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RELEASED

2 Attachments

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APR 11 1973

The Honorable George H. Mahon
Chairman, Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

In response to your request of March 13, 1973, the General Accounting Office has reviewed the propriety of the recent selection of Fairchild Industries, Inc., for full-scale development of the Air Force A-X close air support aircraft.

On March 1, 1973, the Air Force awarded a cost-plus-incentive-fee contract in the amount of $159,279,888 (target cost plus target fee) to Fairchild for the development of ten test aircraft. The contract provides for a cost-sharing arrangement whereby the cost above target is shared by the Government and the contractor on a 70/30 ratio respectively. If the cost reaches $186,810,083 the contractor will have lost all his fee. The Government assumes all additional cost over this amount.

This contract contains provisions for two fixed-price incentive production options--one with a target price of $65.1 million for the production of 26 aircraft and the other with a target price of $45.2 million for 22 aircraft. The ceiling price for these options is 125 percent of the target price.

A contract was also awarded on March 1, 1973, to the General Electric Company. This fixed-price incentive contract calls for the delivery of 32 TF-34-100 engines at a target price of $27,666,900. The ceiling price for this contract is 125 percent of the target price. Options for additional production engines are included in this contract.

The scope of our review included an analysis of the procedures and methodology followed by the Air Force during the selection between the Fairchild A-10 aircraft and the Northrop Corporation A-9 aircraft. We interviewed members of the Source Selection Evaluation Board and examined pertinent evaluation and testing documentation. Although, we did not make a detailed audit, we did conduct a comprehensive review of the underlying source selection data.

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Our review also included meetings with the airframe and engine contractors involved in the competition and Air Force personnel who participated in the flight evaluation. We also met with the Secretary of the Air Force to obtain his basis for selecting the Fairchild A-10 aircraft over the Northrop A-9 aircraft. Within the Office of the Secretary of Defense, we met with the Director of Defense Research and Engineering to discuss his views concerning the A-X contract award and were briefed by the Cost Analysis Improvement Group on its estimate of the cost of the A-10 aircraft.

In our opinion, the Air Force conducted the flight evaluation and source selection fairly and objectively. Because both contractors developed acceptable prototype aircraft, the competition was quite close. All of the competing contractors told us that they were satisfied with the fairness of the flight evaluation and had no complaints about the methods used during source selection.

SELECTION CRITERIA

Selection of the A-X contractor involved an assessment of the competing contractors' proposals and prototype aircraft flight evaluation test results. Basic guidelines established at the beginning of this competition were communicated to all parties concerned, and retained throughout the competition. Our review verified the validity of the evaluation data presented in the final briefing to the Secretary of the Air Force, who made the ultimate selection and award.

The most significant selection criteria used by the Air Force involved program cost, operational capability, transition from prototype to production configuration, and program adequacy. These criteria are discussed below.

Program Cost

A principal consideration in this program was to minimize total cost to the Government in developing, acquiring, operating, and supporting the A-X system.

The Air Force ten-year life cycle cost analysis disclosed no appreciable cost difference between the two aircraft. Although the total program cost of the two competitors was not a predominant factor in the final selection, all cost elements were carefully evaluated during source selection. As a result, the Air Force estimated that the costs of proceeding into full-scale development with the A-10 were less than for the A-9 and were within the authorized Department of Defense

funding constraints. Additional funding authority would have been required for the A-9.

Operational Capability

The Air Force considered the soundness and adequacy of the competitors' design concepts and technical approaches to meeting the goals of the A-X program. Operational capability included bombing and strafing accuracy, flying qualities, maneuvering performance, survivability and supportability characteristics.

The Air Force flight evaluation of the prototype aircraft was conducted at the Air Force Flight Test Center, Edwards Air Force Base, California, between October and December 1972. Representatives from the Air Force Flight Test Center, Tactical Air Command, Logistics Command, and Training Command participated in the evaluation of the weapons delivery, performance, and operational utility of each aircraft.

The flight schedules were arranged so that each of the aircraft were flown at the same time and under the same conditions on identical missions. In addition, the Air Force pilots rotated between the aircraft thereby compensating for differences in individual pilots. The competing contractors informed us that in their opinion the flight evaluation was conducted fairly and objectively.

Although the A-10 fell short of some performance goals established at the beginning of the program, the Air Force concluded that it was more suitable for the A-X close air support mission than the A-9. For example, the A-10's high-fuselage engine mounting reduced the likelihood of engine damage from foreign objects while operating on unimproved runways. Its wide pylon spacing provided more armament carrying flexibility and enhanced armament loading. In addition, the Air Force rated the A-10 as easier to maintain than the A-9.

The Air Force also determined that the A-10 was the most survivable candidate. For example, it survivability was enhanced by the redundancy and wide separation of critical flight control elements, and by the combination of passive fire protection measures provided. The engine location and firewall protection also reduced the overall aircraft vulnerability to an engine fire.

Transition from Prototype to Production Configuration

In this evaluation area the Air Force considered the extent of and the risk associated with changes required to the prototype aircraft design to make it suitable for production.

The key factor that favored the A-10 in this area was the similarity of the prototype to the proposed production configuration. Because of this similarity the A-10 prototype aircraft can be used more extensively during developmental flight tests than could the A-9 prototype. This will allow Fairchild to start their flight test effort almost immediately thereby providing more time for developmental testing and operational evaluation prior to the production decision which is scheduled for May 1974.

Program Adequacy

The Air Force evaluation in this area considered the soundness and adequacy of the competitors' proposals for development of the A-X aircraft including logistic support considerations, aerospace ground equipment, production planning, maintenance and flight manuals, system test and evaluation, and program control management. This evaluation also included flight test demonstrations to provide assurance that program objectives can be met in reasonable time and for the estimated cost.

Although the Air Force felt that both proposals were sound and adequate, in the opinion of the Air Force the Fairchild proposal provided a greater amount of development test and operational evaluation prior to the production decision date. Also, as a result of the firmness of the A-10 design, Fairchild's proposal was more definitive and required less clarification to ensure its adequacy and soundness than Northrop's.

OTHER MATTERS REVIEWED BY GAO

Due to expressed congressional interest, we gathered information concerning the estimated cost of the TF-34 engines and the risks associated with the 30mm gun.

TF-34 Engine

Concern has been expressed as to the reasonableness of the reported Air Force's estimate of about $200,000 each for

the A-10 engines, while the Navy is procuring a similar engine for about $500,000 each. The Navy engine (TF-34-2) is used on the S-3A anti-submarine warfare aircraft and the Air Force engine (TF-34-100) is being developed for the A-10 close air support aircraft. The General Electric Company is the manufacturer for both of these engines.

We found that the disparity in these costs originated primarily from the Air Force and Navy costs having been stated in different year dollars and different purchase quantities. General Electric, in its proposal package, estimated the cost of the Air Force engine to be $194,500 stated in 1970 dollars if 1,500 engines were purchased. General Electric's estimate of $523,700 for the Navy engine, however, is stated in 1974 dollars for 130 engines. This estimate represents General Electric's initial target price for upcoming contract negotiations. We also found that, due to differences in the methods of accounting for costs, the cost of the Navy engine includes the costs of several items that were not reported as part of the contractors estimated cost for the Air Force engine. The costs of these items were reported separately by the Air Force. They included such things as the costs of tooling, technical publications, integrated logistics support, and indirect component inprovement programs.

When the costs of these engines are compared on a similar basis, (equal production quantities, same year dollars, and same items) we determined that the difference in unit cost is explainable. In 1970 dollars the Navy engine would cost more than the Air Force engine by $44,000 and in 1974 dollars by $55,000. This difference is attributable to the difference in configuration between the Air Force and Navy engines. For example, due to mission requirements the Navy version must incorporate a water wash system and an anti-icing system while meeting greater weight restrictions.

The Air Force estimate for the TF-34-100 engine for the A-10 was $224,500 in 1970 dollars.

30mm Gun

The 30mm gun will be the primary weapon on the A-X aircraft. This gun represents the major risk area identified in the A-X program. Concern has been expressed as to the advisability of proceeding with development of the aircraft prior to determining the suitability of the 30mm gun and its adaptability to the aircraft.

Although we did not review the status of the 30mm gun because it was in source selection, we noted the Air Force has considered the risk to the A-X program inherent in its development. After considering alternative courses of action the Air Force has decided to install the winning prototype gun system in the A-10 prototype aircraft in January 1974, during the full-scale development effort. This will provide flight test data of gun/aircraft compatibility prior to the A-X production decision scheduled for May 1974. According to the Air Force, this course of action offers the least possible impact on overall program schedule and cost assuming no problems in the development of the 30mm gun. The Air Force stated that the 30mm gun program is currently on schedule and meeting the planned technical performance goals.

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Senator Abraham A. Ribicoff, Senator Lowell P. Weicker, Jr. and the Chairman of the House Committee on Armed Services have also requested to be informed of the results of this review. Accordingly, similar letters are being sent today to each of these parties. We plan to make no further distribution of these letters unless copies are specifically requested, and then shall make distribution only after your agreement has been obtained or public announcement has been made concerning the contents of the letters.

The Department of the Air Force has no objection to the factual material contained in this letter.

We plan to issue a staff study of the A-X weapon system reflecting the results of this award and other events through March 31, 1973, as soon as possible.

Sincerely yours,

Comptroller General
of the United States