GOVERNMENT AIRCRAFT FACTORIES

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In Reply Quote S/B NMD-55-12
Revision 1
4th December, 1980

SUBJECT: NOMAD SERVICE BULLETIN NMD-55-12 REVISION 1

Ladies and Gentlemen,

Service Bulletin NMD-55-12 (Reference No. 78) is now issued at Revision 1 and incorporates the following changes.

(1) Page 1, Para 1A(1) - Aircraft Affected.
Nomad N22-2 added to list of Nomad N22 Series aircraft.

(2) Page 2, Para 1G - Material - Price and Availability.
Kit Part No. NMD-55-8-1 deleted and new Kit Part Numbers added for Part A and Part B.

(3) Page 2, Para 1I. - Weight and Balance.
Reference to changes in weight and balance amended.

(4) Page 3, Para 2, Part A(3).
Note after step (3) amended.

(5) Page 4, Para 2 Part A(6).
Part number 1/N-30-221 added after "balance fairing".

(6) Page 4, Para 2 Part A(7).
Note added after step (7).

(7) Page 5, Para 2, Part B (1).
Note 2 added.

(8) Page 5, Para 2, Part B (3).
Caution added after step (3).

(9) Page 6, Para 2, Part B (4).
Reference to balance weights added by S/B NMD-55-10 and Option G288 (if fitted) reworded.

(10) Page 6, Para 2, Part B Table 2.
Numerical data in table revised.

(11) Page 6, Para 2, Part B (5).
Step (5) expanded to include weight and index units added by incorporating Mod N439, and also reference to amending flight manuals.

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(12) Page 6, Para 2, Part B (6).
Reference to removing the trim tabs immobilising device added.

(13) Page 7, Figure 1.
Part No's 1K, 1L, 1M and 1N/N-30-231 changed to
1A, 1B, 1C and 1D/NR12126 respectively.

(14) Page 9, Figure 3.
Part No's 1K, 1L, 1M and 1N/N-30-231 changed to
1A, 1B, 1C and 1D/NR12126 respectively.

(15) Page 11, Para 3.A.(1).
Part No NMD-55-12-1 added after Part A Kit.
Part No's 1K, 1L, 1M and 1N/N-30-231 changed to
1A, 1B, 1C and 1D/NR12126 respectively.

(16) Page 11, Para 3.A.(2).
Part No NMD-55-12-2 added after Part B Kit.

(17) Page 12, Para 3.B NOTE.
Note amended by inserting "previously" between "have been" and "re-identified".

(18) Page 12 Para 4.
"S/B NMD-55-12 Revision 1" substituted for "Modification N439".

Bill Henderson

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GOVERNMENT AIRCRAFT FACTORIES

Nomad

SERVICE BULLETIN

SUBJECT: HORIZONTAL STABILISER - INTRODUCTION OF BALANCED TRIM TABS (MODIFICATION N439)

1. Planning Information

A. Effectivity

(i) Aircraft Affected

Nomad N22 Series Aircraft:

N22-2	N22B-22M	N22-51M	N22S-84
N22-3M	N22B-23M	N22B-52M	N22B-85M
N22-4	N22-24M	N22B-53	N22S-86
N22B-5M	N22B-25	N22B-54M	N22S-87
N22B-6M	N22B-26	N22B-56	N22B-88M
N22B-7	N22B-27	N22B-57	N22S-90
N22-8M	N22-31M	N22B-58	N22B-91M
N22-9M	N22B-33	N22B-59	N22S-92
N22B-11M	N22B-35	N22B-61	N22B-93
N22B-12M	N22B-37	N22-63M	N22S-95
N22B-13M	N22-40M	N22B-65M	N22B-97M
N22B-15M	N22-41M	N22B-66	N22B-100M
N22B-16M	N22-43M	N22B-67M	N22B-102
N22B-17M	N22-45M	N22B-68	N22S-103
N22B-18M	N22-47M	N22B-69	N22S-104
N22B-19M	N22-48M	N22B-70	N22B-105
N22B-20M	N22-49M	N22S-82	N22B-106
N22B-21M	N22B-50	N22B-83	N22B-107

Nomad N24 Series Aircraft:

N24-30	N24A-46	N24A-74	N24A-89
N24-32	N24-60	N24A-75	N24A-96
N24-34	N24A-62	N24A-76	N24A-98
N24-36	N24A-64	N24A-77	N24A-99
N24-38	N24A-71	N24A-79	N24A-101
N24-42	N24A-72	N24A-80	N24A-115
N24A-44	N24A-73	N24A-81	N24A-117

Pre-certification implementation of the intent of this service bulletin is recorded in the airframe log book as Mod N439.

(2) Spares Affected

Part No.	Nomenclature	Recommended Disposition
202/N-30-178	Horizontal Stabiliser Assembly	Rework (Ref Para 2 Part A)

B. Reason

The fitment of balanced trim tabs to the horizontal stabilisers improves the durability of the trim tab control system linkages and reduces the risk of instability if excessive free play develops.

C. Description

This modification introduces balanced trim tabs for the horizontal stabiliser.

D. Compliance

Before 1st January 1981.

E. Approval

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

F. Manpower

20 manhours.

G. Material - Price and Availability

The kit required to accomplish this modification shall be procured through the operators local distributor. Kit Part No. NMD-55-12-1 (Part A) and NMD-55-12-2 (Part B) are 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 the Service Bulletin number and the aircraft serial number.

H. Tooling - Price and Availability

Nil required.

I. Weight and Balance

Changes detailed in Para 2 Table 2 and Step (5).

J. References

MM - Maintenance Manual

IPC - Illustrated Parts Catalogue

SRM - Structural Repair Manual

W and BM - Weight and Balance Manual.

K. Publications Affected

MM, IPC, SRM, W and BM.

2. Accomplishment Instructions

This modification may be embodied in two parts, Part A and Part B, and dependent on Part B availability, the reworked trim tabs (Ref S/B NMD-55-8) may be refitted until the balanced trim tabs are supplied.

Part A - Modification of the horizontal stabiliser structure to accept the balanced trim tabs.

Part B - Fitment of the balanced trim tabs.

The time of fitment of Part B, whether received with Part A or after Part A has been embodied, may be determined by the operators to suit their schedules, but the modification is to be fully embodied before the compliance date, i.e. 1st January, 1981.

Part A

(1) Remove the horizontal stabiliser from the aircraft, then remove the trim tabs from the horizontal stabiliser (Ref M.M. 55-20-00 Maintenance Practices).

NOTE: Remove trim tab control rods from the horizontal stabiliser for safe keeping after removal of the trim tabs.

(2) Trim off the upper and lower skins inboard of the horizontal stabiliser LH and RH inboard ribs (Ref Figs 1 and 2).

(3) Assemble and rivet diaphragms and angles to the LH and RH inboard ribs (Ref Figs 1 and 4).

NOTE: The parts shown in detail B of Fig 2 of S/B NMD-55-10 are removed and replaced by Part Nos. 1A/NR12126, 1B/NR12126, and 1C/NR12126 and 1D/NR12126 (Ref Figures 1 and 3 of this bulletin).

(4) Provide the cut-outs on the horizontal stabiliser at BL 67.60 to the top skins and to the trailing edge channels. Rivet reinforcing plates to top skins and reinforcing plates and mass balance rubber seal to the trailing edge channels (Ref Figs 1 and 4).

(5) The horizontal stabiliser is to be re-identified as follows:

(a) Part A only embodied - Ink in the new part number 1/N-03-625 alongside existing part number plate and deface the original part number.

(b) Parts A and B embodied at the same time - Re-identify the horizontal stabiliser to 1/N-30-238 by rivetting the new part number plate SD 254 (using four 1/8 in dia pop rivets supplied P/N AGS 2050-424B) alongside the existing part number plate and by defacing the original part number.

(c) Part B fitted at some time after Part A has been embodied - Re-identify the horizontal stabiliser as in (b) ensuring that the inked in part number 1/N-03-625 is removed or covered over by the new part number plate SD 254.

(6) If Part A only is embodied refit the reworked trim tabs (Ref S/B NMD-55-8) P/N's 1/N-03-598 and 2/N-03-598 and fit the outboard mass balance fairing P/N 1/N-30-221 (Ref MM 55-20-00 and Figure 1 of this bulletin).

(7) Weigh and balance the horizontal stabiliser using table 1 of this bulletin in conjunction with the procedure detailed in SRM 55-10-00.

NOTE: Operators are advised to note the weight of the horizontal stabiliser with Part A embodied, if it is intended to incorporate Part B at a later date. The weight obtained in step 7 can be used to assist in calculating the weight of the horizontal stabiliser after Part B has been incorporated.

(8) Install the horizontal stabiliser (Ref M.M. 55-20-00).

TABLE 1

Revised Horizontal Stabiliser Weight Details				
HORIZONTAL STABILISER CONFIGURATION (MODS INCORPORATED N285, N386, N398, N407 AND N439 PART A)	WEIGHT OF BALANCED HORIZONTAL STABILISER		TOTAL WEIGHT OF MASS BALANCE	
	LB	KG	LB	KG
Two Coats of Polyurethane Paint	138.86 ± 2.0	63.0 ± .90	12.86 ± .50	5.83 ± .23
Two Coats of Polyurethane Paint Plus Customer Option G18	145.75 ± 2.0	66.1 ± .90	10.86 ± .50	4.93 ± .23
Two Coats of Acrylic Paint Plus Customer Option R18A	138.25 ± 2.0	62.7 ± .90	11.86 ± .50	5.40 ± .23
Two Coats of Acrylic Paint Plus Customer Option G18	141.12 ± 2.0	64.0 ± .90	9.34 ± .50	4.23 ± .23

Part B

(1) Fit the trim tabs P/N 1/N-03-622 (ALT 1/N-30-219) (LH) and 1/N-03-623 (ALT 1/N-30-220) (RH) to the horizontal stabiliser (Ref M.M. 55-20-00 Maintenance Practices).

NOTE: 1. When fitting the trim tabs ensure that the outboard mass balance is correctly located through the mass balance seal assembly (Ref Fig 1 of this bulletin) and that a clearance of between 0.15 and 0.18 inches exists between the outboard end of the tab and the stabiliser.

2. To prevent possible damage to the horizontal stabiliser skins by the trim tab mass balance weights, immobilise the trim tabs in the mid travel position until the horizontal stabiliser has been installed and the trim tabs connected to the control system.

(2) Install the outboard mass balance fairing P/N 1/N-30-221 (Ref Fig 1).

(3) Install trim tab control rods P/N 1/N-30-184 or control rods P/N 1/N-03-603 (modified by S/B NMD-55-8) to the trim tabs.

CAUTION: REMOVE THE TRIM TABS IMMOBILIZING DEVICE BEFORE STEP (4) AND REFIT THE DEVICE ON COMPLETION OF THE WEIGHING AND BALANCING PROCEDURE.

(4) Weigh and balance the horizontal stabiliser (Ref SRM 55-10-00). The existing centre mass balance block P/N 1/N-30-129 is replaced by centre mass balance block P/N 1/N-30-242 and the existing mass balance weights P/N 1/N-30-130 are used to obtain the balance. The weight limits are given in Table 2. The balance weights added to the outboard ribs as part of S/B NMD-55-10, and also those of the static discharge wicks installation (Ref Option G288) if fitted, are to remain installed.

NOTE: If balancing equipment is not available, the horizontal stabiliser is to be balanced after installation (Ref step (6)).

TABLE 2

HORIZONTAL STABILISER CONFIGURATION (MODS INCORPORATED N285, N386, N398, N407 AND N439)	TOTAL WEIGHT OF BALANCED HORIZONTAL STABILISER		MASS BALANCE WEIGHT	
	LB	KG	LB	KG
Standard-2 Coats of Polyurethane or Acrylic Paint	150.4 + 3.1	68.2 ± 1.4	19.4 ± .95	8.7 ± .43
Standard-Including Customer Option G18 (De-Icing Boots)	154.5 ± 3.1	70.1 ± 1.4	16.5 ± .95	7.5 ± .43
Standard-Including Customer Option R18A (De-Icing Kit-Military)	152.3 ± 3.1	69.1 ± 1.4	18.7 ± .95	8.4 ± .43

(5) The total incorporation of Mod N439 adds 5.9 Kg (13 lb) at fuselage station 439.75 (N22 Series) or 484.75 (N24 Series) and index units N22 Series - 65.9 $\frac{\text{Kg mm}}{1000}$ (5.72 $\frac{\text{lb in}}{1000}$) or N24 Series - 72.58 $\frac{\text{Kg mm}}{1000}$ (6.30 $\frac{\text{lbin}}{1000}$). Compute the revised Basic Empty Weight and Balance details on the 'Record of Weight Alteration' Sheet. Amend Fig 6.4 of the Flight Manual "Aircraft Empty Weight Balance Statement' to reflect the revised Empty Weight and, Basic Empty Weight and Balance details resulting from this modification.

(6) Remove trim tabs immobilising device and install the horizontal stabiliser (Ref M.M. 55-20-00 Maintenance Practices).

(7) Rig the horizontal stabiliser control system and its trim tab control system using the revised travel dimensions of S/L 79-08.

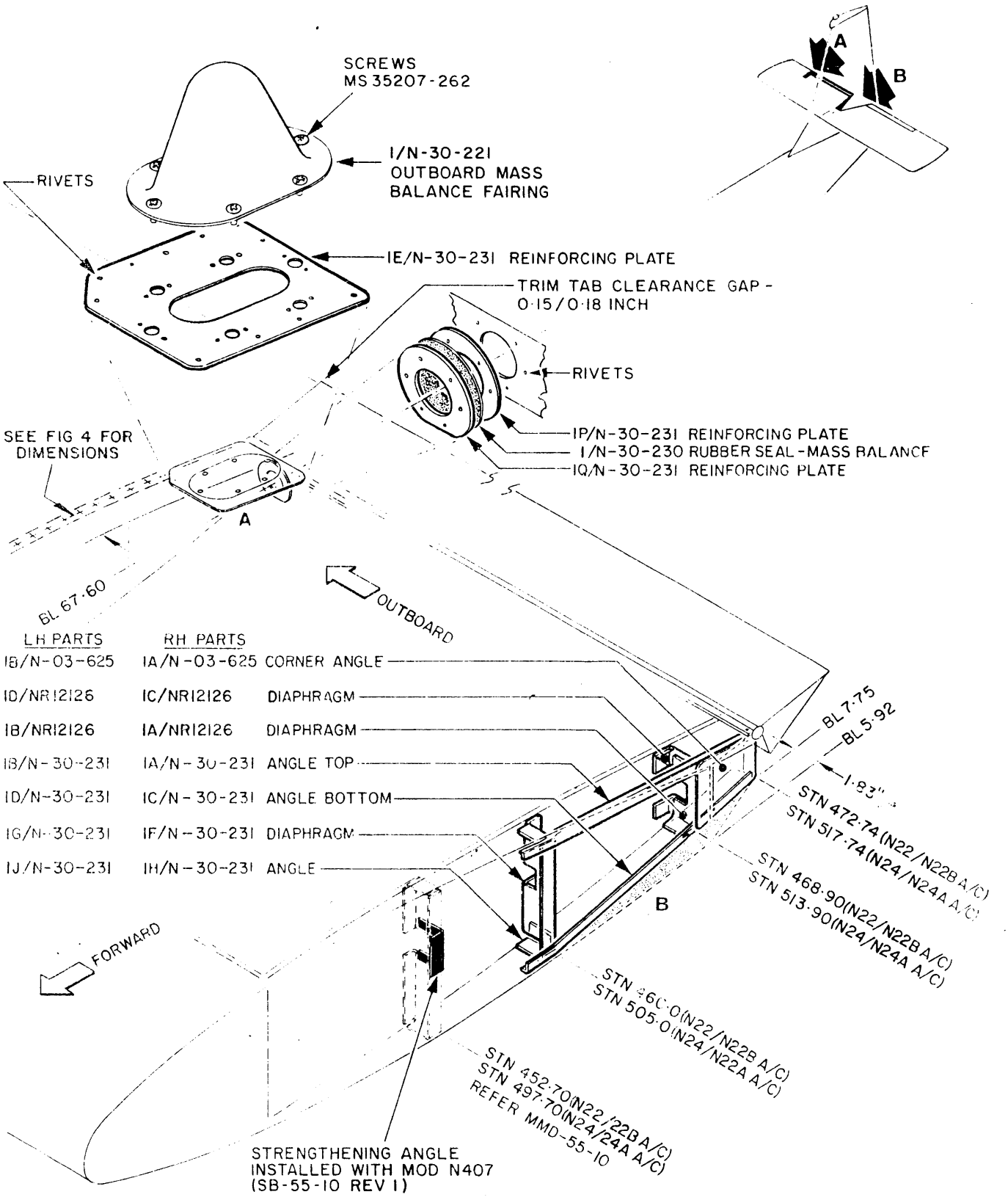
SCREWS
MS 35207-262
1/N-30-221
OUTBOARD MASS
BALANCE FAIRING
RIVETS
1E/N-30-231 REINFORCING PLATE
TRIM TAB CLEARANCE GAP -
0·15/0·18 INCH
RIVETS
1P/N-30-231 REINFORCING PLATE
1/N-30-230 RUBBER SEAL-MASS BALANCE
1Q/N-30-231 REINFORCING PLATE
SEE FIG 4 FOR
DIMENSIONS
A
B
BL 67·60
OUTBOARD
LH PARTS
RH PARTS
1B/N-03-625
1A/N-03-625 CORNER ANGLE
1D/NR12126
1C/NR12126 DIAPHRAGM
1B/NR12126
1A/NR12126 DIAPHRAGM
1B/N-30-231
1A/N-30-231 ANGLE TOP
1D/N-30-231
1C/N-30-231 ANGLE BOTTOM
1G/N-30-231
1F/N-30-231 DIAPHRAGM
1J/N-30-231
1H/N-30-231 ANGLE
BL 7·75
BL 5·92
1·93"
STN 472·74 (N22/N22B A/C)
STN 517·74 (N24/N24A A/C)
STN 468·90 (N22/N22B A/C)
STN 513·90 (N24/N24A A/C)
FORWARD
STN 460·0 (N22/N22B A/C)
STN 505·0 (N24/N22A A/C)
STN 452·70 (N22/22B A/C)
STN 497·70 (N24/24A A/C)
REFER MMD-55-10
STRENGTHENING ANGLE
INSTALLED WITH MOD N407
(SB-55-10 REV 1)

FIGURE 1

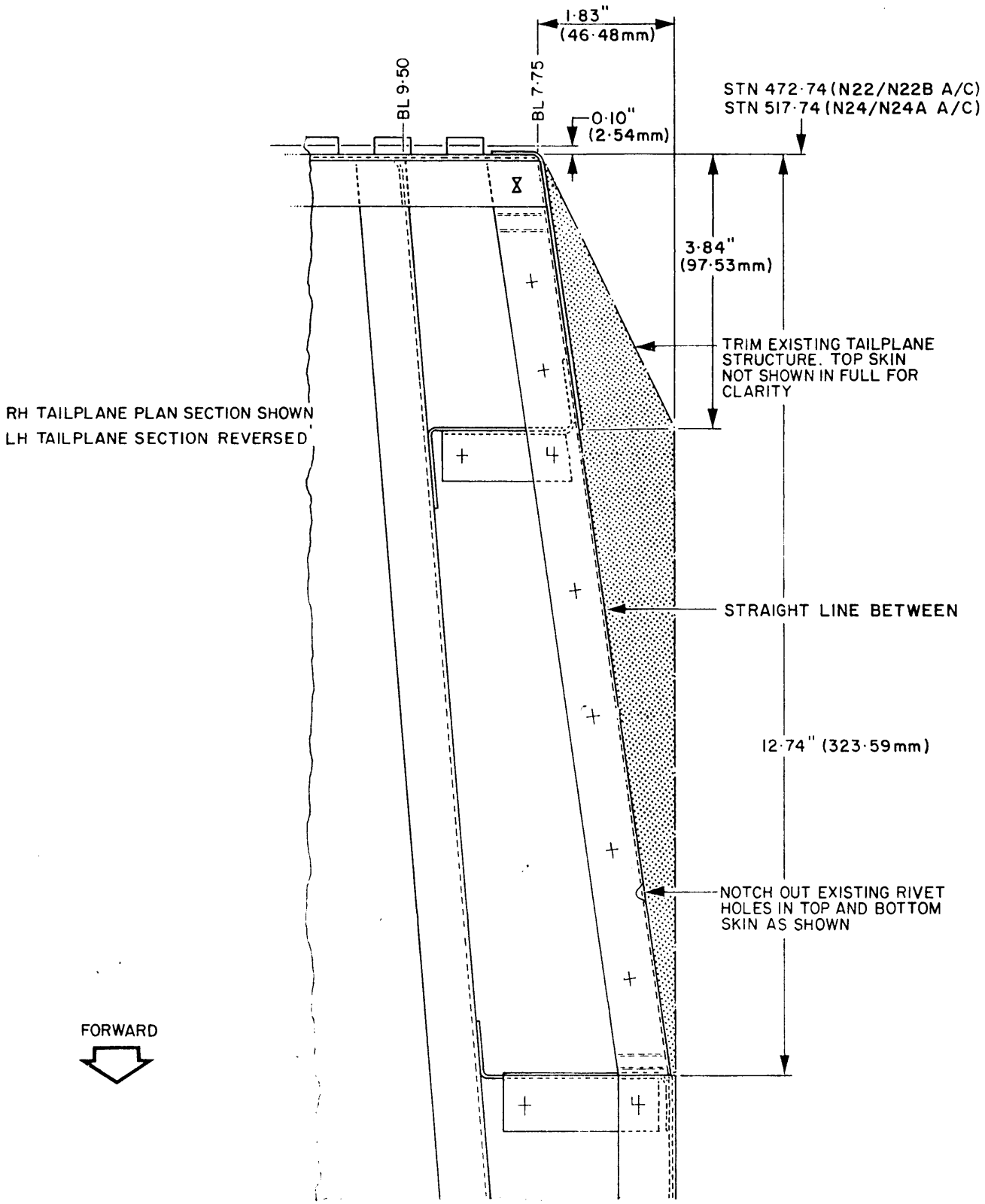
1·83"
(46·48mm)
BL 9·50
BL 7·75
STN 472·74 (N22/N22B A/C)
STN 517·74 (N24/N24A A/C)
0·10"
(2·54mm)
3·84"
(97·53mm)
TRIM EXISTING TAILPLANE STRUCTURE. TOP SKIN NOT SHOWN IN FULL FOR CLARITY
RH TAILPLANE PLAN SECTION SHOWN
LH TAILPLANE SECTION REVERSED
STRAIGHT LINE BETWEEN
12·74" (323·59mm)
NOTCH OUT EXISTING RIVET HOLES IN TOP AND BOTTOM SKIN AS SHOWN
FORWARD

FIGURE 2

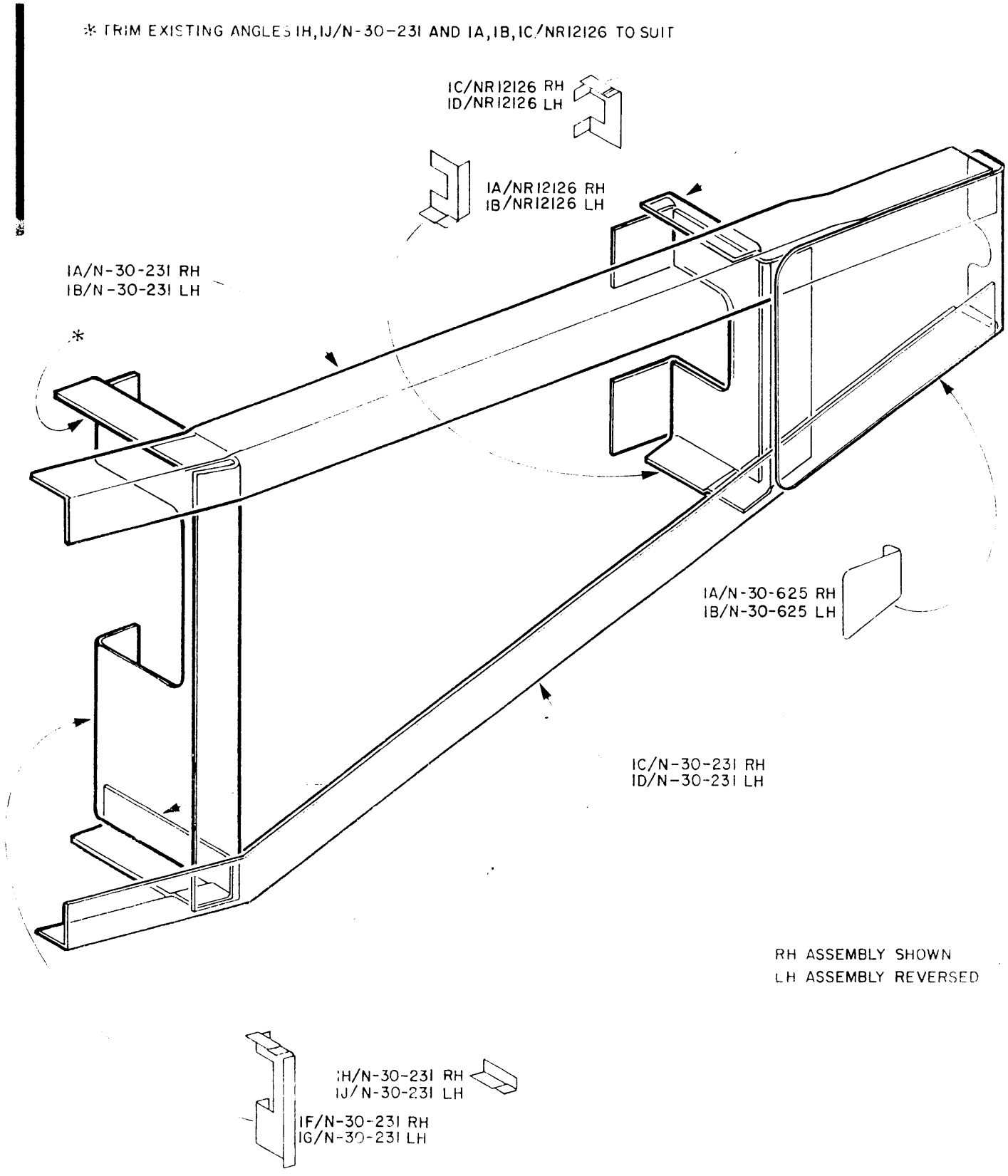
* TRIM EXISTING ANGLES 1H,1J/N-30-231 AND 1A,1B,1C/NR12126 TO SUIT
1C/NR12126 RH
1D/NR12126 LH
1A/NR12126 RH
1B/NR12126 LH
1A/N-30-231 RH
1B/N-30-231 LH
*
1A/N-30-625 RH
1B/N-30-625 LH
1C/N-30-231 RH
1D/N-30-231 LH
RH ASSEMBLY SHOWN
LH ASSEMBLY REVERSED
1H/N-30-231 RH
1J/N-30-231 LH
1F/N-30-231 RH
1G/N-30-231 LH

FIGURE 3

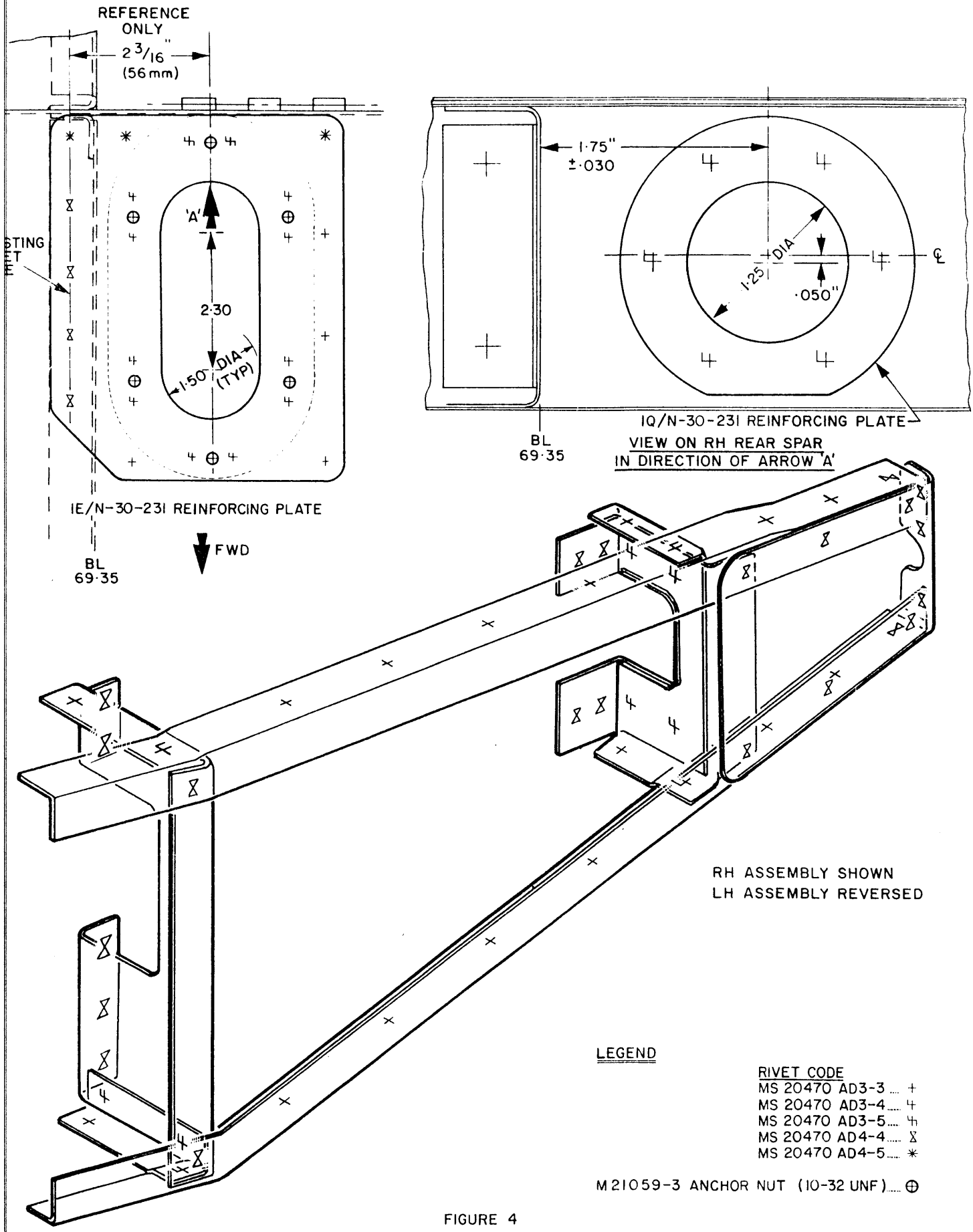
REFERENCE ONLY
2 3/16" (56mm)
'A'
2·30
1·50" DIA (TYP)
1E/N-30-231 REINFORCING PLATE
FWD
BL 69·35
1·75" ±·030
DIA
1·25"
·050"
1Q/N-30-231 REINFORCING PLATE
BL 69·35
VIEW ON RH REAR SPAR IN DIRECTION OF ARROW 'A'
RH ASSEMBLY SHOWN
LH ASSEMBLY REVERSED
LEGEND
RIVET CODE
MS 20470 AD3-3 +
MS 20470 AD3-4 4
MS 20470 AD3-5 4h
MS 20470 AD4-4 8
MS 20470 AD4-5 *
M21059-3 ANCHOR NUT (10-32 UNF) ⊕

FIGURE 4

3. Material Information

A. Parts required per Aircraft

(1) Part A Kit - P/N NMD-55-12-1

Item	Title	Qty.
1A/N-30-231	Angle Top RH	1
1B/N-30-231	Angle Top LH	1
1C/N-30-231	Angle Bottom RH	1
1D/N-30-231	Angle Bottom LH	1
1E/N-30-231	Reinforcing Plate	2
1F/N-30-231	Diaphragm RH	1
1G/N-30-231	Diaphragm LH	1
1H/N-30-231	Angle RH	1
1J/N-30-231	Angle LH	1
1A/NR12126	Diaphragm RH	1
1B/NR12126	Diaphragm LH	1
1C/NR12126	Diaphragm RH	1
1D/NR12126	Diaphragm LH	1
1P/N-30-231	Reinforcing Plate	2
1Q/N-30-231	Reinforcing Plate	2
1/N-30-221	Fairing, Outboard Mass Balance	2
1/N-30-230	Rubber Seal - Mass Balance	2
1A/N-03-625	Corner Angle RH	1
1B/N-03-625	Corner Angle LH	1
MS 21059-3	Anchor Nut	12
MS 35207-262	Screw	12
MS 20470 AD 3-3	Rivet 3/32 Dia	40
MS 20470 AD 3-4	Rivet 3/32 Dia	32
MS 20470 AD 4-4	Rivet 1/8 Dia	52
MS 20470 AD 4-5	Rivet 1/8 Dia	6
MS 20426 AD 3-4	Rivet 3/32 Dia	20
MS 20426 AD 3-5	Rivet 3/32 Dia	4
SD254	Part No. Plate	1
AGS 2050-424B	Rivet, Pop 1/8 Dia	4

(2) Part B Kit - P/N NMD-55-12-2

Item	Title	Qty
1/N-03-622 (ALT 1/N-30-219)	Trim Tab LH	1
1/N-03-623 (ALT 1/N-30-220)	Trim Tab RH	1
1/N-30-242	Balance Weight Block	1
MS21044-N4	Nut, Self-locking	8

(3) Parts modified and re-identified by the operator.

Part	Existing Part No.	New Part No.
Horizontal Stabiliser (Part A only embodied)	202/N-30-178	1/N-03-625 (Ref Para 2(5)(a))
Horizontal Stabiliser (Parts A and B embodied)	202/N-30-178	1/N-30-238 (Ref Para 2(5)(b)(c)

B. Parts Required to Modify Spares

Spare horizontal stabilisers 202/N-30-178 are to be reworked as per Para 2 of this service bulletin. Parts called up in Para 3 A(1) and (2) are required for each horizontal stabiliser.

NOTE: Horizontal stabilisers 1/N-30-120 and 201/N-30-178 have been previously re-identified by S/B NMD-55-10.

C. Removed Parts

None.

D. Special Tools and Equipment Required

None.

4. Record compliance with S/B NMD-55-12 Revision 1 in the airframe log book.