NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
		100FM01		
PACKAGING (PLSS), ITEM 100 (PIVOTED) --- SV799100-14 (1) OR (PLANAR) --- SV799100-15 (1) OR (ORU) --- SV799100-16 (1)	2/2	Separation of lower trailer hitch bracket/bracket. Overstress.	END ITEM: Fracture of one of two lower attachment brackets. Increased stress on remaining bracket and pad would cause subsequent failure of second lower bracket and 02/H20 interface pad. GFE INTERFACE: DCM and HUT structure separate from PLSS structure. DCM/HUT assembly detaches from airlock wall and may impact airlock structure or other airlock equipment. MISSION: Loss of use of one EMU. CREW/VEHICLE: None. TIME TO EFFECT /ACTIONS: Minutes. TIME AVAILABLE: N/A TIME REQUIRED:	A. Design - Pivoted HUT: The HUT is secured to the PLSS by two lower brackets and an O2/H2O interface pad which has eleven screws. The lowest factor of safety occurs in the lower brackets, as a result of stowage in the internal airlock, bottom location, during launch (U36). For bending stress, the yield factor of safety for this load scenario is 1.25. This factor of safety applies to a 148 lb max weight forward of the PLSS/HUT interface with an extra large HUT and no body seal closure (BSC) mounted GFE (292 lb max EMU). Other locations can carry at least 160 lbs with a MMWS attached to the BSC and achieve a 1.25 factor of safety on yield (310 lb max EMU). Planar HUT: The HUT is secured to the PLS by two lower brackets and an O2/H2O interface pad which has four screws. The lowest factor of safety occurs in the fiberglass HUT, by the lower left side bracket, as a result of stowage at the external airlock wall, right side, during launch. FEA analysis was used to determine the worst case for all stowage locations. After FEA modeling to test correlation, the HUT was tested to 1557 lbs (1.58 X limit load, where limit load = 160 X 6.17), there was no damage at this load. At 1971 lbs (2.0 X limit load) there was a snapping noise and a small damaged area was visible near a lower mount (white spot on surface). Ultimate failure of the shell ocurred at 4070 lbs. (4.12 X limit load) at which point the mounting posts on the text fixture were bent. B. Test - Component Acceptance Test - None. PDA Test - None. Certification Test - Pivoted HUT: Certified for a useful life of 20 years (ref. EMUM1-0106). Planar HUT: The HUT is secured to the PLSS by two lower brackets and an O2/H2O interface pad which has four screws. The lowest factor of safety occurs in the fiberglass HUT, by the lower left side bracket, as a result of stowage at the external airlock wall, right side, during launch. FEA analysis was used to determine the worst case for all stowage locations. After FEA mdel to test correlation, the HUT was tested to 1557 lbs (1.58 X limit load, where limit load = 160 X 6.17), there was no damage at this load. At 1971 lbs (2.0 X limit load) there was a snapping noise and a small damaged area was visible near a lower mount (white spot on surface). Ultimate failure of the shell ocurred at 4070 lbs. (4.12 X limit load) at which point the mounting posts on the test fixture were bent. C. Inspection - Details are 100% inspected per drawing dimensions and surface finish characteristics. Details are manufactured from material with certified physical and chemical properties.

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
		100FM01		
			N/A	D. Failure History - None.
			REDUNDANCY SCREENS: A-N/A B-N/A C-N/A	E. Ground Turnaround - None. F. Operational Use - Crew Response - Launch and reentry: None possible. Training - No training covers this failure mode. Operational Considerations - Not applicable.

EXTRAVEHICULAR MOBILITY UNIT

SYSTEMS SAFETY REVIEW PANEL REVIEW

FOR THE

I-100 PRIMARY LIFE SUPPORT SUBSYSTEM (PLSS)

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: _____
[redacted] SSA/SSM

_____
[redacted] EMU/SSM

_____
[redacted] S & MA

_____
[redacted] MOD

_____
[redacted] Crew

_____
[redacted] Program Manager