SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - COMM. & TRACK. FMEA NO 05-6PD-22702 -1 REV:11/06/87

ASSEMBLY :PNL O14 & O15
P/N RI :MC454-0026-2030
P/N VENDOR:
QUANTITY :2
:TWO, 1 FOR EA ALTIMETER
:

CRIT. FUNC: 1R
CRIT. HDW: 2

VEHICLE EFFECTIVITY:	102	103	104
	X	X	X

PHASE(S): PL X LO X OO DO X LS

REDUNDANCY SCREEN: A-PASS B-PASS C-PASS

PREPARED BY:
DES 11/4/87 C ELDER
REL 11/10/87 A L MASAI
QE 11/11/87 J T COURSEN

APPROVED BY:
DES 11/13/87
REL 11-14-87
QE 11/17/87

APPROVED BY (NASA):
SSM
REL
QE 11/20/
REL EPDC 11/19/87
SSM EPDC

ITEM:
CIRCUIT BREAKER, RADAR ALTIMETER.

FUNCTION:
PROVIDES CIRCUIT PROTECTION FOR DC BUSES MNA AND MNB. 2/CIRCUIT BREAKER, 3 AMP, 33V73A14CB24, 33V73A15CB23.

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

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

EFFECT(S) ON:
(A)SUBSYSTEM (B)INTERFACES (C)MISSION (D)CREW/VEHICLE

(A) NO EFFECT ON EPDC.

(B) LOSS OF ALTITUDE DATA IF THAT ALTIMETER IS SELECTED.

(C) NO EFFECT.

(D) POSSIBLE LOSS OF CREW/VEHICLE AFTER TWO CIRCUIT BREAKER FAILURE SINCE PRECISE ALTITUDE DATA FOR CREW DETERMINATION OF SINK RATE I REQUIRED FOR SAFE NIGHT LANDING OR LANDINGS ON RUNWAYS WITHOUT MSELS AN TO PREVENT POSSIBLE VEHICLE DAMAGE.

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

(A,B,C,D) REFER TO APPENDIX D, ITEM # 1, CIRCUIT BREAKER

(B) TEST:
GROUND TURNAROUND TEST- VERIFY RADAR ALTIMETER POWER ON FROM THE D & C PANEL.

(E) OPERATIONAL USE
RADAR ALTIMETER DATA IS AVAILABLE AT 5,000 FEET. DE-ORBIT IS NOT ATTEMPTED IF CEILING IS LESS THAN 8,000 FEET (10,000 FEET IF NO MSBLS AVAILABLE) TO ENSURE GOOD VISIBILITY AT LOW ALTITUDE. MOST ORBITER RUNWAYS ARE EQUIPPED WITH MSBLS GROUND STATIONS WHICH PROVIDE A REDUNDANT SOURCE OF LOW ALTITUDE DATA DOWN TO 50 FEET. RADAR ALTIMETER DATA IS DISPLAYED ON THE HUD AND AVVI NEXT TO NAVIGATION ALTITUDE DATA. CREW CAN ISOLATE A FAILED RADAR ALTIMETER AND THEN SELECT THE OTHER ALTIMETER, IF AVAILABLE, OR DISREGARD RADAR ALTIMETER DATA AND RELY ON NAVIGATION ALTITUDE AND/OR VISUAL CUES.