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FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL HARDWARE  
NUMBER: MO-AA2-305-X

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

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	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
■ ASSEM :	PANEL A7A3	V790-773001
■ SRU :	FUSE	ME451-0018-0050

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PART DATA

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■ REFERENCE DESIGNATORS: 36V73A7A3 - F7  
: 36V73A7A3 - F8  
: 36V73A7A3 - F9  
: 36V73A7A3 - F10

■ QUANTITY OF LIKE ITEMS: 4

■ FUNCTION:  
PROVIDES OVERCURRENT PROTECTION FOR THE PEDESTAL TRANSFER "FIRE" COMMAND  
CIRCUIT.

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FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE  
NUMBER: MO-AA2-305-01

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

ITEM NAME: FUSE

CRITICALITY OF THIS  
FAILURE MODE: 1R2

■ FAILURE MODE:  
FAILED OPEN.

MISSION PHASE:  
00 ON-ORBIT

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

■ CAUSE:  
STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK, 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)  
FAILURE OF PIC TO FIRE

■ C)  
PHYSICAL AND ELECTRICAL ISOLATION OF REDUNDANT ELEMENT.

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- FAILURE EFFECTS -  
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■ (A) SUBSYSTEM:  
LOSS OF POWER TO THE ASSOCIATED "FIRE" SWITCH. THE ASSOCIATED PIC  
CANNOT BE ACTIVATED.

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE  
NUMBER: MO-AA2-305-01

- (B) INTERFACING SUBSYSTEM(S):  
FIRST FAILURE - NO EFFECT. LOSS OF REDUNDANCY. LOSS OF REDUNDANCY IN PIC ACTIVATED PEDESTAL PRIMARY TO SECONDARY TRANSFER FUNCTION.
- (C) MISSION:  
NO EFFECT - FIRST FAILURE.
- (D) CREW, VEHICLE, AND ELEMENT(S):  
NO EFFECT FIRST FAILURE. FAILURE IN REDUNDANT PYRO CONTROL CIRCUIT WILL PREVENT SUCCESSFUL PEDESTAL DRIVE TRANSFER.
- (E) FUNCTIONAL CRITICALITY EFFECTS:  
LOSS OF ALL PEDESTAL DRIVER CAPABILITY WITH PAYLOAD PARTIALLY DEPLOYED COULD PREVENT PAYLOAD BAYDOOR CLOSURE. RESULTING IN POSSIBLE LOSS OF CREW AND VEHICLE.

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- DISPOSITION RATIONALE -  
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- (A) DESIGN:  
REFER TO APPENDIX D, ITEM 4.
- (B) TEST:  
REFER TO APPENDIX D, ITEM 4.  
  
OMRSD: GROUND TURNAROUND  
FREQUENCY OF CHECKOUT IS MISSION DEPENDENT. PIC BITE CIRCUITRY  
VERIFICATION - VERIFIES ENERGY OUTPUT TO THE PICS.  
S0790A.230-I, -J, -K, -L.
- (C) INSPECTION:  
REFER TO APPENDIX D, ITEM 4.
- (D) FAILURE HISTORY:  
REFER TO APPENDIX D, ITEM 4.
- (E) OPERATIONAL USE:  
NONE.

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE  
NUMBER: MO-AAZ-305-01

- 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 :	<i>G.E.</i>	<i>[Signature]</i>	<i>7/17/90</i>
NASA SUBSYSTEM MANAGER :		<i>[Signature]</i>	<i>9/25/90</i>
NASA EPD&C RELIABILITY :		<i>M. S. Dawson for E. Woods</i>	<i>9/18/90</i>
NASA QUALITY ASSURANCE :		<i>[Signature]</i>	<i>9/20/90</i>
NASA EPD&C SUBSYS MGR :		<i>[Signature]</i>	<i>9/20/90</i>