three recommendations which would clarify the presentation of data. First, they suggested using graphs to display SAR data elements, such as total program costs, program unit cost, and total program quantity. These graphs would surface trends, identify matters requiring attention, and make the SAR easier to understand and use.

Second, GAO recommended using cost-quantity curves to track unit cost changes for authorized and funded units to measure current cost estimates against baseline estimates.

Third, GAO recommended developing program summaries that would provide a program overview that is readily understandable in revealing whether a project is on schedule and within its baseline cost estimate. [Ref. 14:p. 2]

All these recommendations are based on making the analytical data easier to use and understand. GAO believes that there is a need to undertake a long-term effort to overhaul, the Federal Government's financial management systems to correct many problems that characterize not only the SARs but other financial management systems within the Government. [Ref. 14:p. 2]

GAO, like the CBO, will not become involved with the Acquisition Strategy Report. Therefore, it will not be addressed in this portion of the thesis.

B. SUMMARY

This chapter reviewed the various uses of the SAR, UCR and Acquisition Strategy Report prepared by DoD. The PM uses the SARs and UCRs as ready references and the acquisition plan as a statement of objectives and on agreement with management. SECDEF also uses the SARs and UCRs as ready references and SECNAV uses the acquisition plan as a control document to ensure compliance with CICA. Congress uses the SARS and UCRs as oversight documents after they have been synthesized and generalized. Congress will also use the Acquisition Strategy Report as a compliance document for enhanced competition. The CBO and GAO, as the analytical non-management arms of Congress, use the SARs and UCRs for analytical purposes and to answer "what if" questions from Congress.

Each user group had different problems and recommendations for improving the reports. However, there are some common links between these problems and recommendations. These commonalities as well as unique issues will be analyzed in Chapter IV.

IV. DATA ANALYSIS

A. INTRODUCTION

This chapter will analyze the research data that have been gathered from current literature, legislation and personal interviews relative to the SAR, UCR, and Acquisition Strategy Report.

In reviewing the acquisition process, the researcher found that the PM faces many choices and risks. For example, the PM must decide whether to use concurrency with technical and operational evaluation testing, whether to use organic or inorganic maintenance philosophies, determine whether cost and schedule estimates are valid, or whether the contractor's performance capabilities are under or overstated. All these choices can impact the program relative to cost, schedule or performance.

Based on an analysis of the acquisition and budget process, the researcher found that there are certain controls or management systems instituted within the Federal Government which alert management to problems. The acquisition process has milestone decisions; however, they are infrequent considering the 20 year average acquisition cycle. The budget process uses annual funding approvals, but the POM and FYDP do not provide a picture of total program costs or an assessment of the program.

The SAR provides management reporting from a baseline and projects total program costs, but the report is considered by some users to be voluminous and too detailed. The UCR provides cost growth on an exception basis, but the threshold is thought by users to be either too high or too low. The Acquisition Strategy Report is generally thought of by users as a compliance report for enhanced competition.

All of the reports listed above provide DoD management and Congress with information on the progress of the weapon system. The researcher observed that there are common and unique problems associated with generating and using the various reports submitted to Congress. These problems and issues are presented and analyzed in the sections that follow.

B. THE SAR AND UCR

1. Diverse Interests

The SARs are status reports from the Department of Defense to the Congress on major acquisition programs. The reports include each program manager's best estimate of key cost, schedule and technical information from the program. They provide a basis for comparing current estimates with earlier planning, development, or production estimates.

Based on the researcher's review of the current legislature, significant increases in budget authority and outlays for defense investment programs in the President's

Budgets have brought increasing Congressional concern about cost overruns in the acquisition of weapon systems. One of the more comprehensive sources of data on the costs of major weapon systems is the SAR. The exception report, the UCR, alerts Congress to a certain level of cost growth. Reasons for the increases in cost include program stretch-outs, quantity reductions, management problems, inefficient production rates, and engineering changes.

The SARs are useful to the Congress only to the extent that they contain information relevant to Congressional interests. Specifically, the oversight committees of the Congress have expressed interest in the cost growth of major programs, adherence to acquisition schedules, and technical performance. The researcher observed that Congress uses the SAR and UCR information only after significant synthesis by the CBO.

The SAR and UCR, therefore are provided to two groups with different needs. The Congress uses the SAR and UCR for oversight purposes and as a political hammer during the budget process. The CBO uses the SAR and UCR as a research tool to analyze alternatives relative to choices between weapon systems.

There are other groups that use the SAR and UCR information. It is worthwhile to analyze their needs and problems associated with generating the report information.

The PMs use the reports as a ready reference for Congressional inquiries. They do not use it as a management tool or a decision document. The PM spends much time developing the acquisition strategy and preparing submissions for the acquisition process and budget process. He must attend hearings before Congress and defend his program for each budget year.

As the program develops, contractors provide status reports to the PM on technical progress, schedule, and funds expenditure through design reviews, progress reports and Cost/Schedule Control Systems reports.

The researcher observed that the PM generates information contained in the SAR and UCR through existing documents in the acquisition process, budget process and contractor progress reports. Also, data are updated annually as the program passes through acquisition milestones or develops new funding estimates for the FYDP. The SAR fixes a baseline when the program is designated as a major weapon system, and that baseline can only be changed with approvals as the system achieves acquisition milestones. Therefore, the SAR contains data from an historical perspective and from a future perspective.

SECNAV and SECDEF have authority to make decisions during the acquisition process and control funding through the POM process. They require summary data and an

assessment of the system to determine how well the system is expected to satisfy its mission.

SECNAV and SECDEF are concerned with resource allocation, especially in these times of a reduced defense budget. The SAR and UCR are too detailed for SECNAV and SECDEF to use in their decision process. However, they do use the report to monitor program progress. The acquisition milestone documents come infrequently (considering a 20 year average cycle) and the budget process only covers a five year projection.

As stated above, Congress uses the SAR and UCR only after it has been highly synthesized by someone else, either the staffs or CBO. It provides too much detail for a generalized review of the weapon system. Congress needs data in order to prioritize budget decisions and to evaluate how DoD is managing itself. With the thrust for enhanced competition, Congress also needs to assure compliance with CICA.

The researcher observed that the CBO is the primary user of the SAR and UCR. They use the cost data to answer "what if" questions from Congress and to recreate the FYDP, since Congress does not receive the detailed support data from DoD. However, the SAR can be inconsistent with the President's Budget and Congressional Data Sheets. Because there are conflicts, CBO cannot rely totally on the SAR and must do further research in order to verify some of the cost

information. Their primary interest is cost data which is available through support documentation in the budget, existing program management documentation, and contractor progress reports.

GAO is also interested in cost information in the SAR; however they also want insight into the planning and projections of DoD. They require quantitative information and also overview or summary information in order to perform their auditing role for Congress.. They prefer pictorial presentations, such as graphs, cost-quantity curves or summary sheets, in order to see trends in DoD management of weapon systems. The researcher observed that this summary concept would coincide with the Congressional oversight role. However, GAO's demand for management and internal decision documentation is contrary to the decentralization concept within DoD.

In summary, Congress uses the reports only after they have been highly synthesized. CBO uses the cost data for very detailed analysis, but they find conflicts and omissions and must verify data from other sources. GAO prefers more insight into the decision process and trend data through pictorial presentations. Based on these differing interests, the researcher observed that it is difficult for DoD management and Congress to decide what information should be included in the SAR and to what detail. The SARs must be short enough to be usable for

people who have little time to review them and yet they should present complete and accurate data which is not misleading.

2. Relevancy of the Data

The SAR and UCR contain very detailed data. The researcher observed that most users felt it could be streamlined or reduced to some degree.

Over the 19 years of its existence, the SAR has become larger and more detailed. It has been "additive" rather than changed. DoD originally designed the SAR to report on the progress in meeting designated cost, schedule and performance targets of a program, to focus management attention primarily on changes to the plan, and to highlight breaches of program thresholds. However, the SAR is now used by several groups with different requirements. The researcher found that users felt the SAR is very informative, but it is difficult to read and too complex. There is always the argument regarding how much detail to disclose; there is the problem of determining what the numbers should indicate.

There is a natural tendency for DoD and PMs to "tighten up" when Congress asks questions about a program. However, the researcher found that Congress appreciated honesty, truthfulness and factual information. The impression received from Congressional staffs was the more

Congress knows about a program, the more they will tend to support the PM.

When OSD made their major reductions to the SAR submission in 1983, it was perceived as limiting information to Congress. The reaction from Congress was to require all of the original information, add further requirements, and impose the requirements statutorily. Rather than review the report, the SAR and UCR were legislated in total. The incident in 1985 is another example of the additive nature of Government reports, rather than an objective evaluation of needs.

The researcher found after reviewing the SAR that information in the SAR is repetitive. Data are not deleted as a system progresses through the acquisition process. The SAR must address the system from day of origin and "rehash" that information with each report. Data can become irrelevant, such as early testing information when a program is well into production.

Baselines are established with the initial SAR. A baseline can only change as the system progresses into another acquisition phase. Even then, updating the baseline may be denied. The PM must extrapolate new cost, schedule and performance data from old baselines, making his job that much harder. As a result, current baselines may not be consistent with acquisition documents and budget submissions.

Timing of the data is very relevant. The SAR is required when a system is designated as a major weapon system, which can occur at any point in the acquisition process. Generally, the SAR is prepared at Milestone II when production cost information is available. Interviewees in OSD recommended that the SAR be provided no earlier than Milestone II, since data are ill-defined and subject to change. The Congressional staff member recommended that the SAR be delayed until after Milestone 0 for similar reasons.

Another problem identified by interviewees from DoD regarding SAR data is the fact that unit costs include development as well as production costs. By dividing the total program costs, including the research and non-recurring costs, by the number of units, there is a distorted view of the cost to produce each weapon system. The researcher observed that DoD personnel felt that unit costs should only consider production costs, since program development costs can vary so much from system-to-system.

A final point concerning relevancy of data is the level of various thresholds. The Congressional staffer suggested that Congress should view the SAR as an exception report, required whenever there is a significant variance from original estimates. This coincides with the Packard Commission recommendation for baselining. However, the

appropriate threshold would be difficult to define in terms of significant.

The quarterly report threshold is five percent change in total program costs or a three-month change in any schedule milestone. OSD recommended the thresholds be changed to 10 percent and six months, respectively. These thresholds would match DSARC thresholds where the DSARC chair must be notified and a potential management review be performed.

The UCR is required when there is a 15 percent increase in unit costs on a major contract. However, this percentage does not differentiate between cost growth due to inflation, increased scope, or change orders within the scope of the program. The CBO would like to see this threshold lowered to ten percent, since it can be adjusted annually, rather than over the life of the program.

Both the SAR quarterly reports and the UCR are submitted in breach situations. The UCR is developed from information contained in Section 12 of the SAR. The researcher observed that the exception reports could be combined, streamlining the administrative effort by the PM and still provide Congress with notice of a breach.

3. Accuracy

The researcher observed that there are problems with interpreting cost variance categories, inconsistent methods in preparing the reports due to a lack of training,

and a failure to update the SAR to coincide with the approved budget.

The PMs have a difficult time categorizing changes in program costs into the seven categories outlined in the SAR. As a result, they may apply costs to an area that is not appropriate. They also become creative accountants trying to make the numbers fit.

The PMs pointed out that there is a tremendous learning time required in order to prepare the SAR. Also, over 100 program offices each prepare the SAR. OSD stated that they spend time correcting tabular errors before the SAR is submitted to Congress. The researcher observed that there are many opportunities for mathematical and interpretive errors to occur in the report with so many offices preparing the report.

According to the CBO, the SAR can be inconsistent with other cost reports, such as the Congressional Data Sheets. The SAR omits relevant costs, like the examples given for the MX Missile and the M-1 Tank. Because of normal personnel turnover, the researcher found that the SAR is prepared by people who may not be totally familiar with its complexities.

According to OSD, the Services differ in their training programs to prepare PMs and their staffs to properly develop the SAR. The Air Force has an extensive training program, including a workshop that is given to each

PM. Navy and Army personnel are trained on the job. Because of this lack of central training, the SAR can contain errors in mathematical computations and interpretations of cost variance categories.

According to the CBO, the SARs are not consistent with the approved budget. The SARs must match the President's budget when it is submitted in February. However, the SAR is not updated to match the final budget until the next annual SAR submission. Thus, agencies like the CBO have conflicting data from DoD. This can create a perception of confusion and mismanagement by DoD.

4. Automation

The reports demand accuracy and completeness, since they are submitted to one of the highest levels within Government. OSD, which administers the reports, is concerned with ensuring that the reports are complete and follow the prescribed format. That is difficult when so many different people at different experience levels are preparing the reports. The preliminary reports typically contain errors in computations, which must be corrected within a very short timeframe.

Currently, there is no uniform hardware or software computer system that standardizes report processing. The PMs addressed the advantage of automation in updating cost information and preparing a consistent format; OSD acknowledged automation would help in coordinating all the

reports; CBO discussed the advantage of automation in providing data which matches other cost data reports provided by DoD. However, a system has not been instituted which would automate the SAR and UCR for all services.

Funds have been offered by Congress to automate the SAR. That offer was made to ease report generation. By making the PM's job easier, Congress would get better data and more acceptance of the reporting requirement.

5. Time of Submission

The users had mixed comments about the required due dates for the SAR and UCR. The PMs felt their time was compressed because of the various management layers the SAR and UCR must go through before reaching Congress. OSD has a major coordination effort from over 100 different program offices. They stated that they do meet the SAR deadline. However, they felt if graphs were required they would not be able to have each PM correct graphs in time to meet the due date. They did request that the UCR schedule be redefined as seven working days rather than seven calendar days.

The CBO recommended that the preliminary SAR be deleted since it is usually changed and replaced within 30 days by the final report. They also recommended the final report be submitted 15 days earlier.

The researcher observed that the PMs and OSD are under extremely tight deadlines, considering the number of

different program offices involved, the lack of automation and the sheer size and complexity of the SAR and UCR.

6. Pictorial and Summary Data

The researcher found the SAR and UCR to be a report of primarily numbers. Currently, the SAR and UCR contain no graphics or charts. GAO has maintained for many years that the SAR should provide graphs and summary data to make the information easier to use and understand.

OSD has rejected the idea of graphics. Since the SAR is prepared by approximately 100 different program offices rather than a central function, ensuring uniformity and accuracy would be nearly impossible. Errors in graphics would require correction by the originating office, and this could not be done within the present timeframes.

The researcher has found that the analytical arms of Congress, CBO and GAO are accustomed to preparing summary level charting, where PMs and DoD normally provide detailed numerical data. Therefore, the PMs would be submitting data in a format unfamiliar to them, adding to the learning process at the program office level. Also, summary data can tend to be conclusionary in nature. The PMs, if providing summary status of their programs would tend to report in a complimentary light, which may not match observations by the analytical groups within Congress.

7. Reporting Potential Program Changes

GAO has recommended that the SAR reflect anticipated, but not yet officially approved cost estimate changes or changes in quantities under consideration. DoD continues to disagree with any requirement to disclose options being considered during internal decision-making processes such as the PPBS or DSARC. Such items are reported when final decisions are made. Such items are likely to change, according to DoD, and there may be several estimates for the same change. GAO suggested providing the information with a footnote and updating with each submission.

The researcher observed that the SAR and UCR contain many explanatory notes already and data in the SAR is subject to several budgetary and milestone updates with each submission.

C. THE ACQUISITION STRATEGY REPORT

The acquisition strategy considers the weapon system in the acquisition process from cradle to grave. The acquisition plan provides objectives and a method of action for a total system or a specific segment of that system. The acquisition plan is internal to DoD and is updated as the system progresses through the acquisition milestones.

The acquisition plan is a control document for the PM. It sets a baseline for the system and can be considered a contract between the PM and management to develop and

produce a weapon system. If used properly, it can provide program stability for cost, schedule and performance parameters.

SECNAV and SECDEF are using the acquisition plan as a compliance document, to ensure that enhanced competition provides reduced costs. Because of Congressional concern over program cost growth and emphasis on competition, a report is now required from the SECDEF to Congress relative to using multiple sources in FSED and Production and Deployment.

As shown above, the acquisition plan is used as a control document and a compliance document. The researcher observed that the acquisition plan has the potential of other uses within the acquisition process.

SECNAV is compiling information relative to acquisition plan submission and compliance with CICA. The acquisition plan could become a data base for statistical major weapon system acquisition information. As advocates discover SECNAV's data base, they may request that information be compiled for their functional area.

The acquisition plan has become additive since its inception. The FAR added to the content, and the Services have expanded coverage and lowered thresholds. As a result, the plan is longer and is required more often. The plan covers business as well as technical decisions. However, SECNAV is placing more emphasis on the business

decisions, since technical decisions, such as testing, are covered in greater detail in other documents, e.g., the Test and Evaluation Master Plan. However, the plan currently requires a complete discussion of all technical and business aspects of the system. SECNAV may have a difficult time convincing the technical advocates to reduce or delete coverage in their functional area.

Congress does not receive a copy of the acquisition plan. With the new legislation, they will receive a report from SECDEF relative to competition in FSED and Production. That report will most likely be extracted from the acquisition plan. Most people interviewed felt that the intent of Congress was not to receive the plan, but to receive assurance that DoD is complying with CICA. Therefore, they saw no potential that the plan would become legislated. However, if this should happen, the plan would probably become vague and contain conditions and caveats.

The staffs felt that the plan was too detailed and sophisticated (e.g., acquisition language) for use by Congress. Congress needs synthesized data for its oversight role. The Acquisition Strategy Report will provide summary data to ensure enhanced competition will reduce program costs.

The researcher observed that DoD does not always provide relevant and complete information to Congress. As a result, Congress legislates data requirements and requires their

non-management agencies, CBO or GAO, to synthesize the data for them. DoD will have to avoid the tendency to be vague with Congress when submitting the Acquisition Strategy Report.

C. SAR/ACQUISITION STRATEGY REPORT SIMILARITIES

There are several similarities in the evolution, generation and use of the SAR and acquisition strategy.

Both reports were originally developed for internal DoD management control purposes. The SAR is now required by law and has been an item of conflict for several years. The acquisition plan has remained internal to DoD until the FY86 Authorization Act, which requires a compliance report extracted from the plan.

Both the SAR and the acquisition plan have become additive since inception, through regulation or legislation. Information is required for advocates of functional areas, analysts for quantitative reviews, and auditors for projections. Neither report has been reviewed for streamlining or consolidation.

The SAR is an historical document, with minimal assessment data. The acquisition plan is a prospective document. However, both documents contain data that appear to become unnecessary as the system evolves.

Congress is interested in how well DoD manages its total resources. The SAR provides total program cost,

schedule and performance information. The acquisition plan provides total program planning from cradle to grave. With these two documents, Congress can gain insight into DoD program management. However, based on interviews, both reports are too complex for Congress to use as submitted.

D. SUMMARY

This chapter has reviewed issues and problems associated with generating and using the SAR, UCR and Acquisition Strategy Report. General observations have been made relative to the diverse interests, relevance and accuracy of data, and automation of the SAR and UCR. The acquisition plan has been evaluated as far as its current use as a control document and potential use as a data base and legislative report. Similarities between the SAR and acquisition plan were addressed. Chapter V will provide conclusions and recommendations based on the analysis in this chapter.

V. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

The following conclusions were developed as a result of the research effort.

There is no other documentation that provides management information to the level of detail or in the form as the SAR and UCR.

The SAR provides historical data an prospective data for the total program. Cost, schedule and performance goals are defined and monitored. Management is made aware of cost growth, schedule slippage and poor performance through routine and exception reporting. Without the reporting systems Congress would not be able to judge DoD's management system. Also, there would be little incentive for the PM to report negative results or interservice rivalry.

Congressmen and their staffs do not use the data from the SAR and UCR as it is submitted.

Congress needs highly synthesized data in an aggregate state in order to perform their oversight role. The CBO and GAO, the non-management arms of Congress, perform analysis and generalizations of the data in recommending alternatives for budget prioritization.

Data contained in the SAR and UCR can be irrelevant, inconsistent or inaccurate.

The SAR has become additive and also requires "rehashing" information from the initialization of the program. Baselines are not current with other documents in the acquisition or budget process. Costs do not match with other reports from DoD, such as the Congressional Data Sheets. Cost variances are difficult to categorize and encourage creative accounting.

The SAR and UCR are not automated under one standardized computer package.

The PMs prepare the SAR or UCR using their own programs or using no automation at all. This adds time and confusions when over 100 program managers are submitting the reports to OSD.

The SAR and UCR try to satisfy too many users with different interests.

Congress needs synthesized data in order to perform their oversight role to ensure that public funds are spent properly and efficiently. SECNAV and SECDEF, as the decision makers for a weapon system in the acquisition process and PPBS, require assessment data to prioritize resources. CBO and GAO require detailed cost information in order to provide analytical support to Congress.

Designing one output to meet the needs of several users with diverse needs is not practical.

Data in the SAR and UCR, if submitted prior to Milestone II are too ill-defined and are too frequently revised to be applicably used.

The SAR must be submitted for a system whenever it is designated as a major weapon system. This can occur at any time during the acquisition process. Weapon system documentation prior to Milestone II does not contain production cost estimates or well-defined program data.

It is not necessary to have two separate exception reports for breach of thresholds.

The UCR and SAR Quarterly Exception Reports are both submitted when there has been a breach of cost growth. Both reports are provided to the same users.

The Acquisition Strategy Report is provided for compliance with existing competition legislation and will probably not be expanded.

The Acquisition Strategy Report will provide an assurance to Congress that DoD is pursuing competitive practices whenever practicable. The philosophy is that enhanced competition will reduce weapon system costs. The Report, which is extracted from the acquisition plan, will address the intent of DoD to apply the philosophy to weapon systems acquisition. The acquisition plan is a document that is acquisition-specific and beyond Congressional needs.

Breach thresholds should be evaluated for a more appropriate level. This would include the cost and schedule

threshold for the total program cost within the SAR and the weapon system unit cost within the UCR.

The five percent threshold for breach of total program costs (requiring a quarterly SAR report) should be raised to ten percent to match DSARC thresholds for program review. The 15 percent annual change in unit cost (requiring a UCR) should be adjusted to reflect constant dollar thresholds. Annual adjustment to thresholds based on projected inflation rates is unnecessarily complex.

Graphics and summary data should be performed by CBO and GAO and not be made a part of the SAR or UCR.

The CBO and GAO, as analytical groups, are highly trained analysts who are familiar with graphics and charting. They are also required by Congress to synthesize data and provide alternatives and recommendations. They would be better able to analyze and summarize data without the prejudicial viewpoint of the PM.

DoD is currently not equipped or trained to provide graphic displays, especially given the short timeframe for submission of the reports.

Prospective program data should not be included in the SAR or UCR.

If DoD provided prospective data relative to estimated cost changes or quantity changes, it would require more explanations and more updates for a report that is already overloaded with explanations. The report as it is prepared

today already is not updated often enough to suit CBO or GAO. The program office would not be able to accommodate the changes in the program that are initiated but never approved, Prospective data would only add to the confusion of too many numbers already.

B. RECOMMENDATIONS

The following recommendations are relevant for this research effort.

The SAR should be retained as a management report, but it should be streamlined, cleared of inconsistencies, and automated.

The SAR provides a more timely update for program status than the acquisition milestone documentation and projects costs for the total program through production and deployment.

The SAR and UCR should be reviewed for irrelevant, inconsistent or inaccurate data.

The SAR and UCR should be reviewed to simplify and streamline the data, and avoid additive data. Irrelevant information should be deleted as the system progresses through the acquisition process. Extensive training programs should be instituted at the OSD level for all Services in order to assure consistency in preparing the reports. There should be a concurrence on application of the cost variance categories during the training program.

The SAR and UCR should be automated to provide a central hardware and software package for all PMs to use.

Automating the SAR and UCR would reduce administrative efforts and provide consistency in report submission. Also, a graphics package could be procured, with concurrence from CBO and GAO, that would satisfy their summary data requirements.

The SAR should not be required until after Milestone II.

Even though the legislation requires a SAR submission when a system has been designated as a major weapon system, the relevant and stable program data does not occur until after Milestone II. Therefore, submitting any data earlier will only serve to have Congress involved prematurely.

The UCR could be combined with the SAR Quarterly Reports for submission to Congress.

The SAR Quarterly report, required for a five percent breach in total program costs, and the UCR, required for a 15 percent breach in unit costs could be combined under one exception report submission by the PM. This consolidation would reduce administrative efforts and still provide the exception notification to Congress.

The Acquisition Strategy Report should remain as written with no expansion of report data.

The Report meets the requirement of compliance certification by DoD. Any additional information would go beyond the scope of CICA

C. ANSWERS TO THE RESEARCH QUESTIONS

The primary research question was: How are major weapon systems acquisition reports utilized by Congress, and how might these reporting requirements be accomplished more efficiently and effectively?

Congress utilizes the SAR in a highly synthesized, aggregated format in order to make budget decisions and evaluate DoD management. Congress uses the UCR as an exception report when costs of a program grow beyond an acceptable threshold. Congress uses the Acquisition Strategy Report to ensure compliance with competition initiatives.

The reporting requirements can be streamlined to reduce repetitive, additive data. The reports could be combined (e.g., the UCR and quarterly reports) to reduce administrative effort. The reports could be automated to be more efficient and consistent.

The subsidiary questions were:

1. What is the effect on the development, execution and change of major weapon systems acquisition because of the reporting requirements to Congress?

The development, execution and change of major weapon systems acquisition is impacted by the reporting requirements to Congress. With total program costs available to them, Congress can gain insight into DoD management of resources. Congress can ask their analytical groups to

hypothesize and provide alternatives for budget decisions. Affordability, program stability, new starts and baselining are all current issues which are evaluated through reports submitted to Congress.

The Acquisition Strategy Report is a compliance report and merely reinforces what is already being advocated within DoD and the Military Services. Both SECNAV and SECDEF have initiated increased emphasis on competition in the early stages of the acquisition process. The Acquisition Strategy Report confirms those initiatives to Congress.

2. What are the major issues and policy decisions surrounding the reporting requirements?

The SAR was originally developed by DoD as an internal control document. In 1967, Congress legislated the report as part of their oversight role. Because it was perceived that DoD was trying to limit information to Congress with their major reductions in the 1983 SAR, Congress legislated the format of the SAR and UCR and requested recommendations from all relevant parties to make the SAR and UCR more effective.

The UCR was created because Congress felt that the SAR was too voluminous to recognize when a program was experiencing significant cost growth. In 1982 the Nunn-McCurdy Amendment required the UCR as an exception report for certain breach situations.

Congress wants assurance that enhanced competition is reducing program costs. With the FY86 Authorization Act,

Congress required the Acquisition Strategy Report, to assure compliance by DoD with competition initiatives.

3. Are the reports in fact submitted, and are they timely and accurate?

The reports, because they are legislated are submitted to Congress on time. However, they are not always accurate. Major programs have omissions in total costs; the reports are not consistent with the President's budget; and cost variance categories are misinterpret.

4. Should the reports be enhanced or eliminated?

Given the absence of the reports, there would be no measure of whether cost, schedule and performance parameters were correctly defined, or that overruns, slippage or poor performance were brought to higher management for correction. Therefore, the reports should not be eliminated, since there are no other systems that would perform the management reporting function. They could be enhanced by automation, summary data and graphical displays.

The Acquisition Strategy Report need not be enhanced since it is serving the purpose of compliance with competition initiatives. It could be eliminated as competition in the FSED phase of the acquisition becomes standard business practice.

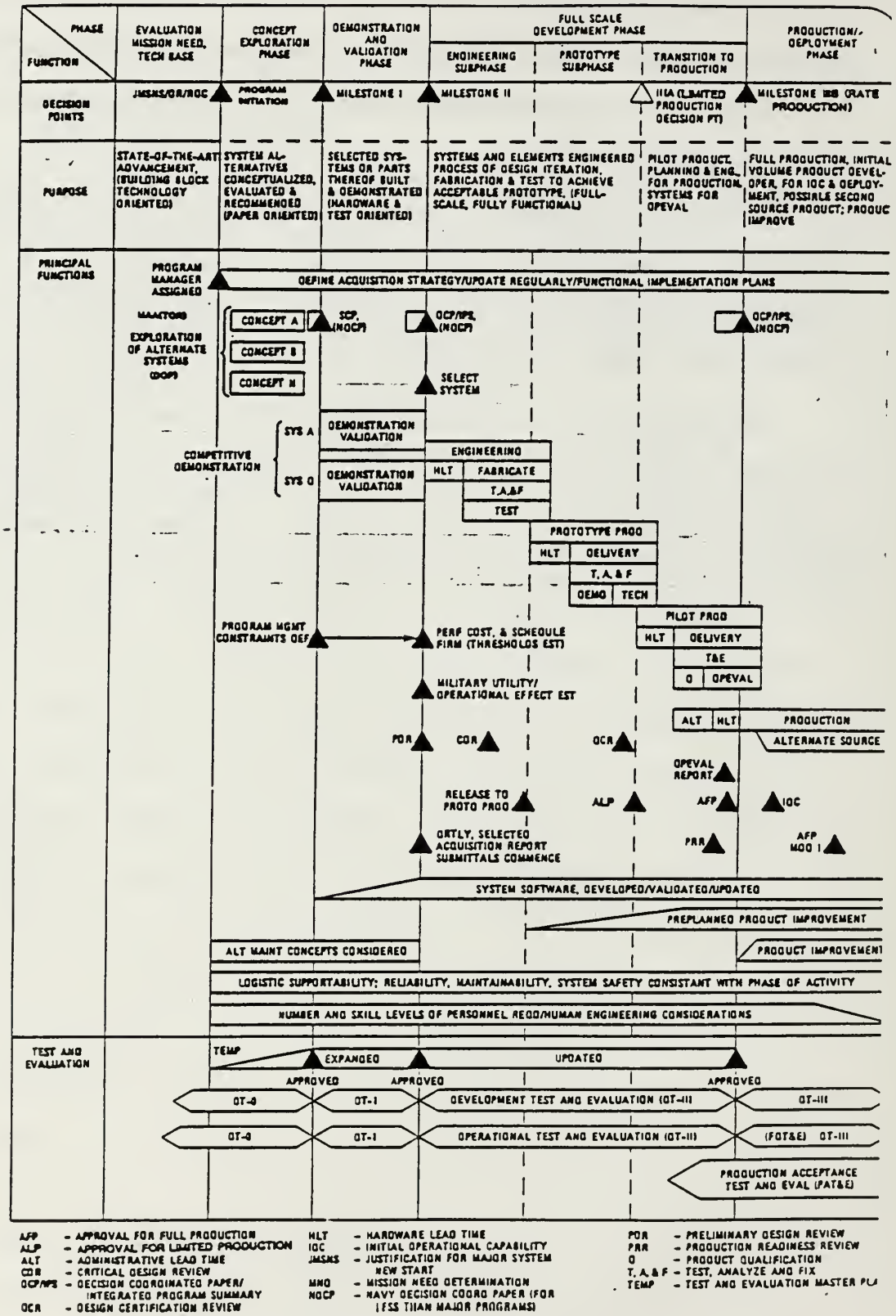
D. AREAS FOR FURTHER RESEARCH

Several items could warrant further research. They involve data computation, data presentation and thresholds.

The cost variance categories seem to be the most controversial item in the SAR. A separate study could be performed to align the categories with programmatic problems in cost growth.

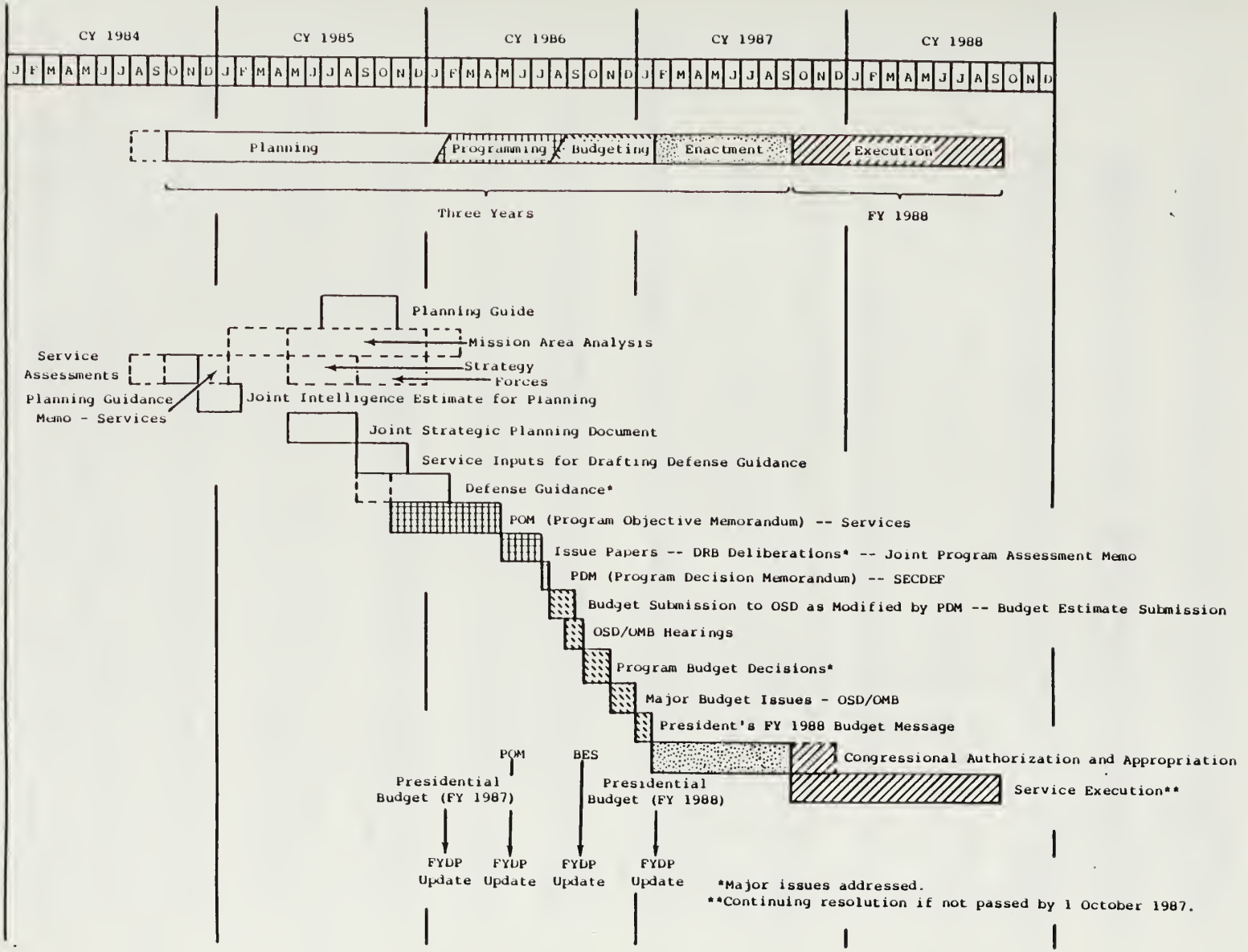
GAO has recommended several times that the SAR contain graphical presentations and cost-quantity curves. A graphics package could be developed for PMs and OSD to utilize for preparing the SAR.

The Acquisition Strategy Report involves a very small portion of the acquisition plan. However, the plan has become additive, just like the SAR. A separate study could be performed to streamline the acquisition plan.



MAJOR WEAPON SYSTEM ACQUISITION PROCESS

SOURCE: NAVY PROGRAM MANAGER'S GUIDE, 1985 EDITION



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