156704

GAO

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

National Security and
International Affairs Division

B-271796

April 30, 1996

The Honorable Charles E. Grassley
The Honorable William V. Roth, Jr.
United States Senate

At your request, we reviewed the accuracy of the data and methodologies employed in the Department of Defense ongoing study, The Anatomy of Decline. The study, which is being conducted within the Department's Office of Program Analysis and Evaluation (PA&E), compares planned budgets and quantities for individual procurement items to actual budgets and quantities over two decades. These comparisons show that the Department is generally optimistic in its weapon system estimates in that actual procurement quantities and budgets for individual items are generally less than planned quantities and budgets. These optimistic planning estimates contribute to instability in procurement programs and ultimately higher unit costs than originally planned. Although the study has not been formally published, the results have been distributed and briefed extensively within and outside the Department.

According to the study's author, the data have been extracted electronically from the Department's Future Years Defense Program (FYDP) procurement annexes back to 1983.[1] Therefore, the 1983 through 2001 data include not only major weapon systems but all items in the procurement annexes, such as vehicles and equipment. According to the author, the data between 1976 and 1982 in the study's database were entered manually from original FYDP procurement annexes. Data for these years include major weapon systems only.

The study is an effort within PA&E with contractor support. Although the study began in the late 1970s, contractor support began in 1992. The study's database is updated each year to extend trend data for existing programs and add new procurement items. Through December 1995, the Department had incurred

[1]DOD's FYDP consists of a basic FYDP and three annexes. The three annexes provide more detailed information in the areas of procurement; research, development, test, and evaluation; and military construction, respectively.

contractor costs of about $240,000 to develop, maintain, and operate the computer database, which supports the study.

To review data accuracy, we requested and received a copy of the study's computer database and supporting program. For selected years, we electronically compared the budget and quantity data for all items included in the study's database with the Department's FYDP database. We compared all the data for the 1990 FYDP years (1988-1994) and the 1996 FYDP years (1994-2001). We found no material differences between the data in the study's database and the Department's FYDP database.

The study's methodologies compare planned budgets and quantities for procurement items to actual budgets and quantities from one annual procurement annex to the next, and calculates unit costs for these items. The study's computer program is designed to perform the comparisons and calculations and display the results in a graphic format. The program is also designed to display the results in current or constant dollars. The following three figures illustrate the types of displays produced by the program. The first two show that actual procurement quantities and budgets for the Advanced Medium Range Air-to-Air Missile were considerably less than planned quantities and budgets in the fiscal years 1985, 1986, and 1987 FYDPs. The third figure shows that the actual average unit cost for the missile increased as a result. The figures show data for only a few of the years during which this missile was procured.

Figure 1: Comparison of Planned Procurement Quantities to Actual Quantities Procured for the Advanced Medium Range Air-to-Air Missile

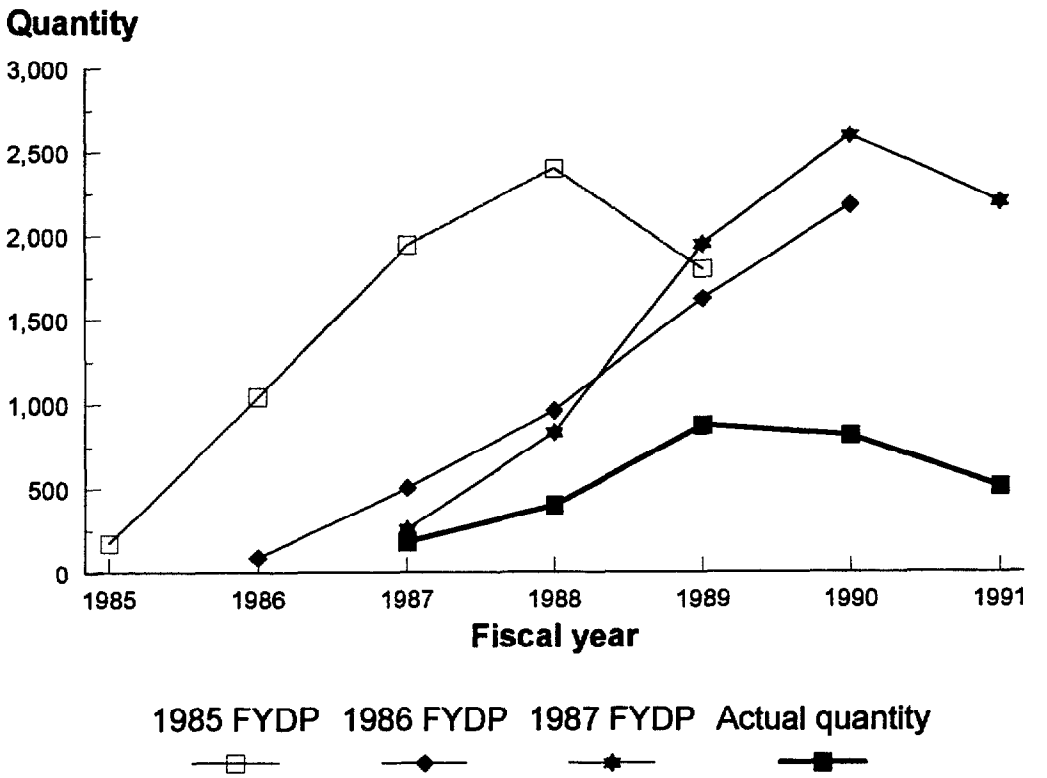


Figure 2: Comparison of Planned Procurement Budgets to Actual Budgets for the Advanced Medium Range Air-to-Air Missile

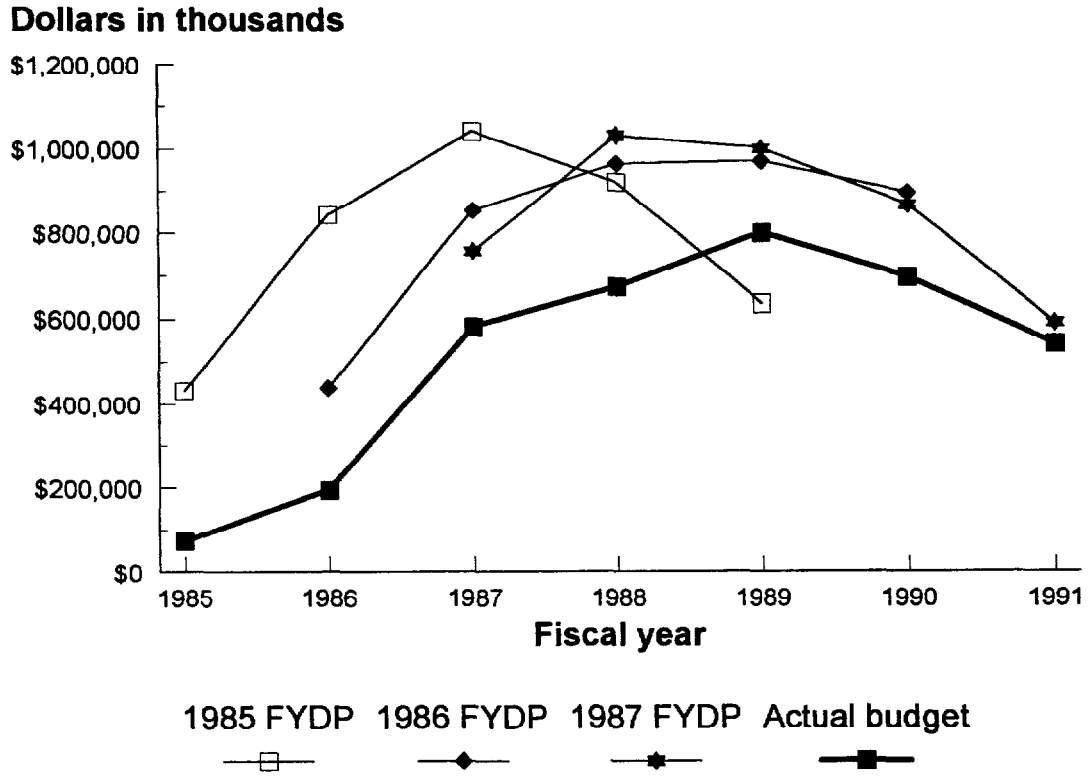
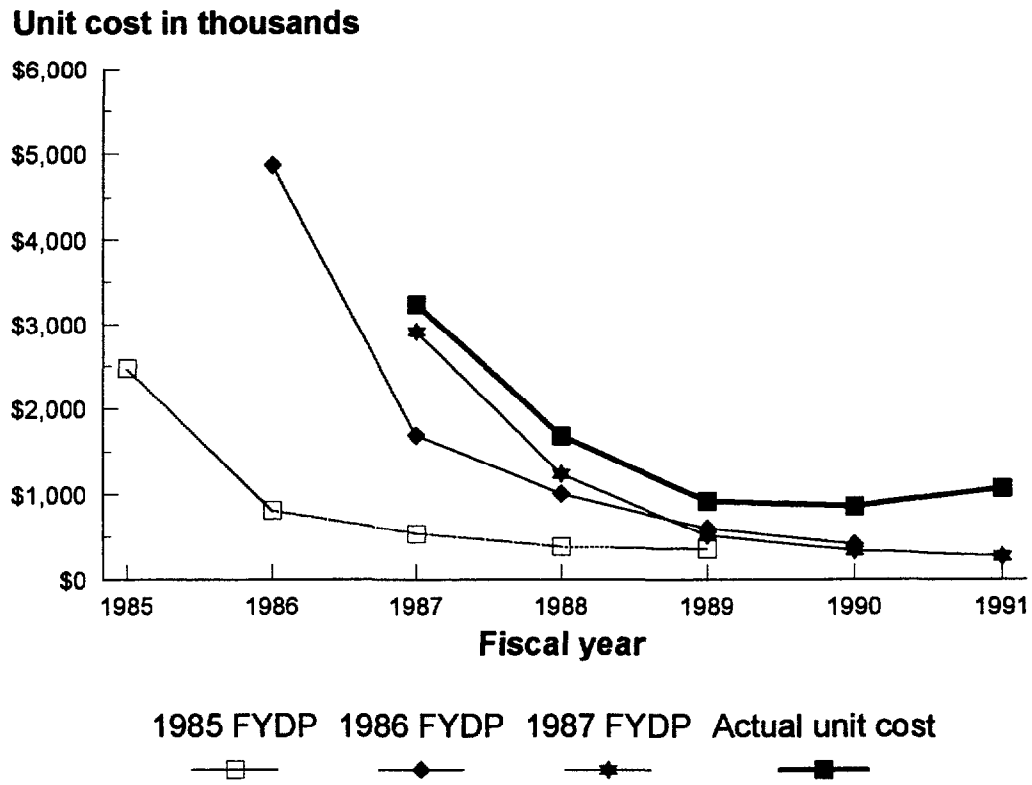


Figure 3: Comparison of Planned to Actual Average Annual Unit Costs for the Advanced Medium Range Air-to-Air Missile



To analyze the study's methodologies, we selected five weapon systems and verified that the treatment of the various cost components (i.e., basic estimates, advanced procurement estimates, and initial spares estimates) were consistent from year to year. Also, using the FYDP data for all of the years the five systems were procured, we graphically displayed the data using a computer software program that is different from the study's program. The graphic presentations using our program and the study's program were consistent. Moreover, we calculated unit cost results and compared these results with those in the study. We found no material problems with the methodologies.

We found a few instances where the study could be improved. For example, the study's results could be more accurate by using the Department's historical procurement annex data to capture actual budgets for some items such as shipbuilding. The annual FYDPs provide funding estimates for the budget year for which funds are being requested, at least the 4 years following it, and the 2 years preceding it. For shipbuilding, which can take a number of years, actual budgets can be adjusted for as many as 7 prior years. Although the annual FYDP would not reflect adjustments this far back, the historical FYDP would. The study's author agreed to implement this and other minor improvements.

As a further verification, we discussed the study with the Director and senior officials of PA&E. They confirmed that the data are taken directly from the Department's annual FYDPs and is complete and accurate. They also stated that the methodologies used to calculate the average unit costs displays and other mathematical formulas, such as constant dollar values, are reasonable, correct, and used in other Department reports. Further, the Director said the study, as a whole, has been subject to the same quality controls and supervisory reviews as other PA&E studies. Moreover, the Director said that, in his view, the most important point regarding The Anatomy of Decline is not the data or particular methodologies employed, but how the Department can best respond to the relevant issues raised in the study. Some of those issues were addressed by the Secretary of Defense in his letter to you dated August 3, 1995. For example, the Secretary stated that the optimism in weapon system estimates has been documented in several other Department-sponsored studies and that all parallel The Anatomy of Decline conclusions that cost and funding projections tend to be overly optimistic, particularly in the earliest phases of the weapons acquisition cycle.

Our work was conducted in accordance with generally accepted government auditing standards. The Department reviewed a draft of this letter and offered no changes. We are providing copies of this letter to the Secretary of Defense. The information for this report was developed by Robert L. Pelletier, H. Donald Campbell, Kenneth A. Mann, and Edna Thea Falk.

- - - -

If you or your staff have any questions on the information provided, please call me on (202) 512-3504.

Richard Davis

Richard Davis,
Director, National Security
Analysis

(701061)

Ordering Information

The first copy of each GAO report and testimony is free. Additional copies are $2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary. VISA and MasterCard credit cards are accepted, also. Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.

Orders by mail:

U.S. General Accounting Office
P.O. Box 6015
Gaithersburg, MD 20884-6015

or visit:

Room 1100
700 4th St. NW (corner of 4th and G Sts. NW)
U.S. General Accounting Office
Washington, DC

Orders may also be placed by calling (202) 512-6000
or by using fax number (301) 258-4066, or TDD (301) 413-0006.

Each day, GAO issues a list of newly available reports and testimony. To receive facsimile copies of the daily list or any list from the past 30 days, please call (202) 512-6000 using a touchtone phone. A recorded menu will provide information on how to obtain these lists.

For information on how to access GAO reports on the INTERNET, send an e-mail message with "info" in the body to:

info@www.gao.gov

United States
General Accounting Office
Washington, D.C. 20548-0001

Bulk Rate
Postage & Fees Paid
GAO
Permit No. G100

Official Business
Penalty for Private Use $300

Address Correction Requested