RUDDER CONTROL SYSTEM – STRENGTHENING OF CABLE PULLEY MOUNTING AT STA 74.52 (MOD N630)

1. PLANNING INFORMATION

A. Effectivity

(1) Aircraft Affected

All Nomad N22 Series and N24 Series aircraft whose log books do not already record the embodiment of Mod N630 or compliance with Service Bulletin NMD–27–33.

Pre-certification implementation of the intent of this Service Bulletin is recorded in the airframe log book as Mod N630.

(2) Spares Affected

Nil

B. Reason

To strengthen the mounting of the rudder control system cable pulley at sta 74.52 (Ref MM Chap 27–20–01 Figure 201) and to increase stiffness of the rudder control system.

C. Description

The existing flanged bush and spacer tube, supporting the cable pulley mounting bolt, are replaced by a flanged bush with an integral spacer tube.

D. Compliance

Within 300 hours Time in Service after receipt of SB NMD–27–33 but not later than 1st OCTOBER 1986. It is recommended that SB N22–27–7 Revision 1 or SB NMD–27–7 Revision 2 (Mod N137) be incorporated at the same time (if not already incorporated).

NOTE

The Service Bulletin number for the incorporation of Mod N137 has been changed from SB N22–27–7 at Revision 1 to SB NMD–27–7 at Revision 2 to conform with current numbering system.

E. Approval

The modification detailed herein has been approved pursuant to Air Navigation Regulation 40 and conforms with the type certification requirements.

F. Manpower

Three manhours

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G. **Material–Price and Availability**

The part required to incorporate the modification detailed in this Service Bulletin is available free of charge from the operator's local distributor. Distributors are to place a "No Charge" purchase order on GAF through the normal procurement procedure. Purchase orders are to quote the Aircraft Serial No and Service Bulletin NMD–27–33.

H. **Tooling – Price and Availability**

None required.

I. **Weight and Balance**

Negligible effect.

J. **References**

Maintenance Manual

Illustrated Parts Catalogue

K. **Publications Affected**

Maintenance Manual

Illustrated Parts Catalogue

2. **ACCOMPLISHMENT INSTRUCTIONS**

WARNING

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

A. Slacken the aft rudder cable at its turnbuckle (Ref MM Chap 27–20–01 Figure 201) sufficiently to enable the pulley located at sta 74.52 to be removed.

B. Remove the pulley mounting bolt, washer, pulley and cable guard (Ref IPC Chap 27–20–02 Figure 5 items 33, 34, 28 and 35 respectively). Retain cable guard for rework (Ref step F.) and the washer and pulley for re–use during installation of the new flanged bush assembly PN 1/N–10–1429.

NOTE

The pulley mounting bolt PN AN5–57A may have been subjected to bending forces resulting in the bolt being overstressed and the bolt therefore is to be destroyed.

C. Drill out the three 1/8 in dia rivets securing flanged bush PN 1/N–10–582 to the rear pulley mounting diaphragm. Remove and retain the flanged bush. Deburr rivet holes in diaphragm and flanged bush.

D. Remove and discard spacer tube PN 1/N–10–616 located between the pulley mounting diaphragms.

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E. Open up the pulley mounting bolt hole in the rear pulley mounting diaphragm to 13/16 inch dia (20.5mm).

F. Open up the bolt hole in the cable guard and the flanged bush (removed at step D.) to 1/2 inch dia (12.5mm).

G. Using the reworked flanged bush as a drill guide, drill three rivet holes in the flange of the new flanged bush PN 1/N–10–1429 using a No.30 drill.

H. Assemble the cable guard onto the spigot of the new flanged bush as shown in Figure 1,i.e. in its normal position relative to the pulley, then back drill the cable guard at one position using a No.30 drill.

I. Remove the cable guard and countersink the rear face of the rivet hole in the guard to suit 100° countersunk flush head rivet PN CR3212–4–4. Re–part number the cable guard to 1A/N–45–1684.

Similarly countersink the rivet holes on the new flanged bush except for the rivet hole used as a drill guide for drilling the cable guard.

J. Insert the shaft of the new flanged bush through the 13/16 inch dia hole in the rear pulley mounting diaphragm and push forward until the counterbored end of the flanged bush is firmly seated on the spigot of the flanged bush riveted to the forward pulley mounting diaphragm.

K. Using a set of feeler gauges measure the gap between the flange of the new flanged bush and the rear face of the rear diaphragm. Note gap dimension.

L. Remove the new flanged bush from its installed position and machine metal from the counterbored end, an amount equal to the gap dimension obtained at step K. Restore the chamfer .02 x 45° to the counterbore at the machined end of the flanged bush. Remove all sharp edges then touch up all reworked bare metal with primers.

M. Assemble the new flanged bush into its installed position (Ref step J.) and with the cable guard on the spigot of the bush. Align the rivet holes of the new flanged bush and cable guard with the three rivet holes in the pulley mounting diaphragm then rivet up using 100° countersunk flush head rivets PN CR3212–4–4.

NOTE

The rivets are to be wet assembled using barium chromate jointing compound.

N. Check pulley for serviceability, if unserviceable replace with new or serviceable item.

O. Ensure that the aft rudder cable is placed around the pulley with the cable adjacent to the pins of the cable guard then position pulley for installation of pulley mounting bolt.

P. Secure pulley in position with new pulley mounting bolt PN AN5–57A ensuring that retained washer (Ref step B.) is located under the head of the bolt. Torque tighten the bolt to between 100 and 140 lb in.

Q. Tension the aft rudder cable (Ref MM Chap 27–00–00)

CAUTION

ENSURE THAT THE RUDDER CONTROL SYSTEM IS FREE FROM OBSTRUCTION.

R. Check the rigging of the rudder control including break–out cheeks (Ref MM Chap 27–20–00).

S. Refit any removed access panels and trim.

3. **MATERIAL INFORMATION**

A. **Parts Required per Aircraft**

(1) The following part will be required to incorporate the modification detailed herein and will be supplied free of charge by GAF (Ref Para 1.G.).

Item	Qty	Title
1/N–10–1429	1	Flanged bush

(2) The following items are to be obtained from the operator's stock or from local sources.

Item	Qty	Title
CR3212–4–4	3	Rivet, Blind 100 deg C/S flush head
AN5–57A	1	Bolt

B. **Parts Modified and Re–identified by Operator**

New Item PN	Title	Old PN
1A/N–45–1684	Cable guard	1/N–45–1257

C. **Parts Required to Modify Spares**

None

D. **Parts Removed**

The following items are to be disposed of as follows:

Item PN	Title	Qty	Disposition
AN5–57A	Bolt	1	Destroyed (Ref Para 2.B. Note)
1/N–10–582	Flanged bush	1	To be scrapped after being used as drill guide (Ref Para 2.G.)
1/N–10–616	Spacer tube	1	Scrapped

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4. **SPECIAL TOOLS AND EQUIPMENT**

None

5. **RECORDING ACTION**

Record compliance with Service Bulletin NMD–27–33 (Ref Mod N630) in the airframe log book.

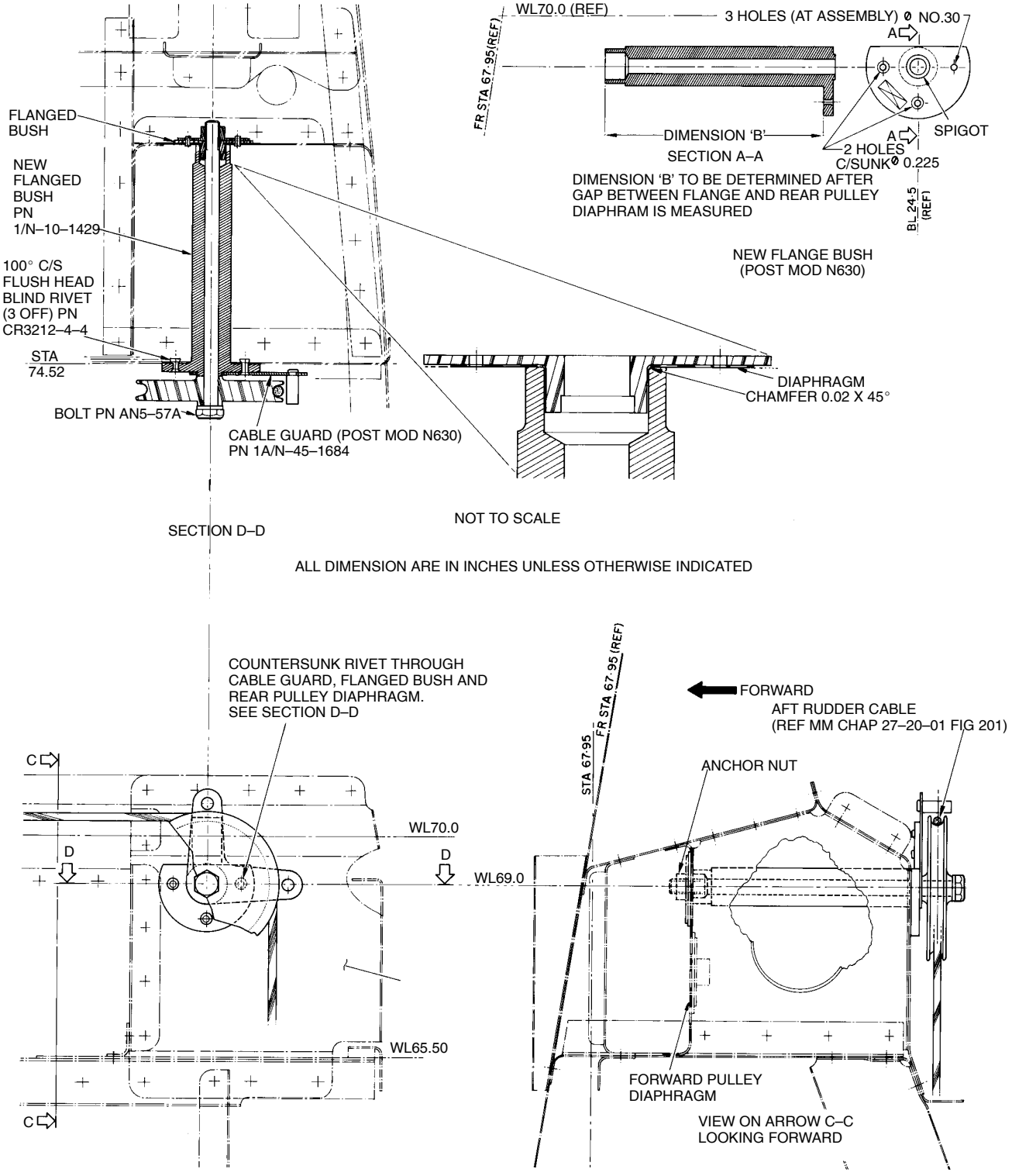

Figure 1 Installation of Flanged Bush (Post Mod N630)

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