SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :R/RADAR & COM ANT JETT FMEA NO 05-6EI-2000 -1 REV:02/24/88

ASSEMBLY :PANEL ML86B
P/N RI :MC454-0026-2030
P/N VENDOR:
QUANTITY :2
:TWO
:

CRIT. FUNC: 1R
CRIT. HDW: 2

VEHICLE	102	103	104
EFFECTIVITY:	X	X	X

PHASE(S): PL LO OO X DO LS

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

PREPARED BY:
DES C STRONG
REL T KIMURA
QE J COURSEN

APPROVED BY:
DES
REL 2-10-89
QE

APPROVED BY (NASA):
SSM
REL 3-2-88
QE
SSM/EPDC FOR W. STALL

ITEM:
CIRCUIT BREAKER (3 AMP) - PYRO KU-BAND ANTENNA JETTISON POWER

FUNCTION:
PROVIDES REDUNDANT MAIN DC BUS POWER AND CIRCUIT OVERLOAD PROTECTION TO PYRO CIRCUITS FOR KU-BAND ANTENNA GUILLOTINE AND SEPARATION NUT INITIATION IN THE EVENT THE ANTENNA CANNOT BE STOWED AND THE PAYLOAD BAY DOORS SECURED. 80V73A130CB26 AND 30

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) LOSS OF ARM/JETTISON COMMAND TO ONE OF TWO SETS OF PYROTECHNIC INITIATOR CONTROLLERS (PIC'S)

(B) LOSS OF REDUNDANCY

(C,D) NO EFFECT UNTIL SECOND FAILURE (LOSS OF REDUNDANT JETTISON SYSTEM). FAILURE TO JETTISON DEPLOYED ANTENNA WOULD PREVENT CLOSURE OF PAYLOAD BAY DOORS PRECLUDING A SAFE VEHICLE RETURN - POSSIBLE LOSS OF CREW/VEHICLE.

FIRST FAILURE IS NOT DETECTABLE IN FLIGHT SINCE THE CIRCUIT BREAKERS ARE NORMALLY OPEN AND THE "ARM/SAFE", "JETTISON/SAFE" SWITCHES ARE IN THE "SAFE" POSITION UNTIL JUST PRIOR TO THE JETTISON OF THE ANTENNA.

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

(A-D) DISPOSITION AND RATIONALE
REFER TO APPENDIX D, ITEM NO. 1 - CIRCUIT BREAKER

(B) GROUND TURNAROUND TEST
"KU-BAND ANTENNA JETTISON SYSTEM VERIFICATION" VERIFIES INTEGRITY OF KU-BAND ANTENNA JETTISON ARM AND FIRE CIRCUITS. TESTS ARE PERFORMED PRIOR TO EACH FLIGHT WITH ALL PYROS SAFED WITH NASA STANDARD INITIATOR (NSI) NO-GO SIMULATORS INSTALLED.

(E) OPERATIONAL USE
NONE