NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
		106FM07X		
PHASE VI PALM PLATE, ITEM 106 (1) LEFT (1) RIGHT --- 0106-812149 (2)	1/1	Palm Plate cracked. Damaged or degraded fiberglass material.	END ITEM: Punctured bladder due to fiberglass. GFE INTERFACE: Suit gas leakage to ambient. Depletion of primary O2 supply and SOP. Rapid depressurizati n of SSA beyond SOP makeup capability. MISSION: Abort EVA. CREW/VEHICLE: Loss of crewmen. TIME TO EFFECT /ACTIONS: Seconds. TIME AVAILABLE: N/A TIME REQUIRED: N/A REDUNDANCY SCREENS: A-N/A B-N/A C-N/A	A. Design - An impact resistant fiberglass palm plate is provided in the palm area of t restraint. This one piece plate enhances hand dexterity by reducing balloc in the palm. The perimeter shape is derived from the laser scan hand data files. The palm plate is sewn into a Dacron fabric pocket to eliminate bla abrasion. The edges of the fiberglass are contoured to provide a friendly interfacing surface. B. Test - Acceptance: Component - See Inspection. PDA Test - The following tests are conducted at the glove assembly level in accordance ILC Document 0111-710112: 1. Initial leak test at 4.3 +/- 0.1 psig to verify leakage less than 8.0 scc/min. 2. Proof pressure test at 8.0 + 0.2 - 0.0 psig to verify no structural dam 3. Proof pressure leak test at 4.3 +/- 0.1 psig to verify leakage less tha scc/min. 4. Final leak test at 4.3 +/- 0.1 psig to verify leakage less than 8.0 scc Certification Test - The glove restraint assembly was successfully tested (manned) during certification testing to duplicate operational usage (Ref. Certification Te Report for the Phase VI Glove, ILC Doc. 0111-712701). The following usage, reflecting requirements of significance to the glove restraint assembly, wa documented during certification testing. The S/AD applies 229 hours in certification while the actual indicates 198 hours toward the Phase VI glov restraint in the Hamilton Sundstrand Limited Life Items list (EMU1-19-001).

Requirements	S/AD	Actual
Glove Joint Cycles		
Flex/Ext (fingers)	45142	39169
Wrist Joint Cycles		
Add/Abd	17104	14830
Flex/Ext	12646	10830
Rotations	20112	17393
Pressurized Hours	229	198
Pressurized Cycle @ 4.3 psig	97	99
5.3 psig	37	63
6.6 psig	16	18
Don/Doff Cycles	49	49

The glove assembly was successfully subjected to an ultimate pressure of 13 psig during Certification Testing (Ref. ILC doc 0111-712701). This is 1.5 the maximum BTA operating pressure based on 8.8 psig.

C. Inspection -
Components and material manufactured to ILC requirements at an approved sup are documented from procurement through shipping by the supplier. ILC incom

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
		106FM07X		receiving inspection verifies that the materials received are as identifiec the procurement documents, that no damage has occurred during shipment and supplier certifications have been received which provide traceability information. The following MIP's are performed for visual inspection of sewn seams durir glove restraint manufacturing process to assure that this particular failur cause is precluded from the fabricated item. 1. Visual inspection of seams and spandex covering for defective threads a material. During PDA, the following inspection points are performed at the glove asse level in accordance with ILC Document 0111-710112: 1. Visual inspection for fabric or material degradation. 2. Visual inspection for damage following proof pressure test and restrair loading. D. Failure History - None. E. Ground Turnaround - Tested per FEMU-R-001, Pre-Flight Final Glove Structural. The glove restra and bladder assembly is subjected to a visual inspection (interior and exte surfaces) to the extent possible for structural integrity, material degrada or damage. F. Operational Use - Crew Response - Pre/Post EVA: If during airlock operations, repress airlock. Consider use backup gloves. EVA: When CWS data confirms SOP activation, abort EVA. Special Training - Standard training covers this failure mode. Operational Considerations - Flight rule A15.1.2-2 of "Space Shuttle Operational Flight Rules", NSTS-128 defines go/no go criteria related to EMU pressure integrity. Generic EVA Checklist, JSC-48023, procedures Section 3 (EMU Checkout) and 4 (EVA prep) verify hardware integrity and systems operational status prior to EVA. Rea Time Data System allows ground monitoring of EMU systems.

EXTRAVEHICULAR MOBILITY UNIT

SYSTEMS SAFETY REVIEW PANEL REVIEW

FOR THE

I-106 GLOVE ASSEMBLY

CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

Prepared by: _____
HS - Project Engineering

_____
HS - Reliability

_____ 4/24/02
HS - Engineering Manager

Approved by: _____
NASA – SSA/SSM

_____ 5/23/02
NASA – EMU/SSM

_____ 6/3/02
NASA - S & MA

_____ 6/3/02
NASA - MOD

_____ 6/05/02
NASA - Crew

_____ 6/3/02
NASA - Program Manager