

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL HARDWARE

NUMBER: 05-6BA-2356 -X

SUBSYSTEM NAME: EPD&C - LANDING GEAR CONTROL

REVISION: 0 02/25/88

PART DATA

PART NAME	PART NUMBER
VENDOR NAME	VENDOR NUMBER
LRU : FWD LCA 2	MC450-0055-0001
LRU : FWD LCA 3	MC450-0055-0002
SRU : RESISTOR	RWR80S10R2BR

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:

RESISTOR, LIMITING, ARM SIGNAL/PIC CIRCUIT (10.2 OHMS, 2W)

REFERENCE DESIGNATORS: 82V76A17R
83V76A18R

QUANTITY OF LIKE ITEMS: 12
TWELVE, SIX PER FLCA-2 AND -3

FUNCTION:

PROVIDES CURRENT LIMITING BETWEEN HDC OUTPUT (ARM SIGNAL) AND THE REDUNDANT PIC FOR NOSE LANDING GEAR, LEFT MAIN GEAR AND RIGHT MAIN GEAR BACKUP UPLOCK RELEASE.

FAILURE MODES EFFECTS ANALYSIS FMEA - CIL FAILURE MODE

NUMBER: 05-6BA-2356-01

REVISION#: 1 08/28/99

SUBSYSTEM NAME: EPD&C - LANDING GEAR CONTROL

LRU: FWD LCA 2

CRITICALITY OF THIS

ITEM NAME: RESISTOR

FAILURE MODE: 1R3

FAILURE MODE:

OPENS

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 RESISTOR FAILURE IS NOT FLIGHT DETECTABLE.

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:

FIRST FAILURE - LOSS OF REDUNDANT PATH TO ARM CIRCUIT OF REDUNDANT PIC FOR NOSE LANDING, LEFT MAIN GEAR AND RIGHT MAIN GEAR BACKUP UPLOCK RELEASE.

(B) INTERFACING SUBSYSTEM(S):

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FIRST FAILURE - LOSS OF REDUNDANT PATH TO ARM CIRCUIT OF REDUNDANT PIC FOR NOSE LANDING, LEFT MAIN GEAR AND RIGHT MAIN GEAR BACKUP UPLOCK RELEASE.

(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 PIC'S FOR BACKUP UPLOCK RELEASE AND LOSS OF HYDRAULIC EXTENSION OF LANDING GEARS. REQUIRES MULTIPLE FAILURES (REDUNDANT PIC AND HYDRAULIC SYSTEM 1) BEFORE LANDING GEAR DEPLOYMENT IS LOST.

-DISPOSITION RATIONALE-

(A) DESIGN:

REFER TO APPENDIX E, ITEM NO. 3 - RESISTOR, WIRE WOUND

(B) TEST:

REFER TO APPENDIX E, ITEM NO. 3 - RESESTOR, WIRE WOUND

GROUND TURNAROUND TEST

ANY TURNAROUND CHECKOUT TESTING IS ACCOMPLISHED IN ACCORDANCE WITH OMRSD.

(C) INSPECTION:

REFER TO APPENDIX E, ITEM NO. 3 - RESISTOR, WIRE WOUND

(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 -

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