

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : P/L RETEN & DEPLOY-MPM PYRO FMEA NO P2-5A-J05-2 REV:08/12/88

ASSEMBLY : MPM PEDESTAL MECHANISM	CRIT. FUNC:	2
P/N RI : SEB26100001	CRIT. HDW:	2
P/N VENDOR:	VEHICLE	102 103 104
QUANTITY : 6	EFFECTIVITY:	X X X
: TWO PER GUILLOTINE	PHASE(S):	PL LO X OO X DO LS

PREPARED BY:	REDUNDANCY SCREEN:	A-	B-	C-
DES R. H. YEE	APPROVED BY:	APPROVED BY (NASA): 9-12-		
REL M. B. MOSKOWITZ	DES <i>R. H. Yee for A.C. Odom</i>	SSM <i>LWH</i>	<i>Theresa J. Spivey</i>	
QE E. M. GUTIERREZ	REL <i>MEM</i>	REL <i>...</i>	9-10-88	
	QE <i>EMG J. Lamm 8-23-88</i>	QE <i>...</i>	NDZ 9+2	

ITEM:
NASA STANDARD INITIATOR (NSI), GUILLOTINE, TYPE II, MPM JETTISON

FUNCTION:
PROVIDES GAS PRESSURE TO PYRO GUILLOTINE AT EACH OF THREE MPM PEDESTALS TO SEVER WIRE BUNDLE IF MANIPULATOR POSITIONING MECHANISM (MPM) MUST BE JETTISONED. TWO (REDUNDANT) NSI'S ARE INSTALLED IN EACH GUILLOTINE.

FAILURE MODE:
INADVERTENT OPERATION

CAUSE(S):
HIGH TEMPERATURE, ELECTROSTATIC CHARGE, ELECTROMAGNETIC FIELDS, SHOCK/VIBRATION, PREMATURE FIRING SIGNAL

- EFFECTS ON:
- (A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE
 - (A) GUILLOTINE OPERATES PREMATURELY.
 - (B) WIRE BUNDLE TO RETENTION LATCH AND POSITION SWITCHES IS PREMATURELY SEVERED. IF WIRE BUNDLE IS PREMATURELY SEVERED, RETENTION LATCH ON PEDESTAL WILL BE INOPERABLE. RMS CAN BE SAFELY STOWED, IF ANY ONE OF THREE LATCHES IS INOPERABLE. (REF. MISSION RULE 12870).
 - (C) LOSS OF MISSION, IF RETENTION LATCH CANNOT RELEASE UPPER MPM FROM RMS. (RMS MUST REMAIN STOWED).
 - (D) NONE.

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SUBSYSTEM : P/L RETEN & DEPLOY-MPM PYRO FMEA NO P2-5A-J05-2 REV:08/12/06

DISPOSITION & RATIONALE:

(A) DESIGN (B) TEST (C) INSPECTION (D) FAILURE HISTORY (E) OPERATIONAL USE

(A-C) DISPOSITION AND RATIONALE

REFER TO APPENDIX I - NASA STANDARD INITIATOR (NSI)

(B) GROUND TURNAROUND TEST

OMRSD: GROUND TURNAROUND INCLUDES PIC RESISTANCE GO AND NO-GO (PRE-HOOK-UP), PIC RESISTANCE GO/NO-GO (POST HOOK-UP), POWER-OFF STRAY VOLTAGE, POWER-ON STRAY VOLTAGE, NSI ELECTRICAL VERIFICATION, RMS JETTISON, AND RMS JETTISON RESET/DEADFACE VERIFICATION.

(D) FAILURE HISTORY

NO HISTORY OF PREMATURE FIRING ON APOLLO, SKYLAB, ASTP.

(E) OPERATIONAL USE

~~CREW CAN DEBOND EVA PROCEDURES FOR MANUAL RMS TIEDOWN.~~ RMS JETTISON MAY BE PERFORMED IF MULTIPLE LATCH FAILURES PRECLUDE SAFE ENTRY.