

FAILURE MODES EFFECTS ANALYSIS (FMEA) - CIL HARDWARE

NUMBER: 05-6BA-2207 -X

SUBSYSTEM NAME: EPD&C - LANDING GEAR CONTROL

REVISION: 2

02/13/90

PART DATA

	PART NAME	PART NUMBER
	VENDOR NAME	VENDOR NUMBER
LRU	: FWD PCA 2	V070-763340
LRU	: FWD PCA 3	V070-763360
SRU	: DIODE	JANTX1N1204RA

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:

DIODE, BLOCKING (12A), POWER, REDUNDANT SHUTOFF VALVE

REFERENCE DESIGNATORS: 82V76A23CR15
83V76A24CR10

QUANTITY OF LIKE ITEMS: 2
TWO, ONE IN FPCA-2 AND ONE IN FPCA-3

FUNCTION:

ISOLATES TWO DIFFERENT MAIN DC BUS VOLTAGES AT THE RPC'S OUTPUT FOR POWERING THE REDUNDANT SHUTOFF VALVE IN PARALLEL. ONE DIODE AT OUTPUT OF EACH RPC FOR REDUNDANT MAIN-DC POWER TO REDUNDANT SHUTOFF VALVE.

FAILURE MODES EFFECTS ANALYSIS FMEA - CIL FAILURE MODE

NUMBER: 05-6BA-2207-01

REVISION#: 3 06/28/99

SUBSYSTEM NAME: EPD&C - LANDING GEAR CONTROL

LRU: FWD PCA 2

ITEM NAME: DIODE

CRITICALITY OF THIS

FAILURE MODE: 1R3

FAILURE MODE:

OPEN, FAILS TO CONDUCT

MISSION PHASE: DO DE-ORBIT

VEHICLE/PAYLOAD/KIT EFFECTIVITY:

102	COLUMBIA
103	DISCOVERY
104	ATLANTIS
105	ENDEAVOUR

CAUSE:

**STRUCTURAL FAILURE (MECHANICAL STRESS, VIBRATION), ELECTRICAL STRESS,
THERMAL STRESS, PROCESSING ANOMALY**

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN

A) PASS
B) FAIL
C) PASS

PASS/FAIL RATIONALE:

A)

B)

FAILS "B" SCREEN BECAUSE DIODE FAILURE IS NOT FLIGHT DETECTABLE.

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:

FIRST FAILURE - LOSS OF CAPABILITY TO CONDUCT POWER FROM ONE OF TWO PATHS

(B) INTERFACING SUBSYSTEM(S):

FIRST FAILURE - LOSS OF REDUNDANT POWER TO REDUNDANT SHUTOFF VALVE

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(C) MISSION:

FIRST FAILURE - NO EFFECT

(D) CREW, VEHICLE, AND ELEMENT(S):

FIRST FAILURE - NO EFFECT

(E) FUNCTIONAL CRITICALITY EFFECTS:

POSSIBLE LOSS OF CREW/VEHICLE DUE TO LOSS OF ELECTRICAL POWER TO REDUNDANT SHUT-OFF VALVE PLUS LOSS OF ALL ASSOCIATED REDUNDANCY (LOSS OF LANDING GEAR DUMP VALVE AND RETRACT/CIRC VALVE) FOR EXTENDING THE LANDING GEARS.

-DISPOSITION RATIONALE-

(A) DESIGN:

REFER TO APPENDIX F, ITEM NO. 2 - DIODE

(B) TEST:

REFER TO APPENDIX F, ITEM NO. 2 - DIODE

GROUND TURNAROUND TEST

ANY TURNAROUND CHECKOUT TESTING IS ACCOMPLISHED IN ACCORDANCE WITH OMRSD.

(C) INSPECTION:

REFER TO APPENDIX F, ITEM NO. 2 - DIODE

(D) FAILURE HISTORY:

CURRENT DATA ON TEST FAILURES, FLIGHT FAILURES, UNEXPLAINED ANOMALIES, AND OTHER FAILURES EXPERIENCED DURING GROUND PROCESSING ACTIVITY CAN BE FOUND IN THE PRACA DATA BASE.

(E) OPERATIONAL USE:

NONE

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- APPROVALS -

EDITORIALLY APPROVED
TECHNICAL APPROVAL

: BNA
: VIA APPROVAL FORM

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