SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - COMM. & TRACK. FMEA NO 05-6PD-22701 -1 REV:11/06/87

ASSEMBLY :PNL O8
P/N RI :ME452-0102-7201
P/N VENDOR:
QUANTITY :2
:TWO, 1 FOR EA ALTIMETER
:

CRIT. FUNC: 1R
CRIT. HDW: 2

VEHICLE	102	103	104
EFFECTIVITY:	X	X	X
PHASE(S):	PL X LO X OO		DO X LS

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

PREPARED BY:
DES W C ELDER
REL A L MASAI
QE J T COURSEN

APPROVED BY:
DES 11/13/87
REL 11/14/87
QE 11/4/87

APPROVED BY (NASA):
SSM
REL
QE 11/20/8
REL EPDC
SSM EPDC 11-30-87

ITEM:
SWITCH, TOGGLE RADAR ALTIMETER ACTIVATION.

FUNCTION:
PROVIDES POWER & CONTROL OF THE 28V DC POWER. 2/TOGGLE SWITCH, DPDT 33V73A8S4,S5.

FAILURE MODE:
FAILS OPEN, SHORT TO CASE (GROUND).

CAUSE(S):
PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECHANICA SHOCK, PROCESSING ANOMALY.

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 SELECTED.

(C) NO EFFECT.

(D) POSSIBLE LOSS OF CREW/VEHICLE AFTER TWO SWITCH FAILURES SINC PRECISE ALTITUDE DATA FOR CREW DETERMINATION OF SINK RATE IS REQUIRE FOR SAFE NIGHT LANDING OR LANDINGS ON RUNWAYS WITHOUT MSBLS AND T PREVENT POSSIBLE VEHICLE DAMAGE.

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

(A,B,C,D) REFER TO APPENDIX A, ITEM # 1, TOGGLE SWITCH

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

(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.