

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : R/RADAR & COM ANT JETT FMEA NO 05-6EI-2005 -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:		VEHICLE	102	103	104
QUANTITY : 2		EFFECTIVITY:	X	X	X
: TWO		PHASE(S):	PL	LO	CO 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	<u>144 R. Burns</u>	SSM <u>[Signature]</u>	
QE	J COURSEN	REL	<u>[Signature] 1-27-88</u>	REL <u>[Signature] 3-2-88</u>	
		QE	<u>[Signature] R.M.S.</u>	QE <u>[Signature]</u>	

*[Signature] 2/24/88*

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

FUNCTION: WITH "ARM" AND "FIRE 1" (JETTISON) STIMULI PRESENT, THE HDC DELAYS FOR 40 MILLISECONDS AN OUTPUT TO GUILLOTINE NSI-1 AND TO SUBSEQUENT FIRE II HDC FOR INITIATION PYROTECHNIC INITIATOR CONTROLLERS (PIC'S) FOR SEPARATING NUT AND JETTISON OF KU-BAND ANTENNA. 81V76A16, 83V76A18

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

(B) LOSS OF REDUNDANCY

(C, D) NO EFFECT UNTIL SECOND FAILURE - (LOSS OF FIRE II COMMAND TO THE REDUNDANT SET OF PIC'S). 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