

FAILURE MODES EFFECTS ANALYSIS (FMEA) - CIL HARDWARE

NUMBER: D5-6BA-2408 -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 2	MC450-0055-0002
LRU	FWD LCA 3	MC450-0056-0001
LRU	FWD LCA 3	MC450-0056-0002
LRU	CONTROLLER, HYBRID DRIVER	MC477-0261-0002

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:

CONTROLLER, HYBRID DRIVER (HDC), TYPE I, FIRE 1 POWER/PIC

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

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

FUNCTION:

UPON RECEIPT OF A FIRE COMMAND, THE APPLICABLE HDC CONNECTS DC INPUT POWER TO THE FIRING CIRCUIT WITHIN A PIC. THE HDC IS USED FOR THE FIRING CIRCUIT (FIRE 1) FOR NOSE LANDING GEAR, LEFT MAIN GEAR AND RIGHT MAIN GEAR BACKUP UPLOCK RELEASE. REDUNDANCY IS PROVIDED.

FAILURE MODES EFFECTS ANALYSIS FMEA -- CIL FAILURE MODE

NUMBER: 05-8BA-2408-01

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

MISSION PHASE: DO DE-ORBIT

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

CAUSE:

PIECE PART FAILURE, MECHANICAL SHOCK, THERMAL STRESS, VIBRATION,
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 PIC'S FOR FIRE 1 CIRCUIT.

(B) INTERFACING SUBSYSTEM(S):

**FAILURE MODES EFFECTS ANALYSIS (FMEA) – CIL FAILURE MODE
NUMBER: 05-8BA-2408- 01**

FIRST FAILURE - LOSS OF REDUNDANT FIRING CIRCUIT TO NOSE LANDING GEAR, LEFT MAIN GEAR AND RIGHT MAIN GEAR BACKUP UPLOCK RELEASE. REDUNDANCY PROVIDED

(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:

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NONE

- APPROVALS -

EDITORIALLY APPROVED
TECHNICAL APPROVAL

: BNA
: VIA APPROVAL FORM

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