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

NUMBER: MO-AA2-325-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 :	CIRCUIT BREAKER	MC454-0026-2030

PART DATA

■ REFERENCE DESIGNATORS: 36V73A7A3 - CB1
: 36V73A7A3 - CB2

■ QUANTITY OF LIKE ITEMS: 2

■ FUNCTION:

PROVIDES OVERCURRENT PROTECTION FOR THE MAIN BUS POWER TO THE PAYLOAD
RELEASE PYROTECHNIC CONTROL CIRCUITS. CB1 FOR SYSTEM A RELEASE AND CB2
FOR SYSTEM B RELEASE.

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE
NUMBER: MO-AA2-325-02

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

ITEM NAME: CIRCUIT BREAKER
CRITICALITY OF THIS FAILURE MODE: 1R3

■ FAILURE MODE:
FAILED CLOSED

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

■ CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

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

PASS/FAIL RATIONALE:

■ A)
PRELAUNCH CHECKOUT

■ B)
CANNOT CONFIRM THAT FAILURE RESIDES IN THE CIRCUIT BREAKER.

■ C)
PHYSICAL AND ELECTRICAL ISOLATION OF REDUNDANT ELEMENTS.

- FAILURE EFFECTS -

■ (A) SUBSYSTEM:
LOSS OF OVER CURRENT PROTECTION.

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE
NUMBER: MO-AA2-325-02

- (B) INTERFACING SUBSYSTEM(S):
NO EFFECT - FIRST FAILURE. TWO ADDITIONAL FAILURES ARE REQUIRED TO FIRE THE PYROTECHNICS.
- (C) MISSION:
NO EFFECT - FIRST FAILURE.
- (D) CREW, VEHICLE, AND ELEMENT(S):
NO EFFECT - FIRST FAILURE.
- (E) FUNCTIONAL CRITICALITY EFFECTS:
POSSIBLE INADVERTENT PAYLOAD RELEASE AFTER THREE FAILURES. POSSIBLE LOSS OF CREW AND VEHICLE DUE TO STRUCTURAL DAMAGE.

- DISPOSITION RATIONALE -

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

- APPROVALS -

RELIABILITY ENGINEERING:	W. R. MARLOWE	<i>W.R. Marlowe</i>	6/14/90
DESIGN ENGINEERING :	T. TAUFER	<i>T. Tauffer</i>	6/14/90
QUALITY ENGINEERING :	M. F. MERGEN	<i>M.F. Mergen</i>	6/14/90
NASA RELIABILITY :		<i>G.E.</i>	9/17/90
NASA SUBSYSTEM MANAGER :		<i>M.B. Dindon</i>	9/19/90
NASA EPD&C RELIABILITY :		<i>J. Woodward</i>	9/19/90
NASA QUALITY ASSURANCE :		<i>J. Woodward</i>	9/19/90
NASA EPD&C SUBSYS MGR :		<i>J. Woodward</i>	9/20/90