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S050250L
ATTACHMENT -
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FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL HARDWARE

NUMBER: MO-AAZ-330-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

■ EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:

■ REFERENCE DESIGNATORS: 36V73A7A3 - S5
: 36V73A7A3 - S6

■ QUANTITY OF LIKE ITEMS: 2

■ FUNCTION:

PROVIDES ON/OFF CONTROL FOR THE PYROTECHNIC INITIATOR CONTROLLER "ARM" SIGNAL FOR THE PEDESTAL TRANSFER FUNCTION. S5 ARMS SYSTEM A AND S6 ARMS SYSTEM B.

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE
NUMBER: MO-AA2-330-01

SUBSYSTEM: STABILIZED PAYLOAD DEPLOYMENT SYSTEM REVISION# 2 06/08/90
ITEM NAME: SWITCH, TOGGLE CRITICALITY OF THIS FAILURE MODE:1R2

■ FAILURE MODE:
OPEN, FAILED OPEN.

MISSION PHASE:
00 ON-ORBIT

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

■ CAUSE:
PIECE PART STRUCTURAL FAILURE; VIBRATION; CONTAMINATION; ELECTRICAL,
MECHANICAL OR 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)
CAPACITOR CHARGE/DISCHARGE CAN BE MONITORED BY CREW - CAN NOT CONFIRM
SWITCH FAILURE.

■ C)
PHYSICAL AND ELECTRICAL ISOLATION OF REDUNDANT ELEMENTS.

- FAILURE EFFECTS -

■ (A) SUBSYSTEM:
LOSS OF POWER TO THE ASSOCIATED PYRO INITIATOR CONTROL CIRCUIT.

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NUMBER: MO-AA2-330-01

- (B) INTERFACING SUBSYSTEM(S):
LOSS OF ONE PEDESTAL TRANSFER PIC CIRCUIT. REDUNDANT ARM SWITCH WILL COMPLETE PIC ARMING FUNCTION.
- (C) MISSION:
NO EFFECT. FIRST FAILURE
- (D) CREW, VEHICLE, AND ELEMENT(S):
NO EFFECT. FIRST FAILURE.
- (E) FUNCTIONAL CRITICALITY EFFECTS:
LOSS OF ABILITY TO TRANSFER FROM PRIMARY TO SECONDARY PEDESTAL COULD RESULT WITH PARTIALLY DEPLOYED PAYLOAD PREVENTING PAYLOAD BAY DOOR CLOSURE. RESULTING IN POSSIBLE LOSS OF CREW AND VEHICLE.

- DISPOSITION RATIONALE -

- (A) DESIGN:
REFER TO APPENDIX A, ITEM 1.
- (B) TEST:
REFER TO APPENDIX A, ITEM 1.

OMRSD: GROUND TURNAROUND
FREQUENCY OF CHECKOUT IS MISSION DEPENDENT. PIC BITE CIRCUITRY,
VERIFIES ENERGY OUTPUT OF THE PIC'S. S0790A.23D-I, -J, -K, -L
- (C) INSPECTION:
REFER TO APPENDIX A, ITEM 1.
- (D) FAILURE HISTORY:
REFER TO APPENDIX A, ITEM 1.
- (E) OPERATIONAL USE:
NONE.

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NUMBER: MO-AAZ-330-01

- APPROVALS -

RELIABILITY ENGINEERING:	W. R. MARLOWE	<i>W.R. Marlowe</i>	<i>6/14/90</i>
DESIGN ENGINEERING :	T. TAUFER	<i>T. Tauffer</i>	<i>6/14/90</i>
QUALITY ENGINEERING :	M. F. MERGEN	<i>M.F. Mergen</i>	<i>6/14/90</i>
NASA RELIABILITY :	G. E	<i>G. E</i>	<i>9/17/90</i>
NASA SUBSYSTEM MANAGER :			<i>9-25-90</i>
NASA EPD&C RELIABILITY :		<i>M.S. Duvall for I. Woodard</i>	<i>9/19/90</i>
NASA QUALITY ASSURANCE :		<i>J.H. Williams for F. Harris</i>	<i>9/20/90</i>
NASA EPD&C SUBSYS MGR :			