

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : R/RADAR & COM ANT JETT FMEA NO 05-6EI-2002 -2 REV:08/15/88

ASSEMBLY : PANEL A14 CRIT. FUNC: 1
 P/N RI : ME452-0102-7252 CRIT. HDW: 1
 P/N VENDOR: VEHICLE 102 103 104
 QUANTITY : 1 EFFECTIVITY: X X X
 : ONE PHASE(S): PL LO OO X DO LS

REDUNDANCY SCREEN: A- B- C-
 PREPARED BY: APPROVED BY: APPROVED BY (NASA): 9-12-88
 DES C STRONG DES *R. J. B...* SSM/WH Thomas Schmitt
 REL *gjh 8-15-88* J HARADA REL *Harada 8-12-88* REL *gjh 9-10-88*
 QE J COURSEN QE *J. Courson 8/16/88* QE *gjh 9-12-88*
 EPOC REV *gjh 9-12-88*

ITEM:
 SWITCH, TOGGLE (DPDT) - JETTISON/SAFE, KU-BAND ANTENNA JETTISON

FUNCTION:
 EMERGENCY SYSTEM PROVIDES MANUAL CONTROL FOR INITIATING "FIRING" OF PYROTECHNIC INITIATOR CONTROLLERS (PIC'S) FOR JETTISON OF KU-BAND COMMUNICATIONS ANTENNA. THE ANTENNA JETTISON IS USED ONLY WHEN THE ANTENNA CANNOT BE STOWED TO ALLOW CLOSURE OF THE PAYLOAD DOORS.
 36V73A14S20

FAILURE MODE:
 FAILS CLOSED, PREMATURE CLOSURE, CONTACT-TO-CONTACT SHORT, POLE-TO-POLE SHORT

CAUSE(S):
 PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK, PROCESSING ANOMALY, THERMAL STRESS (EXCLUDE "THERMAL STRESS" FROM "POLE-TO-POLE SHORT" FAILURE MODE)

EFFECT(S) ON:
 (A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE:
 (A,B,C,D) POSSIBLE LOSS OF CREW/VEHICLE - ENGAGING THE ARM SWITCH DOES NOT ALLOW PIC CAPACITORS TO CHARGE IF FIRE SWITCH HAS ALREADY FAILED CLOSED. THIS PRECLUDES ANTENNA JETTISON WHICH WOULD PREVENT CLOSURE OF PAYLOAD BAY DOORS.

DISPOSITION & RATIONALE:
 (A) DESIGN (B) TEST (C) INSPECTION (D) FAILURE HISTORY (E) OPERATIONAL USE:
 (A-D) DISPOSITION AND RATIONALE
 REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH

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(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

EVA POSSIBLE TO MANUALLY SEPARATE UMBILICAL.