

CEL
EMU CRITICAL ITEMS LIST

12/26/91 SUPERSCOPES 10/31/90

ANALYST:

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NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RAISONNABLE FOR ACCEPTANCE
AIRLOCK ADAPTER PLATE, ITEM 470 ----- SV767660-83 (2)	2/2	470FH03: SCU detaches from adapter storage plate. CAUSE: SCU latch spring failure.	END ITEM: SCU common Multiple connector latch spring fractures allowing handle rotation and separation of connector halves. OPE INTERFACE: The SCU connector detaches from storage plate as a result of launch vibration and may impact surrounding airlock equipment, the EMU or the SCU. MISSION: Loss of use of one EMU. CREW/VEHICLE: None.	A. Design - Positive camming action by the SCU connector lever insures axial displacement of the fluid connection bosses into the storage plate recesses. The connector lever has a locking feature which locks the handle in the fully latched position, and this handle lock must be disengaged before the connector handle can be rotated to disconnect the SCU connector from the storage plate. Latching pins at the storage plate provide a connection interface, identical to the DCH latch shaft. Different boss sizes at the storage plate prevent upside-down installation of the SCU connector. Springs in the SCU handle latch mechanism are initially stressed beyond the yield point, but after first operation are capable of more than 10,000 cycles without fatigue failure. The springs are made of 312/304 cres per QQ-M-425. Other materials for the SCU connector are 17-4 PH cres condition R1058 per AMS 3643 for the latch handle and A-286 alloy steel per AMS 5757 for the set screws. Difficulty with latch closure caused by loosening of the set screws is alleviated by torquing the set screws 10-12 in-lbs. above running torque. Engineering tests certify that the torque provides preload over operational load. The set screws are installed with lockite to prevent loosening under vibration and cyclic loads. B. Test - Certification test - The item completed 15 year structural vibration and shock certification requirement during 10/85. C. Inspection - The interfacing surfaces on the AMP are 100% inspected to meet dimensional and surface finish requirements. D. Failure History - None. E. Ground Turnaround - Tested per FEMU-R-001, V1903-02 EMU to Orbiter Checkout.

CIL
 EMU CRITICAL ITEMS LIST

12/24/01 SUPERSEDES 10/31/90

ANMLTST:

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NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
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2/2 4707403:

F. Operational Use -
 Crew Response - Launch and reentry: None possible.
 Training - No training specifically covers this failure mode.
 Operational Considerations - EVA checklist procedures verify hardware integrity and systems operational status prior to EVA.