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Report to the Chairman, Committee on Governmental Affairs
United States Senate

July 1986

ACQUISITION

DOD's Defense Acquisition Improvement Program: A Status Report

GAO/NSIAD-86-148

GAO

United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

B-221205

July 23, 1986

The Honorable William V. Roth, Jr.
Chairman, Committee on Governmental Affairs
United States Senate

Dear Mr. Chairman:

As you requested, we reviewed the Department of Defense's (DOD's) implementation of the Defense Acquisition Improvement Program that was instituted in 1981. It consisted of 32 management initiatives to address longstanding problems with major weapon systems acquisition, including significant cost overruns and schedule slippages In 1983, DOD focused high-level management attention on the initiatives involving (1) program stability, (2) multiyear procurement, (3) economic production rates, (4) realistic budgeting, (5) readiness and support, and (6) competition. In 1984, DOD added an additional initiative involving ways to enhance the defense industrial base.

We found that although the initiatives have not fully achieved their intended results, there have been improvements in the acquisition process.

- DOD has achieved cost savings, but their magnitude is uncertain. Also, claimed savings are sometimes overstated and DOD needs to improve its estimating and reporting of savings.
- DOD seems to have improved its cost and schedule estimating capabilities. However, since most cost growth and schedule slippage problems have historically occurred after the full-scale development phase,[1] it is too early to assess the long-term impact these improvements will have on the systems that entered this phase during the 1980s after the improvement program began. A complete assessment would compare the total acquisition experience of systems beginning development before the improvement program in the 1970s with those beginning development after the improvement program in the early 1980s
- DOD and the Congress have recently taken actions intended to result in more reliable and supportable weapons, thus improving readiness. Whether these actions will actually result in more reliable and supportable weapons will not be known until they are deployed—10 to 15 years from now.

[1]Full-scale development is the phase in the acquisition cycle in which the program go-ahead decision is made based on demonstration and validation of the initial concept The decision as to whether to produce the weapon system follows full-scale development

- DOD's industrial base initiative is too recent to have a measurable effect. However, DOD has incorporated under this initiative, certain actions to enhance the industrial base which were begun before this initiative was announced in 1984. We have recently recommended actions to DOD for improving its management of some of these efforts.
- DOD has made little progress in stabilizing weapons acquisition programs. DOD still needs to budget more realistically, limit the number of new programs, and eliminate marginal programs.

We could not directly attribute the acquisition improvements noted so far solely to the initiatives because (1) they have not been fully implemented and (2) other factors outside DOD's control, such as the state of the overall economy, influence the acquisition process. We observed other factors which we believe must be addressed in future improvement efforts, including the need for a continuing top level commitment to improvement which must be translated into actions and results at the program office level.

This report provides an overview of the status and results achieved under the improvement program. A follow-on report will address each of the 33 initiatives in detail. In addition, we will be reporting separately on the results of our questionnaires to government and industry program managers who provided their perspectives on the improvement program. We also provide the results of our questionnaire to government managers in this report where appropriate.

Magnitude of Cost Savings Uncertain

We believe that DOD has achieved cost savings and that further savings are possible if certain initiatives are fully implemented. DOD has claimed cost savings of several billion dollars resulting from the implementation of several initiatives, including those related to procuring weapons on a multiyear basis, using more economic production rates (EPRs), increasing competition, and encouraging investment in the defense industry. However, the magnitude of cost savings achieved to date is uncertain because much of the savings are estimated for future years and may be overly optimistic. Furthermore, the techniques for estimating savings are sometimes faulty and not well defined, leading to inconsistencies in how benefits and cost information are reported.

DOD's Estimates of Cost Savings Are Sometimes Overly Optimistic

Estimating cost savings associated with DOD's actions to improve the acquisition process involves projecting the effect of these actions into the future since major systems' acquisition cycles generally span many years DOD's estimates are sometimes overly optimistic as shown by the following examples.

- In 1982 DOD reported a projected savings of about $1 5 billion anticipated from buying weapons produced at more economical rates during fiscal years 1981 through 1984. However, the actual savings claimed through fiscal year 1984 were about $1.25 billion, about $260 million, or 17 percent, less than the earlier estimate.
- The Industrial Modernization Incentives Program is a major effort to enhance the industrial base and reduce the cost of weapon systems. Although this program was initiated well before the industrial base initiative was announced, DOD has included this effort under the acquisition improvement program. We have reported[2] that program benefits are uncertain, and that the program's effectiveness cannot be accurately measured because some program offices do not document or include in their weapon systems' budgets the program's cost benefits A major reason for the uncertainties was that projected benefits can change substantially before actual contractor investment. For example, savings estimates under this program for the B-1B bomber declined approximately 94 percent from $400 million in June 1983 to $25 million in March 1985, as the program approached its final phase. Overall, we found that more than $4 billion of the $6 billion reported savings were subject to change because they were early projections of expected savings through the early 1990s.

DOD Needs to Improve Its Estimating and Reporting of Cost Savings

Methods for estimating cost savings are imprecise because they entail forecasting future events and comparing results of actions taken to what could have occurred had these actions not been taken. However, DOD can improve its techniques for estimating cost savings We have found that in some cases DOD's techniques are faulty, and in other cases, the Office of the Secretary of Defense (OSD) has not provided adequate guidance to the military services for estimating and reporting costs, benefits, and savings The following examples illustrate these problems

- DOD's estimates of cost savings associated with EPRs are not reduced by costs incurred when some major systems are funded below economic

[2]DOD's Industrial Modernization Incentives Program An Evolving Program Needing Policy and Management Improvement (GAO/NSIAD-85-131, Sept 6, 1985)

rates to provide funding for other systems for which EPR savings are claimed. For example, an early internal working group report dated November 17, 1983, stated that preliminary fiscal year 1985 budget submittals had reduced quantity buys on 25 programs below earlier plans, which could increase the cost of these programs by $3.5 billion. The report further stated that this amount was not offset against an estimated savings of $2.6 billion, as reported in DOD's May 1983 Economies and Efficiencies Report. According to DOD, program quantity reductions can occur for several reasons, such as technical problems, in addition to funding other systems at more economic rates when budgets are reduced. However, we believe the November 1983 report clearly indicates that DOD reduced program quantities below earlier plans primarily to fund other systems economically, leading to uneconomical production rates and higher costs for the programs reduced. Consequently, since these costs have not been considered in determining EPR savings, we believe the reported savings are too high and could be nonexistent.

- DOD can use economic production data more effectively in the budgeting process. We found that OSD has not provided adequate guidance to the military services for computing weapon unit costs associated with alternative production rates. This has led to inconsistently reported production data, and has limited the data's usefulness in the budgeting process for making program comparisons and funding trade-offs. We recently recommended[3] steps which the Secretary of Defense should take to enhance the usefulness of economic production data.
- We have recently reported on dual sourcing—a competitive procurement technique which splits contract awards for a product between two or more sources, with the larger share usually going to the supplier offering the lower price. Two of our reports[4] analyzed dual sourcing for the IR Maverick and the high speed antiradiation missiles (HARM). We concluded that assumed savings from dual sourcing could not be substantiated for the Maverick, and that there could be little assurance that dual sourcing the HARM would be cost effective. We also found that results of various DOD analyses of the HARM dual sourcing decision varied widely, and DOD had not provided adequate guidance for analyzing these decisions. Additional guidance will not totally eliminate the varying results of dual sourcing analyses due to the uncertainties involved, such as the costs that would have been incurred by the single supplier had dual sourcing not occurred. Since our reports, OSD has

[3]DOD Can Use Economic Production Data More Effectively (GAO/NSIAD-86-37, Jan 28, 1986)

[4]Transmittal letter and statement of facts on the United States Air Force's IR Maverick Program from the Director, GAO Institute for Program Evaluation to Senator David Pryor, May 4, 1983, and Analysis of HARM Procurement Strategies (GAO/NSIAD-83-59, Sept 12, 1983)

developed a model for analyzing the dual sourcing decision, and was making it available to the military services at the time of our review. Despite the uncertainties surrounding dual sourcing cost benefits, we believe that dual sourcing can reduce costs. For example, we reported[5] that the Army and Marine Corps had saved $15 million in fiscal year 1985 due to competition between two contractors, and that they could potentially save an additional $20 million in fiscal year 1986. However, dual sourcing decisions must be carefully analyzed on a case-by-case basis.

Acquisition Schedules Are Slipping Less

To evaluate DOD's progress in alleviating weapon system schedule slippages since the improvement program, we compared the schedule slippage experience of systems beginning full-scale development before (1970s) and during (1980s) the improvement program Our analysis shows that schedules of weapons in early development during both periods slipped when compared with planned estimates. However, schedule slippages have become smaller for the 1980's systems. Despite this, past experience indicates that schedule slippages continue to occur as systems proceed through and beyond full-scale development. At that time, unforeseen technical or funding problems begin to occur which affect initial schedules. Therefore, we analyzed the 1970's systems through 1984 as an indicator of what could lie ahead for the 1980's systems. This analysis shows that about 30 percent of the total schedule slippages experienced by the 1970's systems occurred during the 1980s (See app. III for additional details.)

In implementing the improvement initiatives, the Deputy Secretary of Defense cited two specific initiatives to shorten acquisition time by alleviating schedule slippages—emphasizing preplanned product improvement and obtaining adequate funding for test hardware. However, several other initiatives, such as acquiring weapons in larger, more economical quantities and improving program stability, can also shorten the acquisition time

We could not determine the extent that preplanned improvements have been implemented because funding for them is not always separately identified in budget documents. According to our questionnaire results, government managers responding had incorporated or were planning to incorporate preplanned improvements in 38 (about 70 percent) of 54

[5]Potential Dollar Reductions to DOD's Fiscal Year 1986 Missile and the Lightweight Multipurpose Weapons Procurement Programs (GAO/NSIAD-85-138, Sept 9, 1985)

programs. Most of the 16 program managers with systems in production incorporating preplanned improvements reported favorable results.

The objective of the initiative to provide adequate front-end funding for test hardware was to shorten acquisition time without substantially increasing risks Acquisition time was to be shortened by having enough test versions of the weapon to permit concurrent rather than sequential testing of performance, reliability, and other characteristics. We recently reported[6] that test schedules of weapon systems were constrained, in part, by too few prototypes available for testing. As a result, expensive retrofits were required to correct problems identified during operational testing performed after the production decision was made. DOD has revised its policies to emphasize the importance of having adequate test hardware.

Weapons Support and Readiness Receiving Increased Emphasis

DOD and the Congress have recently taken actions intended to result in more reliable and supportable weapon systems Several initiatives in the acquisition improvement program are intended to improve weapons' support and readiness. For example, those relating to emphasizing readiness objectives early in the acquisition cycle and giving them equal priority with the other major acquisition objectives, including cost, schedule, and performance. These initiatives also address providing contractors with incentives to improve weapon systems reliability and maintainability, giving weapon systems program managers more control over support resources, and improving reliability and support for certain weapons selected for an accelerated acquisition schedule. Whether these DOD and congressional actions will result in more reliable and supportable weapons can only be conclusively determined when weapons are deployed. This will not occur for several more years because DOD actions have focused on weapons in early development which precedes deployment by 10 to 15 years.

DOD actions have focused on revising its acquisition policies to give weapons support considerations, such as reliability and maintainability, equal priority with cost, schedule, and performance. According to our survey of program managers, weapons support is receiving more emphasis in the acquisition process. Other DOD policy changes, such as those designed to ensure that weapons with accelerated acquisition

[6]Production of Some Major Weapon Systems Began With Only Limited Operational Test and Evaluation Results (GAO/NSIAD-85-68, June 19, 1985)

strategies place emphasis on design requirements for reliability and supportability, have not always resulted in improvements. For example, our 1985 report[7] on this issue concluded that several major systems we reviewed began production without having adequately demonstrated that performance requirements, including reliability, were met in a representative operational environment. As a result, expensive retrofits were required to correct problems identified during operational testing performed after the production decision was made One program, the Sergeant York, was canceled after 64 weapons costing $1 8 billion had been produced and delivered because, according to the Secretary of Defense, independent operational tests showed that the system could not be relied upon to meet the military threat.

Recent legislation directing DOD to use warranties has provided additional incentive for contractors to improve reliability. Warranties contractually require contractors to deliver weapon systems that conform to essential performance requirements as specified in the production contract, and are free from all defects in materials and workmanship. We are currently reviewing DOD's implementation of the warranty legislation.

Defense Industrial Base Enhancements

In June 1984, the Deputy Secretary of Defense directed that a new industrial base initiative be instituted and that it receive high priority The defense industrial base consists of the private firms and government facilities that produce weapon systems and other items for DOD. The objective of the initiative is to enhance industrial base responsiveness to DOD's needs.

DOD reported in June 1985 that expenditures for major items—equipment, buildings, and land—have increased substantially over the 9 years through 1983, and that this increase has been greater in the defense sector than in the nondefense sector. According to DOD, this indicates that the defense industrial base is being enhanced since industry investment in major items is a significant measure for gauging improvements in this area We are evaluating the findings of DOD's report Although major investments in the defense industry have increased, our preliminary findings indicate that, contrary to DOD's findings, investments in the nondefense segment may be proportionally greater.

[7]See footnote 6

Although we cannot link any improvements in the industrial base to the industrial base initiative under the acquisition improvement program, we believe that the initiative's effect has been minimal due to the fact that this initiative is recent, and the effect of DOD's actions under the initiative are long term. However, we have reported[8] that several key elements related to this initiative can be better managed and that DOD can improve its industrial preparedness planning

Rate of Cost Growth Is Declining, but Will Improvements Continue?

DOD has reported substantial progress in reducing the double digit cost growth experienced in the early 1980s for major systems acquisitions, and has cited a 1984 Congressional Budget Office study to corroborate its claims. This study, based on the Budget Office's analyses of DOD Selected Acquisition Reports, reported a decline in cost growth from around 14 percent in 1980 to 1 percent in 1983

While our analysis was not strictly comparable to the Budget Office's, we found that major weapons beginning full-scale development in the 1980s since DOD instituted the improvement program have experienced cost growth However, our analysis also suggests that the cost growth for these weapons may be less than the cost growth experienced by weapons beginning full-scale development in the 1970s before the improvement program Our analysis shows that cost growth, excluding inflation, for weapons in early development during the 1980s was less than the cost growth of comparable weapons in the late 1970s. The question then becomes whether the improvement in the 1980's systems will continue as these weapons are further developed. In the past, weapons have experienced their most significant cost growth later in the acquisition process when technical, funding, or other problems have surfaced. Our analysis of the 1970's systems shows that over 79 percent of the cost growth experienced by these systems occurred during the 1980s. Since the comparable period for the 1980's systems that we analyzed in early development will occur during the 5-year period after 1984, most of the cost growth could lie ahead for these 1980's systems. (See app. III for more discussion.)

[8]DOD Manufacturing Technology Program. Management Is Improving but Benefits Hard to Measure (GAO/NSIAD-85-5, Nov 30, 1984) Overview of the Status of the Defense Industrial Base and DOD's Industrial Preparedness Planning (GAO/NSIAD-85-69, May 23, 1985). Assessing Production Capabilities and Constraints in the Defense Industrial Base (GAO/PEMD-85-3, Apr 4, 1985)

DOD Has Made Little Progress in Stabilizing Weapons Acquisition Programs

When the improvement program was announced, the Deputy Secretary identified DOD's ability to stabilize the acquisition process as the key to achieving many of the program's potential benefits. This issue became the focus of the program's fourth initiative, and was one of the six areas cited in 1983 for high level management attention.

We were unable to identify a generally accepted definition of program stability However, stable programs generally proceed through the acquisition process on schedule, within cost targets, and meet performance requirements; unstable programs do not Program instability leads to uncertainties about the future that foreclose opportunities to achieve efficiencies in the acquisition process For example, the planning for production at the factory is done several years in advance of production to acquire the necessary plant capacity and equipment to produce needed quantities efficiently. Weapon systems cannot be produced at the most economical rates when production quantities do not use this plant capacity efficiently. Increased costs and inefficiencies occur when the quantities being produced result in expensive plant and equipment being idle. Frequently, production quantities of unstable programs change from year-to-year, precluding efficient plant use

Despite overall large budget increases and initial top level management support, the consensus is that little progress has been made in stabilizing the acquisition process. About 45 percent of the program managers responding to our questionnaire considered their programs unstable as compared to about 40 percent who considered their programs unstable at the beginning of fiscal year 1983. Likewise, DOD's analyses have shown that about 43 percent of the programs DOD tracks have been unstable during both fiscal years 1984 and 1985 budgets. In these analyses, DOD considered a program unstable if the planned procurement quantities in the President's budget request were more than 5 percent below the quantities projected in the previous year's budget request.

We believe that a primary cause of program instability is DOD's inability to submit realistic and affordable defense programs and budgets to the Congress for the development and procurement of weapon systems DOD has historically submitted budgets that are optimistic because they have not always included all expected costs, or provisions for the technological risks associated with acquiring high technology weapons When overly optimistic budgets are approved by the Congress, often at even lower levels than requested, program instability can result In these cases, contractors are unable to fully meet schedules due to inadequate

funding. To correct this, either additional funds are requested, or schedules are adjusted and programs are cut back to stay within approved budgets.

Our survey of program managers shows that funding adjustments contribute to program instability. Most of the program managers we surveyed reporting unstable programs attributed this to adjustments by DOD and the Congress to their system's 5-year plan and budgets. Conversely, most of the managers with stable programs attributed their success, in part, to adherence to the 5-year plan and adequate funding Although the acquisition program includes several initiatives to improve budgeting, DOD has not fully implemented these initiatives. (See app. IV.)

To improve the stability of the defense acquisition process, DOD recognizes that it must not only budget more realistically, but also establish priorities so as to limit the number of new programs and terminate low priority programs. DOD has reported progress in limiting the number of major new programs. However, we believe this was achieved, in part, because DOD, in 1982, doubled the minimum cost thresholds that define major systems. Consequently, fewer new starts are considered major under the revised higher thresholds. According to OSD, there were 19 major new starts under the new criteria from fiscal years 1983 through 1985. Our analysis using the old criteria showed that there were at least 29, and could have been as many as 43, major new starts. We could not determine the precise number because the DOD budget documents used in our analysis did not always specify total estimated program costs. Also, OSD has reported that the inability to cancel low priority programs continues to be a fundamental obstacle to improving program stability.

To create an environment which fosters program stability, DOD needs to establish priorities, budget more realistically, adequately fund the higher priority programs, begin only major new programs that are affordable, and terminate low priority programs. We believe these actions are more imperative than ever in today's environment of increasing emphasis on budget reductions under the recently passed Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177), more commonly referred to as the Gramm-Rudman-Hollings Act.

Another factor which we believe indirectly hinders stability is frequent personnel changes at the program manager/deputy program manager level In responding to our questionnaire, 24 (about 31 percent) of the 78 program managers reported that their and their deputies combined

experience on the program in either of these positions did not cover the past 2 years

The program managers averaged approximately 27 months experience on their current program as either the program manager or deputy program manager The deputies had approximately 30 months of experience on their current program as either the deputy or the program manager. The average experience differed by service as shown in table 1.

Table 1: Average Number of Months of Program Manager Experience

Current position	As program manager	As deputy program manager	Combined experience
Program manager:			
Army	19 1	3 0	22 1
Navy	28 0	7 6	35 6
Air Force	19 3	3 8	23 1
Average[a]	22 4	5 0	27 4
Deputy program manager:			
Army	1 6	40 8	42 4
Navy	0 5	27 0	27 5
Air Force	•	23 9	23 9
Average[a]	0 6	29 5	30 1

[a]Averages are weighted to consider the different numbers of managers and programs in each service The averages are based on 77 program managers and 75 deputies who provided tenure data

These periods of experience are relatively short considering that the typical weapon systems acquisition cycle spans 10 to 15 years. According to the Assistant Secretary of Defense for Acquisition and Logistics, short tenures can lead managers to sacrifice quality of the weapon system for near-term results. Our report[9] dealing with key program management personnel discusses tenure options in greater detail

In commenting on our report, DOD officials stated that the Congress has contributed to program instability by authorizing successively lower levels of resources below approved planned levels each year since 1981 While the Congress has reduced DOD's requests since 1981, the Congress has also approved what amounts to nearly a 100-percent increase in DOD's procurement budget from fiscal years 1980 to 1985—the largest peacetime increase in this Nation's history. Furthermore, we believe that

[9]DOD Acquisition Strengthening Capabilities of Key DOD Personnel in Systems Acquisition (GAO/NSIAD-86-45, May 12, 1986)

DOD must continually seek ways to better manage its acquisition and budgeting processes in the real environment of economic and fiscal uncertainties.

Other Factors to Consider in Future Improvement Efforts

Our analysis of the improvement program's implementation indicates that the program has improved the acquisition process, and further improvement will require continued emphasis and monitoring by OSD top management, and commitment from the military services to implement the program. Indicative of what can be accomplished when this occurs are successes achieved in multiyear procurement, such as savings resulting from the use of a multiyear contract on various subsystems of the Air Force's F-16 aircraft.[10] We found that the commitment to the improvement program has waned. While it may not be practical to reinvigorate the entire program, DOD should renew its efforts to implement those aspects of the improvement program having the greatest potential.

During our review, we observed the following factors which any future improvement program must address to be more successful.

- The need for a strong continuing commitment to reform.
- The difficulty in translating top level commitment into actions and results at the program office level.

We believe these factors have hindered the improvement program's implementation as discussed below.

Acquisition Improvement Program Lacks a Strong Continuing DOD Commitment

We believe that the initial sense of commitment to the improvement program has dissipated. A strong DOD commitment is particularly crucial to achieving results because the problems being addressed are long-standing and not amenable to ready solutions When announcing the reform package, the Deputy Secretary of Defense made a strong commitment to implementation. In fact, one of the initiatives was to ensure implementation of the program. The implementation approach included establishing plans of action and monitoring progress. We found, however, that DOD has not carried through with its action plans on most of the program's initiatives, and is not monitoring actions to ensure that results are being achieved

[10] An Assessment of the Air Force's F-16 Aircraft Multiyear Contract (GAO/NSIAD-86-38, Feb 20, 1986)

Although DOD has made some progress in implementing the program, implementation has not been completed, and consequently, results have not been fully achieved. If implementation is considered to be complete when action plans have been carried out and mechanisms for monitoring results established, implementation has not been completed on 23 of the 33 initiatives which has contributed to objectives having not been fully met for 29 or about 88 percent of the initiatives. (See app. IV.) Moreover, the high level management working groups have been disbanded for two key but unresolved issues involving program stability and realistic budgeting. OSD had established the working groups to ensure that results would be achieved under these initiatives. OSD believed these initiatives would have the greatest potential for improving the acquisition process

Program monitoring is essential for identifying progress and problems in implementation and taking corrective action. OSD has not formally reported on the program's status since June 1984, and does not plan to issue any further reports. In addition, the services no longer report to OSD on the status of program implementation. While OSD is monitoring selected initiatives through the budgeting and major acquisition decisionmaking process, we believe that the problems associated with major acquisitions dictate that OSD more closely monitor its policies and initiatives to improve the process.

Difficulty in Translating Top Level Commitment for Reform Into Results at Program Office Level

An integral part as well as an underlying theme of the improvement program was a change in management approach. The change was referred to as "controlled decentralization" and was the focus of the first initiative Through this initiative, the top level commitment for reform was to be translated into results at the program office level. More specifically, program managers were to receive the authority and responsibility necessary for them to manage their programs. Along with this would come increased accountability for what was actually happening on their programs. The result was to be a more streamlined, less time-consuming decisionmaking process for acquiring major weapons with an increased ability to pinpoint accountability for results.

Despite this initiative, program managers responding to our survey indicated little had changed in this area. Most reported that their responsibility was adequate or more than adequate, but one-half reported that the authority they now have is marginally adequate to very inadequate.

Our survey of program managers reflects a somewhat mixed perspective on the program's effect on the overall acquisition process. About 43 percent of the managers indicated that the program has had a generally positive effect on improving the efficiency and economy of the acquisition process. However, more than one-half believed that the program has made little or no difference in the acquisition process. Furthermore, the managers listed several improvements still needed, including reduced management oversight and more authority for program managers. Making these improvements could improve program stability—the majority of program managers responding that their programs were stable since fiscal year 1983 attributed this, in part, to having appropriate levels of authority and responsibility. Furthermore, the improvement program has resulted in little or no reduction in time spent preparing for major acquisition milestone reviews—the thrust of one initiative designed to streamline the decisionmaking process—according to 17 or 65 percent of the 26 program managers who indicated they had prepared for these reviews during fiscal years 1983 through 1985

We believe our survey suggests that the top level commitment to change did not filter down to the program manager level. This occurred despite a philosophy of controlled decentralization which was designed to return significant amounts of responsibility and authority to lower levels of management. The President's Blue Ribbon Commission on Defense Management recently reported[11] that defense acquisition has become encumbered by unproductive layers of management and overstaffing. The Commission recommended specific actions for shortening and clarifying the lines of authority to streamline the acquisition process.

Conclusions

Although DOD has made some progress in implementing the improvement program, implementation has not been completed, and consequently, results have not been fully achieved. A strong continuing DOD commitment to the initiatives is critical to achieving results because the problems being addressed are longstanding and not amenable to ready solutions. The commitment to implementation should include establishing a mechanism to closely monitor improvement program results so that problems can be identified and corrective actions taken.

[11] An Interim Report to the President by the President's Blue Ribbon Commission on Defense Management (Feb 28, 1986)

Recommendations

We recommend that the Secretary of Defense

- identify those specific initiatives which have the greatest potential and continue focusing top level management attention on implementing these initiatives;
- include among these initiatives a DOD commitment to stabilize and improve the acquisition process by (1) budgeting more realistically, (2) limiting the number of new program starts, and (3) eliminating marginal programs when necessary to fund other programs more efficiently; and
- establish reporting mechanisms which will enable OSD to analyze, in a timely manner, the progress made in accomplishing the specific actions to improve the acquisition process so that corrective actions can be taken when necessary

Agency Comments

We provided a draft of this report to DOD for its review and comment DOD generally agreed with our findings and recommendations and suggested several changes to improve the report. We have incorporated these changes where appropriate DOD told us that corrective actions were being planned in response to the recommendations of the Commission on Defense Management which parallel our recommendations.

As arranged with your Office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of the report At that time we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,

David A. Little

for Frank C. Conahan
Director

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Abbreviations

DOD	Department of Defense
EPR	economic production rate
OSD	Office of the Secretary of Defense

Letter From the Honorable William V. Roth, Jr. Chairman, Senate Committee on Governmental Affairs

United States Senate
COMMITTEE ON
GOVERNMENTAL AFFAIRS
WASHINGTON, D C 20510

September 13, 1984

The Honorable Charles Bowsher
Comptroller General of the United States
U. S. General Accounting Office
441 G Street, N. W.
Washington, D. C. 20548

Dear Chuck:

As you know, my Committee has been conducting a series of hearings over the last several years to review the effectiveness and efficiency of the Defense Department's acquisition process. We have reviewed a wide range of specific problem areas, including such things as ineffective operational testing of weapon systems and overpricing of spare parts, as well as examining the Department's management reform efforts.

One of the matters which has been of great interest to the Committee is the development and implementation of the Defense Acquisition Improvement Program (DAIP), informally known as the "Carlucci Initiatives." These 32 initiatives have been the subject of two general oversight hearings and many of the specific problem areas in the acquisition process reviewed by the Committee have also included some examination of one or more of the initiatives.

It has been more than three years since the DAIP was first developed and implementation began and it is appropriate now to begin to assess what effects this reform effort has had on the acquisition process. In addition, GAO has been reviewing many of the issues covered by the DAIP over the last few years and has developed a great deal of useful information on the many problem areas plaguing the defense acquisition process. In light of these facts, I am requesting that the General Accounting Office begin a review of the Defense Department's Acquisition Improvement Program to determine how effective these reforms have been in reaching their stated goals of shortening the acquisition process, increasing readiness, providing cost savings and strengthening the industrial base.

In conducting this review, I would expect the GAO to provide an assessment of the effectiveness of the DoD's reform efforts with special emphasis on problem areas in the acquisition process it has identified through its own reviews. For example,

The Honorable Charles Bowsher
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the GAO has completed several reports and analyses of the Defense Department's budgeting, cost estimating and cost reporting process and based on this work should be able to provide its opinions and views on the Department's progress in these areas.

Before beginning work on this request, I would ask that your auditors contact Mr. Link Hoewing of my staff at 224-4751 to discuss any problems or questions that may need to be resolved. I appreciate your attention to this request and look forward to the completion of the report.

Sincerely,

William V. Roth, Jr.
Chairman

WVR/kkp

Objective, Scope, and Methodology

Our objective was to determine DOD's progress in improving the process of acquiring major weapon systems through the Defense Acquisition Improvement Program More specifically, we reviewed DOD's progress in meeting the improvement program's objectives to achieve cost savings, shorten the acquisition process, increase readiness, and strengthen the industrial base

We could not assess the effectiveness of the Defense Acquisition Improvement Program in accomplishing these objectives because we could not isolate the program's effect from the many other factors affecting the acquisition process. However, we did determine DOD's progress and results achieved in implementing each of the 33 initiatives included in the improvement program. In addition, we examined the trends in estimating cost, schedule, and performance of major acquisitions in the 1970s and in the 1980s. (See app. III for further discussion.) We analyzed cost growth and cost savings as two separate issues because a weapon system can experience both an overall growth in its planned costs due to a variety of factors, while also achieving cost savings due to specific management actions.

We performed our work at several locations in the Washington, D.C., area, including OSD; various headquarters offices of the U.S. Army, U.S. Air Force, and U.S. Navy; Naval Air Systems Command; and the Air Force Systems Command. We reviewed various DOD reports and discussed the status of individual initiatives with key DOD officials. In addition, we reviewed our various reports and other studies related to DOD's acquisition process. We also mailed questionnaires to managers of major acquisition programs to obtain their perspectives on the impact of the improvement program. Our work was performed in accordance with generally accepted government auditing standards.

We sent our questionnaire to the government managers of 92 of the 99 major acquisition programs listed on DOD's December 1984 Selected Acquisition Reports. We excluded four managers who had assisted us in pretesting the questionnaire. In addition, three other managers directing two programs each submitted only one questionnaire each in accordance with our instructions. We received responses from 78 of the 92 programs included in our mailout. To ensure that the respondents' experience adequately covered the period of the improvement program's implementation, we excluded from our analysis 24 of the 78 total responses in which the program manager's and the deputy program manager's combined experience in these positions on the program did not cover the last 2 years. We believe that the remaining 54 respondents

adequately reflect our universe of program managers meeting our experience criterion because the characteristics of both groups did not differ significantly.

A Comparison of the Procurement Experience of the 1970s and the 1980s

The Defense Acquisition Improvement Program's goal was to improve the efficiency of DOD's acquisition process. This appendix assesses DOD's progress in meeting this goal since initiating the improvement program in 1981. We identified two basic approaches that could be used to assess the program's effect: (1) determine the effect of each initiative on the acquisition process or (2) analyze the overall acquisition process to determine if the efficiency of the process has improved. The first approach would be difficult because of data limitations and a possible problem of offsetting effects We concluded that the second approach was more feasible and used it in our analysis.

Our analysis suggests that weapon systems being developed and procured during the 1980s have experienced less cost growth and schedule slippage than systems in the 1970s that were in a comparable phase of development. More specifically, acquisition costs continue to grow, but at a slower rate The same is true for schedule, that is, programs are still missing milestones, but by fewer months. We cannot conclude that the 1980's systems will have less overall cost growth and schedule slippages than the 1970's systems because the acquisition cycle of the 1980's systems will not be complete for several years, and the experiences of the 1970's suggest that the 1980's systems are entering a critical period of development.

Methodology

The methodology used for our analysis was adapted from a 1979 Rand study[1] that examined the effectiveness of the Packard Initiatives DOD instituted in the early 1970s to improve the acquisition process. The Rand study compared the procurement experience of the 1970s to that of the 1960s to make its assessment.

We compared acquisition experiences in the 1980s to the 1970s. Our comparative analysis is based on data contained in DOD's Selected Acquisition Reports[2] —the only comprehensive summary of acquisition data available. These data are a combination of actual experience as well as future estimates For the 1980s, to coincide with improvement program implementation, we selected all systems on DOD's Selected Acquisitions

[1]Acquisition Policy Effectiveness Department of Defense Experience in the 1970s, Rand Corporation, Oct 1979

[2]The Selected Acquisition Reports provide a summary of key cost, schedule, and technical information for major weapon systems

Reports that entered full-scale[3] development after January 1981. We excluded all ships from our analysis because, unlike other conventional weapons, the development and production acquisition phases are not always distinguishable as separate phases. We compared these systems with two sets of 1970's systems. The first set includes systems that began full-scale development in the 1970s between December 1969 and March 1978, except for systems excluded due to data inconsistencies. The second set includes only those systems that began full-scale development after March 1976. For both sets, we used data included on the Selected Acquisition Reports generated at the time the systems entered full-scale development and as of December 1979. The second set is more comparable to the 1980's sample because both had 4 years or less of acquisition experience beyond the initiation of the full-scale development phase. Table III.1 lists types of equipment by service for the 18 systems included in the 1980's sample and table III.2 shows comparable data for the 28 systems in the 1970's sample—including 12 systems in the second set that are more comparable to the 1980's sample. (See app.V for a complete list of these systems.)

Table III.1: Numbers and Types of Systems in the 1980's Sample

Types	Army	Navy	Air Force	Total
Communications/data	2	1	4	7
Aircraft/helicopters	1	2	2	5
Missiles	0	1	1	2
Others	1	3	0	4
Total	**4**	**7**	**7**	**18**

Table III.2: Numbers and Types of Systems in the 1970's Sample

Types	Army	Navy	Air Force	Total
Communications/data	0	3	2	5
Aircraft/helicopters	2	2	4	8
Missiles	3	1	4	8
Tanks/combat vehicles	4	0	0	4
Others	1	2	0	3
Total	**10**	**8**	**10**	**28**

We examined three characteristics of procurement—total program costs, schedule, and performance. Total program costs include the development, procurement, and construction costs to acquire a system. We

[3]Full-scale development is the phase in the acquisition cycle in which the program go-ahead decision is made based on demonstration and validation of the initial concept. The decision as to whether to produce the weapon system follows full-scale development.

adjusted for the effects of inflation and changes to the quantity requirements for the weapon systems because such changes are often caused by forces outside a program. For schedule, we calculated the number of months from the start of full-scale development to the date milestones were achieved or expected to be achieved. For performance, we examined each technical characteristic, such as speed.

To compare the procurement characteristics of the 1980s with the 1970s, we calculated ratios of these characteristics for each weapon system in our samples. The use of ratios is a standard technique for making such comparisons. We compared the current estimates with the planned estimates of each characteristic for each weapon system. Current estimates for the 1980's sample were as of December 1984, those for the 1970's sample were as of December 1979 Planning estimates are generally determined at the beginning of full-scale development We calculated the ratios by dividing the current estimate by the planning estimate. We then averaged these ratios to arrive at a single ratio for each of the three characteristics for each weapon system Using these averages, we computed an average ratio for each of the characteristics for the 1980's and 1970's samples, and compared the 1980's ratios with the 1970's ratios. The ratios can be interpreted as follows·

- A ratio of 1 means that the current estimate and planning estimate are the same, indicating that the program characteristic is proceeding as planned.
- A ratio less than 1 means that the current estimate is less than the planning estimate, indicating that the program characteristic is doing better than planned.
- A ratio greater than 1 means that the current estimate exceeds the planning estimate, indicating that the program characteristic is doing worse than planned.[4]

Ratios that exceed 1 show improvement by moving toward 1, while ratios below 1 show improvement by moving further away from 1. When comparing ratios the lower number is always better.

Our approach has two major limitations

[4]For some performance characteristics, such as speed, where it is desirable to have a current estimate exceeding the planning estimate, we have computed the ratio by dividing the planning estimate by the current estimate in order to be consistent with these interpretations

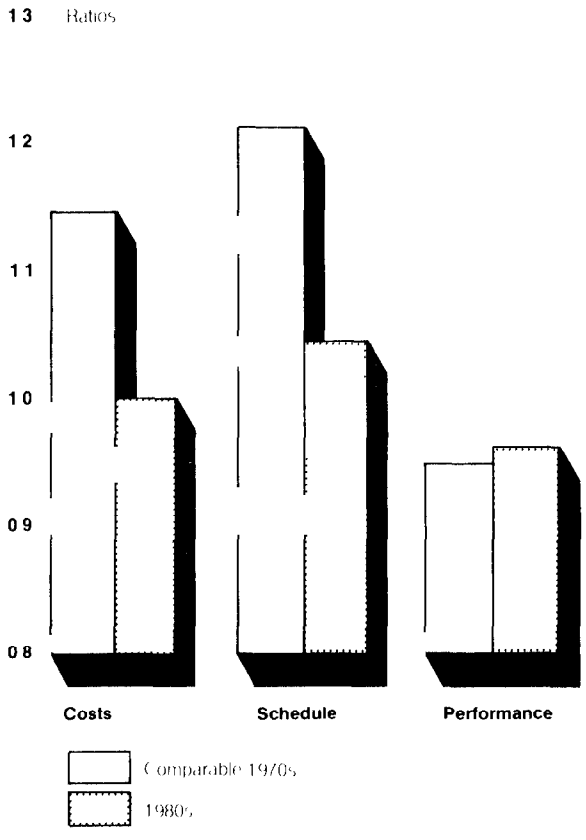
- First, we cannot link the results of our analysis exclusively to the improvement program because of the coincidence of several other factors which could have favorably affected the acquisition process. These factors include the recent defense buildup during which programs received greater funding. This could in turn limit program stretchouts and allow the use of more economical order quantities A second factor is the improved economic climate of the 1980s, particularly lower inflation, which could result in lower costs for systems.
- A second limitation is that compared to the acquisition cycle, the improvement program has existed for only a short period of time. The acquisition cycle typically spans up to 15 years from the weapon's conceptual stage until deployment. Yet, we have only 4 years acquisition experience since the improvement program's initiation to analyze its effect This point is particularly important since cost growth and schedule slippages can occur over the entire acquisition life of the system By looking at the first few years of a system's acquisition life, we capture only part of the cost, schedule, and performance history. In an attempt to deal with this problem, we analyzed systems in the 1970s having approximately the same maturity as those in the 1980s. However, the limited acquisition experience of the 1980's systems constrains our analysis, and a comprehensive comparison cannot be made until the 1980's systems complete their acquisition cycles.

1980's Systems Are Coming Closer to Cost and Schedule Estimates Without Sacrificing Performance

Our analysis suggests that DOD is generally coming closer to its planning estimates in the 1980s than it did in the 1970s. Figure III.1 compares the 1980's sample with the more comparable 1970's sample (those beginning full-scale development after March 1976). Ratios shown in figure III.1 for cost and schedule of the 1980's sample are smaller than those of the 1970's sample. The cost ratios declined from 1.14 for the 1970s to 1 for the 1980s. The schedule ratios show a slightly greater decline. Consequently, DOD's estimating in these areas seem to be improving. Although the performance ratios appear to indicate a worsening situation since the 1980's ratio of .96 is somewhat higher than the 1970's ratio of .94, the difference is not statistically significant.[5] Therefore, there seems to be no change in estimating performance.

[5]The differences between the cost ratios of the comparable 1970's and 1980's samples and the similar schedule ratios are statistically significant (for a one-tail test) at the 10-percent level The difference between performance ratios is not statistically significant at the 10-percent level

Figure III.1: Comparable 1970's and 1980's Samples: Cost (in constant dollars), **Schedule, and Performance**



Will Improvements in Cost and Schedule Estimating Continue?

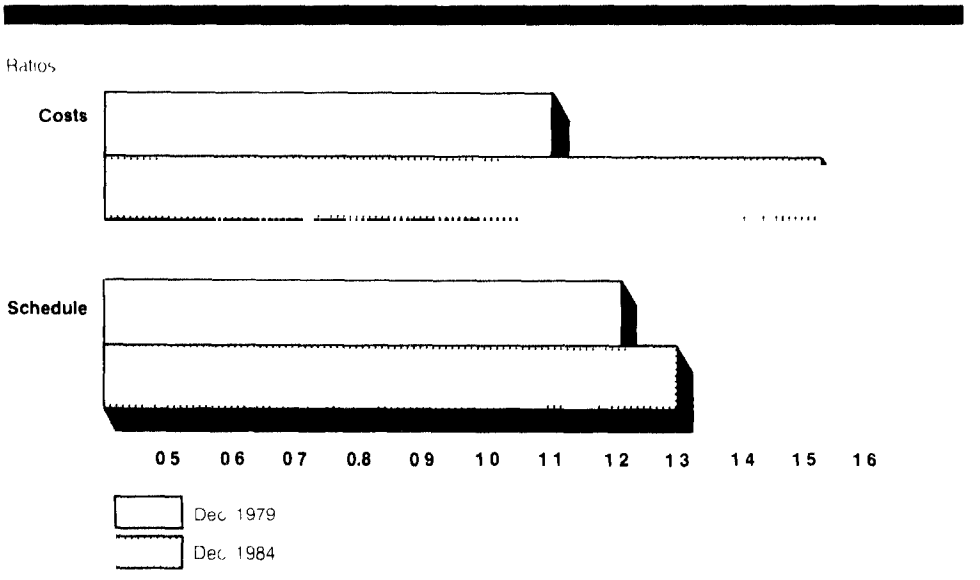
The systems in the 1980's sample are entering a period in their acquisition cycles during which significant cost growth or schedule slippages can occur Only 4 years or less have passed since these systems entered full-scale development. This means that they may not be deployed for up to another 11 years. During these later years, weapons have historically experienced significant cost growth and schedule slippages as technical and other problems surfaced. Consequently, the question becomes whether, and by how much, the cost and schedule ratios shown in figure III 1 will change as the 1980's weapons acquisition cycles continue.

To gain some insight into this question, we further analyzed the acquisition experiences of the 12 weapon systems in our 1970's sample that were of comparable development maturity to our 1980's sample. We compared cost and schedule ratios for the 1970's sample at two points—

December 1979 and December 1984—to see how they changed after they proceeded beyond the initial 3 to 4 years of full-scale development.

This analysis suggests that the estimated cost and schedule of the 1980's sample could worsen during the next few years. The results are presented in figure III.2, which shows that the cost ratio using constant dollars[6] for the comparable 1970's sample increased from 1.11, as of December 1979, to 1.52, as of December 1984, indicating that over 79 percent of the cost growth occurred after 1979 Since this 5-year period for the 1970's sample roughly equates to the 5-year period from December 1984 to December 1989 for the 1980's sample, these results suggest that the 1980's systems may experience most of their cost growth in the future. The schedule ratio increased from 1 21 to 1.30, indicating that 30 percent of the schedule slippages occurred after 1979 Consequently, we believe that the improvement program and other actions DOD is taking to improve the acquisition process should be closely monitored during the remainder of the acquisition cycle

Figure III.2: Cost (in constant dollars) **and Schedule Ratios for Comparable[a] 1970's Sample—Dec. 1979 and Dec. 1984**



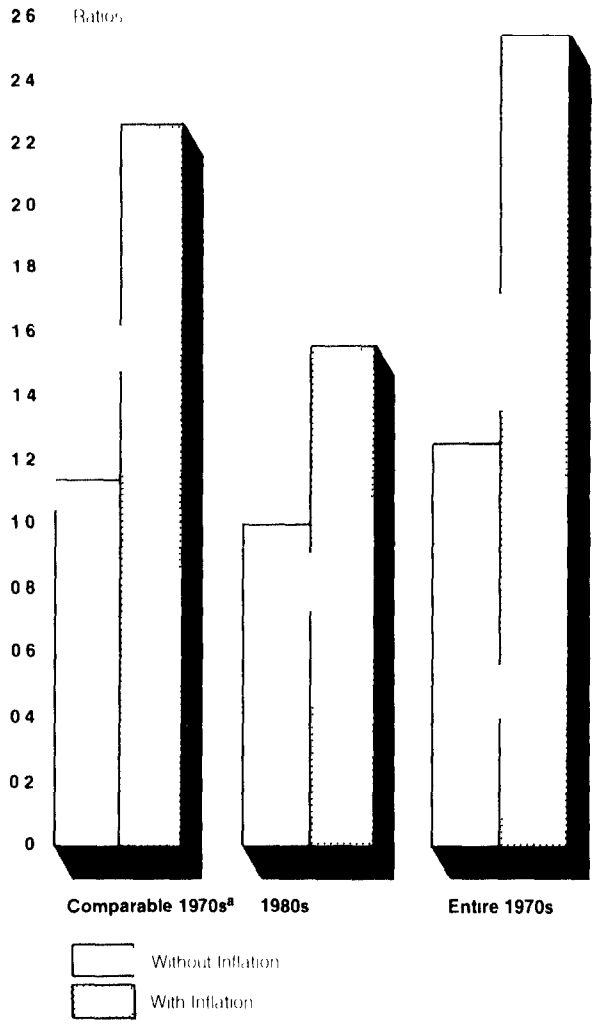
[a]The cost and schedule ratios for December 1979 in figure III 2 are adjusted for systems not included in the December 1984 Selected Acquisition Reports This was done to insure a fair comparison

[6]Constant dollar measurements exclude the effects of future years' inflation

Inflation Is Having Less Effect During the 1980s

Inflation contributed significantly to the cost growth of the 1970s and 1980s but less so in the 1980s. Figure III.3 compares the ratios of the comparable 1970's and 1980's samples with and without inflation. Figures III.1 and III.2 used constant dollars in computing cost ratios. Figure III.3 compares the ratio using current dollars, which reflect the effect of inflation on cost growth, to the constant dollar ratio. As can be seen in figure III.3, the comparable 1970's cost ratio increases from 1 13 without inflation to 2.26 with inflation, an increase of 100 percent. The similar figures for the entire 1970s are 1.24 without inflation and 2.54 with inflation, an increase of 105 percent. The 1980's ratios show a relatively smaller increase from 1 to 1.55, or 55 percent.

Figure III.3: Effects of Inflation on Comparable 1970's and 1980's Samples



[a] The 1 13 cost ratio without inflation in this figure differs slightly from the 1 11 cost ratio in figure III 1 because we excluded 2 systems in figure III 3 for which correct data needed for our calculations was not readily available

Conclusions

Weapon systems being developed and acquired in the 1980s are, so far, experiencing less cost growth and schedule slippage than comparable systems did during the 1970s. Although DOD is keeping costs and schedules closer to their planning estimates in the 1980s than it did for a comparable period of the acquisition cycle in the 1970s, if past experience is an indicator, most of the cost growth for the 1980's systems may be yet

to come. Some additional schedule slippages may also occur. In addition, inflation contributes greatly to cost growth in both the 1970s and the 1980s, but much less so in the 1980s.

Status of Initiatives and Results Achieved as of August 1985[a]

		Implementation		Results achieved	
	Initiatives	Full	Partial	Full	Some
1	Principles	•	X	•	X
2	Preplanned improvements	•	X	•	X
3	Multiyear procurement	X	•	•	X
4	Program stability	•	X	•	X
5	Capital investment	•	X	•	X
6	Budget to most likely cost	•	X	•	X
7	Economic production rates	•	X	•	X
8	Contract type	X	•	•	X
9	Support and readiness	•	X	•	X
10	Administrative costs/time	•	X	•	X
11	Budget for risk	•	X	•	X
12	Test hardware	•	X	•	X
13	Government legislation	•	X	•	X
14	DOD directives	•	X	•	X
15	Funding flexibility	X	•	•	X
16	Contractor incentives	•	X	•	X
17	Briefing and data requirements	X	•	•	X
18	Budget for inflation	•	X	•	X
19	Forecast business base	•	X	•	X
20	Source selection	•	X	•	X
21	Standard systems	•	X	•	X
22	Design to cost	•	X	•	X
23	Implementation	•	X	•	X
24	Reduce milestones	X	•	X	•
25	Link acquisition/budgeting	X	•	•	X
26	Acquisition council	X	•	X	•
27	Defense Acquisition Executive	X	•	X	•
28	Thresholds for milestone reviews	X	•	X	•
29	Integrate acquisition/budgeting	X	•	•	X
30	Visibility of logistics/support	•	X	•	X
31	"Fast Track" programs	•	X	•	X
32	Competition	•	X	•	X
33	Defense industrial base	•	X	•	X

[a]These initiatives will be discussed in detail in a follow-on report

List of Weapon Systems Included in the Samples of Appendix III

	Type of Weapon System (1980s)			
Service	Communications/ data/detection/ systems	Aircraft/ helicopter	Missiles	Other
Army	ADDS	AHIP	•	RPV
	JTIDS	•	•	•
Air Force	JTIDS	T-46A	Peacekeeper	•
	WWMCCS	C-17A	•	•
	EJS	•	•	•
	CONUS OTH B	•	•	•
Navy	JTIDS	E-6A	Trident II	ASWSOW
	•	V-22	•	SUBACS
	•	•	•	T45TS

	Type of Weapon System (1970s)				
Service	Communications/ data/detection/ systems	Aircraft/ helicopter	Missiles	Tanks/ combat vehicles	Other
Army	•	UH-60A	Patriot	FVS	Copperhead
	•	AH-64[a]	Hellfire[a]	M-1[a]	•
	•	•	Roland[a]	M-198	•
	•	•	•	DIVAD[a]	•
Air Force	PLSS[a]	A-10	ALCM[a]	•	•
	DSCS III[a]	F-15	GLCM[a]	•	•
	•	F-16	Sparrow	•	•
	•	E-3A	Sidewinder	•	•
Navy	SURTASS	F-18	Tomahawk[a]	•	Captor
	TACTAS[a]	LAMPS	•	•	5-inch
	AEGIS	MK III	•	•	projectile[a]

[a]Denotes systems (12) most comparable to 1980's systems (See app III)

DOD Comments

ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D C 20301-8000

ACQUISITION AND LOGISTICS

(DASD(P)/MSA)

27 JUN 1986

Mr. Frank C. Conahan, Director
National Security and International Affairs Division
U.S General Accounting Office
Washington, D C 20548

Dear Mr Conahan

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) Draft Report, "DOD's DEFENSE ACQUISITION IMPROVEMENT PROGRAM: A STATUS REPORT" dated April 8, 1986, (GAO Code 396507/OSD Case 6987) The DoD generally agrees with the report's findings and recommendations. Specifically, the DoD concurs with five of the findings and partially concurs with the remaining five of the findings The Department concurs with all three of the GAO recommendations.

Specific DoD comments to GAO findings and recommendations are attached The opportunity to comment on this draft report is appreciated.

Sincerely,

James P. Wade, Jr

Attachment

GAO DRAFT REPORT - Dated April 8,1986
GAO Code 396507/OSD Case 6987
DoD Comments

FINDINGS

FINDING A Defense Acquisition Improvement Program Initiatives Have Not Fully Achieved Results But There Have Been Improvements. The GAO reported that (1) in 1981 the DoD instituted an acquisition improvement program consisting of 32 management initiatives, (2) in 1983 the DoD focused high-level management attention on the initiatives involving program stability, multiyear procurement, economic production rates (EPR), realistic budgeting, readiness and support, and competition, and (3) in 1984 the DoD added an initiative to enhance the defense industrial base Based on its review, including conducting a survey of program managers, the GAO concluded that, although the initiatives have not fully achieved their intended results, there have been improvements in the acquisition process (p 1, GAO Draft Report)

Now on p 1

DOD Position The DoD concurs There have been improvements in the acquisition process even though all of the initiatives have not fully achieved their intended results The DoD has had success in most of the initiatives highlighted for high level management attention (e g multiyear procurement, economic production rates, realistic budgeting, and major system new starts)

The GAO has very little discussion of the DoD efforts in increased competition in their draft report Since FY 1980, DoD has increased the number of annual competitive contracts by 37 percent to over 6 million contracts In FY 1984 alone, competitive dollars awarded increased to over $53 billion, or 43 percent of all procurement dollars Another 29 percent was awarded as follow-on dollars to previously competed contracts Savings from increased competition has been significant For example, the Navy was able to fund the complete reactivation cost of the Battleship USS Missouri from savings achieved through increased competition

Perhaps the most important measure of the success of defense acquisition during the past four years is simply to consider the growth and modernization of the weapons inventory with which the armed forces are equipped The strategic modernization program has provided the DoD with a strong nuclear deterrent force, and provides for continued deterrence in the future through programs such as the B-1B, Trident, the Trident D-5 missile, Peacekeeper, Cruise Missiles, the Small ICBM, and the Advanced Tactical Bomber Non-strategic nuclear forces have been enhanced as well through the production and deployment of the Pershing II and Ground Launched Cruise Missiles Finally, during the past four years, conventional forces have been strengthened and modernized on land, sea, and air From 479 ships in FY 1980, the Navy will have enlarged the fleet to 542 ships in FY 1985, with additional ships ordered and planned to meet our goal of a 600 ship navy In addition, since FY 1980, the Air Force has more than doubled the inventory of modern fighter aircraft -- F-15s and F-16s -- to nearly 1,400 aircraft The M-1 tank inventory has increased from 21 to 1,348 during the past four years

The procurement of major weapon systems has not occurred at the expense of the readiness and sustainability Acquisition management initiatives in these areas have contributed to significant improvements For example, the increases in

munitions inventories achieved during the past few years ensure improved staying power for our conventional forces Army munitions inventories are up 14%, Navy inventories are up 58%, Air Force 62% and the Marine Corps 24% Moreover, since FY 1981, the DoD has increased funding for the daily operation and maintenance of its forces by almost 25% in constant dollars As a result, improvements in spare parts availability have increased the number of tactical combat sorties that could be flown in Europe by more than 75% In addition, Navy ships rated "fully" or "substantially" ready has increased by more than 25% since January 1981 Army and Marine Corps equipment availability rates have also continued to increase

FINDING B DoD Cost Savings The GAO found that cost savings have been achieved, but their magnitude is uncertain The GAO observed that, because major systems' acquisition cycles span many years, the DoD savings estimates must project effects far into the future The GAO found, however, that the DoD estimates are sometimes overly optimistic The GAO cited, for example, that actual savings the DoD claimed from EPRs, for FY 1981 through FY 1984, were $260 million less than the DoD projection of $1 5 billion anticipated in 1982 The GAO also noted that, for the Industrial Modernization Incentives Program (IMIP), which is a major acquisition improvement initiative, $4 billion of the reported overall $6 billion savings were subject to change because they were early projections of expected savings through the 1990s (p 1, pp 3-4, GAO Draft Report)

Now on pp 1 and 2

DoD Position. The DoD partially concurs The GAO correctly states that the magnitude of cost savings associated with acquisition improvement initiatives such as economic production rates (EPR) contain a degree of imprecision because these savings are forecast over the period of time which stretches from contract award to system delivery, a period which might easily extend five years or more Changes in the economy due to such factors as inflation or basic commodity price fluctuations, which are not easily forecast over several years, can affect the estimated savings Another major factor is congressional action on the budget Congressional reductions to programs which have been proposed by DoD to be funded at economic rates have a direct role in reducing estimated savings In its example, however, the GAO does not indicate whether the EPR savings estimated by DoD in 1982 were reduced as a result of economic factors, congressional action, program restructuring, or other factors such as configuration changes to improve weapon systems performance Because of this, it is impossible to determine whether the original savings estimate was "overly optimistic" and the DoD , therefore, disagrees with this statement It should be noted that the real importance of these estimates is not to forecast a precise level of savings but to show that the Department of Defense has taken action to reduce costs through investments in stable, economic production of major weapon systems

FINDING C DoD Needs To Improve Its Estimating And Reporting of Cost Savings The GAO observed that estimating cost savings associated with the DoD actions to improve the acquisition process is difficult because it involves projecting the effect of these actions into the future since major system acquisition cycles generally span many years The GAO found that the DoD can, however, improve its techniques for estimating future cost savings The GAO concluded that in some cases the DoD techniques are faulty, and in others the Office of the Secretary of Defense (OSD) had not provided adequate guidance to the Military Services for estimating and reporting costs, benefits, and savings The GAO cited, for example, estimated cost savings associated with funding some programs at EPRs not being adjusted when other programs were cut below EPRs to provide the sources of funds The GAO also found that the DoD can use economic production data more effectively in the

budget process The GAO noted, for example, that the OSD had not provided adequate guidance for computing weapon unit costs at alternative production rates, which resulted in inconsistency and, therefore, less useful data In addition, while recognizing that dual sourcing can reduce unit costs, the GAO observed that two of its prior reports concluded that savings from dual sourcing HARM and Maverick could not be substantiated Finally, in its analysis of the DoD claimed savings of $4 7 billion for FY 1981 through FY 1989 due to multiyear contracting, the GAO found that the savings on the Black Hawk and the Multiple Launch Rocket System (MLRS) overstated the magnitude of savings by $185 million (or 64 percent) (pp 4-7, GAO Draft Report)

Now on pp 3 to 5

DoD Position The DoD partially concurs TheDoD strongly disagrees with that portion of the finding dealing with the multiyear contracting because it highlights only the Black Hawk and MLRS efforts These are both early efforts and admittedly the Army had difficulty with fact finding and negotiation on the Blackhawk and inclusion of options on the MLRS It is inappropriate and misleading to only report on these efforts as representative of the entire multiyear procurement effort

The use of the multiyear (MYP) contracting technique on major systems and programs, which employs economic order quantity (EOQ), continues to be a successful approach that results in both savings and stability This year the Department has proposed seven candidate programs which could save a little over two billion dollars These programs include the following candidates UH/EH-60 Airframe (follow-on to an existing MYP), F/A-18 aircraft, Patriot, Stinger, Harm (Joint Navy/Air Force Program) missile program, MK-45 gun mount, and defense support program Since the initial use of MYP in 1982, the Department has submitted 60 multiyear candidates in prior budgets and Congress has approved 40 of these programs The 40 approved programs carry a potential savings value of 6 1 billion dollars Last year eight out of ten candidates were approved

Implementing more economic production rates is another important management initiative which can provide significant savings and reduce the time required to complete the inventory objective for a major weapon system The Department has identified a range of economic production rates for major programs, and systematically examines whether current and planned production falls within the most efficient range In instances in which production rates are inefficient, DoD often increases production rates to a more efficient level, thereby reducing unit costs and providing increased quantities of equipment in a shorter time span In FY 1983, DoD achieved $2 3 billion in unit cost savings for 18 programs by producing them at rates that take advantage of economies of scale For example, the Aim-9M Air-to-Air missile unit cost was reduced from $178,000 in FY 1981 to $83,000 when the procurement quantity was increased six-fold Unfortunately, budget reductions below planned levels have eroded these savings during the past three years It has also become increasingly difficult to implement more economic production rates which require additional near-term resources in order to achieve long term savings

Now on p 4

The DoD paper dated November 17, 1983, referred to (on page 6 of the draft GAO report)did not say some programs were stretched so as to fund others at more economic rates as indicated by the GAO EPR savings are adjusted each year If a program for which savings are reported is subsequently reduced in rate, savings are recalculated reflecting the changed quantities Instructions were issued to the Services by the Defense Resources Board on March 31, 1986, on submitting economic production rate (EPR) data on major systems The instructions call for

displaying the unit cost at several different rates in the program objective memoranda submitted at the start of the yearly budget cycle The unit production costs are to be submitted in terms of unit procurement costs as defined in DoD Instruction 5000 33, paragraph D 4 d However, one protrayal or definition is not appropriate for all categories of equipment or equipment within one category Some inconsistency is necessary in the interest of accumulating the most relevent set of costs that reflect variation with rate The Services are permitted to portray other unit procurement cost if an explanation is given

FINDING D: Acquisition Schedules Are Slipping Less The GAO analysis of schedule slippages since DoD undertook the improvement program showed that, in comparison with the 1970s systems, the 1980s systems had smaller slippages Despite this apparant improvement, the GAO cautioned that (judging by the experience of the earlier programs) some additional schedule slippages can be expected as the 1980s systems proceed through and beyond full-scale developoment The GAO observed that in implementing the improvement initiatives, the Deputy Secretary of Defense cited two specific initiatives to shorten acquistion time -- emphasizing preplanned product improvement and obtaining adequate funding for test hardware With respect to preplanned improvements, the GAO was unable to determine the extent of their impact because funding for them is not always separately identified in budget documents The GAO reported, however, that most of the program managers responding to its questionnaire cited this initiative as having favorable results With respect to obtaining adequate test hardware, the GAO cited another of its reports as concluding that test schedules for weapon systems were constrained, in part, by too few prototypes, despite the initiative to correct this (p 2, pp 8-9, pp 28-37, GAO Draft Report)

Now on pp 1, 5-6, and 22 to 30

DoD Position. The DoD concurs It should also be noted that the Packard Commission (p 18, "A Formula for Action") has made similar recommendations that would increase the use of technology to extend the life of existing platforms and early operational testing of prototype hardware

FINDING E. Weapons' Support Readiness Receiving Increased Emphasis The GAO observed that the DoD and the Congress have recently taken actions intended to result in more reliable and supportable weapon systems The GAO reported that several of the acquisition improvement initiatives were intended to improve support and readiness (These include emphasizing readiness early in the acquisition cycle and giving it equal priority with other major acquisition objectives, including cost, schedule and performance) These initiatives also address providing contractors with incentives to improve reliability and maintainability (R&M), and the initiative to give program managers more control over support resources Based on its survey of program managers, the GAO concluded that support is receiving more emphasis The GAO further concluded, however, based on other prior reports, that initiatives to improve reliability and support for certain weapon systems with accelerated acquisition schedules have not always resulted in improvements While noting recent legislation has provided additional incentives to contractors to improve reliability, the GAO concluded that whether DoD and Congressional actions will actually result in more reliable and supportable weapon systems can only be conclusively determined when weapons are deployed (p 2, pp 9-11, GAO Draft Report)

Now on pp 1 and 6 to 7

DoD Position: The DoD concurs However, it should be noted that the GAO statement that "initiatives to improve reliability and support for certain weapon systems with accelerated acquisition schedules have not always resulted in

improvements" is somewhat misleading The systems cited by GAO as a basis for this finding were started before the acquisition improvement initiatives and could not be expected to be affected by this initiative

FINDING F Defense Industrial Base Enhancements The GAO reported that, in initiating the Defense Industrial Base Enhancements, the Deputy Secretary of Defense directed that it receive high priority The GAO noted that, in June 1985, the DoD reported expenditures for major items--equipment, buildings, and land--had increased substantially over the 9 years through 1983, and that this increase had been greater in the defense than in the non-defense sectors The GAO noted, however, that it's preliminary findings indicated the increase in the non-defense segment may be proportionately greater Due to its recent implementation, the GAO concluded that the effect of the Industrial Base initiative has been minimal The GAO also concluded that several key elements that are related to this initiative could be better managed (p 2, pp 11-12, GAO Draft Report)

Now on pp 2 and 7 to 8

DoD Position The DoD partially concurs The DoD does not agree that investments in plant and equipment assets alone are an adequate measure of industrial base enhancements Investments could level out while industrial responsiveness is improving The introduction of new manufacturing techniques could make significant improvements with minimal investments Reductions in lead time and productivity improvements should be included as measures of industrial base enhancement It is suggested that the "Defense Financial and Investment Review (DFAIR)" be specified in reference to a June 1985 DoD report

DoD does not consider its actions as "minimal" as the GAO report suggests Three points substantiate this conclusion First, DoD has not only taken major steps to make industrial preparedness a normal consideration in the acquisition process, but has also centralized policy management through the creation of a core Industrial Base Program Element in the PPBS system Several programs that directly impact the industrial base have been combined into a single program that ensures industrial base policies are cohesive

An annual production base analysis identifies and analyzes critical systems and components to determine the bottlenecks that hinder production efficiency and industry's ability to rapidly accelerate production during national emergencies The TOW 2 missile is an example of an item that can now be rapidly accelerated as a result of a one time minimum investment Planning ensures investments in the industrial base are considered in determining the best mix of war reserves and hardware to achieve affordable defense

The Manufacturing Technology Program (MANTECH) has resulted in tangible benefits that are much more than minimal The purposes of MANTECH are to help transition manufacturing R&D into production, to help reduce manufacturing costs, enhance product quality and to also improve the industrial base MANTECH's major purpose is to develop generic process technology to complement major investments in product development For example, a recent Air Force study of 75 projects (out of several hundred completed since the program began) validates that for every dollar invested in MANTECH, the Air Force will achieve an average cost avoidance of $14 More importantly, these projects represent technical breakthroughs in literally all manufacturing areas Without MANTECH technical gains in the field of low observables, engine manufacturing, inspection techniques, and lightweight material development, many current Air Force weapon systems would not exist In 1984 DoD established a Manufacturing Technology Information Center to distribute

the technologies developed under the program throughout the private sector of American industry

The Industrial Modernization Incentives Program (IMIP) is another example that points out that tremendous gains and enhancements to the Industrial Base are being made IMIP represents a joint venture between the government and industry to accelerate the implementation of modern equipment and management techniques within the industrial base IMIP benefits are equally impressive to those of MANTECH The Air Force, for example, has encouraged $8 in modernization investment by private industry for every $1 expended by the DoD and estimates their implementation of the program will produce over $3 billion in manufacturing cost avoidance The issuance of DoD Directive 5000 44, "Industrial Modernization Incentives Program," on April 16, 1986, represents a major achievement in transitioning IMIP from the test phase to an established acquisition tool IMIP projects are also disseminated to all American industry

FINDING G Rate of Cost Growth Is Declining But Will Improvements Continue? The GAO observed that the DoD has reported substantial reduction in the double digit cost growth of the early 1980s, citing a Congressional Budget Office analysis of DoD Selected Acquisition Reports showing a decline in cost growth from around 14 percent in 1980 to 1 percent in 1983 The GAO reported its analysis suggested that, for major weapons beginning full-scale development in the 1980s the cost growth may have in fact, been less than the cost growth experienced by weapons beginning full-scale development in the 1970s The GAO observed, however, that, in the past, weapons have experienced their most significant cost growth later in the acquisition process when technical, funding, or other problems have surfaced (The GAO noted that over 73 percent of the cost growth experienced by the 1970s systems occurred during the 1980s) TheGAO, therefore, concluded that, since the comparable period for the 1980s systems it analyzed will occur during the 5-year period after 1984, most of the cost growth could lie ahead for the 1980s systems (pp 12-13, GAO Draft Report)

ow on p 8

DoD Position: The DoD concurs There are, however, indications that the decrease in cost growth reported by the CBO has continued Extending the CBO analysis through the current December 1985 Selected Acquisition Reports (SARs) shows that the decline in cost growth has now reached the point where costs are no longer growing at all and have in fact declined since last years' estimate by nearly one percent This continuing trend is very encouraging and is an indication of some success in DoD management efforts to bring weapon system cost growth under control It is recognized, of course, that the DoD cannot predict the future with unerring certainty

FINDING H DoD Has Made Little Progress In Stabilizing Weapons Acquisition Programs. The GAO observed that program instability leads to uncertainties about the future and forecloses opportunities for efficiencies (The GAO cited, for example, planning for production plant capacity is done several years in advance, and changes in production quantities can create idle plant capacity and, therefore, inefficiencies) The GAO found that over 45 percent of the program managers it surveyed considered their programs had been unstable since FY 1983, as compared to about 40 percent who considered these programs unstable in FY 1983 Likewise, the GAO cited DoD analysis showing about 43 percent of the programs the DoD tracks to be unstable during both the FY 1984 and FY 1985 budgets The GAO concluded that a primary cause of program instability is the inability of the DoD to submit realistic and affordable defense budgets, and that DoD budgets are

historically optimistic because they do not include all expected costs or sufficient provision for technical risks The GAO further concluded that when overly optimistic budgets are approved by the Congress, often at even lower levels than requested, program instability can result The GAO found that most program managers reporting unstable programs in the GAO survey attributed the instability to adjustments by the DoD and the Congress to their systems' 5-year plans and budgets The GAO reported the DoD recognizes that to improve stability it must budget more realistically and also that it must establish priorities so as to limit the number of new programs and terminate low priority programs The GAO concluded, however, that some of the progress the DoD has reported in limiting the number of major new programs is accounted for by the DoD doubling the minimum cost thresholds that define major systems (The GAO reported that according to the old criteria there would have been 29 to 44 new starts from FY 1983 through FY 1985, whereas DoD acknowledges only 19 under the new criteria) The GAO also found that 25 of the 79 program managers responding reported that the combined experience on the program of themselves and their deputies did not cover the past two years, and the average time program managers had spent on the program, as program managers or deputies, was 27 1 months The GAO concluded that the consensus of program managers was that there had been little progress in stabilizing the acquisition process The GAO also concluded that to create a stable environment DoD needs to establish priorities, budget more realistically, adequately fund the higher priority programs, begin only new programs that are affordable, and specifically terminate all remaining programs which are of reduced service Finally, the GAO concluded that frequent personnel changes at the program manager/deputy program manager level indirectly hinders stability (p 1 pp 13-17, GAO Draft Report)

Now on pp 2 and 9 to 12

DoD Position. The DoD partially concurs The GAO discussion of idle plant capacity contributing to increased cost is perhaps not the best example since idle plant is not an allowable contract cost DoD agrees that an underutilized plant will increase inefficiencies and indirectly contribute to cost

The GAO also overlooked the success of multiyear procurements as an indication of increased stability for selected weapon systems Multiyear procurement has been a very important part of our acquisition reform program Economic lot buying, rather than purchasing weapon systems on an annual basis can result in significant long-term savings Congress has approved, and the DoD has implemented 40 multiyear procurement contracts which represent about $6 1 billion in savings We requested multiyear procurement for 7 programs in the FY 1987 budget for an additional estimated savings of $2 1 billion

In addition,the Cost Analysis and Improvement Group (CAIG) does an intensive independent review of 20 to 30 major weapons annually as an attempt to verify the realism of cost estimates This CAIG review was not acknowledged in the GAO draft report

The GAO reported that there were at least 29 major system new starts or as many as 44 in the period FY 83-85 vice 19 new starts identified by OSD Since the specific programs in the GAO range of 29 to 44 programs were not identified by name, it is difficult to comment on this finding

The DoD efforts to achieve greater cost savings through improved program stability, however, have repeatedly foundered on the shoals of the annual congressional budget review process Each year, since 1981, the Congress has

authorized successively lower levels of resources below approved planned levels As a result, the Department has had to confront many difficult choices between stretching out programs and incurring higher costs, or reducing or cancelling a weapon system which, regardless of cost, may be critical to military security Appropriately, the DoD has chosen the most prudent path to ensure security and has had to incur some higher program costs Moreover, the Congress has destabilized many defense programs directly through the byzantine process of the annual line-item review of the defense budget It simply doesn't make sense in times where the budget is tight to add to the affordability problem by arbitrarily increasing costs through destabilizing programs DoD continues to support the idea of a two year budget cycle as a means to help reduce costly program instability

FINDING I Acquisition Improvement Lacks A Strong Continuing DoD Commitment The GAO found that the strong commitment, with which the Deputy Secretary of Defense initiated the acquisition improvement program, had waned Although the implementation approach included establishing plans of action for and monitoring progress of the initiatives, the GAO found that DoD had not carried through on its action plans for most initiatives, and is not monitoring actions The GAO found, for instance that implementation had not been completed on 25 of 33 initiatives (action plans carried out and monitoring programs established), and that this contributed to objectives having not been fully met for 29 of the initiatives Moreover, the GAO found that high-level management working groups had been disbanded for two key unresolved issues, (1) program stability and (2) realistic budgeting Further, the GAO found that OSD had not reported on the status of the overall program since June 1984, although program monitoring is essential for identifying problems and corrective actions The GAO concluded that although DoD had made some progress in implementing the program, implementation had not been completed, and, consequently, results had not been fully achieved The GAO also concluded that a strong, continuing DoD commitment to the initiatives is critical to achieving results because the problems being addressed are long-standing and not amenable to ready solutions In addition, the GAO concluded that further savings are possible if certain initiatives are fully implemented Finally, the GAO concluded that the commitment to implement should include establishing a mechanism to closely monitor improvement program results so that problems can be identified and corrective actions taken (p 3, pp 18-19, p 21, GAO Draft Report)

low on pp 2 and 12 to 14

DoD Position: The DoD partially concurs The DAIP made major changes in both the acquisition philosophy and process DoD no longer tracks each individual initiative However, there continues to be senior level management involvement in multiyear procurement, economic production rates, major new starts, weapon support readiness, and competition when the Defense Resources Board annually reviews the Service budgets and when the DSARC reviews selected major weapon systems at predetermined milestone points These initiatives, which were selected as being the most important for the Deputy Secretary of Defense to concentrate on, continue to be tracked and implemented through the DSARC and PPBS processes

FINDING J. Difficulty In Translating Top Level Commitment To Reform Into Results At Program Office Level. The GAO reported that through "controlled decentralization" program managers were to receive the authority and responsibility necessary to manage their programs The GAO found, however, little had changed in this area most reported that responsibility was adequate, but approximately 51 percent said that authority was marginally adequate to very inadequate The GAO reported that program managers listed improvements still needed as including decreased management oversight and more authority for

program managers The GAO survey indicated that 43 percent of the program managers indicated there had been a positive affect from the acquisition improvement program, while 57 percent saw little or no difference in the acquisition process The GAO concluded that the survey suggests that top level commitment to change did not filter down to the program manager level (pp 20-21, GAO Draft Report)

Now on pp 13 to 14

DoD Position: The DoD concurs It should be noted that much of the thrust of the DAIP was to decentralize much management responsibility to the Services This makes an assessment of the situation somewhat difficult for OSD to make in a detailed fashion It has been noted, for example, that the streamlining of the DSARC has not appreciably reduced the number of briefings that a Program Manager must give since most (i e 90% or more) of the briefings occur within the Service hierarchy The Packard Commission has made a recommendation to shorten the "reporting chain" from the Program Manager to the senior decisionmaker and this is currently under consideration

RECOMMENDATIONS

RECOMMENDATION 1 The GAO recommended that the Secretary of Defense identify those specific initiatives which have the greatest potential and continue focusing top level management attention on implementing these initiatives (p 22, GAO Draft Report)

Now on p 15

DoD Position: The DoD concurs This recommendation has already been accomplished As the GAO noted in Finding A, high level management attention has been focussed on program stability, multiyear procurement, economic production rates, realistic budgeting, readiness/support, competition, and the industrial base The DoD continues to address these areas in both the PPBS and DSARC processes

A substantial number of the AIP initiatives are also included in the Packard Commission recommendations The Secretary of Defense has requested Packard implementation reports by July 1, 1986 to include recommendations, draft directives, and required legislation to correct deficiencies in existing law This Secretary of Defense memo highlights off-the-shelf purchasing, prototyping, market place competition, baselining for major weapons, and multiyear procurement for high priority systems Following a decision by the Secretary of Defense on these Packard implementation reports this summer, implementation will take place

RECOMMENDATION 2. The GAO recommended that the Secretary of Defense include among these initiatives a DoD commitment to stabilize and improve the acquisition process by (1) budgeting more realistically, (2) limiting the number of new program starts, and (3) eliminating marginal programs when necessary to fund other programs more efficiently (p 22, GAO Draft Report)

Now on p 15

DOD Position: The DoD concurs Current DODD 5000 1 policy addresses both the major system new process and affordability The Defense Acquisition Executive annually reviews all major new starts with the DSARC and DRB principals and makes appropriate decisions limiting new program starts and eliminating marginal

programs The CAIG annually reviews the cost realism of 20-30 selected major systems

The April 1, 1986 Secretary of Defense memo mentioned above instructs OSD to "reflect full consideration of the findings and recommendations of the Interim Report of the Commission on Defense Management" (Packard report) The Packard report discusses the problem of understated costs, overstated requirements, and lack of realistic budget estimates As a result of these Packard recommendations there will be emphasis on these problems

RECOMMENDATION 3: The GAO recommended that the Secretary of Defense establish reporting mechanisms which will enable OSD to analyze in a timely manner, the progress made in accomplishing the specific actions to improve the acquisition process so that corrective actions can be taken when necessary (p 22, GAO Draft Report)

Now on p 15

DoD Position The DoD concurs As noted in the DoD response to recommendation 1 the PPBS (with its' Defense Resources Board) and the DSARC are existing reporting mechanisms that are currently performing this function The President directed on April 2, 1986 that DoD issue a directive establishing an Under Secretary of Defense for Acquisition and designating him as Defense Acquisition Executive It is expected that the Defense Acquisition Executive will continue to use both the PPBS and DSARC in this role Any decisions regarding additional special reporting will be determined by the new Defense Acquisition Executive

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