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ATTACHMENT -
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FAILURE MODES EFFECTS ANALYSIS (FMEA) — CRITICAL HARDWARE

NUMBER: MO-AA2-345-X

SUBSYSTEM NAME: STABILIZED PAYLOAD DEPLOYMENT SYSTEM

REVISION : 2 06/08/90

	PART NAME VENDOR NAME	PART NUMBER --VENDOR NUMBER
■ ASSEM :	PANEL A7A3	V790-773001
■ SRU :	SWITCH, TOGGLE	ME452-0102-7352

PART DATA

- REFERENCE DESIGNATORS: 36V73A7A3-S1
: 36V73A7A3-S2
- QUANTITY OF LIKE ITEMS: 2
- FUNCTION:
PROVIDES THE CAPABILITY TO ACTIVATE/DEACTIVATE THE ARMING OF THE PAYLOAD
RELEASE PYROTECHNIC INITIATOR CONTROLLERS (PIC). S1 FOR SYSTEM "A".
S2 FOR SYSTEM "B".

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE
NUMBER: MO-AA2-345-02

SUBSYSTEM: STABILIZED PAYLOAD DEPLOYMENT SYSTEM REVISION# 2 06/08/90

ITEM NAME: SWITCH, TOGGLE CRITICALITY OF THIS FAILURE MODE:1R3

- FAILURE MODE:
SHORTED, FAIL CLOSED SINGLE SET OF CONTACTS.

MISSION PHASE:

- VEHICLE/PAYLOAD/KIT EFFECTIVITY: 102 COLUMBIA
: 103 DISCOVERY
: 104 ATLANTIS
: 105 ENDEAVOUR

- CAUSE:
PIECE PART STRUCTURAL FAILURE; CONTAMINATION; VIBRATION; MECHANICAL,
ELECTRICAL, THERMAL STRESS; PROCESSING ANOMALY

- CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

- REDUNDANCY SCREEN A) PASS
B) FAIL
C) PASS

PASS/FAIL RATIONALE:

- A)
PRELAUNCH CHECKOUT.
- B)
UNABLE TO CONFIRM THAT THE FAILURE RESIDES IN THE SWITCH.
- C)
PHYSICAL AND ELECTRICAL ISOLATION OF REDUNDANT ELEMENTS.

- FAILURE EFFECTS -

- (A) SUBSYSTEM:
PIC'S WILL BE ARMED WHEN THE ASSOCIATED CIRCUIT BREAKER IS CLOSED.
- (B) INTERFACING SUBSYSTEM(S):
NO EFFECT - FIRST FAILURE

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE
NUMBER: MO-AAZ-345-02

- (C) MISSION:
NO EFFECT. FIRST FAILURE
- (D) CREW, VEHICLE, AND ELEMENT(S):
NO EFFECT. FIRST FAILURE
- (E) FUNCTIONAL CRITICALITY EFFECTS:
TWO ADDITIONAL FAILURES REQUIRED FOR INADVERTENT RELEASE OF PAYLOAD WHICH COULD RESULT IN VEHICLE DAMAGE AND POSSIBLE LOSS OF CREW AND VEHICLE.

- DISPOSITION RATIONALE -

- (A) DESIGN:
REFER TO APPENDIX A, ITEM 1.
- (B) TEST:
REFER TO APPENDIX A, ITEM 1.
- (C) INSPECTION:
REFER TO APPENDIX A, ITEM 1.
- (D) FAILURE HISTORY:
REFER TO APPENDIX A, ITEM 1.
- (E) OPERATIONAL USE:
NONE.

- APPROVALS -

RELIABILITY ENGINEERING :	W. R. MARLOWE	6/14/90
DESIGN ENGINEERING :	T. TAUFER	6/14/90
QUALITY ENGINEERING :	M. F. Mergen	6/14/90
NASA RELIABILITY :		9/10/90
NASA SUBSYSTEM MANAGER :		9/25/90
NASA EPD&C RELIABILITY :		9/12/90
NASA QUALITY ASSURANCE :		9/20/90
NASA EPD&C SUBSYS MGR :		9/20/90

Handwritten notes and signatures:
 M.P. Rogan 6/14/90
 E. E. Hoff 6/14/90
 C. J. Ball 6/14/90
 G. E.
 M.S. D... for J. Woodward 9/12/90
 J. H. ... for F. H. ... 9/20/90