



Nomad

ALERT SERVICE BULLETIN

Reference No 269

TRANSMITTAL LETTER
FOR
SERVICE BULLETIN ANMD-32-20

**LANDING GEAR – TEMPORARY REVISION TO LANDING
GEAR UP WARNING HORN MICROSWITCH SETTING**

1. **Reason**

Operational limitations imposed by Alert Service Bulletin ANMD-57-11 have the effect that the landing gear 'UP' warning system will not provide adequate gear 'UP' warning for the 10° landing flap configuration.

This service bulletin provides instructions for the temporary resetting of the landing gear 'UP' warning horn power lever activated microswitches to provide a landing gear 'UP' warning if the torque pressure of either or both engines is reduced to 30 psi (nominal), or lower, and the landing gear is not down and locked.

2. **Instructions**

Insert Service Bulletin ANMD-32-20 dated 10 February, 1995 into the Service Bulletin Publication and annotate the Index accordingly.

Revision Status

Original 10 February 1995

D J PILKINGTON
TECHNICAL SERVICES MANAGER



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LANDING GEAR – TEMPORARY REVISION TO LANDING GEAR UP WARNING HORN MICROSWITCH SETTING

1. PLANNING INFORMATION

A. Effectivity

- (1) Aircraft – All Nomad N22 series and N24 series aircraft
- (2) Spares – Not applicable

B. Reason

Operational limitations imposed by Alert Service Bulletin ANMD-57-11 have the effect that the landing gear 'UP' warning system will not provide adequate gear 'UP' warning for the 10° landing flap configuration.

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C. Description

- (1) Part 1 – Determination of the LH and RH Engine Power Lever Trigger Settings
- (2) Part 2 – Adjustment of Engine Power Lever Actuated Landing Gear 'UP' Aural Warning Microswitches
- (3) Part 3 – Ground Test of Aural Warning System
- (4) Part 4 – Post Test Instructions

D. Compliance

- (1) The compliance requirements of this Service Bulletin are mandatory.
- (2) The requirements of this Service Bulletin are to be carried out within 10 hours TIS or one week, whichever occurs sooner, after receipt of this Service Bulletin.

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E. **Approval**

The requirement detailed herein has been approved by a person authorised under Civil Aviation Regulation 35.

F. **Manpower**

10 manhours

G. **Materials — Price and Availability**

None

H. **Tooling — Price and Availability**

None

I. **Weight and Balance**

Not applicable

J. **References**

Maintenance Manual Chap 7

Maintenance Manual Chap 27-50-00

Service Bulletin ANMD-57-11

K. **Publications Affected**

None

2. **ACCOMPLISHMENT INSTRUCTIONS**

A. **Part 1 – Determination of the LH and RH Engine Power Lever Trigger Settings**

- (1) During a ground run of the LH engine, advance the LH power lever until 35 psi torque pressure is achieved and then slowly retard the power lever until a torque pressure within the range of 25.0 to 27.5 is obtained. Mark this power lever trigger position for reference during subsequent adjustment of the LH landing gear 'UP' warning system microswitches.
- (2) Using the same technique during a ground run of the RH engine, determine the RH engine power lever trigger setting. Mark this power lever trigger position for reference during subsequent adjustment of the RH landing gear 'UP' warning system microswitches.
- (3) Shut down both engines before proceeding to Part 2 and Part 3.



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B. Part 2 – Adjustment of Engine Power Lever Actuated Landing Gear 'UP' Aural Warning Microswitches (Ref Fig 1)

- (1) Gain access to the power lever operated landing gear microswitches through the access panel in the bottom of the flight manual stowage compartment and from the rear of Frame STA 132.
- (2) Set the RH power lever full forward and the LH power lever full aft.

NOTE

Only one adjustment is provided and is common to a bank of microswitches. N22 series aircraft have three microswitches in the bank. N24 series aircraft have two microswitches in the bank. The position giving the required overtravel for all microswitches in the bank will need to be determined.

- (3) Adjust the overtravel of the AA and CC microswitches to between 0.020in to 0.030in by loosening the nuts on the microswitch mounting rods and adjusting the microswitch position accordingly. Lock the mounting rod nuts when overtravel adjustment is complete.
- (4) Confirm that all microswitches, when operated, have between 0.020in and 0.030in overtravel remaining.
- (5) Set the LH and RH power levers to the previously marked trigger positions corresponding to LH and RH torque pressures within the range 25.0 to 27.5 psi.
- (6) Connect a continuity tester across terminals 'C' and 'NO' of top microswitch 'AA'.
- (7) Adjust cam 'A' by loosening the two locking screws on the cam and rotating the cam to operate microswitch 'AA'. Tighten the locking screws after adjustment.
- (8) Connect the continuity tester across terminals 'C' and 'NC' of bottom microswitch 'CC'.
- (9) Adjust cam 'C' by loosening the two locking screws on the cam and rotating the cam to release microswitch 'CC'. Tighten the locking screws after adjustment.
- (10) Disconnect the continuity tester.
- (11) On completion of the above adjustments, re-confirm the overtravel setting of each of the microswitches.



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NOTE

N22 series aircraft only (including USCS A/C)

Check that the overtravel adjustment of the LH engine power lever operated flap retraction microswitch 'BB' remains within the limits 0.020in – 0.030in when operated and that the switch is activated at a torque pressure of 60 \pm 5 PSI (engine protractor angle 76° \pm 2°). The RH engine power lever operated flap microswitch 'DD' would not have been affected by the above adjustments.

- (12) Refit access panel and return the power levers to the Flight Idle position.

C. Part 3 – Ground Test of Aural Warning System

- (1) Jack up aircraft until wheels are clear of ground (Refer MM Chap 7).
- (2) Set AURAL WARNING circuit breaker on battery relay panel located in main gear LH pod.
- (3) Connect external 27.5 V DC power supply to aircraft.
- (4) Set landing gear circuit breakers (3 off) located on flight compartment overhead console. Select battery switch to ON.
- (5) Position LH and RH engine power levers to Flight Idle.
- (6) Set landing gear selection switch to UP. Confirm that the aural warning unit emits an interrupted warning sound when the landing gear DOWN indicator light extinguishes.
- (7) Advance both power levers together until the landing gear warning horn stops. Confirm that the warning horn stops as the most forward of the LH or RH power lever trigger positions is passed.
- (8) Advance both power levers to the full forward position.
- (9) With the landing gear retracted, retard the LH power lever until the landing gear warning horn sounds. Confirm that this position corresponds to the required LH power lever trigger position.
- (10) Further retard the LH power lever and confirm that the warning horn sounds for all power lever positions between the trigger setting and Flight Idle.
- (11) Advance the LH power lever and confirm that the warning horn stops as the power lever passes the trigger position.
- (12) Advance the LH power lever to the full forward position.
- (13) With the landing gear retracted, retard the RH power lever until the landing gear warning horn sounds. Confirm that this position corresponds to the required RH power lever trigger position.

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- (14) Further retard the RH power lever and confirm that the warning horn sounds for all power lever positions between the trigger setting and Flight Idle.
- (15) Advance the RH power lever and confirm that the warning horn stops as the power lever passes the trigger position.
- (16) Advance the RH power lever to the full forward position.
- (17) With the landing gear retracted, retard the LH and RH power levers together until the warning horn sounds. Confirm that the warning horn sounds when the most forward of the LH or RH power lever trigger positions is passed.
- (18) Further retard the LH and RH power levers together and confirm that the warning horn sounds for all power lever positions between the most forward LH or RH trigger setting and Flight Idle.
- (19) With the landing gear retracted, advance the LH and RH power levers together until the warning horn stops. Confirm that the warning horn stops when the most forward of the LH or RH power lever trigger positions is passed.
- (20) Advance both power levers to the full forward position.



ENSURE CABIN DOORS ARE CLOSED AND LATCHED.

- (21) Set FLAP ACT and FLAP CONT circuit breakers on flight compartment overhead console.
- (22) Operate flap control switch, extending flaps to 38°, check that as flaps pass the 25° (Post Mod N46) or 23° (Pre Mod N46) extended position, the warning horn begins to operate and continues in all extended flap settings past these positions.
- (23) Retract the flaps to the UP position and confirm that the warning horn stops when the flaps pass through the 25° or 23° position.

NOTE

For N24 series aircraft, carry out steps (24) to (28)

- (24) Trip FLAP ACT and FLAP CONT circuit breakers.
- (25) Return engine power levers to Flight Idle and check that the warning horn sounds.
- (26) Set landing gear selector switch to DOWN, and confirm that the warning horn stops when the landing gear DOWN indicator light comes on.
- (27) Lower the aircraft to the ground and move the jacking equipment clear of the aircraft (Refer MM Chap 7).



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(28) Disconnect external 27.5 V DC power supply from aircraft.

NOTE

For N22 series aircraft, carry out steps (29) to (34)

- (29) Return engine power levers to Flight Idle and check that the warning horn sounds.
- (30) Set landing gear selector switch to DOWN, and confirm that the warning horn stops when the landing gear DOWN indicator light comes on.
- (31) Test the engine power lever operated flap retraction microswitches in accordance with MM Chap 27-50-00 for all N22 series aircraft except N22S USCS aircraft. For N22S USCS aircraft refer Customer Option G582A Five Degree Auto Flap System.
- (32) Trip FLAP ACT and FLAP CONT circuit breakers.
- (33) Lower the aircraft to the ground and move the jacking equipment clear of the aircraft (Refer MM Chap 7).
- (34) Disconnect external 27.5 V DC power supply from aircraft.

D. Part 4 – Post Test Instructions

- (1) The 10° Flap Warning placard introduced by Service Bulletin ANMD-57-11 Rev 1 Fig 3 is to be removed and the placard shown in this Service Bulletin (ANMD-32-20 Fig 2) is to be located on the instrument panel in a position clearly seen by the pilot.

3. MATERIALS INFORMATION

None

4. SPECIAL TOOLS AND EQUIPMENT

None

5. RECORDING ACTION

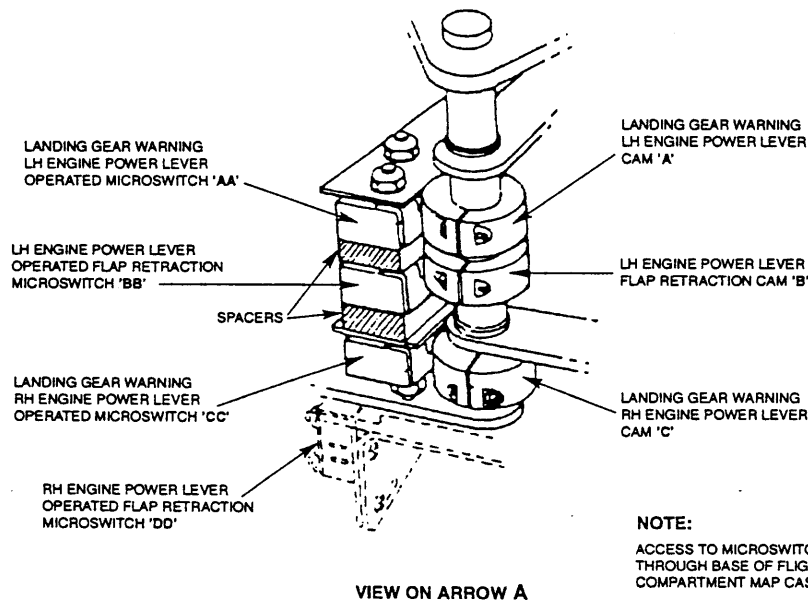
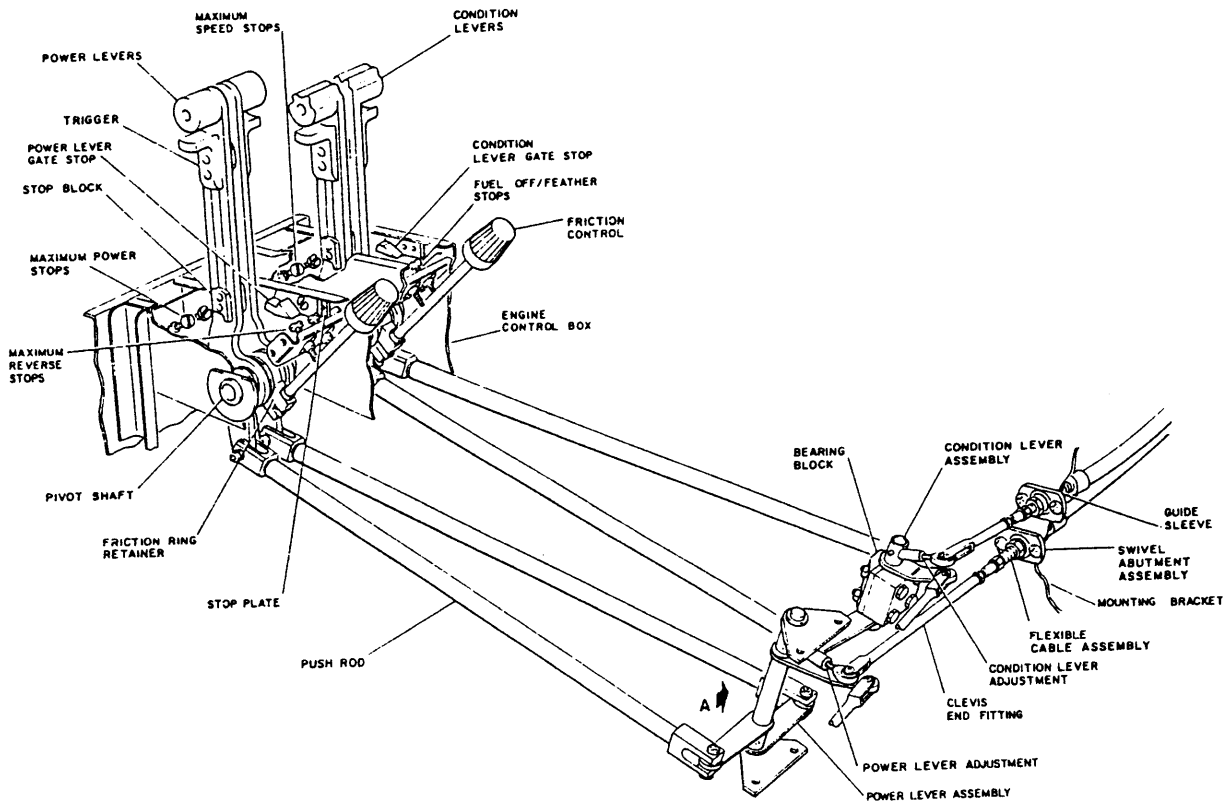
Record compliance with this Service Bulletin in the Airframe Log Book.

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NOTE:
ACCESS TO MICROSWITCHES
THROUGH BASE OF FLIGHT
COMPARTMENT MAP CASE

Figure 1 – Engine Power Lever Aural Warning Microswitches

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USE 10° FLAP FOR TAKE-OFF AND LANDING

WARNING

LANDING GEAR UP WARNING WILL INITIATE FOR
A TORQUE PRESSURE OF LESS THAN 30 PSI

Figure 2 – Temporary Landing Gear 'UP' Warning Placard