

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
PRESSURE BOOT ASSEMBLY, ITEM 104 (1) LEFT (1) RIGHT	3/2RB	104FM36 Loss of heel screw.	END ITEM: Loss of one of nine screws.	A. Design - The heel assembly of the Enhanced Boot is constructed from 7075-T73 aluminum and covered with peroxide catalyzed silicone rubber.
----- 0104-210895- 25/26/29/30; 0104-210895- 33/34/35/36 (2)		Defective Material; Heel, helicoils, loose screw.	GFE INTERFACE: Unable to engage foot restraint with loss of four consecutive screws.	The heel top attachment screws are fabricated from A-286 stainless steel and are procured to MS or NAS specifications. Loss of the heel top attachment screws is precluded in design by adherence to standard engineering torque requirements for screw installation.
			MISSION: Terminate EVA with loss of four consecutive screws.	B. Test - Acceptance: Components - see inspection.
			CREW/VEHICLE: None.	PDA: The following test is conducted at the LTA assembly level in accordance with ILC Document 0111-70028J. Proof pressure test at 8.0 + 0.2 - 0.0 psig for a minimum of 5 minutes conducted with the TMG removed.
			TIME TO EFFECT /ACTIONS: Minutes.	Certification: (P/N 0104-89652): The Enhanced Boot heel and heel top bracket were successfully tested (manned) during certification to duplicate operational life. The test subject successfully performed 400 portable foot Restraint engagement/disengagement cycles. (Ref. ILC Doc. 0111-711330).
			TIME AVAILABLE: N/A	The following usage, reflecting requirements of significance to the boot, was documented during certification:
			TIME REQUIRED: N/A	
			REDUNDANCY	
			SCREENS:	
			A-PASS	
			B-FAIL	
			C-PASS	
				The Enhanced Boot heel and heel top bracket were successfully subjected to a BTA ultimate pressure of 13.2 psig. (1.5 times max BTA operating pressure based on 8.3 psig). (Ref. ILC Doc. 0111-711330).
				C. Inspection - Components and material manufactured to ILC requirements at an approved supplier are documented from procurement through shipping by the supplier. ILC incoming receiving inspection verifies that the materials received are as identified in the procurement documents, that no damage has occurred during shipment and that supplier certifications have been received which provide traceability information.

The following MIP's are performed during the pressure boot assembly

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		104FM36		<p>manufacturing process to assure that the failure causes are precluded from the fabricated item:</p> <ol style="list-style-type: none">1. Helicoil installation is verified during assembly.2. Verification of the presence of screws during the boot heel and heel top bracket screw torquing. <p>During PDA, the following inspection points are performed at the LTA assembly level in accordance with ILC Document 0111-70028J:</p> <ol style="list-style-type: none">1. Visual inspection for material degradation.2. Visual inspection for structural damage following proof pressure test with the TMGs removed. <p>D. Failure History - None.</p> <p>E. Ground Turnaround - None.</p> <p>F. Operational Use - 1. Crew Response</p> <p>Pre/post-EVA : Troubleshoot problem, if no success, continue EVA operations without foot restraint.</p> <p>EVA : Troubleshoot problems, if no success, continue EVA without foot restraint or use foot restraint toe bar for immobilization of affected boot.</p> <ol style="list-style-type: none">2. Special Training No training specifically covers this failure mode.3. Operational Considerations Use of foot restraint not required.

EXTRAVEHICULAR MOBILITY UNIT
SYSTEMS SAFETY REVIEW PANEL REVIEW
FOR THE
I-104 LOWER TORSO ASSEMBLY (LTA)
CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

Prepared by: *J. Amman*
HS - Project Engineering

M. Snyder
HS - Reliability

R. Mumford 4/24/02
HS - Engineering Manager

Approved by: *SP...* 2/24/02
~~NASA - SSA/SSM~~

Will E. ... 5/24/02
~~NASA - SSA/SSM~~

Charles J. Sager 5.29.02
~~NASA - SSA/SSM~~

Paul S. Burke 5-30-02
~~NASA - MOD~~

Joe Tamm 6/04/02
~~NASA - SSA/SSM~~

Jim ... 6/3/02
NASA - Program Manager