

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
PRIMARY WATER TANK ASSEMBLY #1, #2 ITEM 131, ITEM 162 ----- SV769592-30 (1)	3/1RB	Lever latch assembly fails, battery.  Springs fracture.	END ITEM: None. Dual lock provided on latch.  GFE INTERFACE: None for single failure. Possible loss of battery power with loss of both springs and latching function.  MISSION: None for single failure. Terminate EVA with loss of battery power.  CREW/VEHICLE: None for single failure. Possible loss of crewman with loss of battery connection and SOP.  TIME TO EFFECT /ACTIONS: Seconds.  TIME AVAILABLE: Minutes.  TIME REQUIRED: Immediate.  REDUNDANCY SCREENS: A-PASS B-FAIL C-PASS	A. Design - The springs are made of 17-7 PH material. The latch material is aluminum 7075 (AMS 4078). The retainer lock spring is designed for 10E+6 operating cycles for a 5138 cycle requirement. The torsion spring is highly stressed; (in excess of yield stress 243,570 psi vs 218,000 psi) however, testing has shown this spring does not yield and has been certified to meet its cycle requirement.  B. Test - PDA Test - A fit check with a battery is performed per SEMU-60-010. A battery is installed in the battery receptacle area to verify proper fit when installed. At that point, proper latch operation is verified.  Certification Test - Certified for a useful life of 25 years (ref. EMUM1-0106).  C. Inspection - The one helical compression spring is 100% inspected to meet dimensional and force displacement requirements. The one torsion spring is 100% inspected to meet dimensional requirements.  D. Failure History - None.  E. Ground Turnaround - Checked for non-EET processing per FEMU-R-001, Pre-Flight Inspections and Final Structural and Leakage. FEMU-R-001 Para 8.2 EMU Preflight KSC Checkout for EET processing.  F. Operational Use - Crew Response - PreEVA: If determined during battery change operations, trouble shoot problem. Secure battery as required. EMU go for EVA. EVA: No response, single failure not detectable by crew or ground. Training - No training specifically covers this failure mode. Operational Considerations - Not applicable.

EXTRAVEHICULAR MOBILITY UNIT  
SYSTEMS SAFETY REVIEW PANEL REVIEW  
FOR THE  
I-131 PRIMARY WATER TANK ASSEMBLY  
CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

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