

FAILURE MODES EFFECTS ANALYSIS (FMEA) - CIL HARDWARE
NUMBER: 05-6BA-2206 -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 DIODE, RETURN BUS, FWD PCA NOS. 2 AND 3 (12A, 400V)

REFERENCE DESIGNATORS: 82V76A23CR14
 83V76A24CR9

QUANTITY OF LIKE ITEMS: 2
TWO, ONE EA FPCA - 2 & 3

FUNCTION:

DIODES ISOLATE RETURN BUSES BETWEEN FWD PCA NO 2 AND FWD PCA NO 3. IN RETURN LINES OF REDUNDANT SHUTOFF VALVE. PROVIDES PARALLEL LINE TO RETURN BUS.

FAILURE MODES EFFECTS ANALYSIS FMEA - CIL FAILURE MODE

NUMBER: 05-6BA-2206-01

REVISION#: 4 07/01/99

SUBSYSTEM NAME: EPD&C - LANDING GEAR CONTROL

LRU: FWD PCA 2

CRITICALITY OF THIS

ITEM NAME: DIODE

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 THROUGH ONE OF TWO RETURN
PATHS. LOSS OF REDUNDANT RETURN TO THE REDUNDANT SHUTOFF VALVE.**

(B) INTERFACING SUBSYSTEM(S):

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FIRST FAILURE - LOSS OF CAPABILITY TO CONDUCT THROUGH ONE OF TWO RETURN PATHS. LOSS OF REDUNDANT RETURN TO THE REDUNDANT SHUTOFF VALVE.

**(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 LANDING GEAR EXTEND VALVE PLUS LOSS OF ALL OTHER ASSOCIATED REDUNDANCY (LOSS OF RETRACT/CIRC VALVE, AND PYRO BACKUP) 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 -

EDITORIALY APPROVED
TECHNICAL APPROVAL

: BNA
: VIA APPROVAL FORM

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