

**FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL HARDWARE
NUMBER: 05-6BA-2410 -X**

SUBSYSTEM NAME: EPD&C - LANDING GEAR CONTROL

REVISION: 0 02/25/88

PART DATA

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: FWD LCA 2	MC450-0055-0001
LRU	: FWD LCA 2	MC450-0055-0002
LRU	: FWD LCA 3	MC450-0056-0001
LRU	: FWD LCA 3	MC450-0056-0002
SRU	: CONTROLLER, HYBRID DRIVER	MC477-0262-0002

**EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
CONTROLLER, HYBRID CONTROLLER (HDC), TYPE II, PIC, FIRE 2 POWER**

**REFERENCE DESIGNATORS: 82V76A17AR(3)
83V76A18AR(3)**

**QUANTITY OF LIKE ITEMS: 6
THREE PER FLCA - 2 & - 3**

FUNCTION:
UPON RECEIPT OF ARM AND DOWN STIMULI AND THE LANDING GEAR BACKUP UPLOCK SIGNALS, THE HDC, AFTER A ONE SECOND TIME DELAY, CONDUCTS POWER THROUGH TO THE FIRE 2 FOR THE INITIATION OF THE FIRE SIGNALS TO THE PIC'S NOSE LANDING GEAR, LEFT MAIN GEAR AND RIGHT MAIN GEAR BACKUP UPLOCK RELEASE CIRCUITS.

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NUMBER: 05-6BA-2410- 01

REVISION#: 1 06/28/99

SUBSYSTEM NAME: EPD&C - LANDING GEAR CONTROL

LRU: FWD LCA 2

CRITICALITY OF THIS

ITEM NAME: CONTROLLER, HYBRID DRIVER

FAILURE MODE: 1R3

FAILURE MODE:

LOSS OF OUTPUT, FAILS TO CONDUCT, FAILS TO TURN ON

MISSION PHASE: DO DE-ORBIT

VEHICLE/PAYLOAD/KIT EFFECTIVITY:

102	COLUMBIA
103	DISCOVERY
104	ATLANTIS
105	ENDEAVOUR

CAUSE:

**PIECE PART FAILURE, MECHANICAL SHOCK, VIBRATION, THERMAL STRESS,
CONTAMINATION, 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 HYBRID DRIVER FAILURE IS NOT FLIGHT DETECTABLE.

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:

**FIRST FAILURE - LOSS OF POWER TO ONE OF TWO REDUNDANT PICS TO THE FIRE 2
LOGIC CIRCUITS.**

(B) INTERFACING SUBSYSTEM(S):

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FIRST FAILURE - NO EFFECT. LOSS OF REDUNDANCY

(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 IF THERE IS NO POWER TO PIC'S AND LOSS OF HYDRAULIC GEAR EXTENSION. THE PIC REQUIRES THREE COMMANDS TO FIRE NSI'S, ARM AND THE TWO FIRE COMMANDS IN PROPER SEQUENCE (ARM MUST OCCUR BEFORE FIRE 2) TO ENERGIZE THE FIRING CIRCUIT. LOSS OF TWO PIC'S AND HYDRAULIC LANDING GEAR EXTENSION WOULD PREVENT EXTENDING THE LANDING GEARS.

-DISPOSITION RATIONALE-

(A) DESIGN:
REFER TO APPENDIX B, ITEM NO. 1 - HYBRID DRIVER

(B) TEST:
REFER TO APPENDIX B, ITEM NO. 1 - HYBRID DRIVER

GROUND TURNAROUND TEST
ANY TURNAROUND CHECKOUT TESTING IS ACCOMPLISHED IN ACCORDANCE WITH OMRSD.

(C) INSPECTION:
REFER TO APPENDIX B, ITEM NO. 1 - HYBRID DRIVER

(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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