



UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

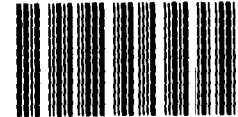
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NATIONAL SECURITY AND  
INTERNATIONAL AFFAIRS DIVISION

February 1, 1984

B-206570

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



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Dear Mr. Chairman:

Subject: GAO examination of Air Force's proposed multiyear  
procurement for the Defense Satellite  
Communications System III (NSIAD-84-54)

In response to your December 21, 1983, request, we examined the Air Force's proposed multiyear procurement for the Defense Satellite Communications System (DSCS) III. As requested, we briefed your office on January 16, 1984. This letter summarizes the information presented during the briefing.

PROGRAM STATUS

The Department of Defense (DOD) has decided to procure 14 DSCS III satellites. Seven are already under contract. In fiscal year 1985 the Air Force plans to request approval for a multiyear procurement of the remaining seven.

On December 7, 1983, the Air Force requested congressional approval for a multiyear advanced procurement of seven long-lead parts sets for the remaining seven satellites. At that time it had negotiated a \$70.1 million multiyear price with the prime contractor, General Electric Space Division, for the purchase of seven "minus" sets. The "minus" refers to certain parts which have yet to be defined and, therefore, were not included in the negotiated price. As discussed later, the Air Force does not expect these undefined parts to affect design stability. The parts definition is forthcoming and the Air Force is confident that the full seven parts sets can be purchased for under the \$81.6 million included in its fiscal year 1984 budget. Initially the Air Force felt it needed this \$81.6 million to buy four parts sets but now believes that under a multiyear program, it can buy seven.

OBJECTIVES, SCOPE, METHODOLOGY

As requested by your office, we questioned the Air Force as to the stability of the DSCS III program, including the potential that not all of the satellites to be included in the multiyear procurement will be completed, the maturity of design, and

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the availability of sufficient funds to complete the program. We obtained information on the discounted cost and savings associated with the advanced procurement of seven parts sets. Our work was performed primarily at the Air Force DSCS III Project Office. We discussed the results of our work with Project Office officials who indicated general agreement with the information presented in this report.

As we discussed with your office, sufficient data was not available to permit a detailed review of the discounted cost and savings data for the total proposed DSCS III multiyear procurement--advanced procurement of the long-lead parts sets plus production of the remaining seven satellites. Accordingly, we concentrated on the Air Forces' request for approval of the multi-year advanced procurement of long-lead parts sets. However, the information we obtained on stability would also be applicable to a multiyear procurement of satellites. Documentation necessary for a detailed review of the projected cost savings for the total multiyear procurement will not be available until after contractor proposals are received and analyzed. This is expected to occur within the next few weeks.

Our field work was performed primarily between January 9 and 13, 1984. Because of the limited time available for us to respond to your request for a briefing by January 16, 1984, our work was not performed in accordance with generally accepted government audit standards. The primary deviation involved relying on Air Force statements and documentation without our normal verification. Further, we made certain estimates of probable contract cost which normally would have been made by the Air Force. We also did not obtain formal agency comments.

#### DESIGN STABILITY

According to the Air Force, the satellites have (1) experienced only minor design changes and (2) such changes have been infrequent and immaterial to the satellite configuration. The Air Force emphasized that it is making two planned product improvements. Solid state amplifiers will replace the 40 watt traveling wavetubes for improved reliability, and sharper communications filters will enhance operational utility by increasing usable channel bandwidth. Both changes will be in the next group of seven satellites. The Air Force believes there is minimal risk to the proposed multiyear procurement associated with these changes.

#### FUNDING STABILITY

The Air Force cited a few major problems which affected contract cost performance in the early stages of the DSCS III full-scale development effort. Since 1980, according to the Air Force, cost performance on the development and production contracts has been satisfactory.

## PROGRAM STABILITY

According to the Air Force, the DSCS III program is very stable because of long-standing approved requirements and a high national priority. The Air Force stated it is currently without an alternative because related systems simply do not have needed capabilities.

### Little possibility of a reduction in the number of satellites procured

According to the Air Force, 14 satellites are currently required and increased military needs will probably require more. The Air Force stated these requirements were derived through the Defense Communication Agency's (DCA) General Availability Prediction Program model and supported by DCA's Ten Year Transition Plan to the DOD Comptroller and the Secretary of the Air Force. Approval for 14 satellites was given by the Deputy Secretary of Defense. Based on the long-standing requirements and other characteristics surrounding the DSCS III program, the Air Force believes the probability of fewer than 14 satellites being procured is virtually zero.

## DISCOUNTED COST AND SAVINGS ASSOCIATED WITH THE MULTIYEAR ADVANCED PROCUREMENT

The Air Force said it had originally been directed, by the Defense Systems Acquisition Review Council, to purchase four parts sets in fiscal year 1984 and three in fiscal year 1986. At the time of our examination, an independent cost and savings estimate comparing the two separate annual buys to one multiyear buy had not been prepared.

To facilitate an analysis of potential savings, using contractor historical data and with the help of Project Office personnel, GAO reduced existing contractor "rough order of magnitude" estimates for two separate or one multiyear buy to what GAO believes to be a reasonable estimate of probable cost. It must be emphasized that these numbers are only "best estimates" based on limited audit effort, and have not been officially supported either by the Air Force or the contractor. Based on our analysis we estimated a probable cost of \$75.6 million for the single purchase of seven sets and \$51.6 million and \$45 million for the purchase of four sets and three sets, respectively, or \$96.6 million in total. We then spread these amounts over the expenditure years and discounted them, in accordance with standard Air Force procedures, to calculate the potential discounted cost and savings.

These calculations, as shown below, indicated a projected discounted savings of \$8.0 million--about 10.6 percent--if the seven parts sets are purchased at one time.

Calculation of Discounted  
Cost and Savings

	<u>Fiscal Year</u>							<u>Total</u>
	<u>84</u>	<u>85</u>	<u>86</u>	<u>87</u>	<u>88</u>	<u>89</u>		
-----millions-----								
<u>Multiyear buy (7 sets)</u>								
Then Year	\$46.8	\$25.4	\$2.6	\$ .8				\$75.6
Constant Year-84	46.8	23.9	2.3	.7				73.7
Present Value	44.6	20.7	1.8	.5				67.6
<u>Annual buys (4+3 Sets)</u>								
Then Year	31.9	17.3	29.7	15.7	\$1.6	\$.4		96.6
Constant Year-84	31.9	16.3	26.3	13.1	1.3	.3		89.2
Present Value	30.4	14.1	20.7	9.4	.8	.2		75.6
								<u>Potential savings</u>
<u>Difference</u>								
Then Year	-14.9	-8.1	27.1	14.9	1.6	.4		<u>\$21.0 (21.7%)</u>
Constant Year-84	-14.9	-7.6	24.0	12.4	1.3	.3		<u>\$15.5 (17.4%)</u>
Present Value	-14.2	-6.6	18.9	8.9	.8	.2		<u>\$ 8.0 (10.6%)</u>

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As agreed with your office, we are sending copies of this report today to the House Committee on Appropriations and the Senate and House Committees on Armed Services. We are also sending copies to the Secretaries of Defense and Air Force.

Sincerely yours,



Frank C. Conahan  
Director