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

APRIL 6, 1984

NATIONAL SECURITY AND  
INTERNATIONAL AFFAIRS DIVISION

B-214623

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



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Dear Mr. Chairman:

Subject: Evaluation of Sole-Source Award for Ejection Unit  
Development (GAO/NSIAD-84-85)

In your November 14, 1983, letter, you asked us to review the Air Force's requirements for, and actions related to, the sole-source award of contract 08635-83-C-0322 for low profile ejection unit development. The low profile ejection unit is a device, attached to the wing of a tactical aircraft, for releasing weapons.

You requested that the review address the justification and requirement for the development effort, U.S. Air Force Systems Command directives related to the development effort, the relationship of the development effort to the Multiple Stores Ejector Rack (MSER) program, the adequacy of the determination and findings which supported a sole-source award, and whether parallel efforts by other contractors could aid in meeting operational requirements for ejector units.

This report summarizes our briefing with your office on January 25, 1984.

JUSTIFICATION FOR DEVELOPMENT EFFORT

According to Systems Command officials, the requirement for the low profile ejector unit was based on the need for a new ejector unit for the dual-role fighter aircraft currently being developed. These officials stated existing ejector units would not satisfy Air Force requirements.

Systems Command officials said no formal requirements document was prepared for the low profile ejector unit because separate requirements documents are not usually prepared for such low-dollar programs. Instead, on April 12, 1983, Systems Command Headquarters directed its Armament Division at Eglin Air Force Base, Florida, to design and develop an ejector unit for

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the dual-role fighter. This directive was the only Systems Command instruction pertaining to the low profile ejector unit development we could identify. It stated that the new ejector unit should make maximum use of technology being used in the MSER development to achieve a high degree of commonality with the MSER.

MSER, a four position bomb rack, is being developed to correct deficiencies with existing 1950's technology bomb racks. Originally, it was to have commonality of usage with the F-15, F-16, A-10, and F/A-18 aircraft. Later, it was planned to be used only on the F-16. The MSER has four ejector units attached to a strongback (the structural member to which the ejector units are attached), and it is designed to deliver up to four weapons. To eject weapons, the MSER ejector unit utilizes a unique gas/hydraulic mechanism, which is supposed to reduce maintenance requirements and improve accuracy.

On June 29, 1983, the Armament Division awarded a sole-source letter contract to Western Gear, the developer of MSER, not to exceed \$1 million for phase I. Under phase I, the contractor was required to determine the ejector unit requirements for the dual-role fighter, prepare a prime item development specification, perform engineering studies to assure the unit meets requirements, design the ejector unit and adapters to allow the unit to be used with the MSER strongback, prepare design drawings, conduct component testing, and fabricate an engineering model. The contract stipulated that Western Gear was to make maximum use of the MSER ejector unit technology in designing the low profile ejector unit. The phase II effort--estimated to cost \$2.3 million--was supposed to include the fabrication, qualification, and delivery of 32 prototype ejector units plus spares by August 1984.

ADEQUACY OF THE DETERMINATION AND FINDINGS THAT SUPPORTED SOLE SOURCE

The Armament Division based its sole-source award on the (1) need to achieve commonality between the low profile ejector unit and the MSER ejector unit, (2) nonavailability of a completed MSER data package, and (3) need to deliver ejector units by August 1984 for flight demonstration tests on the F-16 candidate for the dual-role fighter. The support for the sole-source justification shows that Armament Division officials based their decision, to a large extent, on instructions from the Systems Command, which required the highest degree of commonality possible between the MSER ejector unit and ejector units for the dual-role fighter. The Armament Division's technical program

plan for the low profile ejector unit pointed out that achieving commonality would minimize future Air Force ground crew training and logistic support requirements. However, Armament Division personnel were not aware of any analysis showing the cost and benefits resulting from achieving commonality between ejector units.

The Armament Division concluded that without a completed data package, no contractor other than the MSER contractor could complete the required tasks and provide the hardware in sufficient time. Our review showed that the Armament Division had conceptual and developmental design drawings (level I drawings) on the MSER ejector unit when the sole-source decision was made. Program officials, however, did not believe that the drawings were adequate for competitive contractors to achieve the desired level of commonality between the MSER ejector unit and the low profile ejector unit and still meet the schedule. In addition, these officials believed that using the available MSER drawings would place too much risk on the Government because certain design changes to the MSER ejector unit had not been validated. The officials, however, did not query other contractors regarding the possibility of producing a common item within the time frame.

We verified through discussions with F-16 program officials that they had established an August 1984 deadline for the low profile ejector units. These officials told us that, if the Armament Division failed to meet the delivery schedule, the F-16 program office would have to use contractor-furnished ejector units for the flight demonstration and then repeat the flight demonstration tests when the Armament Division delivered its ejector units. They added that studies were not done to assess the cost and schedule impacts if the Armament Division did not deliver its ejector units by August 1984.

Although the Defense Acquisition Regulation provides little guidance on what justifies a sole-source decision, Air Force's reasons for this sole-source award appear to be consistent with the Comptroller General's decisions. For example, in the Comptroller General's decision B-193263, issued April 9, 1979, GAO recognized that a sole-source procurement may be justified when the desired item manufactured by one source must be compatible with existing equipment. In that same decision, GAO also recognized that a sole-source procurement may be justified, where time is of the essence and only one known source can meet the Government's needs within the required time frame. In addition, the Comptroller General's decision B-166506, issued July 26, 1974, stated that, in the past, GAO has recognized

noncompetitive awards may be made where sufficient data is unavailable for competitive procurement.

CURRENT STATUS

In January 1984 program office personnel and the contracting officer for the low profile ejector unit told us that they had decided phase II of the development effort should be procured through competition rather than sole source. These officials said they currently planned to open the phase II competition to contractors proposing all gas ejector units as well as those proposing gas/hydraulic ejector units.

The personnel attributed their change in direction to current MSER performance problems which could result in MSER not being procured. If the MSER is not procured, the commonality aspect of the sole-source justification would no longer be valid.

Program officials told us they also were considering awarding parallel development contracts during the phase II development effort. Usually parallel contracts are used to minimize development risk, assure the most effective product, or enhance competition. The officials said that if parallel contracts are awarded, one of the contracts may provide for 16 gas/hydraulic ejector units and the other contract for 16 gas ejector units. The two types of ejector units would then be flight tested and the best ejector unit selected for further development and production. Program officials had not estimated the cost of awarding dual contracts, and they acknowledged that funding constraints might preclude awarding dual contracts.

The final decision regarding phase II competition had not been made at the completion of our review work in February 1984. Program office personnel said the decision must be approved by the Armament Division and higher levels in the Air Force, but they could not provide a date when the final decision would be made. Completion of the phase I development effort had slipped from February to March 1984.

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In responding to your request, we visited the Air Force Armament Division, Eglin Air Force Base, Florida, and the Air Force Systems Command, Andrews Air Force Base, Maryland. We also contacted personnel at the F-16 program office. Personnel at those locations were responsible for the development and procurement decisions on the low profile ejection unit. Our work,

which was performed during December 1983 to February 1984, was done in accordance with generally accepted government audit standards except, as requested by your office, we did not obtain agency comments. We did, however, discuss our observations with officials at the Armament Division.

Based on our discussions with your office, we believe this information satisfies your needs. If we can be of further assistance, let us know.

Sincerely yours,



for Frank C. Conahan  
Director