

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :R/RADAR & COM ANT JETT FMEA NO 05-6EI-2006 -1 REV:02/24/88

ASSEMBLY :FWD LCA 1 AND 3 CRIT. FUNC: 1R  
 P/N RI :MC477-0262-0002 CRIT. HDW: 2  
 P/N VENDOR:  
 QUANTITY :2 VEHICLE 102 103 104  
 :TWO EFFECTIVITY: X X X  
 : PHASE(S): PL LO OO X DO LS

PREPARED BY: REDUNDANCY SCREEN: A-PASS B-FAIL C-PASS  
 DES C STRONG APPROVED BY: APPROVED BY (NASA):  
 REL T KIMURA DES 644 R. Palmer SSMT [Signature]  
 QE J COURSEN REL [Signature] 2-23-88 REL [Signature] 3-2-88  
 QE [Signature] R.M.B. OE [Signature]  
[Signature] FOR CO-STAR

ITEM:  
 CONTROLLER, HYBRID DRIVER (HDC), TYPE II - FIRE II COMMAND

FUNCTION:  
 AFTER THE GUILLOTINE HAS BEEN FIRED WITH "ARM" AND FIRE I STIMULI PRESENT, THIS HDC DELAYS (4 SECONDS) FIRING OF PYROTECHNIC INITIATOR CONTROLLERS (PIC'S) FOR THE SEPARATION NUT FOR JETTISON OF THE KU-BAND ANTENNA. 81V76A16(1), 83V76A18(1)

FAILURE MODE:  
 LOSS OF OUTPUT, FAILS TO CONDUCT, FAILS TO TURN "ON"

CAUSE(S):  
 PIECE-PART FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK, PROCESSING ANOMALY, THERMAL STRESS

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

(A) LOSS OF FIRE II COMMAND TO ONE OF TWO SETS OF PIC'S FOR SEPARATION NUT FIRING.

(B) LOSS OF REDUNDANCY

(C,D) NO EFFECT UNTIL SECOND FAILURE - LOSS OF FIRE II COMMAND FOR ANTENNA SEPARATION NUT REDUNDANT PIC. 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 HYBRID DRIVER IS NOT MONITORED OR USED UNTIL JETTISON OF THE KU-BAND ANTENNA IS REQUIRED.

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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 B, ITEM NO. 1 - HYBRID DRIVER

(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