ELECTRICAL POWER – DC GENERATION
GENERATOR CABLE INSPECTION AT FIREWALL
AND FEED THROUGH STUD MODIFICATION (MOD N724)

1. PLANNING INFORMATION

A. Effectivity

(1) Aircraft Affected

All Nomad N22 and N24 series aircraft whose log books do not already record the embodiment of Mod N724.

(2) Spares Affected

Not applicable.

B. Reason

An instance has occurred in which the terminal lug on the generator cable in the wing leading edge at the engine firewall was severely damaged by overheating. Mod N724 is introduced to overcome this hazard. It should be noted that Mod N724 applies to the connection in the Generator circuit only. An identical connection assembly is used in the Starter circuit, but is unaffected by this modification.

C. Description

(1) PART 1

Generator cable connections to Stud, PN I/N–81–424, at the wing leading edge firewalls, are inspected for security and signs of damage through overheating.

(2) PART 2

A warning placard is introduced, limiting single generator output.

(3) PART 3

Mod N724 is introduced. This modification replaces existing Stud PN I/N–81–424 with a copper stud, PN I/N–81–925, using brass nuts. The increased electrical conductivity of the new assembly eliminates overheating problems, giving increased life to the generator cable connections in this area.

Embodiment of Part 3 obviates the requirements of Parts 1 and 2.

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D. **Compliance**

(1) Aircraft whose total electrical load exceeds 150A:

PART 1 – before the next flight following receipt of this Alert Service Bulletin, and thereafter before each flight, until Mod N724 in embodied.

PART 2 – before the next flight.

PART 3 – within the next 50 hours TIS following receipt of this Alert Service Bulletin.

(2) Aircraft whose total electrical load does not exceed 150A:

PART 1 – within the next 100 hours TIS following receipt of this Alert Service Bulletin, and within each 100 hours thereafter, until Mod N724 is embodied.

PART 2 – within the next 100 hours TIS.

PART 3 – within the next 100 hours TIS following receipt of this Alert Service Bulletin.

E. **Approval**

The modification detailed herein has been approved pursuant to Civil Aviation Regulation 35 and conforms with the type certification requirements.

F. **Manpower**

PART 1 – 0.5 manhours.

PART 2 – 0.5 manhours.

PART 3 – 1.5 manhours.

G. **Material – Price and Avallability**

Parts listed in Para 3.A. are to be obtained through the normal procurement system. Parts are anticipated to be available within 15 days from the date of issue of Revision 1 to this Alert Service Bulletin.

H. **Tooling – Price and Availability**

Not Applicable

I. **Weight and Balance**

No Change.

J. **References**

I.P.C. Chap 71–50–00 Fig 1, Mod N724 data.

K. **Publications Affected**

IPC, Chap 71–50–00 Fig 1.

2. **ACCOMPLISHMENT INSTRUCTIONS**

A. **Inspection of cable terminations.**

(1) Gain access to the generator cable connections at both ends of Stud PN I/N–81–424, passing through the firewall in the wing leading edge (Refer IPC Chap 71–50–00 Fig 1, Item 23).

NOTE

It will be necessary to raise the upper engine cowls, and the wing leading edge servicing doors to gain access.

(2) Pull back the protective covers from the cable to stud connections, and inspect all components for signs of damage due to overheating resulting from high electrical resistance in the termination. Check also for security of attachment of the cable to the stud, at each side of the firewall.

(3) If evidence of overheating is apparent, all damaged components must be replaced.

(4) Report results of inspection to ASTA. Nominate aircraft serial number, Time In Service, and indicate if any known previous component replacements have occurred in the affected area.

B. **Application of Warning Placard.**

(1) Manufacture and affix a temporary placard to the generator control panel on the overhead console, with the following text:

MAXIMUM SINGLE GENERATOR CURRENT NOT TO EXCEED 75 AMPS.

C. **Installation of Mod N724.**

CAUTION

ENSURE THE BATTERY IS DISCONNECTED BEFORE CARRYING OUT WORK.

(1) Gain access to the generator cable connection at both ends of Stud PN I/N–81–424, as in PART 1.A., above.

(2) Remove the generator connections from each end of the stud, and remove the stud from the firewall, taking care not to damage the insulating washers.

(3) Remove the 1/4 inch diameter terminal lug from cables P13B2 and P38B2 (Left and Right wing, respectively, Inboard of the firewall), and replace with a 3/8 inch diameter terminal lug, PN MS25036–127. Alternatively, the existing lug, if not showing signs of overheating or other damage, may be drilled out 3/8 inch diameter, (min. 0.385 inch, max 0.400 inch), and the hole carefully deburred to give full seating area against mating surfaces on assembly.

(4) Re assemble the replacement stud PN I/N–81–925, observing the following sequence:–
(all item numbers refer to Fig.1.)

(a) Assemble Special Washer, item 2, and Insulating Washer, item 3, on to the longer end of the new copper stud, item 1.

(b) Insert the stud through the firewall, from the wing leading edge side, and add Insulating Washer, item 4, and Special Washer, item 2, followed by Spring Washer, item 5, and Nut, item 6A. Before running Nut, item 6A, fully home, apply Loctite 242 Nutlock to the threads on the copper stud, then tighten the nut to 20 inch pounds. Preparation, application and curing of the Loctite should be in accordance with the manufacturers instructions.

(c) Assemble Locknut, item 6B, and tighten against item 6A to a Torque of 80 inch pounds.

NOTE

During this and subsequent tightening operation on the stud, care should be taken not to crush or damage the insulating washers.

(d) Assemble the cable terminal lug, followed by Washer item 7, Spring Washer item 5, and Nut item 6C, and Torque tighten to 60 inch pounds, against Locknut item 6B. Replace the protective cover, item 8.

(e) At the other end of the stud, on the wing leading edge side of the firewall, assemble the cable terminal lug, followed by Washer item 7, Spring Washer item 5, and Nut item 6D; torque tighten to 60 inch pounds against the stud hexagon. Replace the protective cover, item 8.

(f) Remove the warning placard applied in accordance with PART 2.

(g) Reconnect the battery and at the next engine start check Generator operation as per the ”After Start” cheeks in Section 3 of the Flight Manual.

3. **MATERIAL INFORMATION**

A. Parts Required per Aircraft

One set of parts, as listed below is required for each aircraft. Kits are not prepared, as most of the items are Standard Parts, and individual requirements may vary depending upon the condition of existing components in service.

New Part No	Qty	Description	Old Part No	Fig 1 Ref
I/N–81–925	2	Stud		1
I/N–81–161	4	Special Washer		2 *
1/N–81–306	2	Insulating Washer		3*
1/N–81–307	2	Insulating Washer		4*
MS35338–46	6	Spring Washer		5
MS35650–338ST	8	Nut, Brass, Tinned		6
AN960–616L	4	Plain Washer		7
MS25171–2S	4	Nipple, Electrical Terminal		8*
MS25036–127	2	Terminal Lug		9*

Items marked * will only be required if the condition of existing parts warrants replacement.

B. Parts Required to Modify Spares

Not applicable.

C. Removed Parts

New Part No	Qty	Description	Old Part No	Instruction/Disposition
MS21083N4	2	Nut		Scrap
AN960–C416L	2	Washer		Scrap
AN960–C416	2	Washer		Scrap
MS35338–44	2	Spring Washer		Scrap
MS3565–3384	2	Nut		Scrap
MS35338–46	4	Spring Washer		Scrap
AN960–C616L	4	Washer		Scrap
MS21083–N6	2	Nut		Scrap
I/N–81–424	2	Stud		Note 1

NOTE 1

Scrap if showing signs of overheating otherwise return to store for use in alternative position in Starter circuit

4. **RECORDING ACTION**

Record compliance with Alert Service Bulletin ANMD–24–5, Parts 1, 2 or 3 as appropriate in the airframe log book.

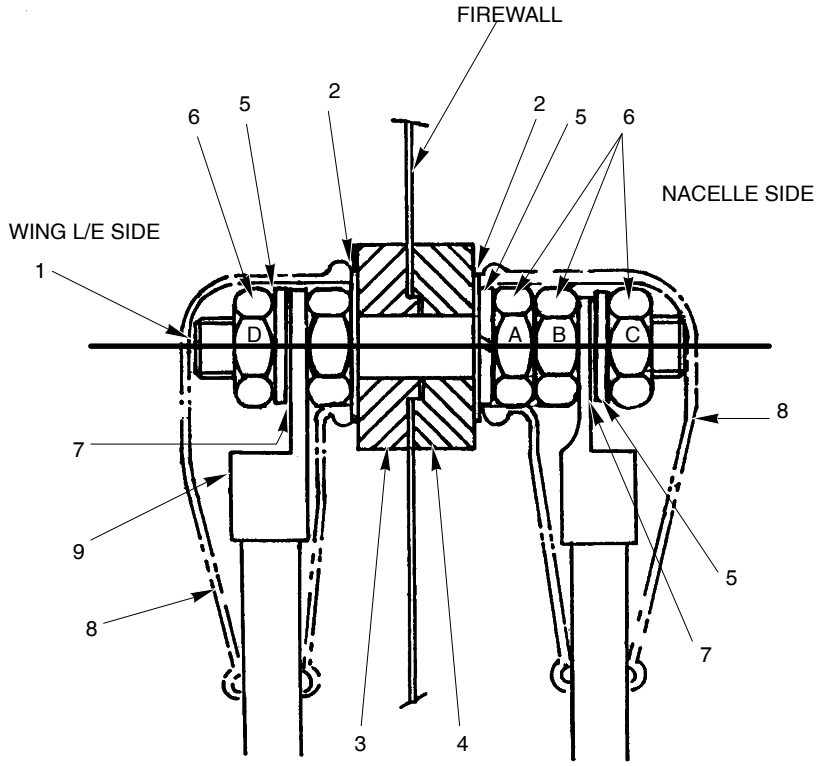

Figure 1 Generator Cables and Stud Assembly

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