

GRUMMAN

GRUMMAN AEROSPACE CORPORATION
FALCON 10
WITH GRUMMAN THRUST REVERSERS INSTALLED
OPERATIONAL INSTRUCTIONS MANUAL SUPPLEMENT

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This Supplement, GRUMMAN Document PMFJC-MA77-1, has been prepared by GRUMMAN AEROSPACE CORPORATION, Bethpage, New York for AVIONS MARCEL DASSAULT-BREGUET AVIATION, to be incorporated into the FALCON 10 Operational Instructions Manual when the FALCON 10 Aircraft is equipped with the GRUMMAN Thrust Reverser System, Drawing Number C43B21000 and installed in accordance with STC SA1042EA.

This Supplement will be revised as required by a separate revision sequence than the FALCON 10 Operational Instructions Manual.

The information in this document supersedes the basic manual only where covered in the items contained herein. For limitations, procedures, and performance not contained in this Supplement, consult the Manual proper.

The information contained herein supplements the corresponding information in the OIM as follows:

<u>OIM SECTION</u>	<u>SUPPLEMENT PAGE NUMBER</u>
Operating Techniques	Page 3
Abnormal Procedures	Page 4 and Page 5

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LOG OF REVISIONS

Revision Number	Modified Pages	Subject	Approval/Date References

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OPERATING TECHNIQUES

7 - DESCENT-APPROACH-LANDING

FILING INSTRUCTIONS: Insert this page adjacent to Paragraph C.7. when aircraft is equipped with Thrust Reversers.

Text of Paragraph C.7. is superseded by the following text when aircraft is equipped with Grumman Thrust Reverser System.

7. After touch down, airbrakesEXT

a. Landing

Extend airbrakes after contact with the runway and as soon as the nose wheel has touched down. Their extension at high speed reduces the lift. The wheel braking is therefore more efficient in the high speed period of the landing run. Thrust reversers can be used in conjunction with or in lieu of wheel braking. Nose wheel must be held firmly on the ground before deploying thrust reversers. Confirm "Deploy" lights are illuminated, then increase reverse thrust from idle to desired level as required. Initiate reduction of reverse thrust to idle at 60 KIAS or above as appropriate. Idle reverse thrust can be used during taxi operations but must be cancelled prior to stopping aircraft. Confirm "Trans" lights are extinguished after cancelling reverse thrust and prior to using main throttles for forward thrust. If wheel braking is used alone or in conjunction with reverse thrust, apply moderate continuous braking immediately after, complying with maximum brake energy speed, upon landing, given per Flight Manual section 6. These limitations set to ensure the brake service life, may be exceeded in emergency condition.

b. Revolutions above runway (Take-off - Landing)

- The revolutions above runway, landing gear extended may be linked at high cadence: the cooling delay of the airbrakes (about 4 minutes) is lower than the normal time for one revolution.
- When the landing gear is normally retracted after take-off, it is recommended to wait about 15 minutes prior to a new take-off in order to allow decrease of the brake temperature.

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ABNORMAL PROCEDURES

THRUST REVERSER SYSTEM

FILING INSTRUCTIONS: Insert this page after last page of Abnormal Procedures when aircraft is equipped with Grumman Thrust Reverser System

1. Failure Indications - "TRANS" or "REV" light on
- Audible T/R warning horn

2. "TRANS" light comes on

The light will come on if any of the normal locking mechanisms malfunction or when the T/R doors are in transitory position between stowed and deployed. Locking mechanisms are in the hydraulic actuator which serves as the primary lock and prevents movement of the actuator piston; and the mechanical latch under the forward stang cover (outboard side) which serves as the secondary lock.

If "TRANS" light comes on during any portion of flight other than landing ground roll or taxi, place guarded "EMERG STOW" switch from "NORMAL" to "STOW".

3. "REV" light comes on

The light will come on only when the reverser doors are fully deployed resulting from double failure of normal locking systems or a electrical "REV" light switch malfunction.

No abnormal aircraft characteristics will be observed for a switch malfunction. If T/R doors actually deploy, then aircraft will pitch up and roll and abnormal buffeting and noise will be observed. In addition, the affected main throttle will have been displaced to the idle position. Initiate immediate action to regain control of the aircraft (Flight Manual Supplement Pg. 4), place guarded "EMERG STOW" switch from "NORMAL" to "STOW" and reduce A/S to less than 190 KIAS. Below 10,000 ft. and weights less than 16,500 lb, level flight at 1.2 to 1.3 Vs clean configuration can be achieved with one T/R deployed.

If the thrust reverser does not indicate a stow condition by absence of "TRANS" and "REV" lights off, visually check the door position from rear cabin window. For either case of a "STOW" or "NO STOW" condition, follow procedures in Flight Manual Supplement Pg. 4.

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ABNORMAL PROCEDURES

THRUST REVERSER SYSTEM (Cont'd)

4. Loss of No. 2 Hydraulic System

The thrust reverser system operates from the No. 2 hydraulic system and from an accumulator should the No. 2 hydraulic system fail. This accumulator is capable of providing one complete operational cycle of the left and right thrust reverser through the normal thrust reverser controls system.

5. Loss of Automatic Throttle Retarder

The automatic throttle retarder will displace the main throttles on the reverse piggy-back throttles from a high power setting to an idle power setting should the reverser doors inadvertently be displaced from a normal operating position; that is, stowed for main throttles forward and deployed for piggy back throttles aft. If pre-flight check (see Airplane Flight Manual Supplement Pg. 8) does not confirm operation of the automatic throttle retarder, then the thrust reversers must be bolted closed prior to flight to preclude aircraft controllability problems for an inadvertent thrust reverser deployment.

6. Thrust Reverser Audible Horn goes on

The thrust reverser audible horn will sound off anytime there is a mismatch between the thrust reverser doors position and either the main throttles or the reverse piggy back throttles. Main throttles above the idle power position and reverser doors deployed or reverse piggy back throttles above idle power position and reverser doors stowed, will trigger the horn to go on. Reducing either throttle to the idle position (if not already accomplished by the automatic throttle retarder) will silence the horn.