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

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LOGISTICS AND COMMUNICATIONS  
DIVISION

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/ The Honorable James C. Fletcher  
Administrator, National Aeronautics and Space Administration 36

Dear Mr. Fletcher:

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2 Between May 1963 and July 1971, the George C. Marshall  
Space Flight Center paid Aero Spacelines, Inc., about  
\$21.9 million to airlift outsized cargo on two specially  
built aircraft. During our review of contracts awarded to  
Aero Spacelines for this service, we observed that the Center  
had paid maintenance costs which should have been borne by  
the contractor.

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Officials of the Center have indicated that they will review such costs. We therefore plan no further reporting at this time.

BACKGROUND

The National Aeronautical and Space Administration (NASA) initiated the Saturn program in 1958. Large vehicle-booster stages were to be constructed for the program in plants located substantial distances from the launch sites.

Aero Spacelines was organized in 1961 to provide special-purpose aircraft to transport such outsized cargo. In October 1962 Aero Spacelines advised NASA that its first aircraft--the Pregnant Guppy--was available. This aircraft was capable of transporting cargoes weighing up to 29,000 pounds and measuring up to 19-1/2 feet in diameter and 60 feet long. Most of the Saturn booster components were within these dimensions.

In August 1965 Aero Spacelines completed the Super Guppy which could haul those Saturn stages and other space hardware which were too large for the Pregnant Guppy. It could transport cargoes weighing up to 39,000 pounds and measuring up to 24-1/2 feet in diameter and 60 feet long.

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From May 1963 through July 1971, the two aircraft flew 2.2 million miles for which the Center paid the contractor about \$21.9 million under seven contracts. In each of the procurement actions, only Aero Spacelines was solicited because it operated the only known existing aircraft capable of transporting the Saturn stages.

MAINTENANCE COSTS CHARGEABLE TO  
CONTRACTOR PAID BY THE GOVERNMENT

Maintenance costs chargeable to Aero Spacelines were borne by the Government because officials of the Center had not reviewed contractor invoices to determine whether costs claimed for specific spare parts were allowable under the contracts.

Contracts awarded to Aero Spacelines required it to pay for all parts, equipment, materials, repairs, supplies, and labor necessary to maintain the Super Guppy. The contracts also provided that the Government would pay for major overhaul and modifications of the Government-owned engines and propeller assemblies when done by the Air Force and supported by an Air Force invoice. The Air Force lease agreement under which Aero Spacelines obtained the engines and propeller assemblies required the contractor to maintain the equipment in good condition and provided for spare parts to be purchased from Air Force inventories. Although Aero Spacelines could do ordinary maintenance on this equipment, it did not have the necessary facilities to do major overhauls. The engines were therefore shipped to the Air Force, and the propeller assemblies were shipped to an Air Force contractor.

As of July 31, 1971, the Center had reimbursed Aero Spacelines \$1.2 million for major overhaul and modification work on the engines and propeller assemblies. We reviewed selective payments totaling \$298,000 and found that \$61,700 had been paid for spare parts and repair work as opposed to major overhaul effort. For example, the contractor had received reimbursement for spare parts, such as signal amplifiers, fuel pumps, temperature indicators, and governors. Records available for our review did not indicate that the Center official responsible for reviewing the invoices had questioned the propriety of such costs, even though the invoices showed that the costs billed were for spare parts.

Air Force officials told us that an engine overhaul generally consisted of complete disassembly, cleaning, inspection, rework, replacement of assemblies and subassemblies,

reassembly, adjustment, calibration, and functional test of a complete unit. We were also informed that, when an engine underwent major overhaul, the time of the engine was set back to zero and that the subsequent removal and replacement of individual component parts was not considered major overhaul work.

Center officials told us that Aero Spacelines' invoices had been paid on the assumption that the Air Force had shipped to the contractor only those component parts needed for major overhauls of the engines. They said that they had not established controls to insure that these components were the only ones for which the contractor was receiving reimbursement. These officials' assumption that the Air Force would ship only those component parts related to major engine overhaul was erroneous because the Air Force lease agreement did not restrict the type of spare parts that the contractor could obtain from Air Force stocks.

To justify paying the contractor for spare parts, Center officials told us that an overhauled engine did not have all of its component parts attached when shipped to the contractor and that these parts had to be placed on an engine when it was installed on the aircraft. They said that the Air Force did not overhaul every component during a major engine overhaul and that the contractor had to maintain a supply of component parts for replacement when necessary. However, Air Force officials informed us that the overhauled engines furnished to Aero Spacelines had been shipped in a complete configuration with all component parts attached.

Center officials told us that they would review the payments made to Aero Spacelines for major overhaul and modification costs.

In view of the action promised by Center officials, we plan no further reporting of this matter at this time. We appreciate cooperation received from Center personnel, and we would like to be advised of any actions taken as a result of this review.

Sincerely yours,



J. K. Fasick  
Director