

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL HARDWARE

NUMBER: 05-6G-2132 -X

SUBSYSTEM NAME: EPD&C - HYDRAULICS (02-6)

REVISION: 2

10/07/91

PART DATA

PART NAME	PART NUMBER
VENDOR NAME	VENDOR NUMBER
LRU : AFT MCA-1	V070-765410
LRU : AFT MCA-1	V070-765630
SRU : CONTROLLER, HYBRID DRIVER	MC477-0263-0002

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:

CONTROLLER, HYBRID DRIVER, HDC TYPE 3 - LANDING GEAR EXTEND ISOLATION VALVE

REFERENCE DESIGNATORS: 54V76A114(J5-H)

QUANTITY OF LIKE ITEMS: 1
ONE

FUNCTION:

WHEN COMMANDED, THE ASSOCIATED DRIVER CONNECTS MAIN DC BUS "A" VOLTAGE TO THE RELATED SOLENOID COIL OF THE LANDING GEAR EXTEND ISOLATION VALVE INITIATING THE "CLOSE" FUNCTION.

FAILURE MODES EFFECTS ANALYSIS FMEA -- CIL FAILURE MODE

NUMBER: 05-6G-2132-02

REVISION#: 3 10/08/98

SUBSYSTEM NAME: EPD&C - HYDRAULICS (02-6)

LRU: AFT MCA-1

CRITICALITY OF THIS

ITEM NAME: CONTROLLER, HYBRID DRIVER

FAILURE MODE: 1R2

FAILURE MODE:

INADVERTENT OUTPUT, FAILS "ON", FAILS TO TURN "OFF"

MISSION PHASE: DO DE-ORBIT

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

CAUSE:

PIECE PART FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK, PROCESSING ANOMALY, THERMAL STRESS

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN

- A) PASS
- B) PASS
- C) PASS

PASS/FAIL RATIONALE:

**A)
VALVE HAS POSITION INDICATION**

B)

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:

CONTINUOUS POWER TO CLOSE SOLENOID

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(B) INTERFACING SUBSYSTEM(S):

INADVERTENT OUTPUT OF "CLOSE" DRIVER PRECLUDES LANDING GEAR EXTEND ISOLATION VALVE OPENING. LOSS OF HYDRAULIC LANDING GEAR DEPLOYMENT. LOSS OF REDUNDANT HYDRAULIC SUPPLY FOR NOSEWHEEL STEERING.

(C) MISSION:

NONE

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

FIRST FAILURE - NO EFFECT

(E) FUNCTIONAL CRITICALITY EFFECTS:

POSSIBLE LOSS OF CREW/VEHICLE AFTER SECOND FAILURE. FOR THE VALVE FAILED IN THE "CLOSED" POSITION, THE SECOND FAILURE IS THE LOSS OF THE BACKUP LANDING GEAR UPLOCK PYRO CARTRIDGE RESULTING IN THE LOSS OF CAPABILITY TO DEPLOY THE LANDING GEAR.

-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.

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(E) OPERATIONAL USE:
NONE

- APPROVALS -

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TECHNICLA APPROVAL	: VIA APPROVAL FORM	: 95-CIL-009_05-6G