



COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON, D.C. 20548

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JULY 14, 1980

B-198680



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✓ The Honorable Sam Nunn  
United States Senate

Dear Senator Nunn:

Subject: Air Force Procurements of Spare and Repair  
Parts for the ARC-164 Radio (PSAD-80-59)

On February 5, 1980, you requested that we determine why certain ARC-164 components and parts are procured from the prime contractor, Magnavox Government and Industrial Electronics Company, instead of competitively. According to the Air Force, noncompetitive procurements from Magnavox are necessary to insure reliability and maintainability. In our opinion, the Air Force should have acquired a procurement data package and competed ARC-164 requirements subsequent to the initial production contract with Magnavox.

The ARC-164 radio is used in Air Force, Army, and foreign military aircraft. The initial production contract and subsequent contracts awarded to Magnavox since 1974 totaled about \$99 million, and 20,000 radios had been produced as of April 1980.

We interviewed Air Force officials responsible for ARC-164 logistics and reviewed pertinent contract, requirement, and procurement records at Air Force Headquarters, the Pentagon, Washington, D.C.; Aeronautical Systems Division, Wright-Patterson Air Force Base, Dayton, Ohio; and Warner Robins Air Logistics Center, Robins Air Force Base, Warner Robins, Georgia.

The Air Force purchased a procurement data package in June 1977, under an option in the initial production contract, which should have provided sufficient detail for other firms to produce the radio and parts and compete for ARC-164 requirements. The Air Force maintains, however, that the radio and the main components and parts have to be procured from Magnavox, regardless of the data package, to ensure their reliability.

The Air Force initiated a program in April 1972 to develop a new radio for aircraft, subsequently designated

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ARC-164, because most radios in the fleet were 20 years old, had high failure rates and lengthy repair times, and cost about \$16 million a year to maintain. When their qualification contracts were completed, Collins Radio Company, Magnavox, and RCA submitted proposals to produce the radios they had developed, primarily based on total acquisition and logistics or life-cycle costs. The initial ARC-164 production contract was awarded to Magnavox effective March 1974.

One option in the contract was to increase the quantity of radios from 2,102 to 17,000 units, and another option was for a second firm to produce identical radios if Air Force requirements for about 10,000 units were exceeded. The Air Force ordered 13,395 radios under the option in the initial contract and awarded 3 additional contracts to Magnavox for up to 8,433 radios during 1977 and 1978. The option for a second firm to produce radios was not exercised.

The initial contract also included an option to procure specified components and parts during a 6-year period beginning August 1975 at prices subject to adjustment for inflation. As of April 1980, the Air Force was still procuring components and parts pursuant to the option. The estimated cost of all components and parts procured from Magnavox was \$10 million, and about \$4.8 million was procured pursuant to the option.

The final option in the initial contract provided that a procurement data package with sufficient details to produce identical radios and, therefore, compete ARC-164 requirements could be furnished for a stated price. The Air Force ordered the procurement data package from Magnavox in June 1977 after all the radios were ordered under the initial contract and a second contract had been awarded to Magnavox in March 1977 for foreign military sales requirements. The data package was needed to determine whether the ARC-164 radio could be modified to include an antijamming capability.

The data package furnished by Magnavox in September 1977 for \$230,000 was subjected to a detailed review which took about 6 months and disclosed the lack of certain technical details. The Air Force discussed the deficiencies with Magnavox in August 1978, and Magnavox furnished a revised data package in December 1978.

The Air Force maintained that the main components and parts of the radio had to be procured from Magnavox, regardless of the adequacy of the data package, to insure reliability and preclude maintenance problems. The Air Force contended that all the information needed to manufacture an item properly cannot be described in technical data. Furthermore, the reliability problem with the ARC-34, the primary radio used in aircraft before the ARC-164, was caused by the supply of parts. The Air Force did not have adequate technical data on the ARC-34, which was initially procured in the early 1950s, and the parts were procured competitively from a number of firms based on performance specifications. Source qualification and first article testing procedures prolonged the procurement process by several months, and then parts were frequently rejected because they did not meet the specifications. In some instances, the Air Force spent over 2 years trying to obtain acceptable replacement parts.

Air Force objectives of reliability and maintainability for ARC-164 radios are consistent with the Department of Defense's manual, "High Dollar Spare Parts Breakout Program." The manual states that, although all procurements should be made competitively to the maximum extent practicable, competitive parts procurements are not to be undertaken at the risk of impairing the safe, reliable, and effective operation and the timely support of the equipments and systems. The manual also states, however, that a determination that parts have to be procured from the actual manufacturer to ensure requisite quality and reliability primarily involves data and the rights to its use. Further, the Defense Acquisition Regulations, which govern procurements by all Defense components, provide that, when a proposed procurement cannot be made competitively, steps should be taken to avoid subsequent noncompetitive procurements whenever possible. Based on these instructions, the procurement data package should have been acquired and used to compete ARC-164 requirements subsequent to the initial production contract.

#### CONCLUSION

The Air Force procures certain ARC-164 components and parts noncompetitively on the grounds that procurement from Magnavox insures reliability and maintainability. Since the procurement data package should provide sufficient detail for other firms to produce identical components and parts, as well as radios, we believe that the Air Force

should have acquired the procurement data package and competed ARC-164 requirements when the final order for radios was issued under the initial production contract and before the second contract was awarded to Magnavox. Now that the procurement data package has been acquired, the Air Force should determine whether savings attributable to competing for the remaining ARC-164 requirements would exceed costs associated with establishing other production sources. Future procurements of either the radios or the main components and parts, or both, should be made competitively if warranted by a potential cost reduction.

RECOMMENDATION

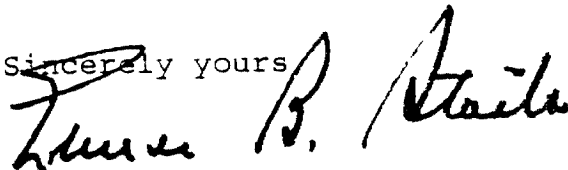
The Secretary of the Air Force should direct that

- savings attributable to competing for the remaining ARC-164 requirements and costs associated with establishing other production sources be computed and
- future ARC-164 procurements of either the radios or the main components and parts, or both, be made competitively if warranted by a potential cost reduction.

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As directed by your office, we did not obtain written comments from the Air Force. The results of our review were discussed with Air Force officials, and their comments were considered in preparing this report. As agreed, we are sending a copy of this report to the Secretary of the Air Force and will send copies to other interested parties. If we can be of further help, please do not hesitate to contact us.

Sincerely yours



Comptroller General  
of the United States