

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : R/RADAR & COM ANT JETT FMEA NO 05-6EI-2001 -1 REV:02/24/88

ASSEMBLY : PANEL A14

F/N RI : ME452-0102-7463

F/N VENDOR:

QUANTITY : 1

: ONE

:

VEHICLE	102	CRIT. FUNC:	1
EFFECTIVITY:	X	CRIT. HDW:	1
PHASE(S):	PL LO	103	104
		X	X
		OO X DO	LS

PREPARED BY:

DES

REL

QE

C STRONG

T KIMURA

J COURSEN

REDUNDANCY SCREEN:

APPROVED BY:

DES

REL

QE

*Q. B. B...*  
*T. Kimura*  
*J. Courson for R. T. G.*

A- B- C-

APPROVED BY (NASA):

SSM *[Signature]*

REL *[Signature]*

QE

*[Signature]* FOR W. STALL

ITEM:

SWITCH, TOGGLE (4PDT) - ARM/SAFE, PYRO KU-BAND ANTENNA JETTISON

FUNCTION:

EMERGENCY SYSTEM PROVIDES MANUAL CONTROL FOR INITIATING "ARMING" 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.  
 36V73A14519

FAILURE MODE:

FAILS OPEN, PREMATURE OPEN, TWO INPUTS SHORT-TO-CASE (GROUND)

CAUSE(S):

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

EFFECT(S) ON:

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

(A,B) LOSS OF "ARM" COMMAND TO ANTENNA JETTISON SYSTEM. SHORT TO GROUND TRIPS RELATED CIRCUIT/BREAKER(S). (WORST CASE) LOSS OF BOTH "ARM" COMMAND TO REDUNDANT JETTISON SYSTEM.

(C,D) FAILURE TO JETTISON DEPLOYED ANTENNA WOULD PREVENT CLOSURE OF PAYLOAD BAY DOOR PRECLUDING A SAFE VEHICLE RETURN. POSSIBLE LOSS OF CREW/VEHICLE

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

NONE