GOVERNMENT AIRCRAFT FACTORIES

Nomad

SERVICE BULLETIN

Reference No. 89

SUBJECT: FLIGHT CONTROL TRIM INDICATOR SYSTEMS (MOD N493)

1. Planning Information:

A. Effectivity:

(1) 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	N22B-31M	N22B-58	N22B-91M
N22-9M	N22B-33	N22B-59	N22S-92
N22B-11M	N22B-35	N22F-61	N22B-93
N22B-12M	N22B-37	N22-63M	N22B-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
N22-17M	N22-45M	N22B-68	N22B-103
N22B-18M	N22-47M	N22B-69	N22B-104
N22B-19M	N22-48M	N22B-70	N22B-105
N22B-20M	N22-49M	N22S-82	N22B-106
N22B-21M	N22B-50	N22F-83	N22B-107

Nomad N24 Series Aircraft

N24-30	N24A-46	N24A-74	N24A-81
N24-32	N24-60	N24A-75	N24A-89
N24-34	N24A-62	N24A-76	N24A-96
N24-36	N24A-64	N24A-77	N24A-98
N24-38	N24A-71	N24A-78	N24A-99
N24-42	N24A-72	N24A-79	N24A-101
N24A-44	N24A-73	N24A-80	N24A-115
			N24A-117

Pre-certification implementation of the intent of this service bulletin is recorded in the airframe log book as Mod N493.

(2) Spares Affected

Part No	Nomenclature	Recommended Disposition
1/N-47-214	Drum, Indicator, Horizontal Stab. Trim	Rework
2/N-47-214	Drum, Indicator, Horizontal Stab. Trim (Post Mod N211)	Rework
102/N-47-214	Drum, Indicator, Horizontal Stab. Trim (Post Mod N211-24)	Rework
1/N-47-215	Drum, Indicator, Rudder Trim	Rework
1/N-47-288	Drum, Indicator Rudder Trim (Option G331)	Rework
1/N-47-94	Trunnion Shaft Assembly	Rework

B. Reasons

(1) An instance has occurred in which the internal gear ring became detached from the drum carrier of the horizontal stabiliser trim indicator drum assembly, due to unsatisfactory adhesive bonding. This could cause trim tab angles outside the allowable range to be obtained as well as incorrect trim to be selected.

(2) The same hazard could occur to the rudder trim indicator drum assembly.

(3) Instances have also been reported of the failure of the taper pin attaching the spur gear to the trunnion shaft (Ref Figure 2 and IPC 27-40-01 Figure 1 items 9, 10 and 7).

C. Description

This Service Bulletin requires the removal, rework and refitting of the relevant trim indicator drums and trunnion shaft assembly (Ref Para 1.A (2)), in accordance with the accomplishment instructions (Ref Para 2) of this bulletin.

D. Compliance

Within 100 hours time in service after receipt of this bulletin.

E. Approval

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

F. Manpower

Eight manhours.

G. Material, Price and Availability

The parts required to accomplish this service bulletin are to be obtained from the operator's stock or local sources. (Ref Para 3).

H. Tooling, Price and Availability

Nil.

J. Weight and Balance

No change.

K. References

M.M. - Maintenance Manual
I.P.C. - Illustrated Parts Catalogue

L. Publications Affected

I.P.C.

2. Accomplishment Instructions

A. Remove the engine control box console (Ref M.M. 76-10-00).

B. Remove the dorsal fin (Ref M.M. 55-30-00).

C. Check the horizontal stabiliser trim control cables for correct tension (Ref M.M. 27-41-00).

D. Set the horizontal stabiliser in the neutral (rigged) position (Ref S/L 79-08). rotate the horizontal stabiliser trim wheel until the trim tab is in the rigged position, then insert rigging pin P/N 1/N-88-73 into the RH bearing block and torque shaft (Ref M.M. 27-41-02 Figure 2).

E. Remove the horizontal stabiliser trim indicator drum assembly and attaching hardware (Ref M.M. 27-41-01, Figure 1 items 6, 2, 3 (3-off), 4 and 5). Note order of assembly of the washers.

F. Inspect the indicator drum assembly to ensure that the internal gear ring is correctly seated in the drum carrier (Ref Figure 1). If it is not correctly seated, press the gear ring back into the carrier drum until correctly seated taking care not to damage the drum or gear ring.

G. Using a No.32 drill (0.1160 inches diameter, 2.95 mm), drill three holes equally spaced on a 1.875 inches pitch circle radius through the drum carrier and gear ring.

NOTE: When drilling, support the gear ring to prevent drilling loads from displacing it from the recess in the drum carrier. Clamp the gear ring to the drum carrier using a small G-clamp to prevent movement.

H. Enlarge the three holes in the drum carrier only, to 0.142 inches diameter (3.6 mm) and countersink the enlarged holes 100 degrees and 0.280 inches diameter.

J. Tap the three holes in the internal gear ring to 6-32 UNC and secure the gear ring to the drum carrier with three MS 24693-S27 screws or suitable alternative, using loctite AV or equivalent.

NOTE: The internal gear ring is made of stainless steel, so the use of locquic T primer (alt. locquic N primer) is necessary before fitting the screws.

K. Inspect the attachment of the spur gear to the trunnion shaft (Ref Figure 2 and IPC 27-40-01 Figure 1, items 10 and 7). If the attachment is by taper pin, the taper pin is to be removed and discarded.

L. After taper pin has been removed, maintain the alignment of the hole through the gear and shaft, and enlarge the hole to between 0.094 and 0.097 inches diameter (2.4 to 2.5 mm) using appropriate sized drill and reamer.

M. Fit spring pin P/N MS 16562-25 (alt MS 16562-119), using loctite AV or equivalent, through gear and trunnion shaft.

NOTE: The spur gear is made of stainless steel so the use of locquic T primer (alt. locquic N primer) is necessary before fitting the spring pin.

N. Remove all swarf from the structure in the area of the trunnion shaft assembly and from the horizontal stabiliser trim indicator drum assembly.

P. Apply a light coating of molybdenum disulphide grease Molybond GS10 or MIL G21164 or DTD 5527 to the spur gear, internal gear ring and spacer.

Q. Refit the horizontal stabiliser trim indicator drum assembly so that when in the assembled position, rigging pin P/N 1/N-88-60 can be inserted through the drum and its supporting structure. Ensure that the washers are correctly positioned during the assembly (Ref step E).

NOTE: If rigging pin P/N 1/N-88-60 cannot be inserted, remove the torque shaft rigging pin P/N 1/N-88-73 and adjust the horizontal stabiliser trim wheel (Ref IPC 27-40-01 Figure 1 item 14) the minimum amount until the rigging pin P/N 1/N-88-60 can be fitted.

R. Carry out a rigging check on the horizontal stabiliser trim tab control system (Ref M.M. 27-41-00).

S. Check the rudder trim control cables for correct tension (Ref M.M. 27-21-00).

T. Set the rudder to the streamlined position using rigging bar 1/N-88-80 (Ref M.M. 27-20-00 Figure 201).

U. Adjust the rudder trim control to neutral and insert rigging pin P/N 1/N-88-60 through the bracket on the rudder spar and into the rudder trim link (Ref M.M. 27-21-03 Figure 201).

V. Remove the rudder trim indicator drum assembly and attaching hardware (Ref IPC 27-20-01 Figure 1 items 11, 7, 8 (3-off), 9 and 10). Note order of assembly of the washers.

W. Inspect and rework the drum as detailed in steps F, G, H and J.

X. Remove all swarf from the drum and apply a light coating of molybdenum disulphide grease Molybond GS10 or MIL G21164 or DTD 5527 to the internal pear rig, spacer and spur gear (Ref IPC 27-20-01 Figure 1).

Y. Refit the rudder trim indicator drum so that when assembled, rigging pin P/N 1/N-88-60 can be inserted through the drum and into the console structure. Ensure that the washers are correctly positioned during assembly (Ref step V).

NOTE: If rigging pin P/N 1/N-88-60 cannot be inserted, remove the rigging pin P/N 1/N-88-60 at the rudder spar. Adjust the trim control the minimum amount to enable the rigging pin P/N 1/N-88-60 to be inserted through the drum and structure.

Z. Carry out a rigging check on the rudder trim tab control system (Ref M.M. 27-21-00).

3. Material Information

A. Parts Required per aircraft

(1) The following parts are to be obtained from the operator's stocks or local sources (Ref Para 1.G).

Part Number	Nomenclature	Qty
MS 24693-S27	100° C/S Screw, 6-32 UNC	6
MS 16562-25	Spring Pin	1
MS 16562-119	Spring Pin (alt)	
-	Locquic T primer	AR
-	Locquic N primer (alt)	
-	Loctite AV (or equivalent)	AR

B. Parts Required to Modify Spares

Refer Para 3A.

C. Removed Parts

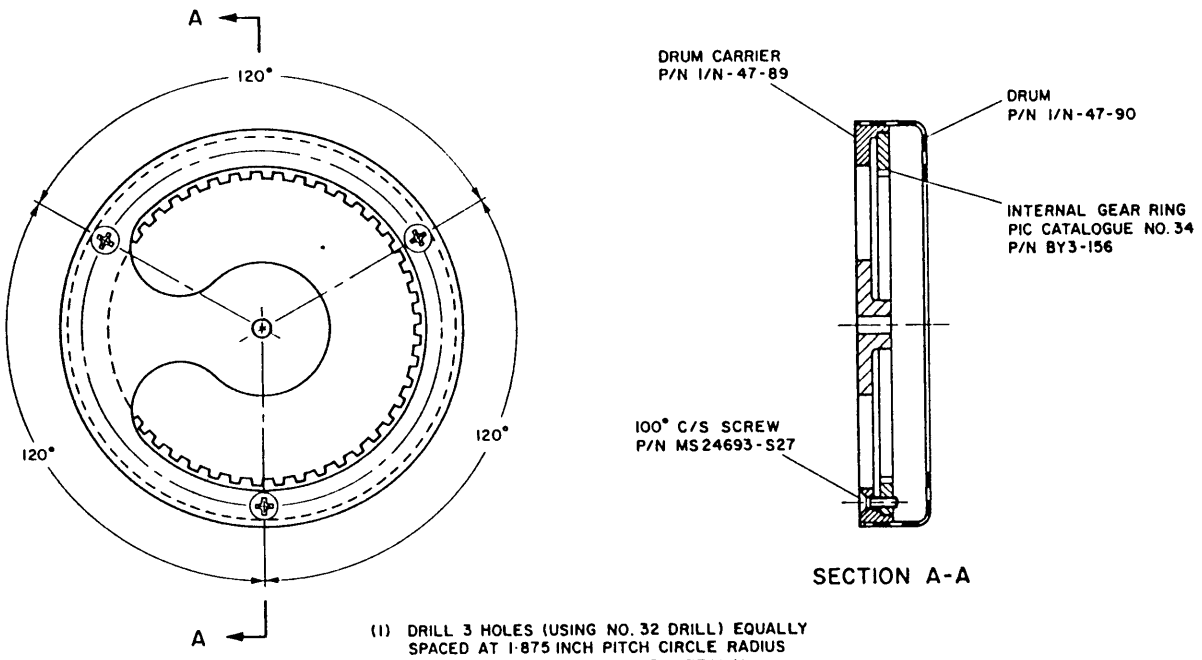
Part Number	Nomenclature	Qty	Recommended Disposition
MS 24692-34P	Taper Pin	1	Scrap

D. Special Tools and Equipment

Nil

4. Recording Action

Record compliance with Service Bulletin NMD-27-18 in the airframe log book.

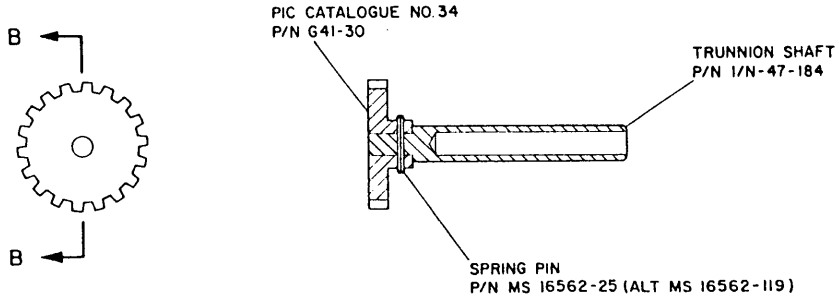


(1) DRILL 3 HOLES (USING NO. 32 DRILL) EQUALLY SPACED AT 1·875 INCH PITCH CIRCLE RADIUS THROUGH DRUM CARRIER AND INTERNAL GEAR RING.

(2) HOLES DIAMETER TO BE INCREASED TO 0·142 INCH (3·6 MM) IN DRUM CARRIER ONLY THEN COUNTERSINK ENLARGED HOLES 100° TO 0·280 INCH DIA.

(3) TAP HOLES IN INTERNAL GEAR RING TO 6-32 UNF AND SECURE DRUM CARRIER TO GEAR RING AS DETAILED IN TEXT (REF PARA 2 H)

Rework of Trim Indicator Drum Assemblies
Figure 1



Rework of Trunnion Shaft
Figure 2