



UNITED STATES GENERAL ACCOUNTING OFFICE  
NORFOLK REGIONAL OFFICE  
5705 THURSTON AVENUE  
VIRGINIA BEACH, VA. 23455

089738

December 11, 1981



089738

Commander  
Tactical Air Command  
Langley Air Force Base, Virginia 23665

Dear General Creech:

During our review of DOD Aircraft Engine Thrust/Power Management (code 943487), we examined the operations and maintenance procedures for fuel conservation of the 4th Tactical Fighter Wing, Seymour Johnson Air Force Base. The results of our examination are being consolidated with results from other sites in a separate report.

We are writing to you now because we believe that changing a current maintenance practice of the 4th Tactical Fighter Wing—i.e., using compressed air instead of engine run-up to transfer fuel to test for external tank fuel leaks—would result in substantial fuel savings. This procedural change could also be applied to other Tactical Air Command F-4 wings and to other types of aircraft operated by TAC.

When external centerline fuel tanks are installed on aircraft, maintenance personnel test for fuel leaks. The technical order requiring the test permits using either an engine run-up or an external compressed-air/nitrogen source to provide the pressure for fuel transfer.

According to 4th Tactical Fighter Wing maintenance officials, the current equipment-allowance list does not include an air compressor of the necessary size, and the on-hand nitrogen pack is not used for the transfer and leak test because it is not readily accessible. The officials told us that one engine on the aircraft is run up to 85-percent power for about 15 minutes to transfer fuel and make the test. Each time an engine is run up for this purpose, about 187 gallons of fuel are consumed. The centerline tanks are reinstalled about 468 times a year in the wing for readiness inspections and evaluations, cross-country trips, and electronic countermeasures training. Our rough calculations show that this wing alone could save about 87,750 gallons of fuel costing over \$100,000 annually by using compressed air for the fuel transfer and leak test. Through discussions with your staff on this fuel-leak test procedure, we understand that the suggested number of compressors needed would be one for each squadron at a cost of \$7,300 each.

Maintenance officials told us that there may be other opportunities for using the air compressor to reduce fuel usage. Specifically mentioned were other (1) F-4 wings, (2) types of aircraft, and (3) maintenance procedures that require engine run-up.

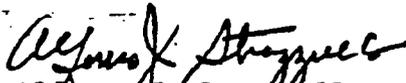
Considering the potential savings available through compressed air procedures, we recommend that you:

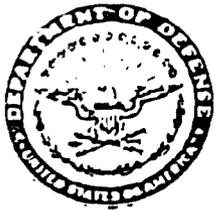
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- Confirm whether it is cost beneficial to purchase compressors and use compressed air in the leak test procedure.
- If savings are confirmed, obtain the compressors and direct that all units use them in lieu of engine run-ups.
- Investigate the applicability of this procedure to other Tactical Air Command aircraft and to other maintenance procedures requiring engine run-ups.

We would appreciate notification of your planned actions and estimated savings from using the compressed air procedure. We sincerely appreciate the courtesies of your staff. If assistance or further information is needed, please contact Mr. Robert Winn of my staff on 804-441-6621.

Sincerely yours,

  
Alfonso J. Stranullo  
Regional Manager



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS TACTICAL AIR COMMAND  
LANGLEY AIR FORCE BASE, VA 23065

15 JAN 1982



Mr. Alfonso J. Strazzullo  
Regional Manager  
Norfolk Regional Office

Dear Mr. Strazzullo

Tactical Air Command is vitally concerned with fuel conservation programs, and we certainly appreciate the efforts of the General Accounting Office in this area. We agree that a potential savings does exist in this particular area, although not to a quantifiable amount at this time. A certain percentage of the referenced external tank hangings will still require aircraft engine runs because of established time criteria during aircraft generation exercises. In such instances, any and all available authorized procedures are employed to insure readiness is achieved in minimum time.

It appears the purchase of MC-7 air compressors would be cost effective over a relatively short period if their reliability and maintainability are adequate. However, I believe a test program at one of our Tactical Air Command units using one of the compressors would produce more factual data upon which to base a decision as to the extent of the program.

Tactical Air Command will perform a six month test program at the 4th Tactical Fighter Wing to produce a data base for evaluation. We are very receptive to any ideas on fuel conservation realizing a large portion of our operational expense lies in this area. Tactical Air Command stands ready to act on any proposal for improvement.

Sincerely,

ALBERT G. ROGERS  
Major General, USAF  
DCS/Logistics

FILE COPY/Rec'd

	Code	Initial
RM	<i>AR</i>	
ARNOLD		
STEVENS		<i>.T</i>
TAYLOR	<i>T. Taylor</i>	

*Readiness is our Profession*



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS TACTICAL AIR COMMAND  
LANGLEY AIR FORCE BASE, VA 23065

	Code	Initial
RM		
ARNOLD		
STEVENS		
TAYLOR	C	
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Mr. Alfonso J. Strazzullo  
Regional Manager  
Norfolk Regional Office  
United States General Accounting Office

Dear Mr. Strazzullo

As a result of your letter of December 11, 1981 a six-month test using an MC-7 compressor for F-4 aircraft transfer and leak tests was completed with very successful results. The results are indicated below, by month:

<u>MONTH</u>	<u>TIMES USED PER MONTH</u>	<u>AVERAGE TIME REQUIRED TO PERFORM CHECK</u>	<u>DOLLAR SAVINGS PER MONTH</u>	<u>PROBLEMS ENCOUNTERED</u>
Mar 82	25	10 min 32 sec	\$ 5,265.00	None
Apr 82	50	12 min 54 sec	10,530.00	None
May 82	48	12 min 54 sec	10,108.80	None
Jun 82	48	10 min	10,108.80	None
Jul 82	45	10 min	9,477.00	None
Aug 82	58	14 min 35 sec	12,214.40	None
Totals	274	11 min 6 sec	\$57,704.00	

In their last status report on the test, the 4th Tactical Fighter Wing stated, "The MC-7 air compressor has proven to be very cost and time saving for F-4 leak and transfer checks and fuel systems transfer problem troubleshooting. Table of Allowances should change to include this unit immediately."

We have taken necessary action to change authorizations for F-4C, D, E and G Table of Allowances to one unit per 18 PAA. The RF-4C Table of Allowances presently authorizes one unit per 18 PAA.

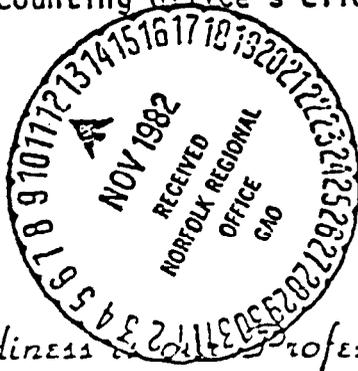
Our investigation revealed the MC-7 air compressor, in addition to test accomplished on the F-4, has application on the F-15 aircraft for the fuel transfer and leak check. The only fighter weapons systems in TAC that can use MC-7 air compressor are the F-4 and F-15.

We appreciate the General Accounting Office's efforts and involvement in this pursuit.

Sincerely

*Harry L. Brewer*

HARRY L. BREWER, Colonel, USAF



Readiness & Profession