

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL HARDWARE

NUMBER: 05-6X-2000-X

SUBSYSTEM NAME: EPD&C - PAYLOAD INTERFACE

REVISION : 2 04/20/92

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
■ LRU :	PANEL MA73C	V070-730383
■ SRU :	CIRCUIT BREAKER	MC454-0032-3030

PART DATA

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- EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
CIRCUIT BREAKER, 3-PHASE, 3 AMP - MAR AC POWER
 - REFERENCE DESIGNATORS: 85V73A129CB59
 - QUANTITY OF LIKE ITEMS: 1
ONE PER PANEL MA73C
 - FUNCTION:
PROVIDES CIRCUIT PROTECTION FOR 3-PHASE FEEDER CIRCUIT FROM AC1 BUS TO MAR PAYLOAD.

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FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE

NUMBER: 05-6X-2000-01

REVISION# 2 04/20/92 R

SUBSYSTEM: EPD&C - PAYLOAD INTERFACE
 LRU : PANEL MA73C
 ITEM NAME: CIRCUIT BREAKER

CRITICALITY OF THIS
 FAILURE MODE: 2/2

■ FAILURE MODE:

FAILS OPEN, FAILS TO CONDUCT, FAILS TO CLOSE

■ MISSION PHASE:

00 ON-ORBIT

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

■ CAUSE:

STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK,
PROCESSING ANOMALY, THERMAL STRESS

- CRITICALITY 1/1 DURING INTACT ABORT ONLY? N

- REDUNDANCY SCREEN A) N/A
 ■ B) N/A
 ■ C) N/A

■ PASS/FAIL RATIONALE:

- A)
 ■ B)
 ■ C)

- FAILURE EFFECTS -

■ (A) SUBSYSTEM:

LOSS OF AC POWER TO MID-DECK ACCOMMODATION RACK (MAR)

■ (B) INTERFACING SUBSYSTEM(S):

UNABLE TO PROVIDE AC POWER TO MAR PAYLOAD

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- (C) MISSION:
POSSIBLE LOSS OF MISSION OBJECTIVES DUE TO LOSS OF AC POWER NECESSARY FOR SPECIFIC PAYLOAD/CONTROL.
- (D) CREW, VEHICLE, AND ELEMENT(S):
FIRST FAILURE - NO EFFECT
- (E) FUNCTIONAL CRITICALITY EFFECTS:

NOTE: FAILURE EFFECTS AND CRITICALITY WILL CHANGE ON FLIGHT-TO-FLIGHT BASIS AND ARE DEPENDENT UPON THE PAYLOAD USAGE OF AC POWER.

 - DISPOSITION RATIONALE -

- (A) DESIGN:
REFER TO APPENDIX D, ITEM NO. 1 - CIRCUIT BREAKER
- (B) TEST:
REFER TO APPENDIX D, ITEM NO. 1 - CIRCUIT BREAKER
- GROUND TURNAROUND TEST
MUP VERIFICATION PERFORMED FIRST FLOW, OMDP, AND CONTINGENT UPON MUP REPLACEMENT (NOT TO EXCEED TEN FLIGHT INTERVALS).
- (C) INSPECTION:
REFER TO APPENDIX D, ITEM NO. 1 - CIRCUIT BREAKER
- (D) FAILURE HISTORY:
REFER TO APPENDIX D, ITEM NO. 1 - CIRCUIT BREAKER
- (E) OPERATIONAL USE:
MISSION DEPENDENT - OTHER AC OUTLETS MAY BE AVAILABLE

 - APPROVALS -

RELIABILITY ENGINEERING: T. AI
 DESIGN ENGINEERING - : T. POCKLINGTON
 QUALITY ENGINEERING : W. R. HIGGINS
 NASA EPD&C RELIABILITY :
 NASA P/L INTEGRATN. MGR:
 NASA QUALITY ASSURANCE :
 NASA EPD&C SUBSYS MGR. :

: T. AI
 : T. Pocklington 5/11/92
 : W. R. Higgins 5/12/92
 : R. B. ... 5/14/92
 : ... 5/12/92