

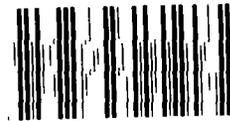
GAO

Report to the Chairmen, Senate and  
House Committees on Armed Services

July 1986

# PROCUREMENT

## Selected Acquisition Report: Suggested Approaches for Improvement



130445

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**National Security and  
International Affairs Division****B-221486**

July 17, 1986

The Honorable Barry M. Goldwater  
Chairman, Committee on Armed Services  
United States Senate

The Honorable Les Aspin  
Chairman, Committee on Armed Services  
House of Representatives

Since 1969, Selected Acquisition Reports (SARS) have been the primary means by which the Department of Defense (DOD) reports the status of major weapon system acquisitions to the Congress. The SAR is a comprehensive report that contains information on the cost, schedule, and performance of major weapon systems in comparison with baseline values established at the demonstration/validation, full-scale development, and production decision points. As of December 31, 1985, there were 97 SAR programs. The cost for 1 of the 97 programs is classified. Acquisition cost for the remaining 96 programs is approximately \$769 billion.

Over the 18 years of selected acquisition reporting, the content of the report has been changed numerous times in an effort to meet the oversight needs of DOD management and the Congress. To try to make the SAR a more useful and readable status report, DOD revised the SAR format and deleted considerable data from the December 31, 1984, reports. For example, the length of the SAR for one system was reduced from 26 pages (as of December 31, 1983) to 8 pages (as of December 31, 1984). This revision became the subject of considerable discussion during hearings by the House Armed Services Committee on DOD's fiscal year 1986 budget request.

The Committee expressed concern over the deletion of information it believed useful, such as a description of the system and mission. The revised SARS also deleted information about ceiling price on current contracts which the Committee believed was needed to understand the government's liability. Because the Committee felt that these revisions made the SAR less useful, the fiscal year 1986 Defense Authorization Act required that future SARS include the same information content as the December 1983 SARS. In addition, the Conference Report directed that we, DOD, and the Congressional Budget Office submit comments and recommendations to the Congress for improving the SAR. The Chairman, House Armed Services Committee, reiterated this requirement in an August 6, 1985, letter to us.

Our analysis considered our prior recommendations which have not yet been acted on, as well as several other approaches for making the SARs easier to use. One such recommendation<sup>1</sup> was to have the SARs identify anticipated cost and/or quantity changes. DOD identified many practical problems in implementing this recommendation. Therefore, we are now suggesting that DOD provide a general discussion of changes under consideration. Details concerning this approach are discussed in appendix I.

The other approaches we explored include:

- Using graphs to display SAR data elements, such as total program cost, program unit cost, and total program quantity, to surface trends, identify matters requiring attention, and make the SAR easier to understand and use. We also developed cost-quantity curves to track unit cost changes for authorized and funded units and to measure the current cost estimate for these units against a baseline estimate.
- Developing more meaningful SAR formats that are readily understandable in revealing such matters as whether a project is on schedule and whether it is within its baseline cost estimate or requires additional resources to complete.
- Establishing a new cost baseline estimate when a program undergoes a major modification. This approach was suggested by the President's Private Sector Survey on Cost Control (PPSSCC) as a more realistic basis for measuring cost variances. We agree with rebaselining as long as the cost history of the program is maintained.

Details concerning these approaches are discussed in appendixes II through IV. Beyond these approaches, we continue to believe there is a need to undertake a long-term effort to overhaul the federal government's financial management systems to correct many of the problems that characterize not only SARs, but other financial management systems within the government.

The House Armed Services Committee staff also asked us to comment on the reasonableness of current thresholds that trigger the issuance of unit cost exception reports by DOD to the Congress. In appendix V we discuss the reasonableness of these thresholds in light of current inflation rates.

<sup>1</sup>DOD Needs to Provide More Credible Weapon Systems Cost Estimates to the Congress (GAO/NSIAD-84-70, May 24, 1984)

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**Objectives, Scope, and Methodology**

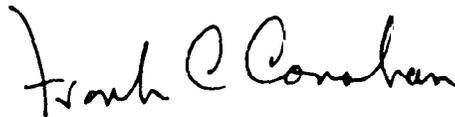
Our objectives and methodology, in part, are described above. The feasibility of the new approaches examined for making the SAR easier to use and understand and for tracking unit cost was determined using F-16 program SARs. Other SAR programs with different program characteristics, such as low production quantities, need to be examined to determine if these approaches have broad applicability. We recognize that each of the approaches considered would require a major revision to the SAR.

Our work was conducted between September and November 1985. During our review, we interviewed cognizant officials from the Office of the Secretary of Defense and military service headquarters. We provided a draft of this report to DOD for its review and comment. While acknowledging that there is a need to improve the SAR, DOD officials expressed a number of concerns which are discussed in the appendixes.

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Improving the SAR will likely require a long-term effort and extensive coordination. We would be pleased to participate in the effort and provide whatever additional assistance we can.

As arranged with your Offices, we are sending copies of this report to the Secretaries of Defense, Army, Navy, and Air Force. We will send copies to other interested parties upon request.



Frank C. Conahan  
Director

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**Abbreviations**

<b>DOD</b>	<b>Department of Defense</b>
<b>SAR</b>	<b>Selected Acquisition Report</b>
<b>PPSSCC</b>	<b>President's Private Sector Survey on Cost Control</b>

# Reporting Potential Program Changes

For some time, the Congress and its oversight committees have been concerned about the accuracy, timeliness, completeness, and usefulness of SAR information. One important concern relates to whether SARs could be more informative about anticipated changes to approved programs. The SARs are largely historical documents based on the officially approved program. Thus, they do not reflect anticipated, but not yet officially approved cost estimate changes, or show quantity changes under consideration.

In addressing this concern, we previously recommended that the Secretary of Defense ensure that DOD disclose the total number of units it is considering for a program by providing a footnote in the SAR when that number is different from the approved program reported in the SAR.

DOD did not accept our prior recommendation. DOD's primary basis for disagreement was that our recommendation would require SARs to report quantity, cost, and/or schedule changes that have not yet been officially approved. DOD surfaced many practical problems concerning the reporting of such information, including the fact that such estimates are likely to change and that several estimates related to the same anticipated change may exist within DOD at the same time

An approach that we believe should be considered to address anticipated changes is to continue reporting on the officially approved program but to add a narrative section which would describe, in general terms, matters under consideration which may result in significant cost, schedule, or quantity changes. This section would provide the Congress a better perspective on how firm the officially approved program estimates are.

We recognize that potential quantity and schedule changes are reviewed by numerous organizational levels within DOD. Accordingly, this narrative section could be initially drafted by the program manager and reviewed and modified as necessary during the SAR review process.

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## DOD Comments

DOD officials had concerns with our suggestion and objected to disclosing information on changes being considered during internal decisionmaking processes such as the Planning, Programming, and Budgeting System and Defense System Acquisition Review Council. Under our suggestion, DOD would not have to disclose specific details surrounding options being considered. Instead, DOD would only identify, in general terms, the options being considered that are likely to result in significant cost,

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**Appendix I**  
**Reporting Potential Program Changes**

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schedule, or quantity changes. This information would provide the Congress a more accurate perspective and permit a better overview of major programs. We continue to believe that such information is needed

# Graphic Display of SAR Data

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SARS provide information on the cost, schedule, and performance of major defense acquisition programs. Because of the volume of data reported and the largely tabular format used, SARS are sometimes difficult to understand. We believe graphic display of cost and quantity data would make SARS easier to understand and increase their utility.

Using cost and quantity information from SARS for the F-16 from December 1975 through December 1984, we developed graphs to demonstrate how SAR data could be made easier to understand. We did not determine the full range of graphs that could be developed. Moreover, other programs—especially those with fewer units—might not be appropriate for graphic display. We do not include graphs for performance and schedule data because graphic display of this information for the F-16 program did not, in our opinion, make it easier to understand than the current SAR formats.

Each graph puts SAR data into perspective by showing trends—changes occurring over time. Trend data often provides useful information that raises questions about the stability of program quantities, accuracy of cost estimates, and stability of system design. Current SARS, on the other hand, provide data in tabular form and show only the baseline estimate, the current estimate, and the prior year's current estimate. SARS focus primarily on changes occurring since the last reporting period. The graphs that follow show the effect of quantity and engineering changes over time on program and unit cost estimates for the F-16 aircraft. In addition, as shown in figure II 9, interrelationships between various aspects of the program can be observed by comparing related graphs.

Figure II.1: Example Graph Showing Total Program Cost (Constant Dollars) -F-16

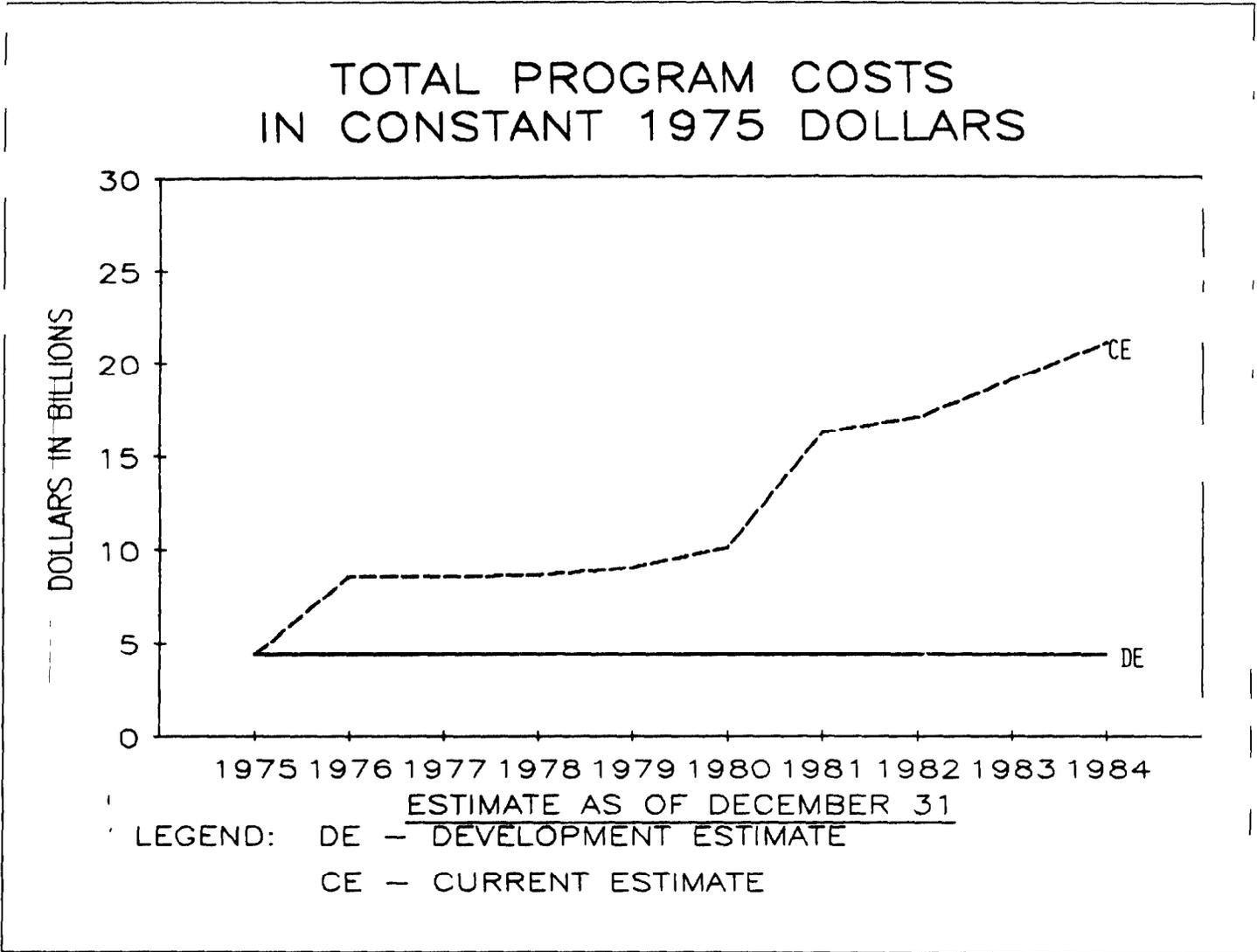


Figure II.1 illustrates the historical trend of total program costs over the life of the program. On a year-to-year basis, it shows increases in program costs in fiscal year 1975 dollars from the development estimate of \$4.4 billion as of December 31, 1975, to the current estimate of \$21 billion as of December 31, 1984.

Figure II.2: Example Graph Showing Total Program Unit Cost (Constant Dollars)-F-16

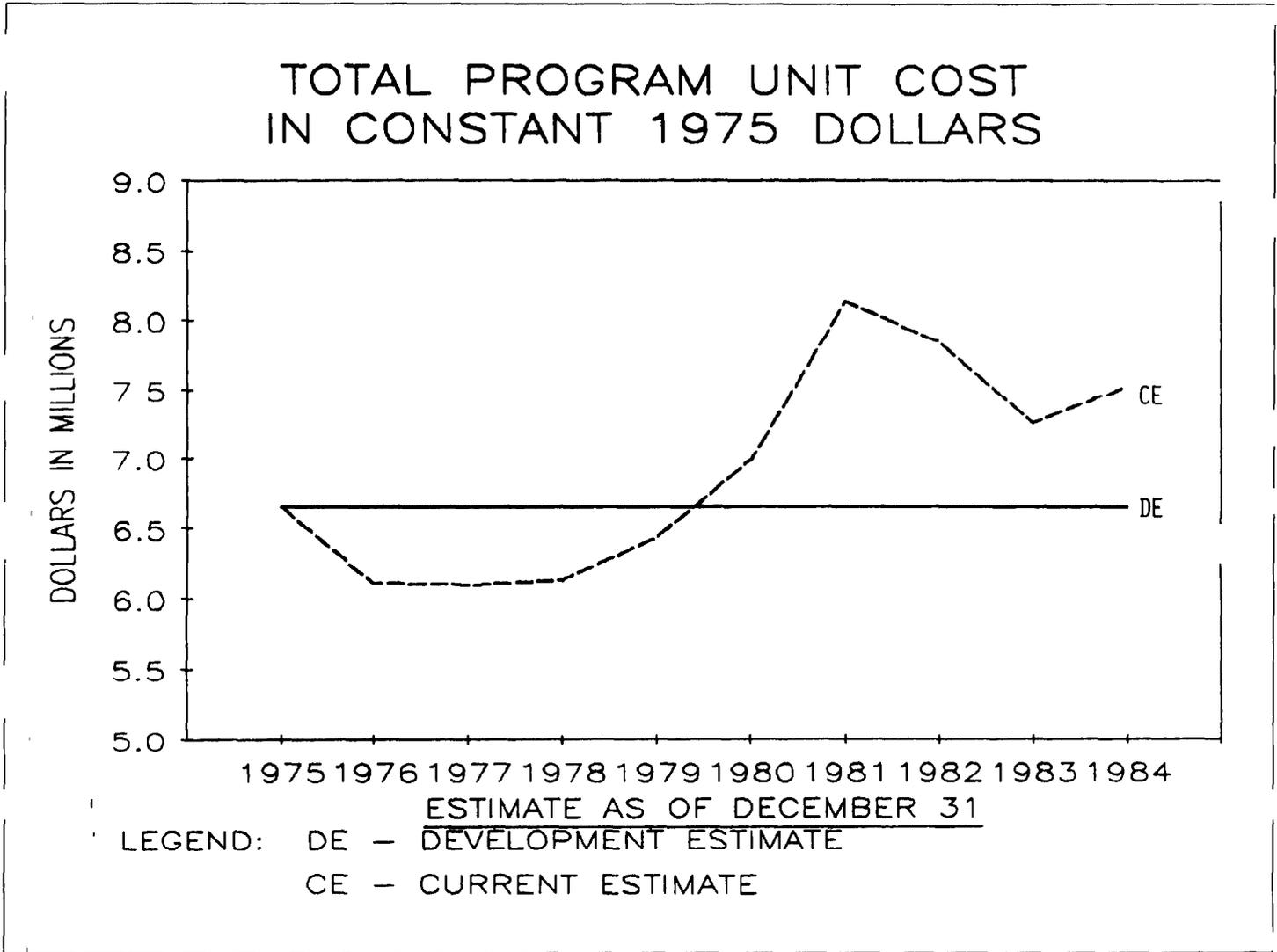


Figure II.2 illustrates the historical trend of total program unit cost. On a year-to-year basis, it shows changes in unit cost in fiscal year 1975 dollars measured against the development estimate of \$6.65 million. It also shows that estimated total program unit cost was less than the development estimate from 1976 through 1979 before sharply increasing between 1980-81.

Figure II.3: Example Graph Showing Total Program Quantity -F-16

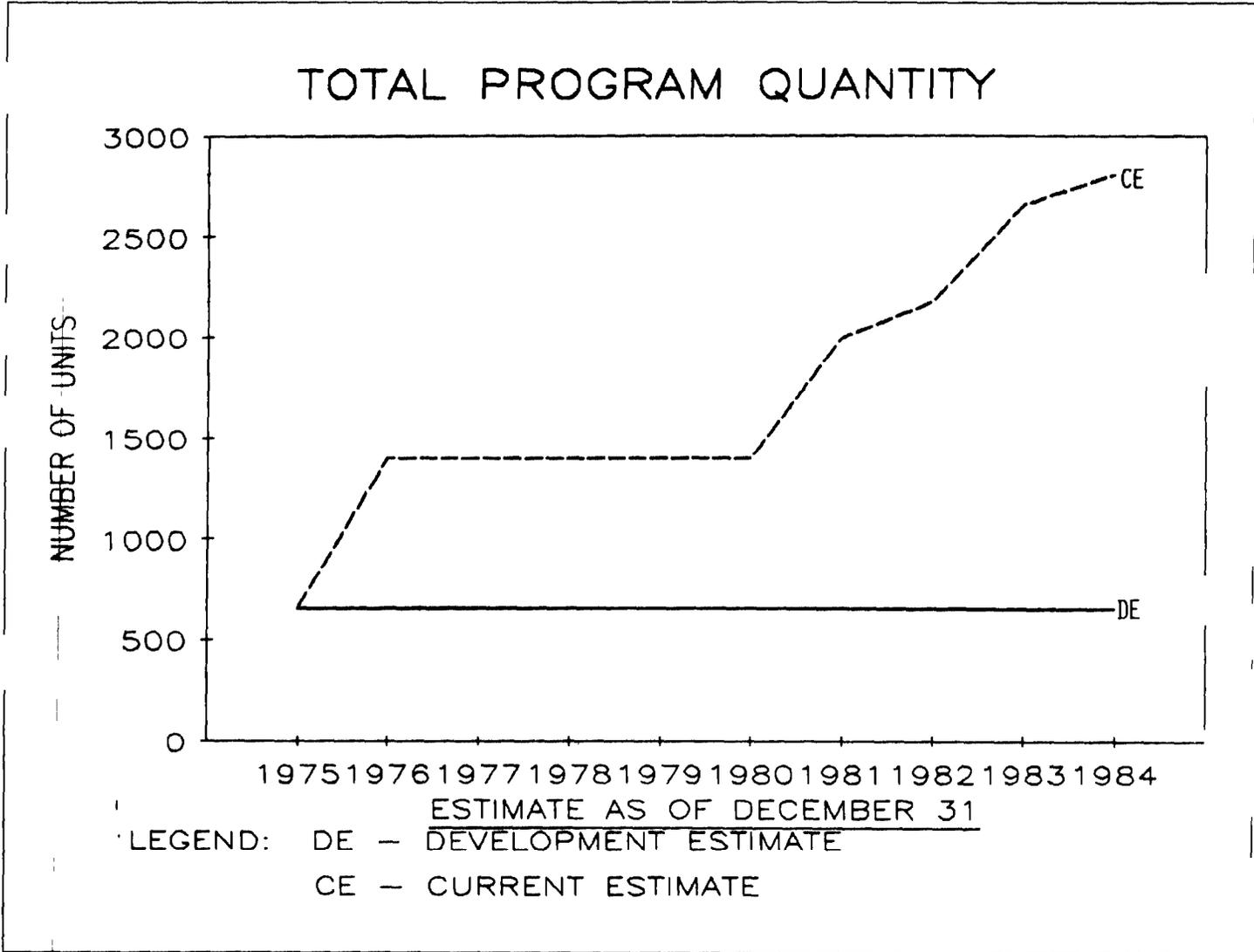


Figure II.3 shows the historical trend of increases in total program quantity from the development estimate of 658 aircraft to the current estimate of 2,803 aircraft as of December 31, 1984.

Figure II.4: Example Graph Showing Major Causes of Cost Variances (Constant Dollars) -F-16

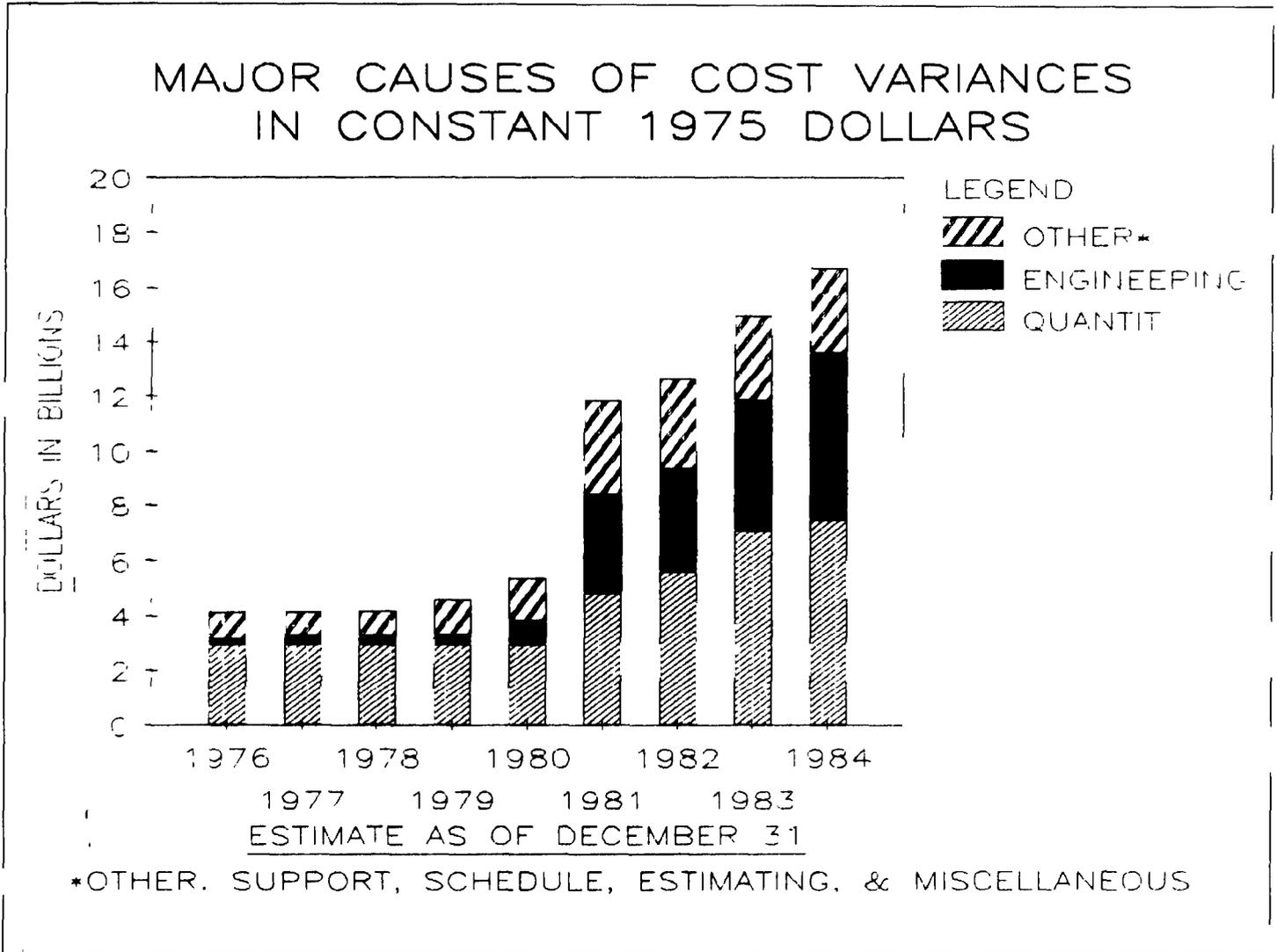


Figure II.4 shows the major reasons for total program cost growth (in constant dollars) that was displayed in figure II.1. Cost growth occurs when there is a variance between the baseline and current estimates of program costs. There are seven variance categories or reasons for cost

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**Appendix II**  
**Graphic Display of SAR Data**

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growth, which include: economic,<sup>1</sup> quantity, schedule,<sup>2</sup> engineering, cost estimate changes, support, and other. In figure II.4, estimating, support, and schedule are included in other. Figure II.4 is in constant dollars; therefore, the economic variance is not shown. As shown, engineering and quantity changes were the major causes of cost growth.

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<sup>1</sup>Changes in the current estimate resulting from actual escalation (inflation) being different than previously assumed

<sup>2</sup>Changes in a procurement or delivery schedule, completion date, or intermediate milestone for development or production

Figure II.5: Example Graph Showing Total Program Cost (Current Dollars) -F-16

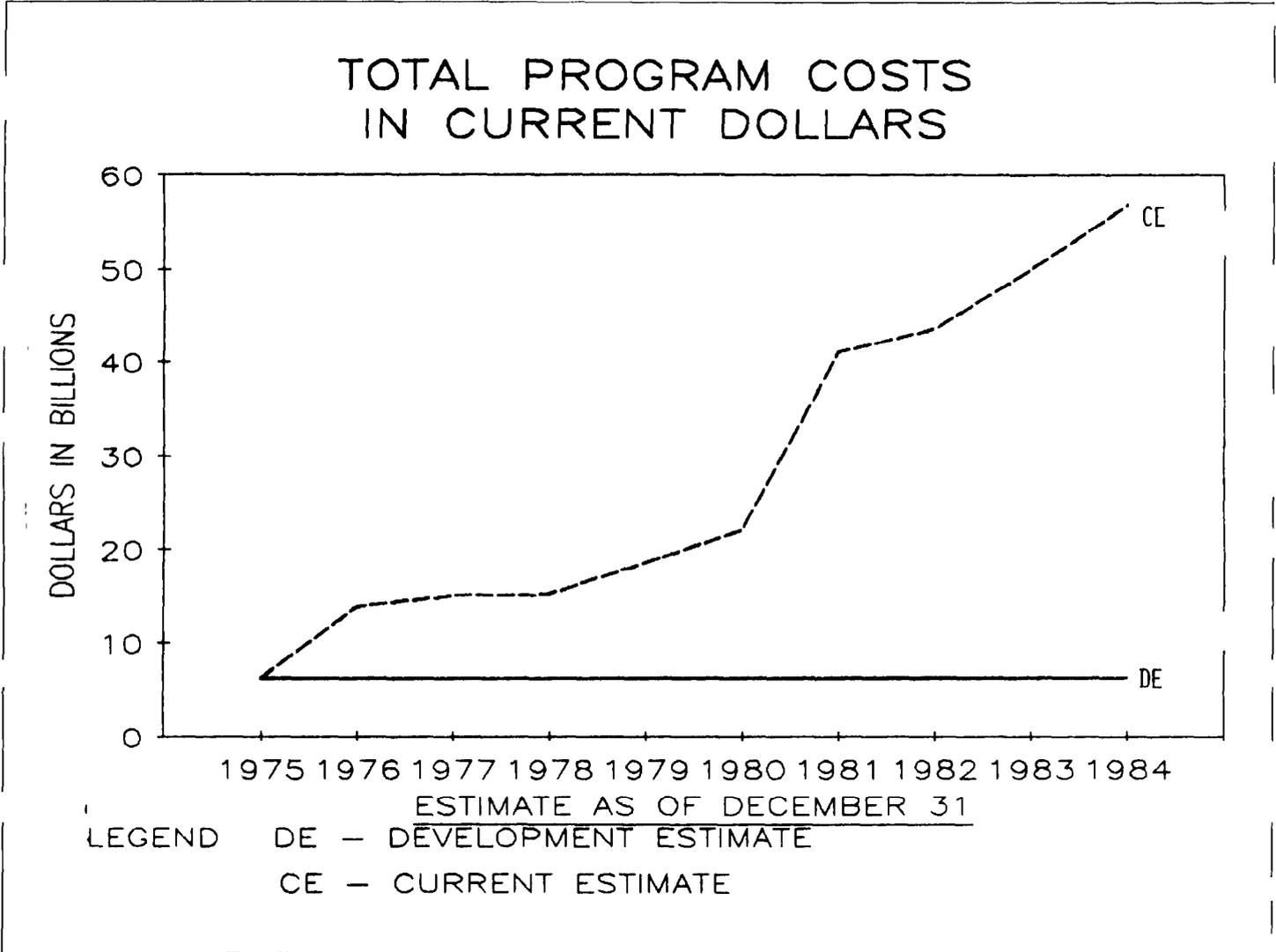


Figure II.5 shows the historical trend of the total program cost estimate in current dollars from approximately \$6.1 billion as of December 31, 1975, to \$56.8 billion as of December 31, 1984. Causes for the cost increases are shown in figure II.6

Figure II.6: Example Graph Showing Major Causes of Cost Variances (Current Dollars) -F-16

## MAJOR CAUSES OF COST VARIANCES IN CURRENT DOLLARS

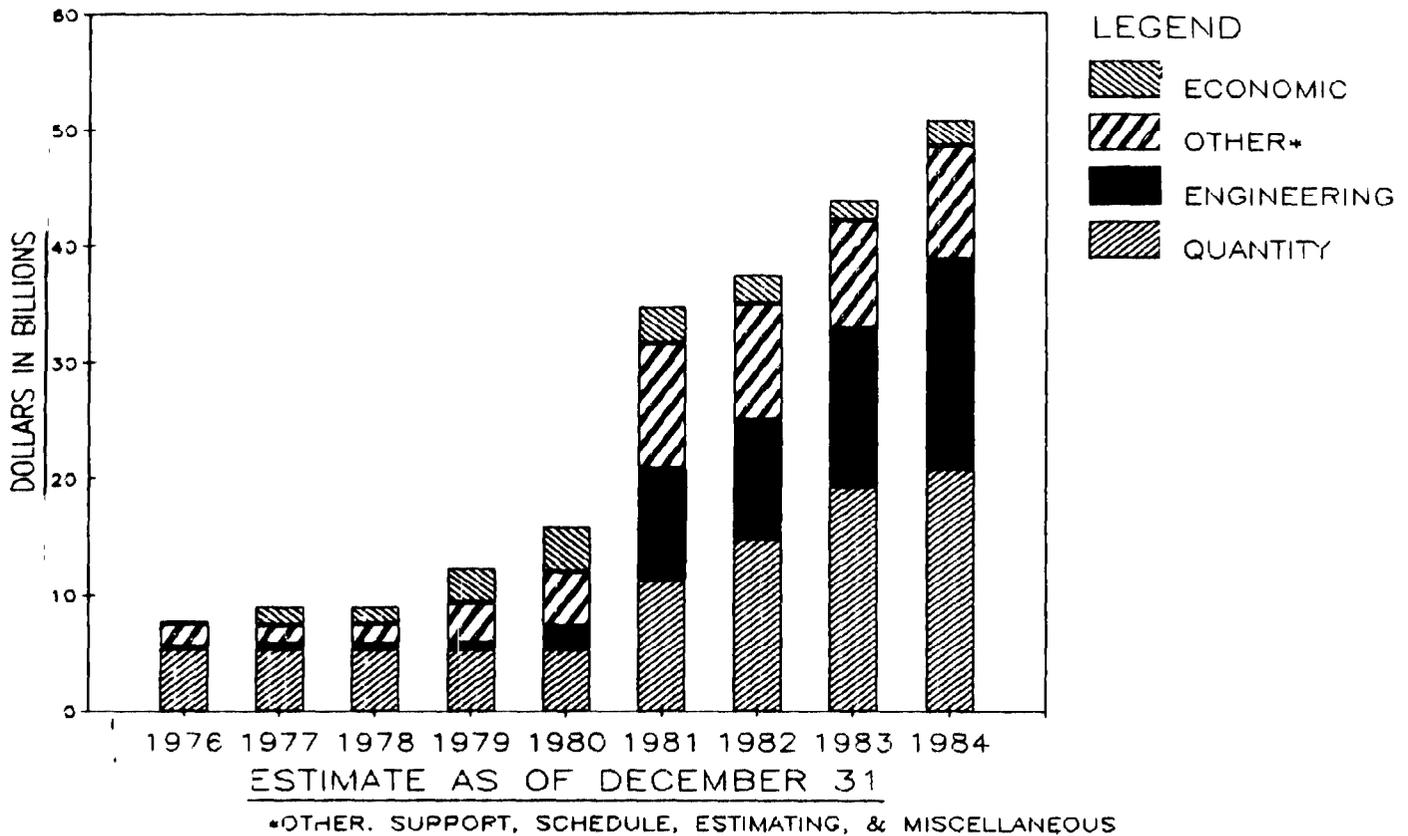


Figure II.6 shows the major reasons for total program cost growth (in current dollars) that was displayed in figure II.5. It shows, for example, that in fiscal year 1984, cost growth for the F-16 totaled \$50.7 billion. This cost growth consisted of \$20.9 billion, \$17.9 billion, \$2.2 billion, and \$9.7 billion, respectively, in quantity, engineering, economic, and other (support, schedule, estimating, and miscellaneous) changes.

Figure II.7: Example Graph Showing Cost-Quantity Curves (Constant Dollars)-F-16

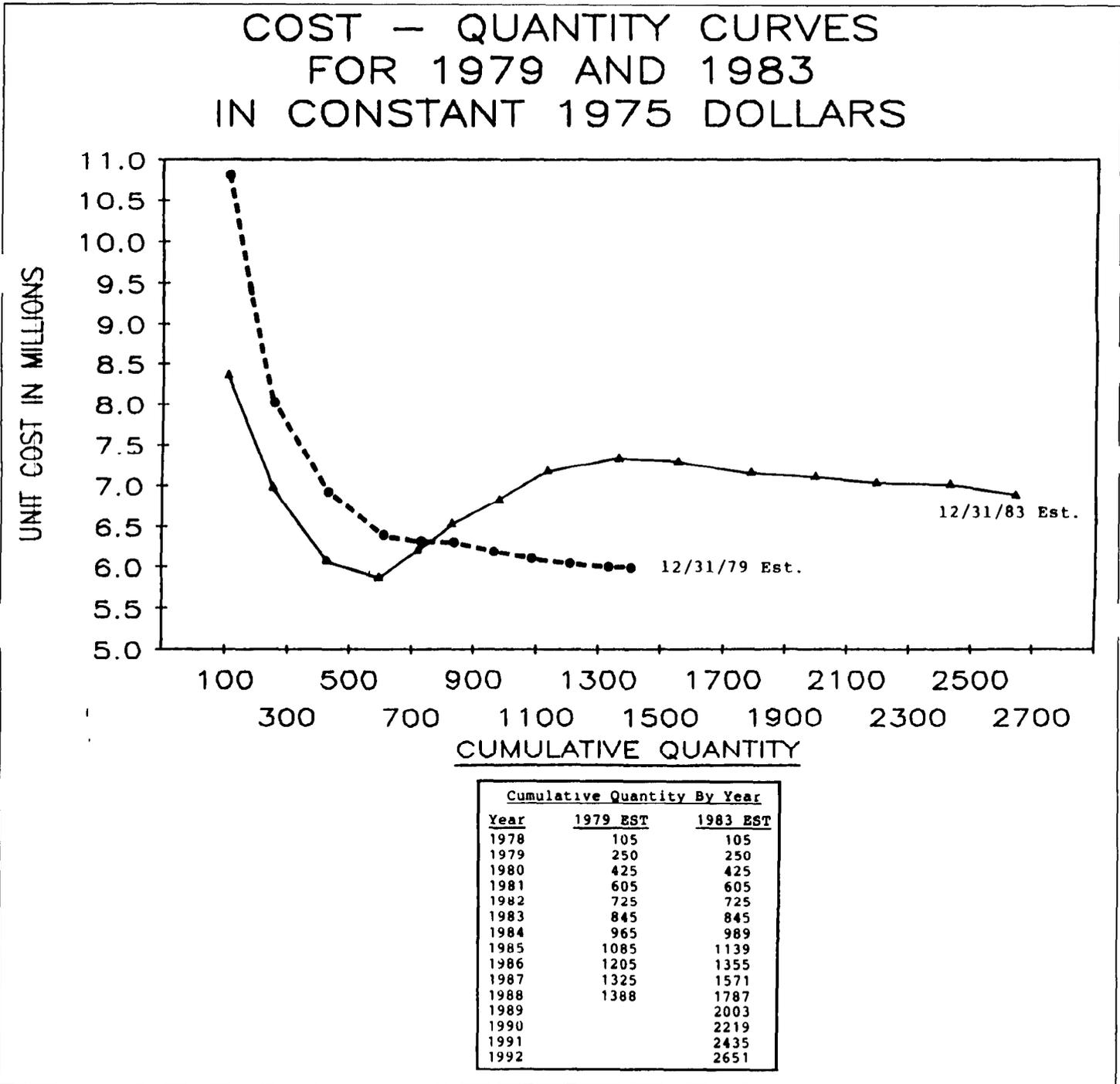


Figure II.7 illustrates a technique for tracking unit production cost estimates using cost-quantity curves. This technique compares the baseline production unit cost estimate<sup>3</sup> with the current estimate for congressionally authorized and funded units. For the F-16 program, this quantity was 845 aircraft as of December 31, 1983. If the average unit cost for these 845 aircraft increased above an established threshold percentage, a unit cost exception report would be required. In the above case, as of December 31, 1983, the average unit cost increase for 845 aircraft appears to be \$200,000<sup>4</sup> (\$6.5 million versus \$6.3 million), or only about 3.2 percent. If, however, the 1,300th aircraft had been authorized and funded, the increase would be about \$1.3 million, or about 22 percent (\$7.3 million versus \$6 million). Specific percentage thresholds for triggering a unit cost exception report would have to be established.

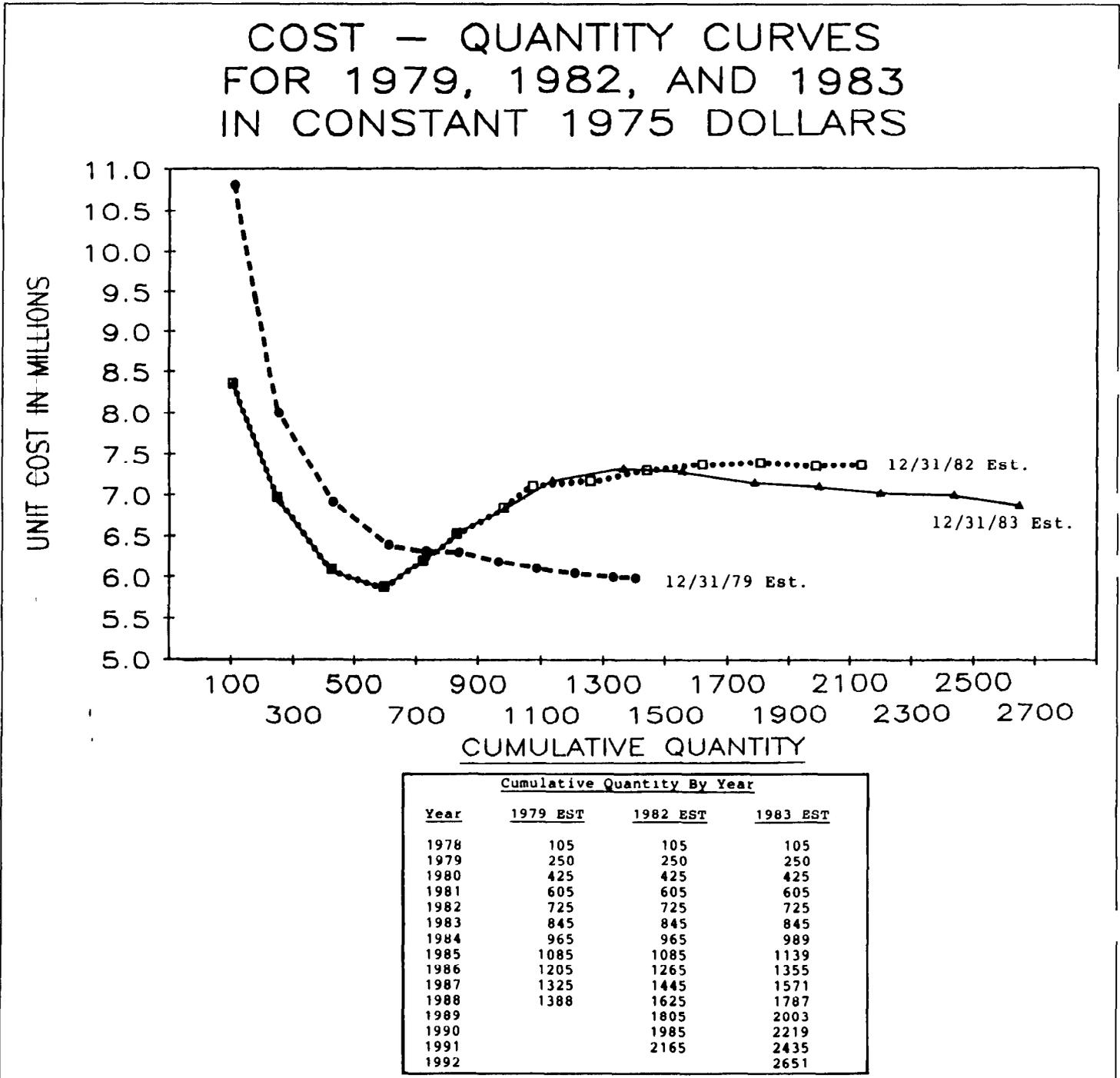
Our illustration is consistent with a PPSSCC recommendation that thresholds, similar to those used for reporting projected unit cost increases in unit cost exception reports, be established for actual unit cost growth. The PPSSCC believed that this would ensure timely and accurate information concerning actual cost increases. If implemented, specific criteria to require actual unit cost increase reports would have to be developed.

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<sup>3</sup>Since the baseline production estimate was not available, figure II 7 presents the 1979 estimate (broken line) and the 1983 estimate (solid line)

<sup>4</sup>The numbers in this section are drawn from the chart and are for illustrative purposes only. They may not be the exact numbers.

Figure II.8: Example Graph Showing Cost-Quantity Curves (Constant Dollars) -F-16



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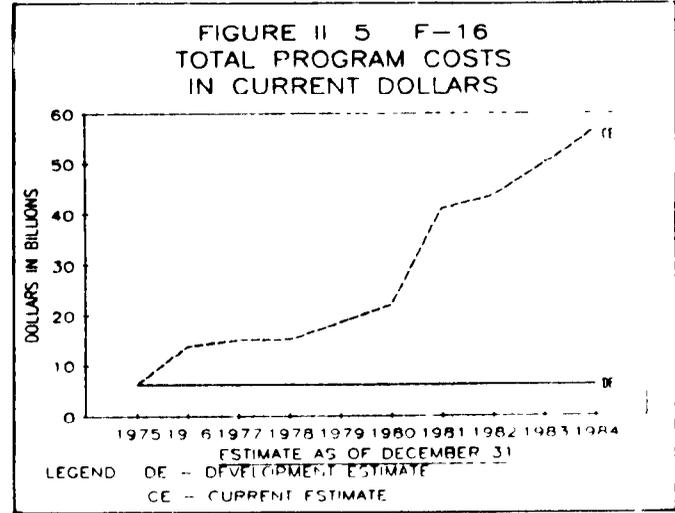
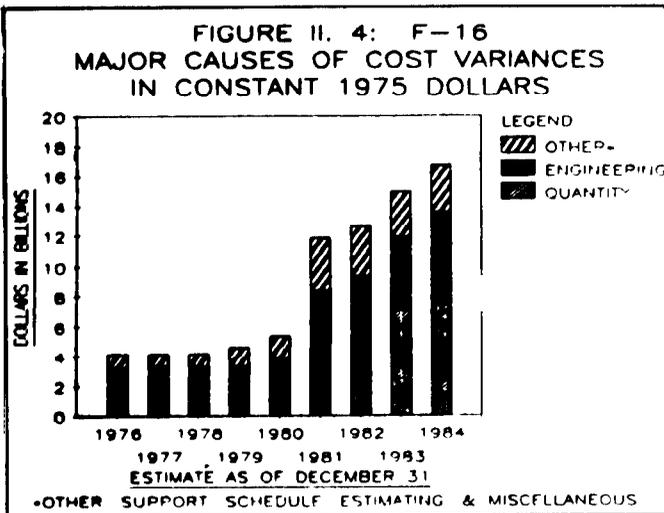
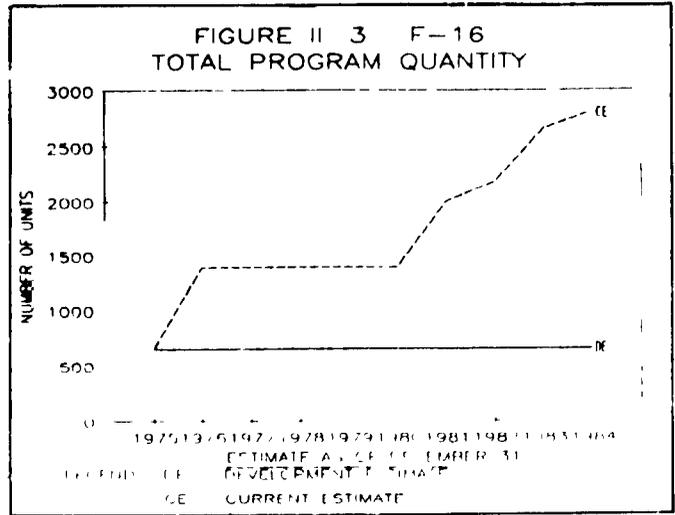
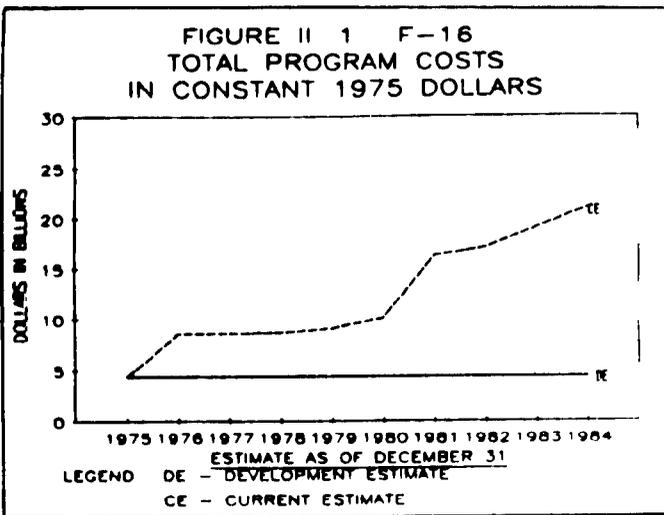
Figure II.8 shows cost-quantity curves for 1982 and 1983, as well as the baseline, to identify changes in unit cost. For example, the 1983 estimate shows that unit cost is expected to decrease, whereas, the 1982 estimate projected that unit cost would remain relatively constant. Similar graphs comparing recurring flyaway cost-quantity curves can also be constructed from SAR data.<sup>5</sup>

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<sup>5</sup>Flyaway cost includes the airframe, propulsion equipment, electronics, armament, and other installed government-furnished equipment

# Interrelationships Among SAR Data Elements

Figure II.9: Example Graphs Showing Interrelationships Among SAR Data Elements



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By looking at the relationships between graphs, questions raised by one trend can be explained by another. For example:

- Increases shown in figure II.1 for total program costs can be explained by examining the major causes of cost variances shown in figure II.4. Figure II.3 further illustrates one of these causes, the changes in quantity.
- Comparing figure II.1, in constant dollars, to figure II.5, in current dollars, illustrates the impact of inflation on total program cost.

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## DOD Comments

DOD officials agreed that graphs are useful for understanding data, but said that it would not be practical to prepare them within the allowed time for submitting SARs. They also said that the utility of graphs is customer and situation dependent and suggested that it would be better for us or the Congressional Budget Office to prepare the charts which could be tailored to specific congressional requirements at the time.

We believe DOD is in the best position to prepare graphics since it has ready and earlier access to the needed information. In our opinion, the graphs presented in this report are relatively simple and are probably not as customer or situation dependent as suggested by DOD. If necessary, graphs could be prepared within a short time after SARs are submitted to the Congress to avoid delaying SAR preparation

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# Developing More Meaningful SAR Formats

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SARS present cost, quantity, schedule, and technical performance estimates for major weapon systems. However, SARS rely on contractor and other information that does not necessarily tie into the DOD accounting system, and SAR data is sometimes not comparable or consistent over time. Moreover, the current SAR is a very complex and lengthy document that requires substantial time to read and understand. Consequently, it is difficult for users with management and oversight responsibilities to use SARS in making decisions and trade-off evaluations.

The problems cited above generally characterize current financial management reporting in the federal government. We believe it will take a long-term effort to correct these problems. In our report, Managing the Cost of Government: Building an Effective Financial Management Structure (GAO/AFMD-85-35 and 85-35A, February 1985), we outlined the key elements of a modern financial management structure for producing clear, consistent, and reliable project reports. We also suggested a revised SAR format which could be produced within a modern financial management system.

Data in the revised SAR based on this new format would tie directly into DOD's accounting system which would, in turn, tie directly into contractors' accounting systems. SARS would also be based on accrual rather than cash accounting and would report the actual cost<sup>1</sup> of work accomplished. Actual cost to date information reported in the SAR would be consistent with contractors' records.

Such SARS would disclose, in a more concise and accurate way, the cost impact of schedule slippages and program changes and make it easier for members of the Congress and executive branch officials to quickly determine the status of major weapon systems. These officials would have the information they need to see a project's actual cost to date, how this compares to previous estimates, how much money has been spent, and what it has been used for. An example of a summary project report based upon this concept is shown in figure III.1.

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<sup>1</sup>By actual cost, we mean cost based on the accrual method of accounting. When using the accrual basis, revenues are recognized when earned, and costs are recognized when resources are consumed. For example, inventory is considered to be a program cost at the time it is used in operations, not when it is ordered (obligation basis) or paid for (cash basis).

Figure III.1: Example Project Report

<b>Project Report</b>							
<b>Trident Submarine Construction</b>							
<b>10/31/83</b>							
<b>PROJECT STATUS</b>							
Phases	Planned Cost	Actual Cost To Date	Estimate to Complete	Total Cost to Complete	Over (+) Under (-) Planned	Scheduled Completion Date	Months Under (-) Over (+)
Dollars in billions							
Research and Development	\$16	\$20	\$0	\$20	\$+4	8/82	+2
Testing and Evaluation	4	3	0	3	-1	1/83	
Design	10	11	0	11	+1	9/83	+1
Procurement	70	10	65	75	+5	10/85	+24
	<u>\$100</u> <sup>1</sup>	<u>\$44</u>	<u>\$65</u>	<u>\$109</u> <sup>2</sup>	<u>\$+9</u> <sup>3</sup>		
<b>FUNDING STATUS</b>							
Appropriations				Obligations <sup>6</sup>			
Number	Description	Date	Amount	Amount	Unobligated		
Dollars in billions							
XXXXXX	Research and Development Testing and Evaluation (FY82)	10/81	\$20	\$20	\$0		
XXXXXX	Research and Development Testing and Evaluation (FY82 Supplemental)	2/82	3	3	0		
XXXXXX	Shipbuilding and Conversion (FY83)	10/82	10	10	0		
XXXXXX	Shipbuilding and Conversion (FY83 Supplemental)	4/83	1	1	0		
XXXXXX	Shipbuilding and Conversion (FY84)	10/83	70	35	35		
	<b>Totals</b>		<u>\$104</u>	<u>\$69</u>	<u>\$35</u>		
	Current Estimate To Complete over (+) under (-)		<u>109</u> <sup>2</sup>				
			<u>\$+5</u> <sup>4</sup>				
<sup>1</sup> Planned cost to complete the project <sup>2</sup> Current estimate of total cost to complete the project <sup>3</sup> Estimate to complete exceeds planned costs by 9 <sup>4</sup> Shows that the procurement phase is running two months over schedule <sup>5</sup> Shows additional budget authority is needed to complete the project <sup>6</sup> Shows status of obligations by appropriations							

Since current accounting systems cannot produce cost data in this manner, we developed an interim format using the expenditure and obligation data currently reported in the SAR. (See figure III.2.) A SAR in this format would allow DOD officials and members of the Congress to quickly assess

- program expenditures to date,
- estimated resources needed to complete the project,
- estimated cost for each phase of the project,
- expected start and completion dates for each phase, and
- all appropriated funding sources for the project.

In an additional effort to make SARs easier to use and understand, we developed a new SAR format for cost variance reporting. (See figure III.3.) These formats were developed using information from the December 31, 1983, F-16 SAR.

**Appendix III  
Developing More Meaningful SAR Formats**

**Figure III.2: Example Program Status Formats**

**F-16 PROGRAM STATUS BY PHASE**  
(as of December 31, 1983, in current dollars)

Phases	Devel. estimate (1975)	Actual expend. to date	Estimate to complete	Total cost	Over (+) under (-) dev. est.	Orig. comp. date	Current comp. date	Number of units		
								Dev.	Current	Change
Research, devel test & eval.	\$ 378.6	\$1,001.9	\$ 302.5	\$ 1,504.4	\$+ 725.8	N/A	N/A	8	8	0
Procurement (Unit cost)	3,798.2 ( 5.8)	8,016.7	40,598.4	48,615.1 ( 18.3)	+44,816.9 (+ 12.5)	N/A	N/A	650	2,651	+2,001
Operations & support <sup>a</sup> .										
Operations & Maintenance	N/A	N/A	N/A	N/A						
Personnel	N/A	N/A	N/A	N/A						
Facilities	N/A	N/A	N/A	N/A						
Total Program \$	N/A	\$ N/A	\$ N/A	\$ N/A						

**F-16 PROGRAM STATUS BY APPROPRIATION**  
(as of December 31, 1983, in current dollars)

Account number	Appropriation	Appropriations to date				Current budget request	Needed to complete	Total program estimate
		Expended	Unliquidated obligations	Unobligated	Total			
Research, devel. test & eval.		\$1,001.9	\$ 24.7	\$ 106.5	\$ 1,133.1	\$ 83.4	\$ 87.9	\$ 1,504.4
Procurement		8,016.7	2,989.6	2,683.1	13,689.4	4,145.4	30,780.3	48,615.1
Operations & maintenance		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Personnel		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Military construction		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Totals		\$ N/A	\$ N/A	\$ N/A	\$ N/A	\$ N/A	\$ N/A	\$ N/A
Over (+) or under (-) original estimate								\$ N/A

N/A = Data not reported in December 31, 1983, F-16 SAR.

<sup>a</sup>These cost categories were selected for illustrative purposes and represent major categories of weapons system costs.

**Appendix III  
Developing More Meaningful SAR Formats**

**Figure III.3: Example Cost Variance Analysis Format**

F-16 COST VARIANCE ANALYSIS (as of December 31, 1983)									
Cost Variance by Category	Status. 12/31/82					Change. 12/31/82 to 12/31/83			
	Develop.	Changes	Infla-	Total	Total	Changes	Infla-	changes	Total
	estimate (1975)	to date (1975 \$)	tion adjust.	changes	esti- mate	this period (1975 \$)	tion adjust.	this period	prog. estl.
------(millions)-----									
<b>Research, devel. test &amp; evaluation</b>									
Economic	\$ -	\$ -	\$ 118.3	118.3	\$ -	\$ -	\$ -2.5	\$ -2.5	\$ -
Quantity	-	-	-	-	-	-	-	-	-
Schedule	-	-	.1	.1	-	-	-	-	-
Engineering	-	230.0	183.6	413.6	-	3.3	3.9	7.2	-
Estimating	-	-22.7	20.6	- 2.1	-	6.6	9.1	15.7	-
Support	-	101.0	55.9	154.9	-	-	-	-	-
Other	-	15.5	5.1	20.6	-	-	-	-	-
<b>Total</b>	<b>\$ 578.6</b>	<b>\$ 323.8</b>	<b>\$ 381.6</b>	<b>\$ 705.4</b>	<b>\$ 1,284.0</b>	<b>\$ 9.9</b>	<b>\$ 10.5</b>	<b>\$ 20.4</b>	<b>\$ 1,304.4</b>
<b>Procurement</b>									
Economic	\$ -	\$ -	\$ 3,902.2	\$ 3,902.2	\$ -	\$ -	\$ -684.8	\$ -684.8	\$ -
Quantity	-	5,634.7	9,181.5	14,816.2	-	1,434.7	3,108.1	4,542.8	-
Schedule	-	312.4	1,189.8	1,502.2	-	-	-	-	-
Engineering	-	3,440.1	6,332.9	9,773.0	-	1,065.0	2,291.7	3,356.7	-
Estimating	-	-330.8	221.5	-109.3	-	-701.9	-1,431.6	-2,133.5	-
Support	-	3,050.5	4,720.6	7,777.1	-	672.6	1,311.8	1,984.4	-
Other	-	24.6	11.2	35.8	-	-	-	-	-
<b>Total</b>	<b>\$ 3,798.2</b>	<b>\$ 12,131.5</b>	<b>\$ 25,619.7</b>	<b>\$ 37,751.2</b>	<b>\$ 41,549.5</b>	<b>\$ 2,470.4</b>	<b>\$ 4,595.2</b>	<b>\$ 7,065.6</b>	<b>\$ 48,615.1</b>
<b>Operations &amp; support</b>									
Economic	\$ -	\$ N/A	\$ N/A	\$ N/A	\$ -	\$ N/A	\$ N/A	\$ N/A	\$ -
Quantity	-	N/A	N/A	N/A	-	N/A	N/A	N/A	-
Schedule	-	N/A	N/A	N/A	-	N/A	N/A	N/A	-
Engineering	-	N/A	N/A	N/A	-	N/A	N/A	N/A	-
Estimating	-	N/A	N/A	N/A	-	N/A	N/A	N/A	-
Other	-	N/A	N/A	N/A	-	N/A	N/A	N/A	N/A
<b>Total</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total program</b>	<b>\$ N/A</b>	<b>\$ N/A</b>	<b>\$ N/A</b>	<b>\$ N/A</b>	<b>\$ N/A</b>	<b>\$ N/A</b>	<b>\$ N/A</b>	<b>\$ N/A</b>	<b>\$ N/A</b>

N/A = Data not reported in the December 31, 1983, F-16 SAR.

During recent hearings before the Grace Commission Panel of the House Armed Services Committee, a Committee member expressed interest in developing a new SAR format consisting of an executive summary followed by a number of attachments which would provide greater detail on cost, schedule, and performance data. This member believed that such a format would make the SAR easier to read and understand for those with differing levels of interest and knowledge about individual weapon systems. We believe this concept is consistent with efforts to improve the SAR and warrants consideration as an approach for increasing the SAR's utility. The sample SAR formats included in this report are complementary to this idea and would be useful either as part of the executive summary or as appendixes

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## DOD Comments

DOD's comments on the long-term prospects for a modern financial accounting structure—including SARs tied into DOD's accounting systems which, in turn, would be tied into contractors' accounting systems—were that the SAR reflects DOD's budgeting system and will probably continue to do so. Accordingly, DOD believes that to the extent that the budgeting system is changed in the future to tie into accounting records at any level, the SAR will probably reflect those changes

DOD officials had no objection to SAR format changes if the Congress wanted to revise them. DOD noted that it has repeatedly encouraged the Congress to suggest such improvements. DOD emphasized that stabilizing SAR formats and content should be a paramount objective in any improvement effort.

DOD officials opposed the idea of modifying the SAR to include an executive summary with attachments. They expressed the view that the major problem with the current SAR is that it is too voluminous to be a useful management report. Since it is already a summary of the "massive budget justification materials currently provided to Congress," DOD objected to an executive summary because it would be a "summary of a summary." DOD officials felt a better approach would be to reduce the data content of the current SAR to the minimum necessary to summarize program status.

While the exact nature of an executive summary approach has yet to be defined, DOD agrees that a shorter, easier to understand document is necessary if the SAR is to be an effective oversight tool. DOD would solve this problem by shortening the SAR. The concept proposed by the Committee

member would accomplish this through an executive summary. Implementing DOD's suggestion of shortening the SAR would result in some of the current detailed information being dropped.

Under the executive summary approach, the summary would provide top level managers a quick overview of the program and the detailed attachments would be available to other users for analyzing different aspects of the program at detailed levels. This approach could result in a SAR which is longer than the current SAR, but the increased length may be justified. We believe any increased length would need to be evaluated against the increased utility.

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# Program Rebaselining

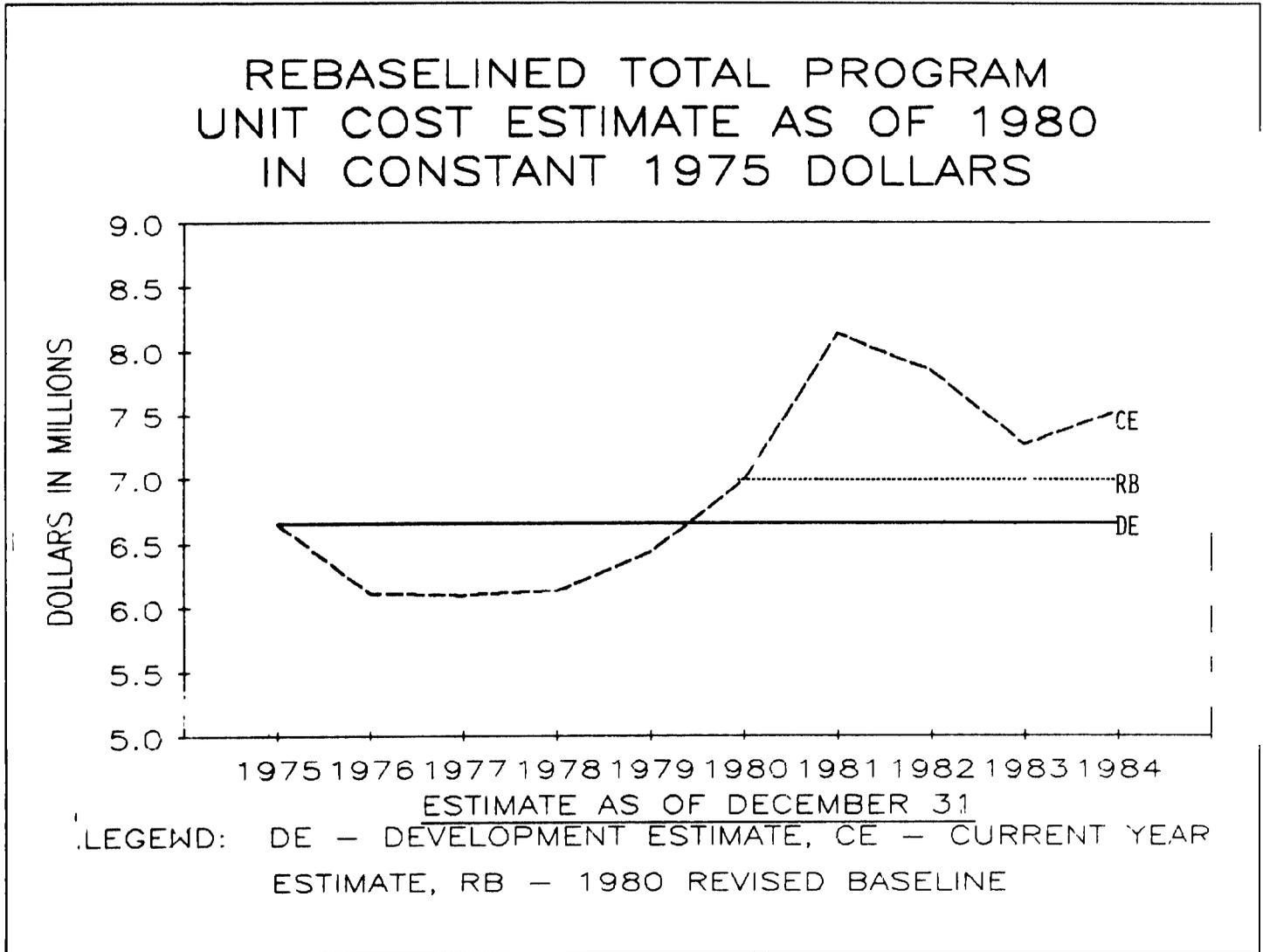
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At present, DOD can rebase major weapon system programs at major program decision points; that is, demonstration/validation, full-scale development, and production. The purpose of establishing a new baseline is to provide a more realistic basis for measuring cost variances. In its August 1983 report, PPSSCC recommended that DOD should also rebase programs that undergo major modifications. We agree that the revised estimate would provide a more meaningful basis for tracking cost growth. However, when a new baseline is established due to a major modification, we believe a clear historical track of the program's acquisition costs should be maintained.

In figure IV.1, we demonstrate one method for establishing a revised baseline. This method was selected for demonstration purposes only. We chose to have the revised baseline include all program units. This method may be appropriate when the modification is to be retrofitted to earlier units. The exact methodology for rebaselining would have to be carefully considered and designed. The following concerns raised by DOD officials would have to be resolved before finalizing the methodology:

- Defining the nature of a modification that would qualify for rebaselining.
- Developing procedures on how to establish a new baseline, that is, whether the new baseline should be based on all program units or only on those units that are modified.
- Allocating research and development costs between the original and modified systems.
- Deciding how, whether, and if so, to report on both the earlier and modified systems within the same SAR.

Figure IV.1: Example Graph Showing Program Rebaselining -F-16



As shown in figure IV.1, a large cost variance exists between the development estimate for program unit cost (solid line) and the December 31, 1984, current estimate (broken line). This variance, in part, is the result of modification and engineering changes to the aircraft. Because the development estimate was based on a less complex aircraft, it may no longer be a meaningful basis for measuring cost variances. To establish a more realistic benchmark for measuring cost growth, we have imposed a new baseline (dotted line), starting the year the modification was

approved. The baseline was created by converting the current year estimate for the year in which the modification was approved into base year 1975 dollars. As figure IV.1 shows, the new baseline reduces the reported unit cost variance by approximately \$250,000. Another option, as implied on page 29, would be to establish a new baseline which would include only the new modified aircraft units.

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**DOD Comments**

DOD officials agreed that it would be desirable to rebaseline for major system modifications. However, DOD stated that it had previously been turned down by the Congress on proposals to rebaseline several aircraft programs.

# Reasonableness of Thresholds for Exception Reporting

We were asked by the House Armed Services Committee to comment on the reasonableness of the current thresholds that trigger unit cost exception reports.

The Defense Authorization Act, 1982 (Public Law 97-86), required the service secretaries to submit unit cost exception reports to the Congress. Exception reports are initially required when either the total program acquisition unit cost or the current procurement unit cost increases by 15 percent over the exception reporting baselines. Baselines are the estimates in the first SAR for the program or the annual SAR (normally as of December 31) from the preceding fiscal year. The exception report includes numerous data elements, including an explanation for the increase and action taken or proposed to control future cost growth. Additional exception reports are required for any subsequent 5-percent increase in either unit cost estimate. For a 25-percent projected increase in either unit cost, the act requires the Secretary of Defense to certify in an exception report to the Congress that, among other things, the system is essential to national security. Public Law 97-252 extended this requirement indefinitely.

As previously discussed, unit cost estimate changes can result from numerous factors, including quantity changes, actual costs that differ from previous estimates, and revised estimates for future costs. Current inflation estimates that differ from baseline estimates vary the amount of other cost growth that can be permitted before unit cost exception reports are required. For example, if current inflation estimates are higher than corresponding baseline inflation estimates, the level of other cost growth that would result in exception reporting would be less than 15 percent. Conversely, if current inflation estimates were lower than corresponding baseline inflation estimates, the level of other cost growth that would result in exception reporting would be greater than 15 percent.

Accordingly, we believe that consideration should be given to establishing unit cost reporting thresholds for cost increases related to factors other than inflation. One possibility would be to establish constant dollar thresholds in addition to the existing current dollar thresholds.

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## DOD Comments

Our draft report contained a different suggestion which called for annual adjustments to the thresholds reflecting changing inflation levels. DOD officials expressed the view that this method would be unnecessarily complex and suggested constant dollar thresholds as an

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**Appendix V  
Reasonableness of Thresholds for  
Exception Reporting**

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alternative. We agree, but as stated above, constant dollar thresholds should supplement, rather than replace, the existing current dollar thresholds. In this manner, some visibility and accountability is retained for the quality of baseline inflation estimates.



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