Nomad
SERVICE BULLETIN

Reference No 164

TRANSMITTAL LETTER FOR SERVICE BULLETIN NMD-55-5

HORIZONTAL STABILISER — VERTICAL FIN AND TRIM TABS — STRUCTURAL AND OPERATING MECHANISM INSPECTION AND MODIFICATION

Reason

1. Since the release of this Service Bulletin there has been a change to the types of aircraft in the Nomad N22 series. This revision changes the effectivity of the Service Bulletin to include all types of Nomad aircraft.

Instructions

2. Remove and destroy page 1 and 2 of Service Bulletin NMD-55-5 Rev 3 dated 29 Aug 86 and insert the attached page 1 and 2 Rev 4 (NMD-55-5) and annotate the index accordingly.

D J PILKINGTON
TECHNICAL SERVICES MANAGER

AEROSPACE TECHNOLOGIES OF AUSTRALIA
A.C.N. 008 622 008

Nomad
SERVICE BULLETIN

HORIZONTAL STABILISER — VERTICAL FIN AND TRIM TABS — STRUCTURAL AND OPERATING MECHANISM INSPECTION AND MODIFICATION

1. PLANNING INFORMATION

A. Effectivity

(1) Aircraft Affected.

All N22 and N24 Series aircraft.

(2) Spares Affected.

Part No.	Nomenclature	Recommended Disposition
1/N-30-120	Horizontal Stabiliser	Rework

B. Reason

An incident has occurred on one aircraft with total time approximately 1300 hours whereby 6 inches of outboard section of the right hand horizontal stabiliser trim tab became detached in flight. Extreme vibration was experienced with subsequent damage to the tailplane structure. The aircraft landed safely. The following additional inspections result from customer feedback to Alert Service Bulletin ANMD-55-5 Revision 1.

C. Description

Part 1. Details the instructions for a visual inspection of the horizontal stabiliser trim tab. This inspection remains unchanged to that set out in Alert Service Bulletin ANMD-55-5 Revision 1.

Part 2. Further instructions for visual inspection of the empennage.

Part 3. Instructions for the rework of the stub fin to provide an access panel and install reinforcing strips.

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D. **Compliance**

Aircraft over 500 hours.

Part 1. Before next flight. Thereafter at intervals not exceeding 50 hours time in service until Modification N439 is fitted (Ref Nomad Service Bulletin NMD-55-12) following which the interval may be extended to each 100 hours time in service.

Part 2. Within 30 hours time in service after receipt of this Service Bulletin. Thereafter at intervals not exceeding 100 hours time in service.

Part 3. Within 100 hours time in service after receipt of this service Bulletin.

Aircraft less than 500 hours.

Part 1. Within 30 hours time in service after receipt of this service Bulletin. Thereafter at intervals not exceeding 50 hours time in service until Modification N439 is fitted (Ref Nomad Service Bulletin NMD-55-12) following which the interval may be extended to each 100 hours time in service.

Part 2. Within 30 hours time in service after receipt of this Service Bulletin. Thereafter at intervals not exceeding 100 hours time in service.

Part 3. Within 100 hours time in service after receipt of this Service Bulletin.

E. **Approval**

The requirement detailed herein has been approved by a person authorised under Civil Aviation Regulation 35 and conforms with the type certificate requirements.

F. **Manpower**

Part 1. 1 man 1 hour

Part 2. 1 man 3 hours

Part 3. 2 men 8 hours

G. **Materials, Price and Availability**

The parts required in Para 3.A are to be procured from operator's stock or local sources.

H. **Tooling, Price and Availability**

None.

I. **Weight and Balance**

Negligible effect.

J. References

I.P.C. 27-40-01
27-40-02
53-18-05
55-00-00
55-10-01

Structural Repair Manual 53-10-11

K. Publications Affected

I.P.C. 53-18-00

2. Accomplishment Instructions:

Part 1. Use appropriate trestles, ladders, etc., to provide close proximity to undertake the following inspections:-

a. Visually inspect both left and right hand horizontal stabiliser trim tabs for the following:-

(1) Signs of cracking on trim tab skins especially on bend radius of flutes. No repairs other than replacement of working rivets are permitted on trim tab.

(2) Backlash in trim tab operating mechanism does not exceed limits established in Nomad Service Letter Ref. 77-02. This limit is decimal one two inches measured by free movement at tab trailing edge. If limit exceeded, carry out Part 2 of this Service Bulletin before next flight.

(3) Ensure trim tab hinge is not worn excessively.

(4) Check rigidity of attachment of hinges to tab and tailplane sub spar.

(5) Check for loose or working rivets on skin to rib and skin to spar attachment on both trim tabs and horizontal stabiliser.

(6) If Modification N439 is fitted, check horizontal stabiliser trim tab mass balance for security of attachment.

Part 2 a. Visually inspect the following and rectify where necessary (Ref. I.P.C. 27-40-01 Fig. 2).

(1) Trim tab hinge bracket for elongated holes.

(2) Bolt (Item 4) torque loading is 12 to 15 lbs. inches.

(3) Rod end bearings items 9 and 13 for wear.

(4) Trim tab hinge for wear, loose rivets and cracks. Worn hinge can be replaced in sections (Ref. Nomad Service Letter 79-04).

(5) Trim tab operating mechanism for looseness or movement under load. In particular check torque shaft assy P/N 1/N-45-943 for movement at taper pins (Item 43) of crank arms (Items 44 and 46) relative to torque shaft (Item 47).

b. Remove dorsal fin fairing (Ref. I.P.C. 55-00-00 Fig. 1 Item 5) and visually inspect the following:

(1) Excessive play of horizontal stabiliser pivot bearings.

(2) Rivets for working/loose where side skins attach stub fin forward spar.
If the following limits are exceeded, carry out Part 3 of this Service Bulletin.

(i) 3 consecutive working/loose rivets.

(ii) 3 working/loose rivets in any 5 inches.

(iii) 30% of all rivets working/loose.

If the above limits are not exceeded, rivets found loose/working may remain until next periodic inspection providing this does not exceed 100 hours time in service and the above inspection (Para, b. (2)) is complied with at intervals not exceeding 50 hours time in service.

(3) Fin attach for signs of fretting (Ref. I.P.C. 55-00-00 Fig. 1 Items 36 and 39).
If fretting observed, remove attach bolts and check attachment fittings, attachment bolts and attachment bolt holes for signs of fretting, etc.
Fin attach bolts - torque loading

Front Item 39	30-40 lbs. inches
Rear Item 36	60-80 lbs. inches

NOTE: Measured torque of castelated stiff nuts to be added to above figures.

(4) Inspect horizontal stabiliser stops (Ref. I.P.B. 55-10-01 Fig. 1 Item 10, and surrounding structure for damage. Check security of hinge brackets (Item 9). Torque loading for attach bolts (Item 7) is 20-25 lbs. inches.

NOTE: Measured torque of self locking nut to be added to above torque figures.

(5) Check security of hinge brackets (Ref. I.P.C. 53-18-05 Fig. 1 Items 13 and 14). Torque loading on bolts (Items 7, 8, 9 and 10) is 50 to 70 lbs. inches.

NOTE: Measured torque of self locking nuts to be added to above torque figures. Access to head of bolts (Items 7, 8, 9 & 10) by inspection panel as detailed in Part 3 of this Service Bulletin or through lightening hole in top of stub fin when upper fin removed.

(6) Gain access to rear fuselage and visually inspect horizontal stabiliser control cables, pulleys and lever assy (Ref. I.P.C. 27-40-02 Fig. 4 Item 43) for signs of damage. In particular check push-pull tube fork end (Item 13) and cable attach fork ends (Items 48 and 49) for deformation.

Part 3. a. Rework left side of stub fin to provide access panel (Ref. Fig. 1).

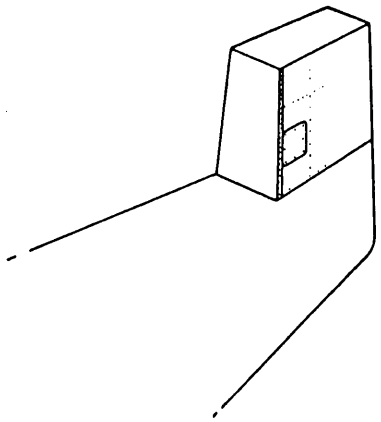
b. Remove countersunk rivets where side skins attach stub fin forward spar (on both sides of fin). Attach reinforcing strips to rivet line of side skins at stub fin forward spar using rivets as detailed in Fig. 1.

c. Using torch and mirror carry out visual inspection of internal stub fin structure. In particular inspect vertical stringer emanating from rudder lower hinge doubler.

d. Vertical stringers: Replace or repair in accordance with Structural Repair Manual 53-10-11 Fig. 2.

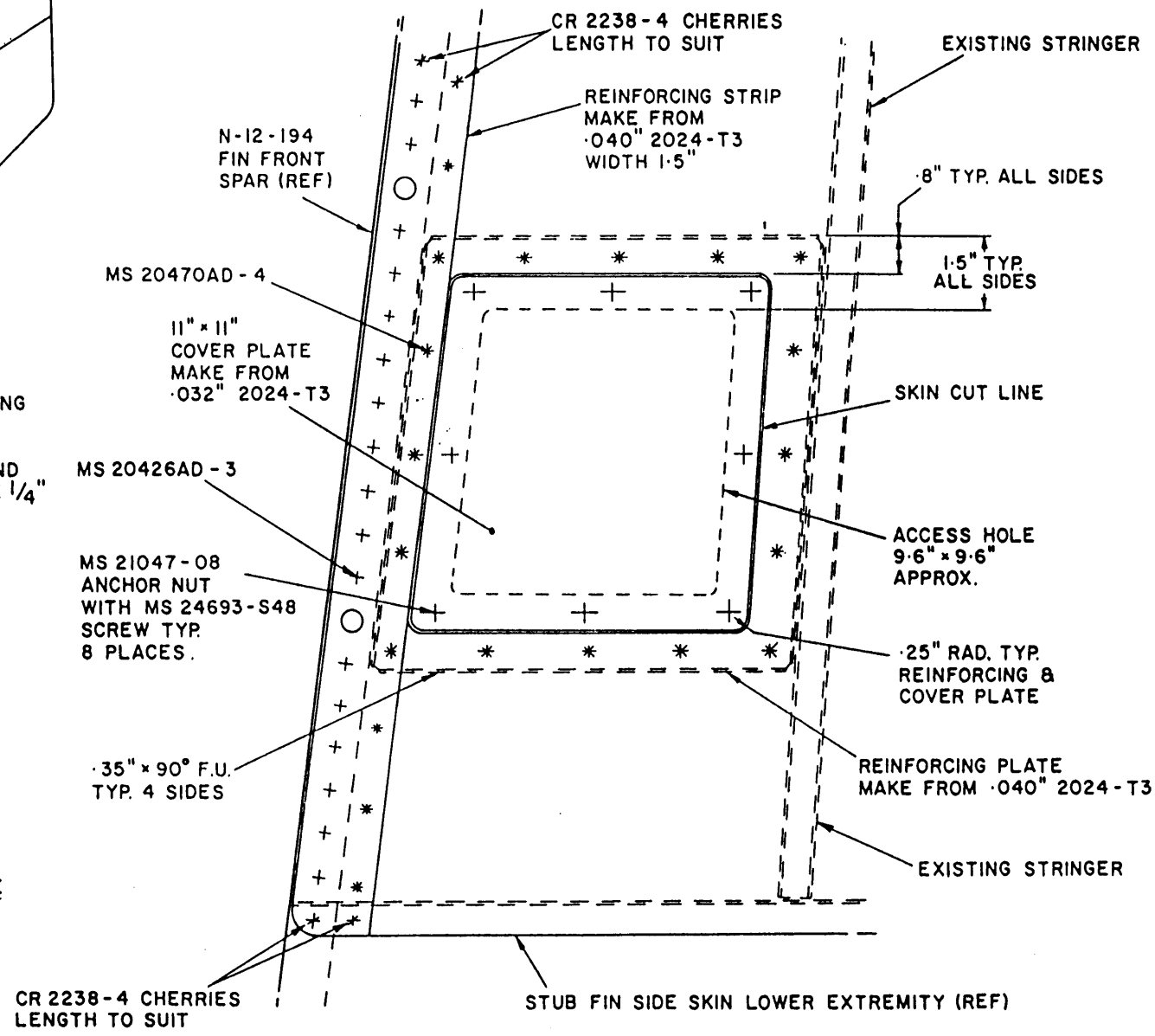
e. Manufacture and install "Z" stiffener as detailed in Fig. 2.

NOTE: It may be necessary to remove fin assembly (Ref. I.P.C. 55-00-00 Fig. 1 Item 32) to gain access for stringer modification.



VIEW ON L.H.S. AIRCRAFT (DORSAL REMOVED)

DE-RIVET ALONG SPAR FLANGE LINE - ATTACH REINFORCING STRIP PICKING UP EXISTING HOLES. INSTALL 15 EQUALLY SPACED RIVETS IN SECOND ROW, MIN EDGE DISTANCE 1/4"



DO NOT SCALE

FIGURE 1

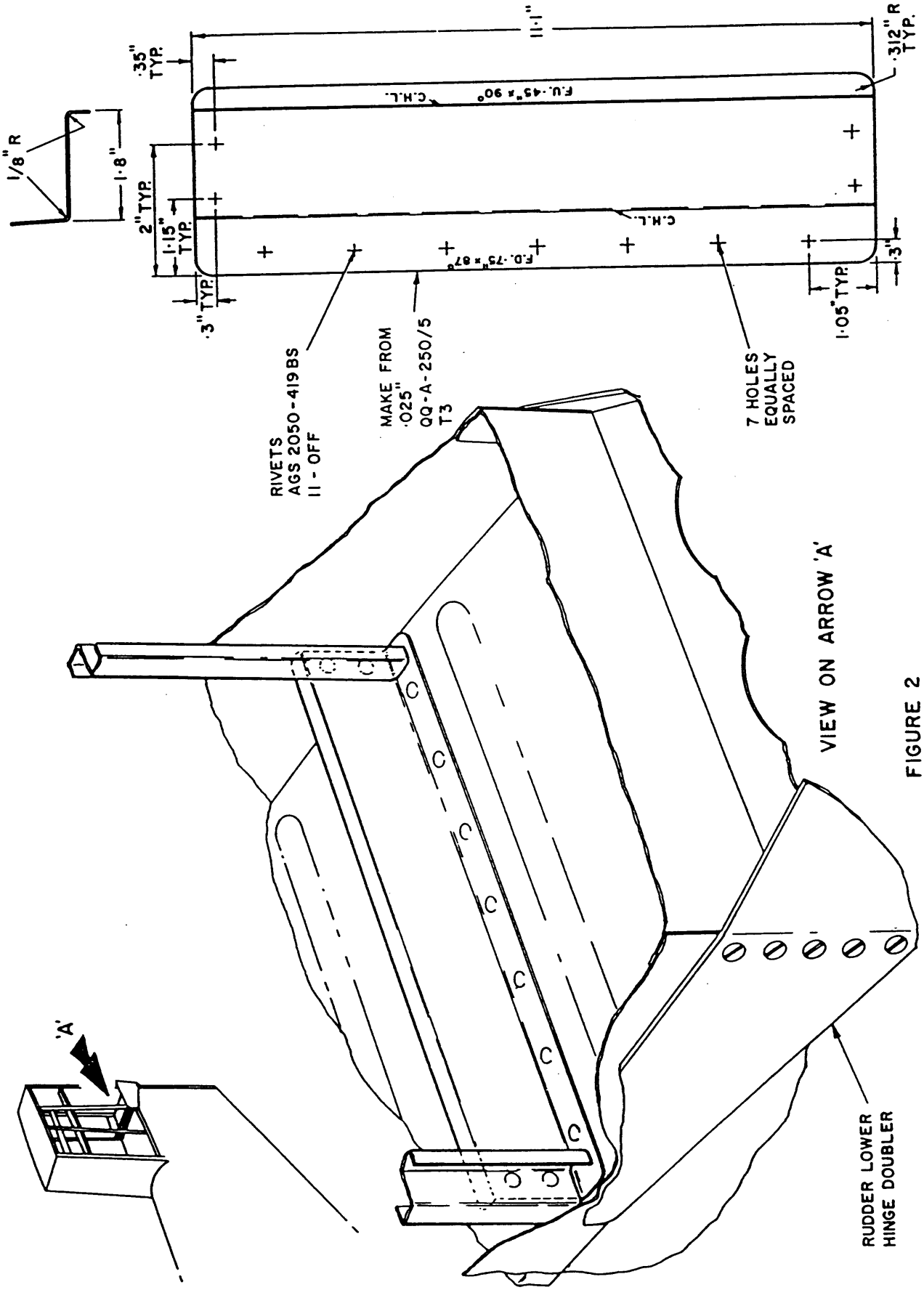

11.1"
.35" TYP.
.312" R TYP.
F.U. .43" x 90°
C.H.L.
1/8" R
1.8"
2" TYP.
1.15" TYP.
C.H.L.
F.D. .75" x 87°
.3" TYP.
.3"
1.05" TYP.
RIVETS AGS 2050-419BS 11 - OFF
MAKE FROM .025" QQ-A-250/5 T3
7 HOLES EQUALLY SPACED
VIEW ON ARROW 'A'
'A'
RUDDER LOWER HINGE DOUBLER

FIGURE 2

3. Material Information:

A. Parts Required per Aircraft

(1) The following parts are to be procured from operator's stock or local sources.

PART NO.	QTY	NOMENCLATURE
QQA250T3	1	Alclad sheet .032 Thick 11 x 11
QQA250T3	1	Alclad sheet .040 Thick 13 x 13
QQA250T3	2	Alclad sheet .040 Thick 2 x 24
AN366F832 or MS21047-08	8	Anchor nut
AN507-8R8 or MS24693S48	8	Screw
CR2238-4-( )	8	Rivet
MS20426AD3-( )	50	Rivet
MS20426AD4-( )	30	Rivet
	AR	Barium chromate sealing compound

B. PARTS REQUIRED TO MODIFY SPARES

None

C. REMOVED PARTS

None

D. SPECIAL TOOLS AND EQUIPMENT REQUIRED

None

4. Recording Action

Record compliance with Service Bulletin NMD-55-5 Revision 3, Para 2, Parts 1, 2 and 3 as appropriate in the Airframe Log Book.

NOTE: Para 2 Part 3 incorporates the intent of Mod N406 Part B.