

Nomad

ALERT SERVICE BULLETIN

FLIGHT CONTROLS — RUDDER CONTROL LEVER SHAFT

1. PLANNING INFORMATION

A. Effectivity

(1) Aircraft affected:

- (a) **N22 Series** line sequence numbers 1 to 9, 11 to 29, 31, 33, 35, 37, 39 to 41, 43, 45, 47 to 59, 61, 63, 65 to 70, 82 to 88, 90 to 95, 97, 100, 102 to 114, 116, 118, 125, 126, 131 to 134, 137, 138, 141, 143 to 170.
- (b) **N24 Series** line sequence numbers 10, 30, 32, 34, 36, 38, 42, 44, 46, 60, 62, 64, 71 to 81, 89, 96, 98, 99, 101, 115, 117, 119 to 124, 127 to 130, 135, 136, 139, 140, 142.

(2) Spares affected:

All Rudder Control Lever Shafts PN 1/N-45-1102, 2/N-45-1102, 1/N-45-1103, 1/N-45-1104.

B. Reason

Since the introduction of Alert Service Bulletin ANMD-27-23, a recent failure of an upper control lever shaft (P/N 1/N-45-1103) has occurred. The purpose of this Alert Service Bulletin is to introduce an initial inspection followed by on-going inspections of all the rudder control lever shaft joints until a terminating modification can be made available. All failures have occurred during ground operations and nosewheel steering/rudder loads are now considered to be the primary cause.

Reason for Revision 1

Revision 1 includes superseded part PN 1/N-45-1102 as it is considered that such parts may still be in service.

Reason for Revision 2

Revision 2 deletes the requirement for Part B - Repetitive Inspections and refers to the IRM for ongoing inspections.

C. Description

Both upper and lower rudder pedal control lever torque shafts are subjected to an initial inspection (in-situ or removed) for signs of cracking at the lever weld joints and for adequate lever plate thickness, followed by a repeat inspection interval. The repeat inspection includes a requirement for an additional inspection after certain operating conditions occur involving the likelihood of abnormal rudder pedal loads.

D. Compliance

Part A - Initial Inspection, to be carried out within 10 hours TTIS or 14 days, after receipt of this Alert Service Bulletin.

Part B - Repeat Inspection, deleted - refer to Inspection Requirements Manual.

Page No	1	2	3	4
Rev No	2	2	2	0

Nomad

ALERT SERVICE BULLETIN

E. **Approval**

The requirement detailed herein has been approved by a person authorised under Civil Aviation Regulation 35 and conforms to the Type Certification requirements.

F. **Manpower**

Part A - 12 man hrs

Part B - deleted

G. **Material – Price and Availability**

None

H. **Tooling**

None.

I. **Weight and Balance Change**

None.

J. **References**

Maintenance Manual Chap 27-20-09

K. **Publications Affected**

None

2. **ACCOMPLISHMENT INSTRUCTIONS**

A. **PART A - Initial Inspection**

(1) In-situ Method - Dye Penetrant Inspection

- (a) Remove the rudder pedal and control column guards in the flight compartment to gain access to the rudder control lever shafts.
- (b) Carry out a dye penetrant inspection of rudder control lever shafts P/N's 1/N-45-1102 or 2/N-45-1102, whichever is fitted, (LH and RH), 1/N-45-1103 and 1/N-45-1104 (Ref IPC Chap 27-20-02 Figure 4 Item 6, (2 off, 1 L/H and 1 R/H), also items 10 and 11) for cracking in the area of the welded joints between levers and the tubular shaft, paying particular attention to the ends of the welds at the lever flanges (Ref Fig 1). If the lever shafts are found to be cracked they shall be removed and replaced by new or serviceable items in accordance with Nomad MM Chap 27-20-09 before further flight.
- (c) Measure and record the thickness of all lever shaft side plates on items P/N's 1/N-45-1102 or 2/N-45-1102, whichever is fitted, (LH and RH), 1/N-45-1103 and 1/N-45-1104. Record dimension and condition of each item, on the Recording Page attached to this Alert Service Bulletin and forward to ASTA.
- (d) If lever shaft side plates are less than 0.050 in thickness, contact ASTA before fitment or further flight.
- (e) New lever shafts side plates should be measured before use. Any item found to be less than 0.050 in should not be used. If spares are not available contact ASTA for advice.

Nomad

ALERT SERVICE BULLETIN

(2) Removal method - Magnetic Particle Inspection or Dye Penetrant Inspection

- (a) Remove lever shafts P/N's 1/N-45-1102 or 2/N-45-1102, whichever is fitted, 2/N-45-1102 (LH and RH), 1/N-45-1103 and 1/N-45-1104 (Ref IPC Chap 27-20-02 Figure 4 Item 6, (2 off, 1 L/H and 1 R/H), also items 10 and 11) from the aircraft in accordance with Nomad MM Chap 27-20-09. Verify freedom from cracking by Magnetic Particle Inspection or by Dye Penetrant Inspection method. If the lever shafts are found to be cracked they shall be removed and replaced by new or serviceable items before further flight.
- (b) Measure and record the thickness of all lever shaft side plates on items P/N's 1/N-45-1102 or 2/N-45-1102, whichever is fitted, 2/N-45-1102 (LH and RH), 1/N-45-1103 and 1/N-45-1104. Record dimension and condition of each item, on the Recording Page attached to this Alert Service Bulletin and forward to ASTA.
- (c) If lever shaft side plates are less than 0.050 in thickness, contact ASTA before fitment or further flight.
- (d) New lever shaft side plates should be measured before use. Any item found to be less than 0.050 in should not be used. If spares are not available contact ASTA for advice.
- (e) If lever shafts are serviceable or new, reinstall in accordance with Nomad MM Chap 27-20-09.

B. PART B - Repetitive Inspections

- (1) The requirement for Part B - Repetitive Inspections is deleted from this service bulletin.
- (2) For ongoing inspection refer to the Inspection Requirements Manual.

3. MATERIAL INFORMATION

A. Parts Required per Aircraft

None

4. SPECIAL TOOLS AND EQUIPMENT

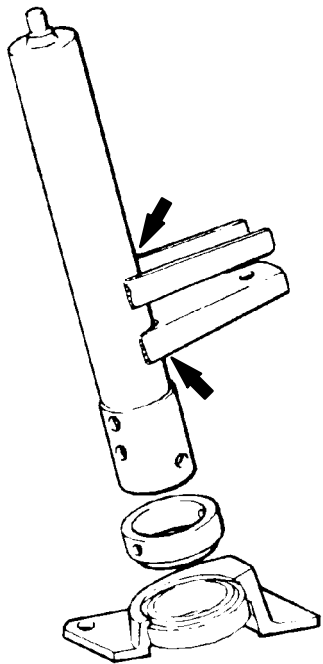
None.

5. RECORDING ACTION

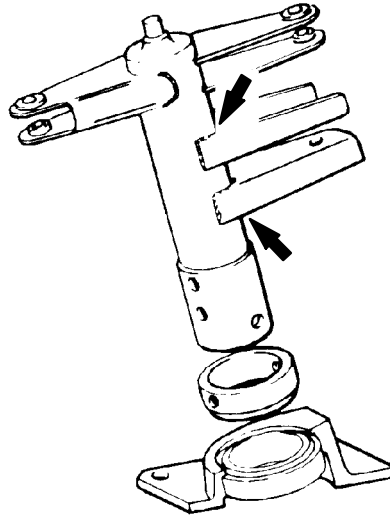
Record compliance with Parts A or B, as appropriate, of Alert Service Bulletin ANMD-27-51 in the Airframe Log Book.

Nomad

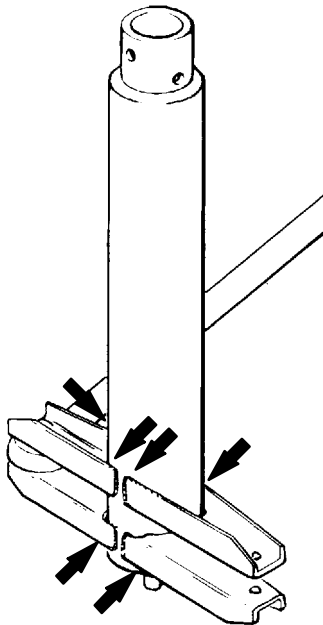
ALERT SERVICE BULLETIN



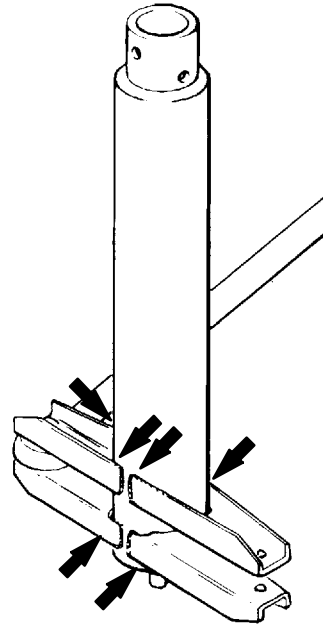
LH UPPER TORQUE SHAFT



RH UPPER TORQUE SHAFT



LH LOWER TORQUE SHAFT



RH LOWER TORQUE SHAFT

Figure 1 Location of Welds to be Inspected

13 Sep 02

ANMD-27-51

Nomad

ALERT SERVICE BULLETIN

FLIGHT CONTROLS — RUDDER CONTROL LEVER SHAFT

Recording Page

Aircraft

LSNo.

TTIS

Reg:

Landings:

1/N-45-1102, Lower Lever Shaft, LH

Thickness of side plates:

Indicate inspection method used (delete one)

Magnetic Particle Inspection

Dye Penetrant Inspection

Cracked: Yes No

1/N-45-1102, Lower Lever Shaft, RH

Thickness of side plates:

Indicate inspection method used (delete one)

Magnetic Particle Inspection

Dye Penetrant Inspection

Cracked: Yes No

2/N-45-1102, Lower Lever Shaft, LH

Thickness of side plates:

Indicate inspection method used (delete one)

Magnetic Particle Inspection

Dye Penetrant Inspection

Cracked: Yes No

2/N-45-1102, Lower Lever Shaft, RH

Thickness of side plates:

Indicate inspection method used (delete one)

Magnetic Particle Inspection

Dye Penetrant Inspection

Cracked: Yes No

1/N-45-1103, Upper Lever Shaft, LH

Thickness of side plates:

Indicate inspection method used (delete one)

Magnetic Particle Inspection

Dye Penetrant Inspection

Cracked: Yes No

29 Apr 2004

ANMD-27-51

Nomad

ALERT SERVICE BULLETIN

1/N-45-1104, Upper Lever Shaft, RH

Thickness of side plates:

Indicate inspection method used (delete one)

Magnetic Particle Inspection

Dye Penetrant Inspection

Cracked: Yes No

Please forward to: Nomad Operations
Aerospace Support
Boeing Australia Ltd
PO Box 767
Brisbane Qld 4001
AUSTRALIA
Fax +61 7 3306 3111

15 Apr 2002

ANMD-27-51

