

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - ATCS/FCL PMEA NO 05-6WD-1000 -1 REV:06/10/88

ASSEMBLY : PANEL L4 CRIT. FUNC: 1R  
P/N RI : MC454-0026-2030 CRIT. MDW: 2  
P/N VENDOR: VEHICLE 102 103 104  
QUANTITY : 2 (TWO), EFFECTIVITY: X X X  
: ONE PER LOOP PHASE(S): PL LO OO DO X LS

PREPARED BY: *J.B.* J BROWN APPROVED BY: REDUNDANCY SCREEN: A-PASS B-PASS C-PASS  
DES DES APPROVED BY (NASA)  
REL M MOVE REL *R.V. Brown* SSM  
QE J COURSEN QE *Adrian Clifton 6-21-88* REL *J.P.S. ...*  
*6-21-88* QE *...*  
*6/29/88*

ITEM: CIRCUIT BREAKER (3 AMP). FLOW PROPORTIONING MODULE.

FUNCTION: SUPPLIES SINGLE-PHASE AC POWER TO THE FLOW PROPORTIONING VALVE FOR FREON COOLANT LOOP 1 (2), AND PROVIDES PROTECTION FOR AC BUS 2 PHASE A (AC BUS 3 PHASE A). 31V73A4CB42, CB45.

FAILURE MODE: FAILS OPEN, FAILS TO CONDUCT, FAILS TO CLOSE

CAUSE(S): STRUCTURAL FAILURE, MECHANICAL SHOCK, THERMAL STRESS, VIBRATION, CONTAMINATION, PROCESSING ANOMALY

EFFECT(S) ON:  
(A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE  
(A) UNABLE TO PROVIDE POWER TO THE PROPORTIONING VALVE DRIVE.  
(B) LOSS OF CONTROL OF ONE FLOW PROPORTIONING VALVE.  
(C) POSSIBLE LOSS OF MISSION OBJECTIVE IF VALVE IS IN 'INTERCHANGER' POSITION AND PAYLOAD COOLING CANNOT BE PROVIDED.  
(D) NO EFFECT.  
(E) FUNCTIONAL CRITICALITY EFFECT - IF VALVE IS IN PAYLOAD POSITION, SECOND ASSOCIATED FAILURE (LOSS OF FLOW IN THE REDUNDANT FREON COOLANT LOOP) CAN CAUSE LOSS OF ORBITER COOLING AND RESULT IN LOSS OF CREW/VEHICLE.

DISPOSITION & RATIONALE:  
(A) DESIGN (B) TEST (C) INSPECTION (D) FAILURE HISTORY (E) OPERATIONAL USE

(A-D) DISPOSITION AND RATIONALE  
REFER TO APPENDIX D, ITEM #1 - CIRCUIT BREAKER.

05-6WD-1

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(B) GROUND TURNAROUND TEST

CIRCUIT BREAKER AND FLOW PROPORTIONING MODULE ARE VERIFIED PRIOR TO EACH FLIGHT.

(E) OPERATIONAL USE

FOR FIRST FAILURE, NO CREW ACTION REQUIRED.