FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL HARDWARE
NUMBER: MO-AA2-350-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	:	DIODE	JANTXV1N4246

PART DATA

■ EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:

■ REFERENCE DESIGNATORS: 36V73A7A3-A2CR1
: 36V73A7A3-A2CR2
: 36V73A7A3-A2CR3
: 36V73A7A3-A3CR1
: 36V73A7A3-A3CR2
: 36V73A7A3-A3CR3

■ QUANTITY OF LIKE ITEMS: 6

■ FUNCTION:
PROVIDES BUS ISOLATION BETWEEN MAIN DC BUS A AND MAIN DC BUS B. ALLOWS SWITCH S3 OR S4 TO SIMULTANEOUSLY ENERGIZE ALL PIC'S WHILE MAINTAINING BUS INTEGRITY.

FAILURE MODES EFFECTS ANALYSIS (FMEA) — CRITICAL FAILURE MODE
NUMBER: MO-AA2-350-02

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

ITEM NAME: DIODE CRITICALITY OF THIS FAILURE MODE:2R3

■ FAILURE MODE:
SHORTED

MISSION PHASE:
00 ON-ORBIT

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

■ CAUSE:
STRUCTURAL FAILURE; VIBRATION; CONTAMINATION; MECHANICAL, ELECTRICAL, THERMAL STRESS; PROCESSING ANOMALY.

■ CRITICALITY 1/1 DURING INTACT ABORT ONLY? N

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

PASS/FAIL RATIONALE:
■ A)
PRELAUNCH CHECKOUT

■ B)
THE SHORTED DIODE DOES NOT AFFECT FIRE COMMAND CAPABILITY.

■ C)
PHYSICAL AND ELECTRICAL ISOLATION OF REDUNDANT ELEMENTS.

- FAILURE EFFECTS -

■ (A) SUBSYSTEM:
LOSS OF BUS ISOLATION WHEN FIRE SWITCHES ARE "ON".

■ (B) INTERFACING SUBSYSTEM(S):
UNDER ADVERSE BUS VOLTAGE CONDITIONS AND DUAL FIRE COMMANDS, THERE WILL BE CURRENT FLOW BETWEEN MN A AND MN B POSSIBLY CAUSING A FUSE TO OPEN

FAILURE MODES EFFECTS ANALYSIS (FMEA) — CRITICAL FAILURE MODE
NUMBER: MO-AA2-350-02

IN THE ASSOCIATED "FIRE" COMMAND CIRCUIT. RESULTING IN LOSS OF REDUNDANT PIC FIRE COMMNAD.

■ (C) MISSION:
NO EFFECT.

■ (D) CREW, VEHICLE, AND ELEMENT(S):
NO EFFECT.

■ (E) FUNCTIONAL CRITICALITY EFFECTS:
MULTIPLE FAILURE WOULD BE REQUIRED TO CAUSE LOSS OF PRIMARY TO SECONDARY PEDESTAL TRANSFER ACTIVATION REDUNDANCY.

- DISPOSITION RATIONALE -

■ (A) DESIGN:
REFER TO APPENDIX F, ITEM 3.

■ (B) TEST:
REFER TO APPENDIX F, ITEM 3.

■ (C) INSPECTION:
REFER TO APPENDIX F, ITEM 3.

■ (D) FAILURE HISTORY:
REFER TO APPENDIX F, ITEM 3.

■ (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	GE	9/11/90
NASA SUBSYSTEM MANAGER		
NASA EPD&C RELIABILITY		9/19/90
NASA QUALITY ASSURANCE		
NASA EPD&C SUBSYS MGR		9/20/90