RE-ALIGNMENT HORIZONTAL STABILISER CONTROL PULLEY (MOD N63)

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 N63 or compliance with Service Bulletin NMD-27-15.

Pre-certification implementation of the intent of this service bulletin is recorded in the airframe log book as Mod N63.

(2) Spares Affected:

Nil.

B. Reason

This modification was introduced to provide a better cable run for the horizontal stabiliser primary No.2 control cable.

C. Description

The pulley mounting bracket at Sta 399 (N22), Sta 444 (N24), is removed and replaced with similar bracket to obtain correct cable/pulley alignment.

D. Compliance

This modification is to be embodied in conjunction with Mod N211 (N22), N211-24 (N24) (Service Bulletin NMB-27-9 refers).

E. Approval

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

F. Manpower

Two manhours.

G. Material, Price and Availability

The kit required to accomplish this modification shall be procured through the operator's local distributor. Kit Part No. NMD-27-15-1 is classified "no charge" and a "no charge" purchase order must be placed with the distributor within 90 days to receive this offer. Distributors are to place a "no charge" purchase order on GAF through the normal procurement method. Purchase orders are to quote this Service Bulletin number and the aircraft serial number.

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H. **Tooling, Price and Availability**

Nil required.

I. **Weight and Balance**

Negligible effect.

J. **References**

Maintenance Manual

Illustrated Parts Catalogue

K. **Publications Affected**

Illustrated Parts Catalogue.

2. **ACCOMPLISHMENT INSTRUCTIONS**

A. On installation of Mod N211 (N22), N211-24 (N24) the horizontal stabiliser primary No.2 control cable pulley at sta 399 (N22), sta 444 (N24) is realigned to provide a better cable run.

B.

(1) Remove the pulley from its mounting bracket (Ref MM Chap 27-40-03). Retain the pulley, and the attaching washers and self-locking nut (Ref IPC Chap 53-18-02 Figure 1 items 23, 24 and 25). Discard the pulley mounting bolt and spacer (Ref IPC Chap 53-18-02 Figure 1 items 26 and 27).

(2) Remove and retain the cable guard bolt, washers and self-locking nut (Refer IPC Chap 53-18-02 Figure 1 items 31, 30, 28 and 29 respectively) from the pulley mounting bracket.

(3) Remove the pulley mounting bracketry from the rear fuselage and remove the bearing plate Part No. 1CJ/N-12-22 (Ref Figure 1) from the bracket.

NOTE

Do not disturb the double pulley assembly forward of and adjacent to the pulley removed at step (1).

(4) Install new pulley mounting bracketry (Ref Figure 1)

(a) Plug with solid rivets the four rivet holes marked A (Ref Figure 1) in the fuselage bottom skin.

(b) Rivet brackets PN 1CP/N-12-22 and 1CQ/N-12-22 to the fuselage structure picking up existing rivet holes. Oversize rivets (Ref Para 3.C. may be used if rivet holes have been damaged when removing the original bracketry.

(c) Rivet diaphragm PN 1CL/N-12-22/950 to the outer faces of the forward flanges of the brackets installed at step (b) and to the fuselage bottom skin using existing rivet holes. Oversize rivets (Ref Para 3.A.) may be used if rivet holes have been damaged when removing the original bracketry.

(d) Rivet channels PN 1CS/N-12-22 and 1CR/N-12-22 to the diaphragm installed at step (c).

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(e) Rivet diaphragm PN 1CM/N-12-22 to the channels installed at step (d) and to the outer faces of the rear flanges of the brackets installed at step (b).

(f) Position angle PN 1CN/N-12-22/950 on the fuselage bottom skin and abutting the rear side of the diaphragm installed at step (e).

(g) Holding the angle in this position drill four rivet holes through fuselage skin and angle at the same rivet pitch as the rivet holes plugged at step (a). Drill four equally spaced rivet holes through the angle and the diaphragm.

NOTE

Diameter of rivet holes to suit rivet PN CR3223-4-2.

(h) Rivet the angle to the fuselage bottom skin and the diaphragm installed at step (e).

(5) The optimum position of the pulley to be installed (Ref Figure 2) is that which reduces to a minimum the angle of the control cable (+ 2 degrees Max) to the plane of the pulley's groove and also the angle of the control cable to the plane of the groove of the LH pulley (viewed looking forward) of the two pulleys located forward and adjacent to the newly installed bracketry. To determine the optimum position of the pulley to be installed, carry out the following procedure.

(a) Set the horizontal stabiliser torque shaft in the rigging position using rigging bar PN 1/N-88-180.

(b) Tie a length of string between the torque shaft lower cable end and the LH pulley (viewed looking forward) of the two pulleys located forward of and adjacent to the newly installed bracketry. Ensure that the string is kept taut, passes under the pulley and is located in the centre of the pulley groove.

(c) Assemble the pulley to be installed on top of the bearing plate and maintain the assembly together using bolt PN NAS1105-34.

(d) Position the pulley and bearing plate assembly on top of the newly installed bracketry, so that with the string touching the bottom of the pulley groove, the angle between the string and the plane of the forward LH pulley groove is at a minimum (+ 2 degrees Max).

(e) Remove the rigging bar from the horizontal stabiliser torque shaft and keeping the string taut, rotate the torque shaft through its normal range of travel.

(f) Maintaining the position of the pulley and bearing plate assembly (established in step (d)), cheek that the angle between the string and the plane of the pulley groove does not exceed + 2 degrees throughout the range of travel of the torque shaft. If necessary, adjust the position of the pulley and bearing plate assembly to reduce the angle to within + 2 degrees and at the same time ensuring that the angle of the string to the plane of the forward LH pulley groove also does not exceed + 2 degrees.

(6) Having determined the optimum position of the pulley and bearing plate assembly, mark the position of the bearing plate and line drill the pulley attaching bolt hole in both channels (PN 1CR and 1CS/N12-22) using 5/16 in dia drill.

(7) Rivet the bearing plate PN KJ/N-12-22 to the upper channel PN 1CR/N-12-22. (Ref Figure 1)

(8) Assemble the pulley and attaching parts to the new mounting bracket as shown in Figure 1.

(9) Connect the horizontal stabiliser primary No.2 control cable to the torque shaft lower cable end.

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(10) Ensure that the cable is correctly routed around the pulleys then locate and fit the cable guard bolt, washers and self-locking nut (removed at step (2)) as per Figure 1.

(11) Cheek the rigging of the horizontal stabiliser, including full and free movement and break-out checks (Refer MM Chap 27-40-00).

3. **MATERIAL INFORMATION**

A. **Parts Required Per Aircraft**

(1) One kit PN NMD-27-15-1 is required per aircraft. Each kit comprises the following items.

Part No.	Quantity	Nomenclature
1CL/N-12-22/950	1	Diaphragm
1CM/N-12-22	1	Diaphragm
1CN/N-12-22/950	1	Angle
1CR/N-12-22	1	Channel
1CS/N-12-22	1	Channel
1CP/N-12-22	1	Bracket
1CQ/N-12-22	1	Bracket
NAS1105-34	1	Bolt
1W/N-45-949	1	Pulley Spacer
AN960-PD516 *	2	Washer
MS21083-N5 *	1	Nut, Self-locking
1CJ/N-12-22 *	1	Bearing Plate
MS20220-2 *	1	Pulley
AN3-11A *	1	Bolt
AN960-PD10 *	2	Washer
1B/N-12-160 *	1	Spacer
MS21042-L3 *	1	Nut, Self-locking

* Retain from original installation

(2) The rivets listed below are required for the incorporation of this service bulletin and are to be obtained from the operator's stock or from local sources.

Part No.	Quantity	Nomenclature
CR3223-4-2	44	Rivet
MS20600AD4-2 (Alt)		Rivet
MS20470AD4-4	4	Rivet
CR3253-4-2 **	AR	Rivet
CR3213-4-2		Rivet
NAS1738E-4-2) (Alt)		Rivet
NAS1738B-4-2) (Alt)		Rivet

** Rivets CR3253-4-2 or alternatives are to be used as required where damaged rivet holes necessitate the use of a larger rivet.

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B. **Parts required to Modified Spares**

Nil.

C. **Removed Parts**

Items removed.

Part Number	Nomenclature	Recommended
1CD/N-12-22	Diaphragm	Scrap
1CE/N-12-22	Diaphragm	Scrap
1CFIN-12-22	Bracket	Scrap
1CG/N-12-22	Bracket	Scrap
1CH/N-12-22	Channel	Scrap
1CK/N-12-22	Channel	Scrap
1T/N-45-949	Pulley Spacer	Scrap

D. **Special Tools and Equipment**

Nil.

E. **Superseded Special Tools**

Nil.

4. **RECORDING ACTION**

Record compliance with Service Bulletin NMD-27-15 in the airframe log book.

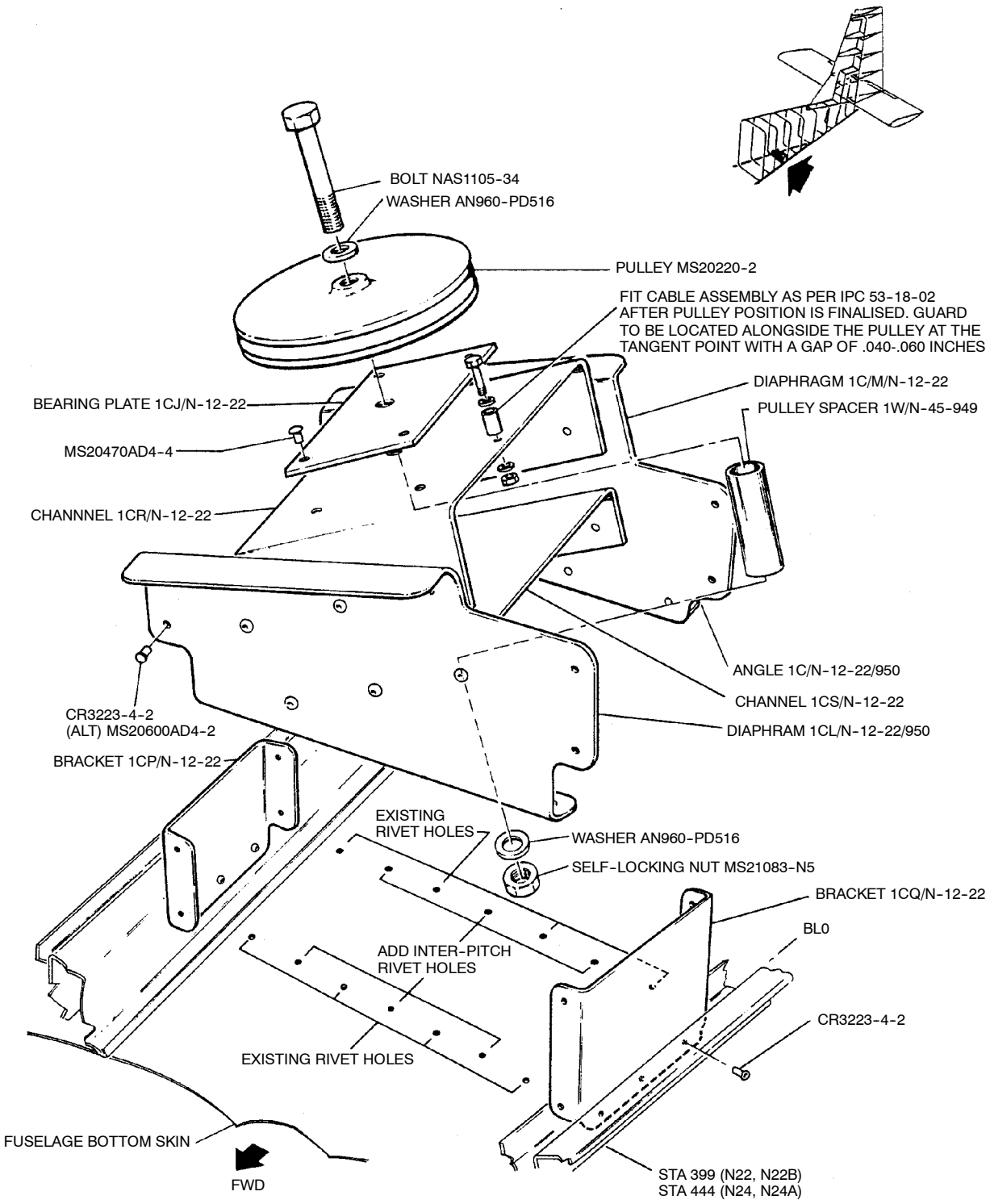

Figure 1 Alignment Tool - Replacement strut pick-up fittings

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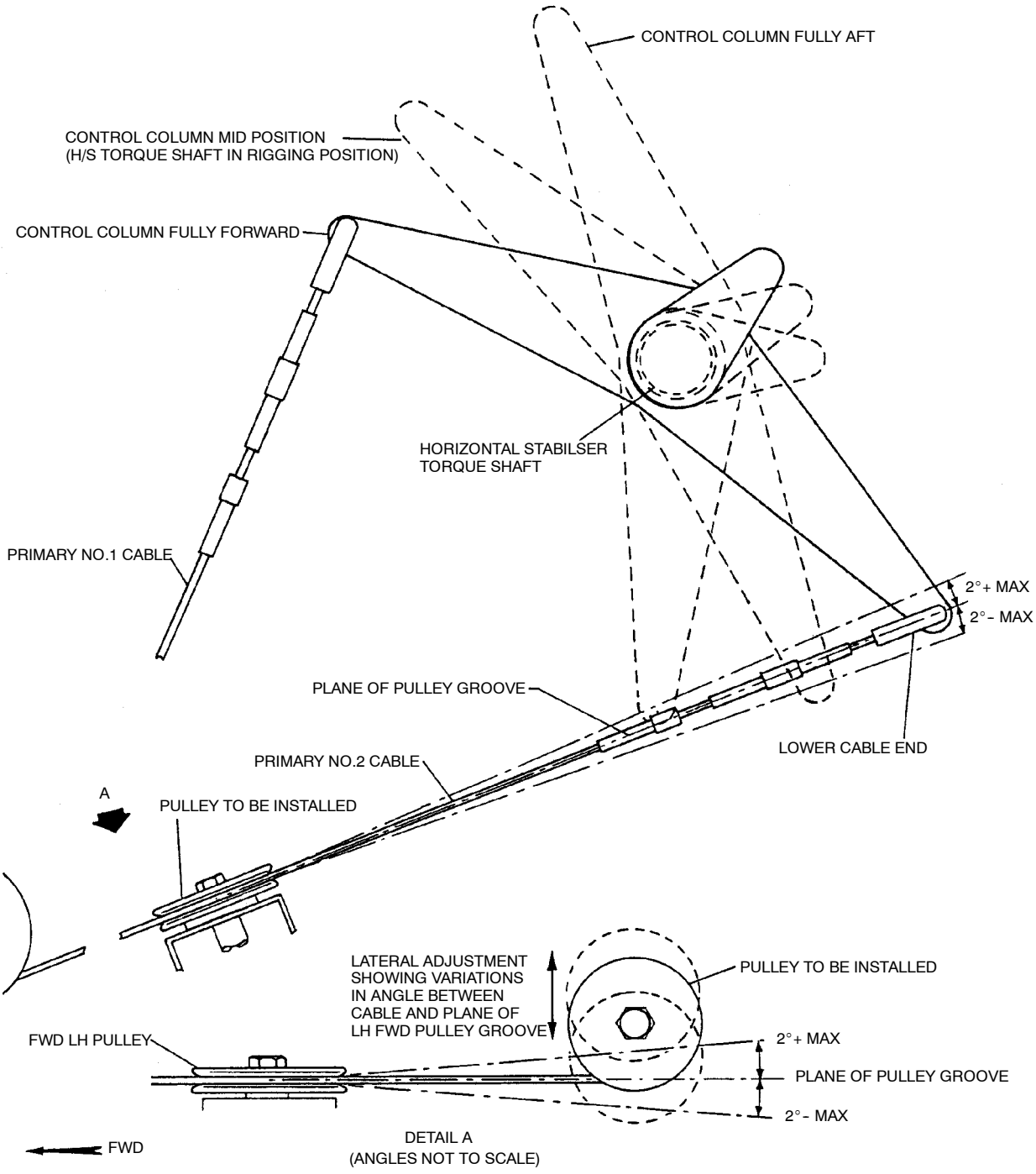

Figure 2 Alignment Tool - Replacement strut pick-up fittings

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