

Nomad

SERVICE BULLETIN

FLIGHT CONTROLS — HORIZONTAL STABILISER — TRIM TAB BACKLASH MEASUREMENT

1. PLANING 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, 136 to 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, 139, 140, 142.

(2) Spares

Not applicable

B. Reason

It has been determined that excessive backlash of the Horizontal Stabiliser Trim Tab causes unacceptable longitudinal control characteristics, and that the current method of measurement, published in the Maintenance Manuals (Ref Chap 27-00-00) does not capture the true dimension of the problem.

The procedure described in this Service Bulletin NMD-27-54, is intended to provide a more accurate and consistent result.

C. Description

- (1) Previous techniques of measurement, by application of 'light finger pressure' did not represent the airloads expected on the Trim Tab in flight. The method provided in this Service Bulletin NMD-27-54 is intended to be more representative and consistent.
- (2) Figure 2 provides a drawing (N-88-273) of the tool required to perform the loading of the Trim Tab for backlash measurement. It is designed for local manufacture. A full-sized template will be supplied.

D. Compliance

Compliance with this Service Bulletin NMD-27-54 is mandatory, and shall be applied at the next scheduled (B, C or D) inspection activity.

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.

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F. **Manpower**

2 manhours.

G. **Material – Price and availability**

None

H. **Tooling**

Local manufacture of tool required.

I. **Weight and Balance Change**

None

J. **References**

Maintenance Manual Chapter 27-00-00

K. **Publications Affected**

Maintenance Manual

Inspection Requirements Manual

2. **ACCOMPLISHMENT INSTRUCTIONS**

A. **Manufacture Tool**

- (1) Using template provided, manufacture Load Applicator Tool (1/N-88-273 from 0.50 in plywood; deburr and remove all sharp edges.
- (2) Using template provided, manufacture Locking Plate from 0.10 in plywood; deburr and remove all sharp edges.
- (3) Apply 1.00 in x 0.50 in x 4.00 mm felt pads to bearing surfaces as shown, using PVA adhesive.
- (4) Drill 3/16 in hole to suit machine screw.
- (5) Assemble with appropriate washer under head of machine screw and nut.

B. **Measurement of backlash**

WARNING

DO NOT OPERATE FLIGHT CONTROLS WITH CONTROL COMPONENTS DISCONNECTED OR WHEN PERSONNEL ARE WORKING IN THE AREA CONCERNED. SERIOUS INJURY TO PERSONNEL OR DAMAGE TO COMPONENTS AND STRUCTURE COULD OCCUR.

- (1) Procedure for measuring Horizontal Stabiliser Trim Tab backlash:
 - (a) Fit Horizontal Stabiliser External Gust Lock (1/N-88-191).

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- (b) Fit Load Applicator at inboard end of Trim Tab as shown on Figure 1., and apply Locking Plate.
- (c) Hang a 0.5 Kg weight to the aft hole of Load Applicator Tool.
- (d) Set Trim Wheel to line up Trim Tab trailing edge with Horizontal Stabiliser fixed trailing edge.
- (e) Using a suitable marker pen, place distinctive marks on both the Tab and the Horizontal Stabiliser trailing edges, so that an accurate measurement of Tab deflection relative to the fixed Horizontal Stabiliser trailing edge may be made.
- (f) Remove weight and re-attach to forward hole of Load Applicator Tool.
- (g) Measure the upward deflection of the Tab trailing edge relative to the Horizontal Stabiliser trailing edge.
- (h) The resultant measurement should not exceed 0.120 in max (see Note below).
- (i) Repeat measurement on other Trim Tab.
- (j) On completion of backlash measurements remove Load Applicator Tool (1/N-88-273) and Horizontal Stabiliser Gust Lock (1/N-88-191).

NOTE

If backlash is greater than 0.120 in, determine the cause and renew or repair any defective component.

- (2) Repairs or repainting the Horizontal Stabiliser can affect the balance. Following any such activity the Horizontal Stabiliser is to be correctly weighed and balanced (Ref SRM Chap 55-10-00).

3. MATERIALS INFORMATION

None

4. SPECIAL TOOLS AND EQUIPMENT

Locally manufactured tool (1/N-88-273)

5. RECORDING ACTION

Record compliance with Service Bulletin NMD-27-54 in the Airframe Log Book.

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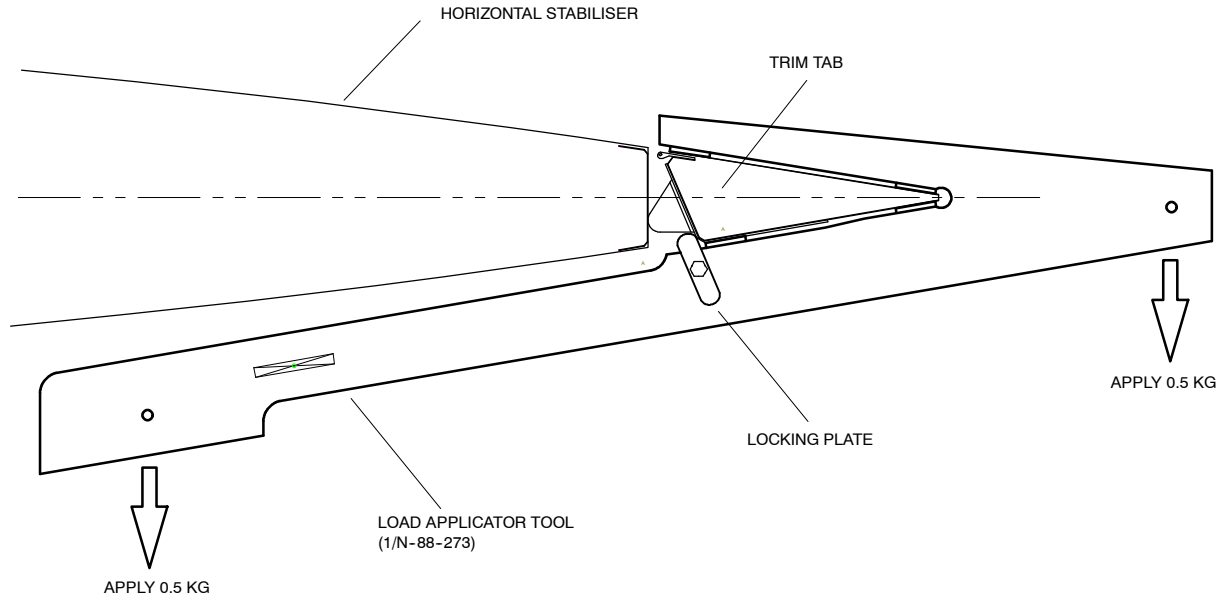


Figure 1. Horizontal Stabiliser Trim Tab Backlash Measurement.

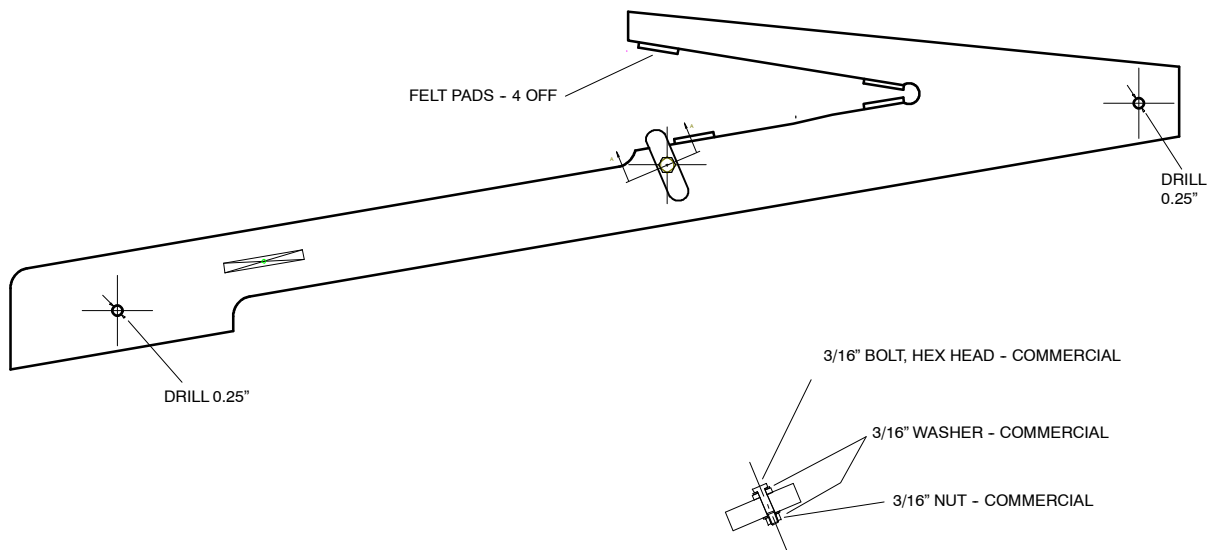


Figure 2. Load Applicator Tool (1/N-88-273)