

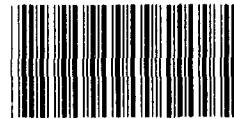
GAO

Briefing Report to the
Honorable Romano L. Mazzoli
House of Representatives

May 1986

**AIR FORCE
CONTRACTING**

**Procurement of Piston
Rings for the F-16
Aircraft**



129949



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

NATIONAL SECURITY AND
INTERNATIONAL AFFAIRS DIVISION

May 28, 1986

B-222984

The Honorable Romano L. Mazzoli
House of Representatives

Dear Mr. Mazzoli:

On February 25, 1986, you requested us to review a recent Air Force decision that Dover Corporation is not an approved source for a piston ring, National Water Lift Company part number 960329-5. The piston ring is a component part of the F-16 aircraft integrated servoactuator (ISA), which is manufactured by the National Water Lift Company. You stated it is Dover's contention that its piston ring is of equal quality with that provided by the approved source, Koppers Company, and that the only difference between this Dover piston ring and another approved Dover piston ring supplied earlier to the Air Force is its size. You further stated that Dover contends it can supply ISA piston rings at a substantial savings to the Air Force.

Kitco, Inc., which has an Air Force contract to provide repair kits for the F-16 ISA, wanted to use the Dover piston ring in its kits. The Air Force denied the use of the Dover ring after learning that the ring had not passed qualification testing. In your request, you provided a letter from Kitco to the Air Force which objected to the decision, and raised a number of questions.

We have examined the concerns raised in your letter and the Kitco letter, and on April 10, 1986, we briefed your representative on the results of our review. At that meeting we agreed to provide you this report.

The ISAs control the aircraft's flaperons and horizontal stabilizers (see figure I.3). The Air Force considers the ISA to be a "single point failure" item on the aircraft; that is, a failure of an ISA would result in the loss of the aircraft. Thus, qualification testing of the ISA piston ring is an important safety consideration.

We found that the Dover piston ring (part number 960329-5) was never qualified and that Dover is not an approved source for this ring. The fact that Dover may be an approved source on a

similar, but different size ring (part number 960329-3) is not, in our view, adequate justification for the Air Force to waive qualification testing for the ring in question. It is true that the Air Force, believing that the ring had passed qualification testing, allowed Kitco to use the unqualified Dover ring in some repair kits. The Air Force admits this was an error. It has prohibited the continued use of the Dover piston ring in the ISA repair program and has initiated action to identify and remove those rings already installed in the ISAs.

If Dover attempts to become an approved source, the Air Force has agreed to provide an ISA for the qualification testing. Dover would, however, have to assume liability for any damage to the ISA during testing. Officials of the National Water Lift Company informed us that qualification testing could take from 4 months to 1 year and cost between \$125,000 and \$150,000. The largest part of this cost would be the labor hours to conduct testing which, according to company officials, could amount to 2,000 hours and cost \$120,000.

The Air Force is studying the need for dual sourcing the ISA piston rings. If it concludes that it is in the government's best interest to approve a second source, the Air Force said it will initiate action to do so and may provide financial assistance for the qualification testing. According to Air Force officials, the qualification testing criteria and selection of the second source will be determined by the National Water Lift Company, which is responsible for maintaining the integrity and supportability of the ISA.

With regard to the contention that it is cheaper to buy the Dover piston ring versus the Kopper's ring, we do not believe it is appropriate to compare the price between Koppers, an approved source and Dover, an unapproved source. The question is, how would the prices compare after Dover has incurred the qualification costs and allocated them to the price of the ring?

Kitco's statement that its price reduction under the 1983 contract was to allow the Air Force to qualify the Dover piston ring is not supported by evidence in the contract file nor by the offer submitted by Kitco. The price reduction was the result of the Air Force allowing Kitco to use the Dover ring, which it believed was a qualified part.

During our meeting with your representative, your concern about whether the Air Force is doing enough to promote competition was raised. Although this issue was beyond the scope of this review, it is also of concern to us. We have a review underway to examine federal agencies' efforts to implement The

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Competition in Contracting Act of 1984. We will provide you a copy of our report when it is released.

We made our review during March and April 1986. We examined the procurement files for the 1983 and 1985 contracts with Kitco, Inc., and interviewed officials at the Ogden Air Logistics Center, Utah--the Directorate of Contracting and Manufacturing, the Directorate of Competition Advocate, and the F-16 Aircraft Acquisition Division. We also interviewed officials from Kitco, Inc., and discussed qualification testing requirements with officials from the National Water Lift Company.

We discussed the results of our review with officials at the Ogden Air Logistics Center, and their views were considered in preparing this report.

Copies of this report are being sent to the Secretary of Defense and the Secretary of the Air Force. Copies will also be made available to other interested parties upon request. If you have any questions, please call me on (202) 275-4268.

Sincerely yours,

A handwritten signature in black ink that reads "Harry R. Finley". The signature is written in a cursive style with a large, stylized initial "H".

Harry R. Finley
Senior Associate Director

PHOTOGRAPHS OF PISTON RINGS,
ISA, AND F-16 AIRCRAFT

Figure I.1: Comparison of Dover and Koppers Piston Rings

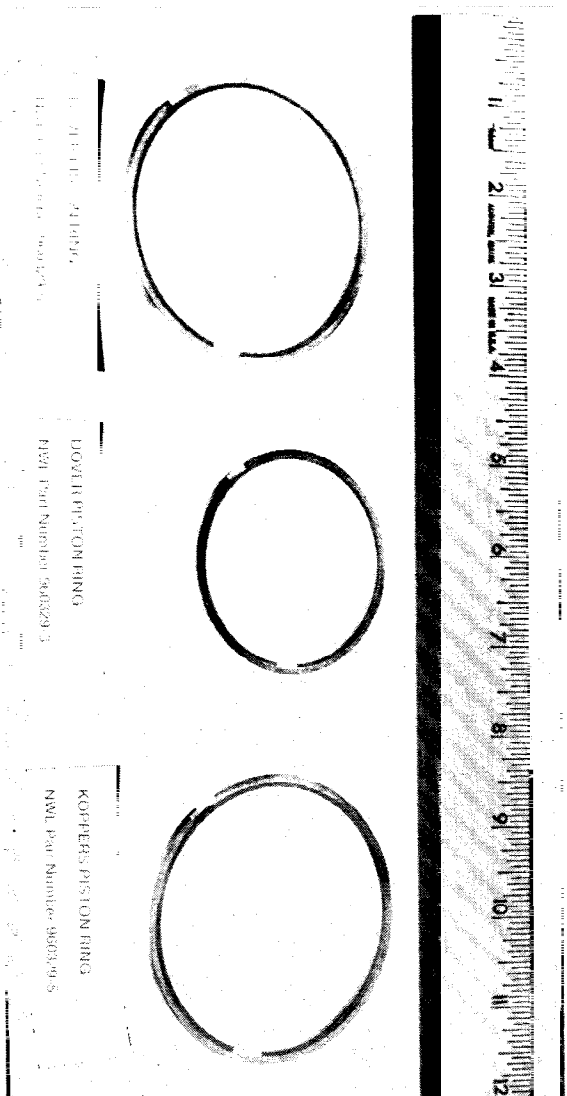


Figure I.2: Integrated Servoactuator for F-16 Aircraft

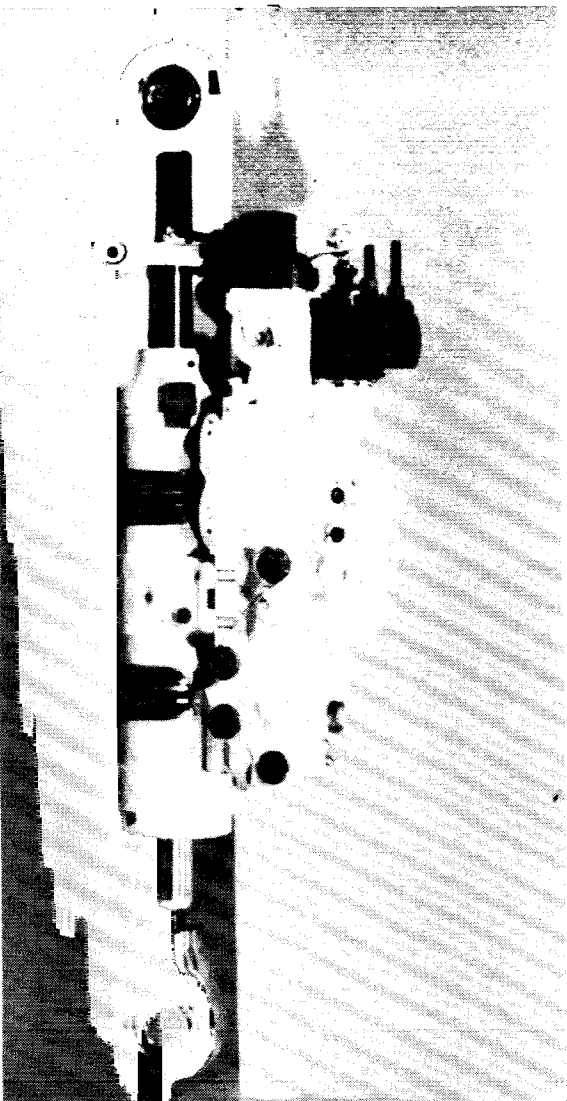
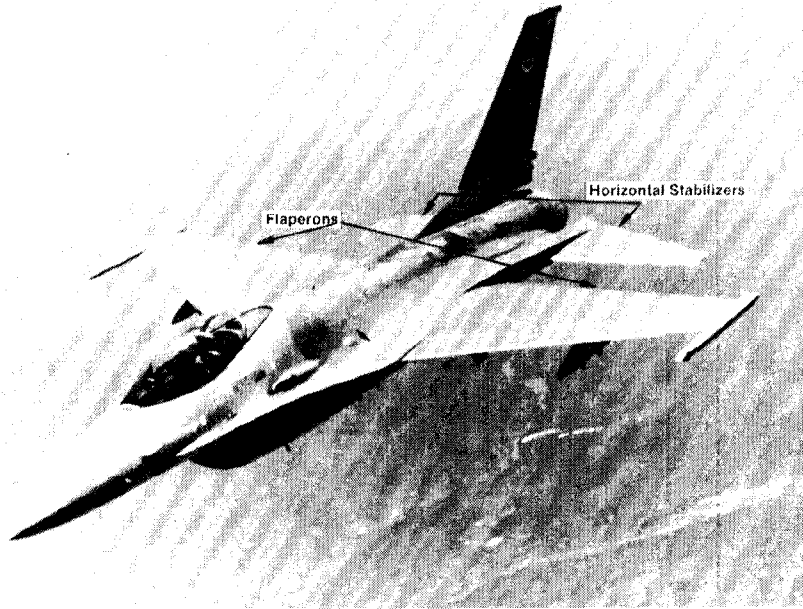


Figure I.3: F-16 Aircraft Showing Location of Horizontal Stabilizers and Flaperons



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