REPORT BY THE U.S.

General Accounting Office

Analysis Of DOD's Fiscal Year 1985 Multiyear Procurement Candidates

Public Law 97-86 established criteria which must be met by DOD multiyear contract candidates. The criteria are that the multiyear contracts will benefit the government by saving money and improving contractors' productivity, and that the estimated contract cost and savings be realistic. The criteria also require that the system being procured has a stable design, requirement, and funding. DOD submitted 12 multiyear contract candidates for congressional approval in its fiscal year 1985 budget. Five candidates--the F-16 simulator, Bradley Fighting Vehicle turret drive, TOW II missile, shop equipment contact maintenance vehicle, and Bushmaster 25mm gun--have not clearly met all the criteria, or have undergone program budget changes which warrant the submission of a revised justification.

In addition, one of the anticipated benefits of multiyear contracting is enhancement of the defense industrial base. It is difficult, however, to identify in advance the enhancements which would result from a multiyear contract and would not occur if an annual contract was awarded.

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NATIONAL SECURITY AND
INTERNATIONAL AFFAIRS DIVISION

B-215825

The Honorable Ted Stevens
Chairman, Subcommittee on Defense
Committee on Appropriations
United States Senate

The Honorable Joseph P. Addabbo
Chairman, Subcommittee on Defense
Committee on Appropriations
House of Representatives

In response to your requests, we analyzed the 12 multiyear procurement candidates proposed in the Department of Defense's (DOD's) fiscal year 1985 budget request to determine if they met the criteria established by the Congress. We presented our preliminary views in discussions with your staffs on May 24, 1984.

We continue to support the concept of multiyear procurement as a method of achieving savings, reducing administrative cost, improving contractor performance, and increasing competition. While we continue to support multiyear contracting in principle, we believe the desirability of using the technique must be determined based on a case-by-case assessment of potential benefits and added risks that can result from awarding a multiyear contract instead of a series of annual contracts. Public Law 97-86 established the conditions that must be met by multiyear candidates to ensure a reasonable balance of benefits and risks.

The military services and the Office of the Secretary of Defense (OSD) reviewed 22 potential candidates before the fiscal year 1985 budget was submitted to the Congress. Ten of the candidates were not approved for multiyear procurement because they did not meet the criteria outlined in Public Law 97-86. The 12 candidates DOD believed met the criteria were submitted for congressional approval with the fiscal year 1985 budget.

The criteria, which multiyear candidates must meet and which are specified in Public Law 97-86, require that the government benefit from the use of a multiyear contract by saving money and improving contractors' productivity. In addition, estimated contract costs and projected savings must be realistic. The criteria also require that the system being procured has a stable design, requirement, and funding.

We reviewed the justification for each of the 12 candidates and their adherence to the multiyear criteria. Appendix I discusses the objective, scope, and methodology we used to evaluate DOD's multiyear candidates. We include information on the criteria for multiyear contracting and its potential for enhancement to the defense industrial base in appendix II. The details of our review for each individual system are in appendix III.

We identified no significant issues with seven of the candidates--the F-16 airframe, the Defense Satellite Communications System (DSCS III), the UH/EH-60A helicopter airframe, the CH-47D helicopter modernization, the M939 5-ton truck, the CH/MH-53E helicopter, and the AN/SSQ-36 sonobuoy. We believe the other five candidates--F-16 simulator, Bradley Fighting Vehicle turret drive, TOW II missile, shop equipment contact maintenance vehicle (CMV), and Bushmaster 25mm gun--either did not clearly meet one or more of the criteria, or had undergone program budget changes that warrant the submission of a revised justification package. In particular:

--The F-16 simulator design is not stable, because four major changes have occurred to date. The most recent change, to incorporate simulator changes needed to accomplish the multinational staged improvement program, has not yet stabilized. In addition, savings may not be substantial enough to justify the risks of entering into a multiyear contract.

--Savings associated with the Bradley Fighting Vehicle turret drive are relatively small. Quantities of the Bradley Fighting Vehicle to be procured in fiscal years 1985-87 have been recently reduced by the Army, thus warranting the submission of a revised justification package to the Congress to reflect the current proposed procurement. The reduced quantities indicate requirements instability and may affect the projected savings.

--Funding and requirement stability of the TOW II missile are uncertain as a result of DOD's reduction of quantities to be procured in fiscal year 1985 by 12,000 missiles and the Army's consideration of reductions in later fiscal years. These actions warrant that a revised justification package be submitted to the Congress. Since the Army has acquired a technical data package and the projected unit price will increase substantially through fiscal year 1989 even with multiyear procurement, competition should be considered. Generally, competition is the most effective means of ensuring that the government obtains the most reasonable

APPENDIX III

The sonobuoy requirement and funding appear to be stable. Although the proposed multiyear program's planned quantities exceed historical production rates, the current contractor believes it has the capability of meeting the projected multiyear production rates and the Navy supports the increased production levels. The program has received the funding requested for it in the past several years. The Navy's budget includes quantities in each outyear similar to those requested for the proposed multiyear contract, reflecting its commitment to this program.

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price. Program office officials are concerned that qualification of a second source would involve cost and time, reducing the practicality of using competition.

--Most of the savings associated with the CMV candidate are from procurement of the chassis, which will not be part of the proposed multiyear contract. Instead, the chassis will be obtained using an add-on to an existing annual contract. Chassis deliveries could be made up to 5 years before they are needed. The multiyear contract is for fabrication of a tool compartment to be installed on the chassis and the tools to be included. The multiyear contract would be a competitive award. In addition, the Army has not ensured that funding will be provided throughout the multiyear contract period, because the Army is considering reducing the CMV fiscal year 1986 budget. According to Army officials, the program may be cut because of its priority relative to other programs. Further, the design stability of this candidate is questionable because engineering changes are required.

--Recent changes to the fiscal year 1985 budget and Army consideration of changes in future budgets may result in reduced quantities for the Bushmaster 25mm gun during the multiyear period. This may affect the program's funding and requirements stability. The Army plans to revise the justification package to reflect a change in acquisition strategy. According to the Army, the revision will project greater savings than the current justification, based largely on the threat of competition. The Army should continue to consider a competitive award.

Your Offices also requested that we assess the effect of the fiscal year 1985 candidates on enhancement of the defense industrial base. Generally, we believe the stability in contractor and subcontractor operations associated with multiyear procurement (provided the procurement is substantial) can create a level of business certainty more conducive to enhancement of the industrial base than annual procurements which are more likely to fluctuate. Nevertheless, we found it difficult, if not impossible, to specifically identify in advance, the enhancements that will occur as a result of a multiyear contract that would not occur if procurement were by annual contract. Most program offices had little information concerning enhancement of the industrial base other than that already included in justification packages.

. . . . .

At your requests, we did not obtain official comments on our report, but we did obtain the views of agency officials from individual program offices and OSD. Their views were included where appropriate.

We are sending copies of this report to the Chairmen, House Committee on Government Operations, Senate Committee on Governmental Affairs, and the House and Senate Committees on Appropriations and Armed Services; and to the Secretaries of Defense, Army, Navy, and Air Force.

Frank C. Conahan
Director

APPENDIX I

DOD'S FISCAL YEAR 1985 MULTIYEAR PROCUREMENT CANDIDATES

OBJECTIVE, SCOPE, AND METHODOLOGY

Our objective was to evaluate the justifications for the 12 multiyear candidates included in DOD's fiscal year 1985 budget to determine if they met the criteria established by the Congress. We visited the DOD and military services headquarters and the program offices which prepared the justifications for each of the candidates.

Our evaluation included a review of

--DOD and service guidance for preparing and screening candidate justification packages and

--the results of DOD and service screening, including the reasons for rejecting candidates.

For candidates submitted to the Congress, we visited the program offices to review the

--estimating methods used to prepare the justification package,

--production and delivery history,

--testing results,

--engineering changes not yet tested or incorporated in the production item,

--schedules for implementing the multiyear program,

--specific benefits involving enhancement to the industrial base, and

--acquisition strategy.

During the review we also evaluated any major changes in the requirements or funding commitments for the systems or subsystems involved, particularly those affected by the fiscal year 1985 budget.

As requested, we did not obtain official agency comments on this report. However, we discussed the results of our review of each candidate with the appropriate program offices and OSD (Comptroller). Their views are included in this report where appropriate.

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We performed our work at the following locations:

--Office of the Secretary of Defense (Comptroller), Washington, D.C.

--Headquarters, U.S. Air Force, Washington, D.C.

--Headquarters, U.S. Army, Washington, D.C.

--Headquarters, U.S. Navy, Washington, D.C.

--Aeronautical Systems Division (Air Force Systems Command), Wright-Patterson Air Force Base, Ohio

--Air Force Space Division (Air Force Systems Command), El Segundo, California

--Naval Air Systems Command (Naval Material Command), Washington, D.C.

--Army Aviation Systems Command, St. Louis, Missouri

--Army Missile Command, Huntsville, Alabama

--Army Tank Automotive Command, Warren, Michigan

--Army Armament Munitions and Chemical Command, Rock Island, Illinois

Our review was performed in accordance with generally accepted government auditing standards.

ANALYSIS OF MULTIYEAR PROCUREMENT CANDIDATES INCLUDED IN DOD'S FISCAL YEAR 1985 BUDGET REQUEST

We were requested on December 21, 1983, by the Chairman of the Subcommittee on Defense, Senate Committee on Appropriations, to analyze multiyear procurement candidates in the DOD fiscal year 1985 budget request. On February 14, 1984, the Chairman of the Subcommittee on Defense, House Committee on Appropriations, requested the results of our analysis. They requested that the analysis be focused on a comparison of the candidates with the criteria for multiyear procurement established in Public Law 97-86, with particular emphasis on the benefit to the government and design stability. We were also asked to address the effect of multiyear procurement on enhancement of the industrial base.

THE CRITERIA FOR MULTIYEAR PROCUREMENT

Multiyear procurement is a method for acquiring several years requirements (no more than 5 as defined in the Public Law 97-86) of systems or subsystems with a single contract. DOD identified multiyear procurement as a key initiative for improving the weapon systems acquisition process; and in 1981, the Congress authorized DOD to use multiyear procurement for major systems. Since fiscal year 1982, DOD has proposed weapon systems or subsystems to be acquired using multiyear procurement.

Multiyear procurement can produce benefits to the government, but it also entails certain risks. Public Law 97-86 reiterates the benefits and establishes the criteria that multiyear candidates must meet to limit the risks. The law states,

> ". . . it is the policy of the Congress that such contracts, when practicable, provide for the purchase of property at times and in quantities that will result in reduced costs to the Government and provide incentives to contractors to improve productivity through investment in capital facilities, equipment, and advanced technology."

The risk limiting criteria require that the: requirement for the property be expected to remain substantially unchanged, funding be requested by DOD to carry out the contracts, design be stable, and estimated cost be realistic.

Some of these criteria have been further refined by DOD and the congressional committees. A further discussion of the criteria--benefit to the government, degree of cost confidence, and stability of requirement, funding, and design--is included below.

Benefit to the government

The savings to be achieved by multiyear contracting should be significant since multiyear contracting can reduce future budget flexibility and can entail some added risks, particularly if the requirement, configuration, and funding prove not to be stable or if cost estimates ultimately prove to have been inaccurate. If a multiyear contract was awarded and later changed significantly or terminated, the ultimate cost of the effort could be higher than under annual contracting. Further, cost savings must offset additional government borrowing costs associated with accelerated expenditures under multiyear contracting.

Each proposed multiyear contract should be evaluated on its own merits, weighing the margin of savings against added risks and any other uncertainties. The savings should be high enough to offset any additional risks of entering into a multiyear contract. For example, a candidate with no risks in terms of requirement, funding, or design stability, and in which a high degree of confidence in the cost estimate does exist, may provide only a small percentage or amount of savings. In this case the savings are essentially ensured, and they may be judged substantial enough to take advantage of them. On the other hand, a candidate with high projected savings may be inappropriate for multiyear contracting if the design, funding, or requirements are unstable or if the cost estimate is not based on sound information and logic.

Accordingly, savings should be assessed in relation to the risk or absence of risk which is reflected in (1) the confidence in the cost estimate, (2) requirement stability, (3) funding stability, and (4) configuration or design stability.

One indicator of risk for multiyear candidates is the type of contract proposed. The use of a firm, fixed-price contract indicates a high degree of cost confidence and stability and represents minimal risk to the government, if the contract price is fair and reasonable. When contract value cannot be determined with enough certainty, a fixed-price incentive contract can be used. A fixed-price incentive contract allows for adjustment of profit and determination of contract value up to a preestablished ceiling price, and can be used to encourage contractors to improve cost and performance.

According to the program offices, 10 of DOD's fiscal year 1985 multiyear candidates will use firm, fixed-price contracts. The Air Force has not yet determined if firm, fixed-price contracts or fixed-price incentive contracts will be used for the F-16 airframe and DSCS III, if approved.

Degree of cost confidence

This criterion requires that the contract cost and the anticipated cost savings be realistic. Cost savings is the difference in cost estimates, proposals, or negotiated prices for the multiyear contract and the cost of procuring the same quantities, in the same time frames, with successive annual contracts.

Initially, the military services produce budgetary estimates of the potential savings available from multiyear contracting. These estimates are usually based on prior history, information received informally from contractors, and/or in-house estimates. They are usually the basis for the original multiyear justification submitted to the Congress. Confidence in the cost estimates may be increased by the receipt of firm proposals from the applicable contractor, on an annual and multiyear basis, and then comparing and analyzing those proposals.

The fiscal year 1984 Defense Appropriations Act required that the House and Senate Armed Services and Appropriations Committees be notified at least within 30 days of contract award for multiyear contracts for major systems. This allows the Committees to compare the estimates presented in the justification packages with the actual proposed contract amounts.

Stability of requirement

The need for the system or subsystem must be stable and remain relatively stable throughout the multiyear procurement period. A stable requirement means the quantity needed will not vary significantly over the term of the multiyear contract, particularly downward. Decreases in the requirement and quantities procured often create unit cost increases, which could adversely affect savings.

Stability of funding

DOD must be committed to ensure that sufficient funds will be made available to complete a multiyear contract at planned production rates. A turbulent funding history for a weapon system may suggest an unstable requirement or wavering support, making it inappropriate for multiyear contracting.

The current and anticipated budget deficits and pressure to reduce defense spending have created concern whether continued availability of funds can be guaranteed. Consequently, although DOD may have provided amounts in its Five-Year Defense Program for proposed multiyear efforts, it may require extra discipline to ensure the stability of funding required to sustain the contractual production schedule over the life of the contract. Pressures to reduce budgets increase the discipline necessary for using multiyear contracts for major weapon systems.

Stability of design

The design of a system or subsystem should be stable before multiyear procurement is initiated. Test and evaluation should be complete and demonstrate that the item is operationally effective. In our opinion, a program should be judged mature and stable only after research and development and one or two production runs have been successfully completed. The Senate Committee on Appropriations, in its fiscal years 1983 and 1984 reports on the DOD appropriations bill, indicated a similar view that the multiyear approach must be reserved for established production operations and low risk, state-of-the-art technology.

INDUSTRIAL BASE ENHANCEMENT

The multiyear justification packages include statements about industrial base enhancements related to each of the candidates. The categories discussed in each multiyear justification, excluding the Bradley turret drive, include

--improved competition,

--enhanced investment,

--improved vendor skill levels,

--training programs,

--progress payment changes,

--use of multiyear contracting for vendors, and

--increased production capacity.

The justification for the Bradley turret drive contained a few general sentences, and did not discuss each of the categories shown above.

The stability in contractor/subcontractor operations associated with multiyear contracts can create a level of business certainty more conducive to enhancing the industrial base than annual procurements which are more likely to fluctuate. Nevertheless, in most instances, it is difficult if not impossible, to specifically identify in advance the enhancing that will occur as a result of a multiyear contract that would not occur if procurement is by annual contract.

We requested information from each program office to further support the presentations in the fiscal year 1985 justification packages. Most program offices had little information other than

what had already been included in the justification package. The following are two typical examples of what we found.

F-16 airframe

The F-16 airframe justification package contained general statements and logic on the enhancement of the industrial base due to multiyear procurement. The basic statement, however, was that the proposed follow-on multiyear buy will have little additional effect beyond that provided by the initial multiyear contract. The F-16 program officials stated that the multiyear buy would stabilize the industrial base that is in place for the F-16 program.

The F-16 program is heavily involved in industrial modernizing improvement programs which enhance capital investment and technology modernization of the contractor plants. Multiyear contracts can ensure the long-term business base that is required to enhance the modernization programs.

CH/MH-53E

Although no new plants or production line equipment are expected to be required by Sikorsky to produce the multiyear quantities of the CH/MH-53Es, the February 1984 justification package listed the following improvements to the defense industrial base.

--Improved competition at the subcontractor level because vendors will be competing for a comparatively large number of units to support the 56 airframe multiyear contracts, which would give a larger base over which to amortize nonrecurring costs.

--Possible stimulation of Sikorsky to investigate new investments in capital equipment and technology with the potential of lowering costs and enhancing productivity with multiyear procurement for both the Black Hawk and CH/MH-53E helicopter programs.

--Improved vendor skill levels at both the prime and subcontractor levels because production line rates could be established for known quantities with multiyear procurement.

--A substantially larger quantity of parts and raw materials on hand or already on order than under an annual contract, thereby permitting Sikorsky to rapidly surge production to capacity in the event of a national emergency or contingency.

Program officials could not demonstrate that any specific enhancements to the industrial base will actually occur with multiyear procurement of the 56 CH/MH-53Es. However, they noted that the total number of subcontractors supporting the Black Hawk substantially increased when it went under multiyear procurement.

While we believe that multiyear procurement is more conducive to expanding the industrial base than annual procurement and that many enhancements should logically occur, the program offices were unable to be specific in defining the anticipated enhancements.

In early 1984, OSD officials visited four prime contractors and three subcontractors involved in previously approved multiyear procurements. While they found it difficult to tie capital investments directly to multiyear contracts, they found that multiyear procurement had led to a dramatic increase in vendor competition and an increase in dual sourcing. They believe the increase in competition and dual sourcing are major industrial base enhancements.

While OSD's effort found that some benefits may be occurring, we believe a review of the results of previously awarded multiyear contracts will yield additional insight into the potential for enhancement to the industrial base. We plan to consider this issue in our future evaluations of multiyear contracts.

FISCAL YEAR 1985 CANDIDATES REJECTED BY THE SERVICES AND OSD

The military services considered 22 potential candidates for fiscal year 1985 multiyear procurement. Six of the potential candidates were screened out by the services before being submitted to OSD for approval. Of the remaining 16, OSD disapproved 4 because they did not fully meet the criteria and submitted the remaining 12 to the Congress for approval.

Service headquarters, and in turn OSD, reviewed each candidate to determine if the criteria for multiyear procurement had been satisfied. The following list shows the reasons for rejecting 10 candidates.

Candidate rejected by	Reason for rejection
Air Force:	
F-16 Radar	Unstable configuration
AN/ARC-170 radio	Insufficient savings
Airborne Warning and Control System	Unstable requirements
Low-level laser guided bomb	Unstable configuration
Army:	
Bradley Fighting Vehicle	Insufficient savings
Navy:	
Sealift support	Unstable program and costs estimates
OSD:	
Inertial upper stage (Air Force)	Operational failure in June 1983
AH-64 (Army)	Low confidence in cost estimates
SH-60B (Navy)	Program quantity decreased (unstable requirement and funding)
AN/SSQ-77 (Navy)	Unstable requirement

We made no further evaluation of the candidates that were rejected. Our review concentrated on the candidates submitted to the Congress, including the benefit to the government, degree of confidence in savings, and stability of design, requirements, and funding.

ESTIMATED SAVINGS OF THE 12 CANDIDATES SUBMITTED TO THE CONGRESS

In the fiscal year 1985 budget, DOD submitted 12 candidates for approval of multiyear procurement authority. DOD estimated a total potential savings of $1,239.2 million in then-year dollars, or about 10.5 percent less than the cost of procurement on an annual basis.

Since the rates of government expenditures differ for annual and multiyear procurement methods, present value analysis must be used to put the annual and multiyear estimates on a comparable basis. Present value analysis is a method to compare the two procurement alternatives, and adjust for inflation and the cost of borrowing.

Although present value analysis is a generally accepted practice, selecting an appropriate interest rate has been the subject of much controversy. The rate applied has a direct effect on the results of an analysis. For federal government investment analyses and decisionmaking, arguments have been presented for interest rates ranging from the cost of borrowing by the U.S. Treasury to rates of return that can be earned in the private sector of the economy. Since most government funding requirements are met by the Treasury, its estimated cost to borrow is a reasonable basis for establishing the interest rate to be used in present value analyses. Accordingly, for our analyses, we used the average yield on outstanding marketable Treasury obligations that have remaining maturities similar to the period involved in the analysis. DOD uses the Office of Management and Budget Circular A-94 prescribed present value method which applies a flat 10-percent discount rate to constant dollars.

Our present value analysis of all the fiscal year 1985 candidates indicated projected savings of $697.6 million or about 8.5 percent. DOD's present value analysis shows $522.2 million in projected savings, or about 7.7 percent.

The estimated savings and contract costs for the fiscal year 1985 candidates are shown on page 11 in then-year dollars. We show DOD's and our present value savings estimates for the multiyear candidates on page 12.

Fiscal Year 1985 Multiyear Candidates Savings Estimates

System	Estimated contract cost			Percent[a]
	Annual	Multiyear	Savings	
	(millions)			
Air Force:				
F-16 airframe	$ 4,253.5	$ 3,895.2	$ 358.3	8.4
F-16 simulator	130.1	114.0	16.1	12.4
DSCS III	888.9	713.1	175.8	19.8
Army:				
UH/EH-60 airframe	1,376.3	1,250.0	126.3	9.2
CH-47D modernization	1,434.8	1,281.4	153.4	10.7
5-ton truck (M939)	1,001.6	936.1	65.5	6.5
TOW II missile	1,175.9	1,058.2	117.7	10.0
Shop equipment CMV	215.4	141.1	74.3	34.5
Bradley turret drive	238.5	227.7	10.8	4.5
Bushmaster 25mm gun	156.8	144.8	12.0	7.7
Navy:				
CH/MH-53E airframe	886.7	759.3	127.4	14.4
AN/SSQ-36 sonobuoy	13.2	11.6	1.6	12.1
Total	$11,771.7	$10,532.5	$1,239.2	10.5

[a]Percent of savings compared to annual contract cost.

APPENDIX II

Comparison of DOD and Our Present Value Savings for Fiscal Year 1985 Multiyear Candidates

	DOD present value savings		Our present value savings	
	Amount	Percent[a]	Amount	Percent[b]
	(millions)		(millions)	
Air Force:				
F-16 airframe	$118.3	5.0	$170.7	6.0
F-16 simulator	.9	1.1	4.0	4.2
DSCS III	64.7	12.7	94.1	15.1
Army:				
UH/EH-60 airframe	60.5	7.6	78.4	8.0
CH-47D modernization	64.1	8.7	93.2	9.2
5-ton truck (M939)	39.7	6.5	48.4	6.5
TOW II missile	80.2	10.0	80.8	10.0
Shop equipment CMV	29.9	27.0	41.6	28.7
Bradley turret drive	4.0	2.6	6.3	3.2
Bushmaster 25mm gun	6.0	6.2	8.1	6.7
Navy:				
CH/MH-53E airframe	52.5	9.9	70.8	11.2
AN/SSQ-36 sonobuoy	1.4	12.3	1.2	10.2
Total	$522.2	7.7	$697.6	8.5

[a]Percent of savings compared to DOD's present value annual contract cost.
[b]Percent of savings compared to our present value annual contract cost.

Source of savings

Just as the percentage of savings for each candidate varies, so does the source of the savings. The largest category of savings for the 12 fiscal year 1985 candidates is associated with vendor or subcontractor procurement. The sources of estimated savings for the 12 candidates are shown in the chart below.

Source of savings	Percent of total savings
Inflation	30.6
Vendor procurement	47.9
Manufacturing	17.0
Other	4.5

The majority of the savings in a typical multiyear arrangement are associated with procurement of vendor and subcontracted items on a more economical basis than is possible with a series of annual procurements. The technique is called economic order quantity procurement or expanded advance buy. Rather than procure subcontracted parts and materials in annual lots of limited sizes, the prime contractor can procure parts in larger lots, thereby obtaining lower prices from subcontractors because the subcontractor can be more efficient in buying materials and in scheduling production. However, the government must make a contractual commitment to the prime contractor to either procure the larger multiyear total quantity or pay termination costs if quantities are reduced.

OUR ASSESSMENTS OF THE FISCAL YEAR 1985 CANDIDATES

We reviewed the justification submitted to the Congress for each of the 12 candidates to assess their conformance to the multiyear criteria outlined in Public Law 97-86. The chart below summarizes our views of each candidate with the criteria. The Xs identify instances in which the multiyear contract candidate does not meet the legislative criteria. We placed an X under cost confidence in all cases because firm proposals were not available at the time the estimates in the justification packages were prepared. Although firm proposals were also unavailable for most of the candidates at the time of our review, we have not excluded any of these systems from consideration for multiyear contracting solely because of this category.

In addition, we placed an X under savings for two candidates, the F-16 simulator and the Bradley turret drive. These two systems show low savings when compared to the rest of the candidates. We have not excluded these two candidates from further consideration for multiyear contracting solely because of their projected savings. The projected savings for all the multiyear contract candidates must be examined in context with each of the other criteria, and not in isolation. We also note that no criteria has been established by the Congress, DOD, or us to determine if projected savings are sufficient for approval of multiyear contracting.

Summary Schedule Showing Questionable Conformance with Legislative Criteria

	Savings	Cost confidence	Stability: Requirement	Stability: Funding	Stability: Design
Air Force:					
F-16 airframe	-	X	-	-	-
F-16 simulator	X	X	-	(a)	X
DSCS III	-	X[b]	-	(a)	-
Army:					
UH/EH-60A airframe	-	X[b]	-	-	-
CH-47D modernization	-	X	-	-	-
5-ton truck (M939)	-	X	-	-	-
TOW II missile	-	X	X	X	-
Shop equipment CMV:					
--chassis	-	X	-	X	-
--body and tools	-	X	-	X	X
Bradley turret drive	X	X	X	-	-
Bushmaster 25mm gun	-	X[b]	X	X	-
Navy:					
CH/MH-53E airframe	-	X[b]	-	-	-
AN/SSQ-36 sonobuoy	-	X	-	-	-

[a]Action on the fiscal year 1985 budget by the House Armed Services Committee disapproved the funding necessary to implement these multiyear contracts.

[b]Firm proposals had been received at the time we completed our review but had not been used to update the justification packages.

The following sections discuss each of the systems submitted to the Congress for approval and the basis for our judgments as to whether they met the legislated criteria. We have placed an asterisk next to the titles of those candidates which either did not clearly meet one or more of the criteria, or had undergone program budget changes, thus warranting the submission of a revised justification package.

F-16 AIRFRAME

The F-16 multimission fighter (Fighting Falcon) is a single-engine, lightweight aircraft being procured by the Air Force for air-to-air combat and delivery of air-to-surface weapons. Over 1,000 F-16s have been delivered since August 1978. Aircraft now being delivered are being procured on a multiyear contract covering fiscal years 1982-85 requirements.

The Air Force plans to purchase 864 F-16C and D model aircraft in fiscal years 1986-89 at the rate of 216 aircraft per year. The acquisition strategy contemplates procurement of 720 airframes by use of a "core" multiyear contract at the rate of 180 aircraft per year, with the remaining 144 aircraft to be procured with annual "variation-in-quantity" options for up to 36 additional aircraft per year. This will give the Congress the option each year of funding the additional 36 aircraft.

The Air Force estimates the proposed core multiyear procurement of the 720 aircraft will cost $358.3 million less than acquisition of those aircraft on annual contracts. When including the annual variation-in-quantity options of 36 aircraft per year, the total savings are estimated to be $227.1 million.

The estimated savings are, for the most part, based on cost experience from the fiscal years 1982 to 1985 multiyear contract. The F-16 program office plans to ask the contractor to submit both annual and multiyear proposals for the planned fiscal years 1986-89 contract. Cost savings cannot be determined with a high degree of confidence until the proposals are received and analyzed. Air Force officials said the justification package reports the estimated savings conservatively. When we last checked with the program office in late August 1984, it had not received approval to issue the request for proposals. It had planned to release the request in May 1984.

The F-16 airframe meets the multiyear criteria of stable design, requirements, and funding. The airframe design appears to be stable with over 1,000 F-16s having been produced. We are unaware of any significant changes to the airframe.

The Air Force's F-16 aircraft program has historically received strong support from DOD and the Congress. The Air Force's stated requirement for F-16s has increased to 2,651 aircraft with a yearly requirement of 216 aircraft in fiscal years 1986 through 1992.

The Air Force is considering developing an advanced version of the F-16 aircraft for production in 1990 and 1991. The requirement for that aircraft has not been approved.

F-16 SIMULATOR*

The F-16 weapon systems training simulator provides training for all normal and emergency aspects of the F-16 mission, including weapons delivery, electronic warfare, and air-to-air and air-to-ground radar simulation. A total of 18 simulators have been procured for F-16 users; 8 for the United States Tactical Air Forces, 2 for use as test beds, 6 for European governments participating in production, and 2 for nations making foreign military purchases.

The Air Force plans to award a multiyear contract for 12 Air Force simulators with fixed-price options for 9 additional units. It also plans to award the contract on a sole-source basis to acquire fiscal years 1985-88 requirements. The Air Force received annual and multiyear proposals in August 1984 and plans to award a contract in December 1984.

The total cost of the multiyear procurement is estimated at $114 million, with $42.6 million of that figure being used for the advanced procurement of common parts, excluding options. The Air Force estimated it would save about $16 million, or 12.4 percent over annual procurements if a multiyear procurement is approved. Discounted savings are about 4.2 percent.

Little documentation was available regarding the basis for the projected $16 million savings, and we have little confidence in the projected costs and savings. The cost estimates were based on preliminary contractor inputs, prior contracts, program office judgment, and direction from Air Force Systems Command to adjust the multiyear cost downward by $3 million.

While the total requirements for F-16 simulators have been stable, the House Armed Services Committee recently denied $127 million of the $141.3 million budgeted for the F-16 simulator in fiscal year 1985. In addition, the lack of a stable design may jeopardize the stability of the simulator's configuration. Four major changes to the simulator's configuration have taken place to date. The most recent change, to incorporate simulator changes needed to accomplish the multinational staged improvement program, has not yet stabilized. The program office estimated that the simulators to be procured would require a 30-percent hardware change and a 40-percent software change.

Average use of the currently fielded simulators has increased from 78 percent to 90 percent. Although testing has been completed on these units, most delivered units are being updated to a

later configuration. We believe the F-16 simulator's design is not stable and the present value savings may not be substantial enough to justify the risks of entering into a multiyear contract.

DSCS III

DSCS III will provide satellite communications for secure voice and high data rate transmissions in support of DOD and other special users. Operational DSCS III satellites will replace satellites of the DSCS II configuration on a replenishment basis as DSCS II satellites reach the end of their orbital lifetimes.

In 1977 the Air Force awarded a contract to produce one qualification DSCS III satellite launch and two developmental satellites. In 1978 the Defense Communication Agency established a requirement for a total of 14 DSCS III satellites, including the qualification and the developmental satellites. Contracts were awarded in 1982 for four production satellites.

The multiyear procurement request is for procurement of the remaining 7 of the 14 satellite programs during fiscal years 1985-88. The Congress approved an expanded advance buy contract for this multiyear procurement in the fiscal year 1984 budget. The Air Force awarded that contract in January 1984.

The Air Force received both annual and multiyear proposals in January 1984, but plans to negotiate only a multiyear contract. Negotiations were completed in August 1984 and the Air Force plans to award the multiyear contract in October 1984.

The justification package submitted to the Congress estimates cost savings of $175.8 million. This figure includes about $39 million in savings from the expanded advance buy released in January 1984. The justification package estimates were based on "not-to-exceed" cost estimates provided by the contractor. The not-to-exceed estimates were used because proposal data was not available at the time the package was submitted. We have little confidence in these estimates. Although the Air Force had the contractor proposals before our review was complete, it would not release the information to us because negotiations were not completed. The Air Force plans to upgrade the justification package no later than 30 days before the expected contract award (October 1984) to reflect proposed annual costs and the negotiated multiyear cost. There should be a higher degree of confidence in the cost savings when the justification package is updated.

The DSCS III appears to have a stable design. According to Air Force officials, the satellites have experienced only minor changes, primarily because parts were unavailable. Because of the nature of satellite production (i.e., small numbers and long production times), a part which was available for a previous buy may not be available for the next buy. When this occurs, the Air Force is forced to locate and qualify a new vendor or part. Even when the part is found, it may not exactly duplicate the previous

part, which can lead to minor design changes to make it compatible to the existing system. This occurred with the prior DSCS III procurement. According to Air Force officials, these occurrences have been infrequent and immaterial to the satellite configuration. The Air Force pointed out that the satellite has two preplanned product improvements. According to the Air Force, the possibility of failures and the risk associated with the changes are minimal.

The requirements and funding for the DSCS III appear to be stable. The requirement for a total of 14 satellites has remained constant since 1978, and we found no indications it would decrease over the multiyear period. Although the contractor experienced some cost overrun problems in the program, the cost performance was at or below target for all but two quarters in fiscal years 1981, 1982, and 1983.

In April 1984, the House Armed Services Committee disapproved the fiscal year 1985 multiyear procurement of DSCS III. The reason for the disapproval was apparently related to the need to cut the overall fiscal year 1985 budget rather than any technical reason. Since the Committees requested us to review each of DOD's proposed multiyear contracts, and since the House Armed Services Committee action occurred during our review, we included the DSCS III in our report.

UH/EH-60A HELICOPTER AIRFRAME

The UH-60A (Black Hawk) utility helicopter was designed and developed in the early 1970s. It replaces the older UH-IH helicopter and is a twin-engine helicopter used by the Army to transport troops and equipment into combat, resupply troops while in combat, perform aeromedical evacuation, reposition reserves, and provide command and control. The UH-60 airframe is also used for the Army's EH-60A, a special electronics mission aircraft. Modified versions of the UH-60A airframe are also used for the Navy's SH-60B and the Air Force's HH-60D programs.

The Army plans to procure 1,195 helicopters. As of March 1984, 500 aircraft had been delivered to the Army.

The initial production contract for the UH-60A was issued in December 1976 for fiscal year 1977 requirements. This contract included options for fiscal years 1978, 1979, and 1980 which the Army exercised. The Army awarded two additional production contracts for the UH/EH-60A airframes, including a single-year contract for fiscal year 1981 and a multiyear contract for fiscal years 1982, 1983, and 1984. The Army has contracted for 636 airframes.

The proposed multiyear contract is for 234 UH-60s and 54 EH-60s in fiscal years 1985-87. In January 1984, the Army requested proposals for the multiyear contract and an annual contract for fiscal year 1985. The Army received the proposals in

March 1984 and is planning to award a contract in October 1984. The annual proposal for fiscal year 1985 was to provide a realistic basis for estimating savings on the multiyear contract and to also continue the project should the Congress disapprove the multiyear proposal.

The Army's projected cost savings of $126.3 million, or about 10 percent, for the multiyear contract were based on budgetary estimates using data from the ongoing multiyear contract. We believe these estimates are inadequate to establish the reasonableness of the claimed savings. The contractor proposals received in March 1984 indicate that a multiyear contract would be about 11 percent less than annual contracts. However, the contractor's proposed price for the multiyear contract was about 20 percent less than the Army's estimate. These differences between the Army estimates and contractor proposals should be reconciled by the Army during its evaluation of the contractor's proposals and the negotiation of the contracts.

The justification package should be updated by the Army after negotiations are completed. In April 1984 the House Armed Services Committee recommended reducing the fiscal year 1985 request for the UH-60 by $31.8 million due to the increased savings in the contractor's multiyear proposal.

Although the Army has made several engineering changes to the UH-60A airframe, and more have been proposed, we do not believe the changes had or will have a significant effect on the design of the airframe. The requirements for UH/EH-60A airframes and related funding are expected to be stable during the proposed multiyear period. We are not aware of any changes to the requirements and funding.

CH-47 HELICOPTER MODERNIZATION PROGRAM

The CH-47 medium lift helicopter was designed and developed in the late 1950s. It is a transport helicopter used by the military services for artillery movement, missile transport, personnel movement, aircraft recovery, medical evacuation, and resupply of ammunition and fuel to the battlefield.

The Army is modernizing its CH-47 helicopter fleet to maintain its medium lift capability beyond the year 2000. The modernization of 436 aircraft is to provide a uniform 15,000 pound lift capability and standardize the CH-47s to the D configuration, which was firmly established with the first production contract in 1980.

The Army has awarded single-year production contracts for fiscal years 1981-84, for a total of 88 CH-47D aircraft. As of May 1, 1984, 33 production aircraft had been delivered. Each of

these aircraft was delivered on time and within contract cost. Prototype aircraft testing was completed in December 1983 and production aircraft testing was in process at the time of our review.

The Army's projected cost savings of $153.4 million under a multiyear contract are based on budgetary estimates, past procurements, and mathematical extrapolations. The reasonableness of these claimed savings cannot be fully established without firm proposals.

The multiyear contract proposed is a 5-year (fiscal years 1985-89) contract for 240 airframes. The Army issued a request for proposal on June 1, 1984, and received the proposal on July 6, 1984. It plans to award the contract by December 31, 1984. Along with the request for a multiyear proposal, the Army also requested a single-year proposal for the first year of the multiyear contract period. This proposal will provide a basis for estimating savings on the multiyear contract and will also continue the project should the Congress not approve the multiyear procurement.

Since the basic CH-47D design configuration was firmly established in 1980, approved engineering design changes have been insignificant. Testing of prototype and production aircraft to date has not disclosed any serious deficiencies in the operational capability of the aircraft. The Army's plan to modernize 436 aircraft has not changed since 1980 and sufficient funding is included in DOD plans for the multiyear procurement as proposed by the Army. We believe the risk is low for any design, requirement, or funding problems with the CH-47D modernization program.

M939 SERIES 5-TON TRUCK

The M939 is a basic 5-ton truck that includes various body types such as a wrecker, dump, van, and cargo. The M939 is an improved version of the M809 series truck first produced in 1970. The M939 was first acquired in 1981 under a competitive firm, fixed-price 5-year multiyear contract which provides for delivery of a total of 22,788 trucks (including options) through fiscal year 1985.

The justification package describes a follow-on 3-year multiyear contract for fiscal years 1985-87 for a total of 9,289 trucks, with options for another 9,289 trucks. (An overlap exists in fiscal year 1985 to prevent a break in production.) However, the Army is considering expanding the multiyear procurement from 3 to 5 years as a result of firmed up requirements for fiscal years 1988 and 1989. Under the 5-year procurement package, the program office plans to issue an invitation for bid in October 1984 for about 18,500 M939 series trucks with an option for another 18,500. The Army plans to award the contract in March 1985.

The Army's estimated cost for the proposed 3-year multiyear contract was $65.5 million less than for three annual contracts. The Army estimated the cost of the proposed multiyear contract using unit cost data from the ongoing multiyear contract. The annual procurement cost was estimated to be 7 percent greater than the estimated multiyear cost based on an Air Force study related to savings from multiyear contracting. The annual costs were estimated this way because the M939 trucks had never been procured annually. In addition, the Army does not intend to request annual proposals because the procurement will be advertised. Therefore, no comparison of annual versus multiyear proposals will be available.

Obtaining proposals only on a multiyear contract basis does not yield the highest degree of cost confidence and certainty of savings. However, since full competition will be used, and the contractors will foresee obtaining a multiyear contract, this should ensure that the government obtains the most reasonable prices.

The design of the M939 series truck appears to be stable with only minor improvements, such as different paint and new radial tires, planned for the proposed multiyear period. Although some initial production deficiencies were experienced under the existing contract, they have been corrected and 8,785 out of a scheduled 9,481 trucks had been delivered and accepted as of mid-April 1984.

The requirements and funding for the 3-year multiyear program appear to be stable. A 5-year program, however, will require a funding commitment for an additional 2 years. The Army plans to update its fiscal year 1985 multiyear justification requesting approval for the 5-year program and additional quantities.

TOW II MISSILES*

TOW II is an antitank/assault wireguided missile that can be employed from a ground mount or a variety of military vehicles, including the Bradley Fighting Vehicle and the Cobra helicopter. TOW II represents the third generation of TOW missiles. It is similar to its predecessors--TOW and Improved TOW--except it has a more lethal warhead, a more powerful flight motor, and a thermal beacon to improve field performance.

TOW II research and development began in December 1978, production started in December 1981, and it was deployed in October 1983. The Army has awarded two firm, fixed-price production contracts for the TOW II with options for additional quantities. The contracts cover procurement of 48,466 missiles. The Army, in

January 1984, exercised the last of the production options for 20,200 missiles. Prices paid for TOW II missiles declined in fiscal year 1984 to about $6,800 per missile from about $8,000 per missile paid in fiscal year 1981.

The Army requested authority to award a 5-year TOW II multiyear contract in fiscal year 1984, but the Congress disapproved the request. The Army submitted another request with the fiscal year 1985 budget. Under the currently proposed multiyear contract, the Army plans to procure 125,350 missiles for the Army and Marine Corps, with options to procure additional United States requirements and approved foreign military sales. The Army estimates that the proposed 5-year multiyear procurement would cost $117.7 million less than successive annual buys. The Army also claims an unquantified cost avoidance by eliminating the need for five annual contract proposals, negotiating those proposals, and awarding the five contracts.

The cost estimates for the proposed multiyear and comparative annual procurements are based on a contractor's proposal for the disapproved fiscal years 1984-88 multiyear contract, project office judgment, and budget planning data. The contractor's proposal for the disapproved fiscal years 1984-88 multiyear program indicates that a multiyear contract would cost less than a series of annual contracts. Nevertheless, the cost estimates in the justification package for fiscal years 1985-89 show higher unit costs than those incurred in fiscal years 1981-84. The Army projected unit prices increasing from $7,932 in fiscal year 1985 to $9,153 in fiscal year 1989.

For the fiscal years 1985-89 multiyear program, the project office plans to request firm proposals on a sole-source basis, receive the proposals in November 1984, and award a multiyear contract no later than April 1985. The proposals would establish a higher degree of confidence in the costs and savings estimates.

Competition may be appropriate for multiyear procurement of TOW II missiles. The Army took control of the technical data package in September 1981. Another contractor, after examining the technical data package, concluded that competing for the multiyear production buy would be feasible if the Army planned to buy about 100,000 missiles. Since the Army projects a departure of past favorable unit price trends, even with use of multiyear procurement, competition may be desirable. Program office officials believe the cost and time required to qualify a second source may make competition less practical.

The design for the TOW II appears stable. Substantial quantities have been produced and no major design changes are planned. While the design is stable, requirement stability is uncertain because the Army and DOD have recently changed the planned acquisition schedule for the proposed multiyear period.

In May 1984, several months after the justification package was submitted, the Secretary of Defense recommended a $120 million reduction in the fiscal year 1985 TOW II budget, reducing the planned procurement by 12,000 missiles. Army officials told us budget plans for fiscal years 1986-89 which are now developing, consider reductions of the planned procurement quantities by 6,000 missiles each year. Consequently, if a multiyear contract was awarded for fiscal years 1985-89, it might be considerably different from the one proposed in the justification package.

CMV*

CMV is a truck-mounted mobile-repair shop with tools for repairing equipment in the field. The current model is a 1-1/4-ton Dodge truck chassis with a 4,100-pound payload. It has a compartmentalized body equipped with numerous tools, such as hammers, screwdrivers, electric drills, welders, and an air compressor. The multiyear contract would be used to procure the compartmentalized body only. The model currently being considered will have a Chevrolet chassis with a 3,600-pound payload.

The Chevrolet chassis would be procured as an add-on to the last year of an existing annual contract rather than as a multiyear contract. It appears that acquiring the chassis using an add-on to an existing contract was the driving factor in proposing the CMV as a multiyear candidate.

The Marine Corps plans to buy 81 CMVs and redesign the compartmentalized body to fit the Chevrolet chassis. The Army plans to take advantage of the Marine Corps procurement by performing engineering tests on the Marine Corps prototype before the Army CMV enters production. However, the Army did not know when the prototype would be completed and tested.

No current or planned producer exists for the compartmentalized body and tools. Army procurement officials stated that several different welding and body shops could produce the bodies and that the tools are available commercially.

The Army is proposing to award a competitive multiyear contract for the compartmentalized body covering fiscal years 1985-89. The Army plans to procure the Chevrolet chassis separately in one lot on an annual contract basis and supply them to the multiyear contractor as government-furnished material. The multiyear contractor for the body and tools will manufacture and mount the body on the chassis furnished by the Army. The contractor will also mount a power takeoff kit on the engine, provide the appropriate tools for each CMV, and paint the entire vehicle to meet Army camouflage specifications. The Army plans to seek both single-year and multiyear proposals for the body and tools to permit calculation of the savings available from multiyear contracting. The following dates have been established for the proposed multiyear contract.

Issue invitation for bid	1/03/85
Receive bids	2/16/85
Award contract	4/30/85

The Army's estimated savings of $74.3 million for the proposed multiyear contract was based on questionable cost projections which we believe overstate the savings. The Army used a 1976 contract cost to project the cost of the body and tools for both single-year and multiyear options. To project the single-year chassis contract cost, the Chevrolet contract unit cost was simply doubled and inflated without any contractor input. This resulted in a chassis savings figure of $44.8 million. The savings for the body and tools may also be overstated because the estimate assumed that a new contractor would be selected each year under the single-year alternative. This places the single-year contractor in a constant learning curve situation with resulting higher costs. The cost savings to be derived from this multiyear procurement may be determined with a higher degree of confidence when firm proposals are received.

Questions exist concerning the design stability of the CMV. Engineering changes will be needed to adopt the compartmentalized body to the Chevrolet chassis. The body, as presently designed, fits the earlier model Dodge chassis. The required engineering changes include

--scaling down the body and tool weight to meet a reduced payload capacity and

--adding a power takeoff kit to the engine to power the generator to operate the electrical tools (instead of a small gasoline engine to operate the generator).

Since the CMV is not in production, the design changes have not been tested. The Army plans to use the Marine Corps prototype testing program to test the changes before the Army CMV enters production. However, Army officials did not know when the Marine Corps prototype vehicle would be produced or when testing would begin. Army officials agreed that assembling and field testing a prototype vehicle would be ideal, but said that time was not available. To take advantage of the option price available on the Chevrolet, the Army said it needs to buy all 3,013 chassis in fiscal year 1985.

By procuring 3,013 CMVs as proposed in the justification package, the Army plans to replace the CMV inventory by fiscal year 1991. Since June 1983, the Army acquisition objective has grown from 3,013 CMVs to 3,252 CMVs. While the total requirements have grown, the Army is considering reducing the CMV fiscal year 1986 budget by $7.9 million. According to Army officials, the

program may be cut because of its priority relative to other programs. This proposed reduction indicates that funding stability for this system has not been ensured throughout the multiyear contract period.

TURRET DRIVE SYSTEM FOR THE BRADLEY FIGHTING VEHICLES*

The turret drive system is the part of the Bradley Fighting Vehicle which

--controls turret rotation,

--controls elevation motion of the weapons platform,

--stabilizes the gun for accurate fire on the move, and

--controls firing of weapons.

Since fiscal year 1983, the Army has procured the turret drive system and furnished it to the system contractor to install in the Bradley Fighting Vehicle. Requirements for fiscal years 1983 and 1984 are being procured on a 2-year multiyear contract. Before fiscal year 1983, the contractor procured the turret drives from the same source.

The Army plans to award a sole-source 3-year multiyear contract for a total of 2,510 turret drives in fiscal years 1985, 1986, and 1987. The program office plans to request a multiyear proposal and an annual proposal without outyear options. The program office plans to award a contract in November 1984.

The Army's estimated multiyear cost savings of $10.8 million is based on contractor estimates for annual procurements and various multiyear periods. The reasonableness of claimed savings cannot be ascertained with a high degree of confidence until firm proposals are received and analyzed. Nevertheless, on a present value basis, the savings are 3.2 percent, which is relatively low compared to DOD's other multiyear candidates.

It appears that the design of the turret drive system is stable. The contractor has been delivering these units in the current configuration for 3 years with few problems; thus, significant design changes are not expected.

While the total requirement for the turret drive has remained stable since 1979, recent procurement schedule changes in the Bradley program indicate some requirement instability during the proposed multiyear period. Recent procurement schedule changes

for the Bradley program reduce the quantities of turret drives to be procured during the multiyear period. The reduced quantities may affect the projected multiyear savings and warrant that a revised multiyear justification package be submitted to the Congress.

BUSHMASTER 25MM GUN*

The M242 Bushmaster 25mm gun is the primary armament on the Bradley Fighting Vehicles. It is a rapid fire stabilized gun with a dual feed for instantaneous selection of armor piercing or high explosive ammunition. It weighs 250 pounds and is 115 inches long.

The Army initially procured Bushmaster competitively in fiscal year 1980 on a fixed-price incentive contract with production options for fiscal years 1981 and 1982. The Army later exercised those options. The Army awarded a second contract for fiscal year 1983 requirements on a sole-source basis. The contract was a negotiated firm, fixed-price instrument with production options for fiscal years 1984 and 1985. The fiscal year 1984 option has been exercised and the fiscal year 1985 option is to be exercised in October 1984.

The justification package proposes a multiyear contract for fiscal year 1985. The Army planned to award a competitive 5-year contract for a total of 3,172 guns. This contract would overlap the fiscal year 1985 contract option to prevent a production line gap. However, shortly after the Bushmaster program office submitted its fiscal year 1985 budget justification proposing this multiyear contract, the office received an unsolicited firm proposal from the current sole-source production contractor. This proposal was for a 5-year sole-source multiyear contract that offered the Army a huge increase in cost savings over that estimated for the 5-year competitive award.

This cost savings was apparently prompted by the threat of competition. In addition, the program office has definitized its option for the fiscal year 1984 production under an existing contract which has provided the office with updated cost information. As a result of this new cost information, the Army initiated an analysis of various competitive and sole-source alternatives to update its fiscal year 1985 justification package. When we completed our review, the program office was reviewing the updated justification package in anticipation of sending it to Army Headquarters for final approval. The projected savings shown in the updated justification package should be considerably greater than those contained in the current justification.

The Bushmaster gun completed development/operational tests in 1978 and initial production tests in 1981. Through April 1984, 1,563 Bushmasters have been accepted by the Army. The Bushmaster has had few engineering changes since initial production and those in process are minor. Therefore, the design appears to be stable.

The Army acquisition objective of 6,882 Bradley Fighting Vehicles has remained unchanged since December 1979. Consequently, the Bushmaster, as the vehicle's primary armament, has experienced the same stability. The Army is planning to acquire 7,194 Bushmasters to equip the 6,882 Bradley Fighting Vehicles; the remaining 312 will be for depot spares and training purposes. The Army has finalized contracts for 2,672 Bushmasters through fiscal year 1984. It plans to acquire the remaining 4,522 with the proposed 5-year multiyear contract beginning in fiscal year 1985 (3,172), and by 2 years of concurrent production with the current producer (1,350). We find no reason to question requirement stability.

The Bushmaster has been in production since fiscal year 1980 and has been fully funded through fiscal year 1984. This system does not meet the stability of requirement criteria because total quantities and procurement rates have been changed. The fiscal year 1985 budget created a reduction in the Bushmaster's production quantities in fiscal years 1985-88, but the fiscal year 1989 quantity was increased. Therefore, some quantities were to be procured later than originally planned. In May 1984, however, the Army further amended the Bushmaster program by reducing total contract quantities by 65 units.

While the Bushmaster program received full funding for the last 5 years, the quantity changes indicate some instability in funding for fiscal year 1985 and subsequent years. These reduced yearly quantities could affect the projected cost savings from multiyear procurement.

CH/MH-53E HELICOPTER

The CH-53E is a heavy lift helicopter used primarily for Marine Corps amphibious assault. The MH-53E uses the same basic airframe, but the electronics equipment differs substantially. It is a multimission helicopter for Navy airborne mine countermeasures missions.

The first production model of the CH-53E was provisionally accepted in December 1980 and 83 aircraft have been procured through 1984. Funding for eight CH-53Es has been requested for fiscal year 1985 on an annual procurement basis. The Navy's fiscal years 1984 and 1985 budgets included research and

development funding for the MH-53E of $32.3 million and $14.6 million, respectively. The fiscal year 1985 budget also includes funding for two production MH-53E aircraft on an annual contracting basis.

The Navy plans to approve this system for limited production in December 1984. It is scheduled to start technical evaluation of the MH-53E in October 1985. The Navy plans to approve the MH-53E for full production in February 1986 before the award of the proposed multiyear contract.

The Navy combined the requirements for the two versions of the helicopter (27 CH-53E and 29 MH-53E) into one justification package for approval of a multiyear procurement for fiscal years 1986-89 with advance procurement funding in fiscal year 1985. In September 1983, the Navy requested proposals for both multiyear and annual contracts. The proposals were received from the contractor in May 1984. The Navy told us it plans to negotiate both the annual and multiyear proposals and select the most advantageous. Negotiations are to be completed in September 1985, while the expanded advance buy release for the multiyear buy is scheduled for November 1984. The contract award is scheduled for February or March 1986.

The fiscal year 1985 multiyear justification package showed an estimated current dollar savings of $127.4 million, or 14.4 percent, based on preliminary estimates received from the contractor in December 1983. The program office reduced the estimated savings to $102.9 million in May 1984 based on negotiation experience for the fiscal year 1984 annual contract. The firm, fixed-price annual and multiyear proposals received from the contractor in May 1984 show the savings to be even lower, $87.6 million, or 10.3 percent.

There seems to be a reasonable level of confidence that multiyear procurement will result in at least a 10-percent savings.

The CH-53E design appears to be relatively stable. Production aircraft have been accepted since early 1981 with no significant problems, and only minor changes are planned during the multiyear period. The design of the MH-53E is far less stable, with the first flight of the production prototype having only occurred in September 1983. Production approval for the MH-53E is not scheduled until February 1986, just before the planned award of the definitized multiyear contract. The Navy plans to include only common CH/MH-53E parts in the advance buy contract covering procurement of material from vendors in economic order quantities.

The requirement for the helicopters appears stable for the period of the multiyear contract. The fiscal year 1983 DOD budget increased the production aircraft from 126 to 160. Programming documents and prior congressional support also indicate the funding will be stable for the multiyear period.

AN/SSQ-36 SONOBUOY

The AN/SSQ-36 sonobuoy is an air-dropped expendable transmitting set which sends information to aircraft on temperatures of the ocean at various depths. The information is used to assist in tracking submarines. This sonobuoy has been in production since 1966. The following chart shows the procurement history of the sonobuoy since 1976.

Contractor	Fiscal year	Quantities contracted for
Magnavox	1976	25,500
Magnavox	1977	12,800
Hermes	1978	11,600
Hermes	1979	28,600
Hermes	1980	14,900
Sippican	1981	20,500
Sippican	1982	20,500
Sippican	1983	29,300
Sippican	1984	22,400

Each of the above requirements were obtained with firm, fixed-price contracts. Since 1979, the program office has used annual contracts with 1 year options.

The Navy is proposing a multiyear contract for fiscal years 1985 and 1986 production buys of 31,600 sonobuoys each year. It plans to request both annual and multiyear proposals from the three qualified sources and award a contract by October 1984. The Navy estimates the multiyear contract will cost about $1.7 million less than two annual contracts for the same quantities. The estimates are based on historical data, primarily from the most recent contract. A higher degree of confidence in the estimates will be achieved with receipt of firm proposals.

The AN/SSQ-36 sonobuoy's design is stable with over 100,000 units delivered since 1973 having the same configuration. Final acceptance rates have been 100 percent since fiscal year 1981. Navy officials said the design and function of the sonobuoy are relatively simple and fixed.

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