

RAW P/N BY	QNTY	FAILURE MODE & CAUSE	FAILURE EFFECT	REASON FOR ACCEPTANCE
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LOWER WING  
 MOUNTING BRACKET  
 ASSEMBLY, 110H 101  
 D101-02103 -22  
 (8)

2/10

ISSUES:  
 Loss of primary axial restraint  
 1 bracket

FAILURE EFFECT:  
 Loss of primary axial restraint.

A. Design -  
 The primary restraint "1" bracket is fabricated from 17-4 stainless steel. The brackets are machined or cast/machined, ultrasonic cleaned, passivated and either electropolished or dry foam finished.

CAUSE:  
 Defective material; loose or missing keeper screw.

CPE IMPACT:  
 Sinal load will be transferred to latching rod which joins secondary restraint system webbing.

The "2" bracket keeper screw is fabricated from stainless steel and procured to the NAS specification. The loss of the "2" bracket keeper screw is precluded by adherence to standard engineering torque requirements for screw installation.

B. Test -  
 Acceptance:  
 Comment - See Inspection.

MISSED:  
 None.

PRA:  
 The following test is conducted at LHA Assembly level in accordance with NTC Document 011-1002B2:  
 Proof pressure test at  $B \pm 0.2 - 0.0$  gmp for a minimum of 5 minutes conducted with the TMO removed.

REMARKS:  
 None with single failure. Loss of screw with loss of secondary restraint.

Certification:  
 The bracket was successfully tested (passed) during QA certification on duplicate 25 year operational life (24).  
 NTC Engineering memorandum EN-83-1003.

The following image, reflecting requirements of significance to the lower wing restraint, was documented during certification:

Requirement	S/AD	Actual	Equip Life (hrs)
Wip Joint Cycles	17700	24315	21.09
Shl/Abd	9774	10008	17.58
Pressure Cycles	1800	2045	28.40
Compress Cycles	300	445	10.34
Pressure Hours	1755	1848	21.4

C. Inspection -  
 Components and material manufactured to NTC requirements at an approved supplier are documented from procurement through shipping by the supplier. NTC Incoming receiving inspection verifies that the materials received are as identified in

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08/31/90 SIMPENSEBIG 01/02/90

ANALYST:

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
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E/1R 1041M25:

The procurement documents, that no damage has occurred during shipment and that supplier certification have been received which provides traceability information.

The bracket castings are radiographically inspected to detect the presence of flaws prior to machining and magnetic particles inspected after machining. Verification of the presence of "E" bracket taper screw during assembly torque operations and during application of epoxy adhesive on screw threads.

**During PDR:**

The following inspection points are performed at the IIA assembly level in accordance with IIC Document D111-P002M1:  
Visual inspection for material degradation,  
Visual inspection for structural damage following proof pressure test.

**D. Failure History -**

D-EMU-984-A029 (7/20/89). All twelve E-brackets in the IIA were corroded at the axial restraint webbing interface due to lack of passivation during manufacturing and storage in a plastic bag without thorough drying. IIC document II-EM-B12 re-instructs IIC personnel to follow proper procedures to prevent acceptance of parts without passivation and packaging with residual moisture present.

**E. Ground Turnaround -**

During ground turnaround in accordance with FEMU-R-001, the IIA is visually inspected (with IMAs removed) for material damage. Additionally, E-bracket screw torque is verified upon completion of final string. Structural and leakage are also performed at IIA and EMU level.

**F. Operational Use -**

**Crew Response -**

Prepost-EVA : If not detected, no response. If detected audibly or tactilely, troubleshooting problem. If no success, use spare IIA if available or terminate EVA prep.

EVA : Single failure not detectable, no response.

**Special Training -**

No training specifically covers this failure mode.

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CIL  
EMI CRITICAL ITEMS LIST

08/31/90 SUPERSEDES 01/02/90

ANALYSE:

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NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONNE FOR ACCEPTANCE
	2/70	104PNP51		Operational Considerations - Not applicable.

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