

FAILURE MODES EFFECTS ANALYSIS (FMEA) - CIL HARDWARE  
NUMBER: 05-6BA-2400 -X

SUBSYSTEM NAME: EPD&C - LANDING GEAR CONTROL

REVISION: 0 03/21/89

---

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
SRU : CONTROLLER, HYBRID DRIVER	MC477-0261-0002

---

**EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:**  
CONTROLLER, HYBRID DRIVER (HDC), TYPE I - NOSE LANDING GEAR NO WEIGHT-ON-WHEEL NO. 1 & NO. 2, AND MDM POWER INPUT

**REFERENCE DESIGNATORS:** 82V76A17AR  
83V76A18AR

**QUANTITY OF LIKE ITEMS:** 2  
TWO PER VEHICLE, ONE PER FLCA - 2 & 3

**FUNCTION:**  
WHEN EITHER NOSE LANDING GEAR NO WEIGHT-ON-WHEELS SIGNAL, THROUGH A PROXIMITY SENSOR ELECT. PACKAGE, DROPS LOW, THE HDC REMOVES BRAKE INHIBIT INPUTS TO THE BRAKE/SKID CONTROL BOX AND ENABLES ANTI-SKID BRAKING.

**FAILURE MODES EFFECTS ANALYSIS FMEA - CIL FAILURE MODE**

**NUMBER: 05-6BA-2400- 01**

**REVISION#: 2 07/01/99**

**SUBSYSTEM NAME: EPD&C - LANDING GEAR CONTROL**

**LRU: FWD LCA 2**

**ITEM NAME: CONTROLLER, HYBRID DRIVER**

**CRITICALITY OF THIS**

**FAILURE MODE: 1R2**

---

**FAILURE MODE:**

LOSS OF OUTPUT, FAILS TO CONDUCT, FAILS TO TURN "ON" (INDICATES FALSE WEIGHT-ON-WHEEL)

**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) PASS
- C) PASS

**PASS/FAIL RATIONALE:**

A)

B)

C)

---

**- FAILURE EFFECTS -**

---

**(A) SUBSYSTEM:**

FIRST FAILURE - ASSOCIATED ANTI-SKID/BRAKE BOX IS ENABLED. FIFTY PERCENT OF BRAKING CAPABILITY IS PREMATURELY ENABLED.

**FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL FAILURE MODE  
NUMBER: 05-6BA-2400-01**

**(B) INTERFACING SUBSYSTEM(S):**

FIRST FAILURE - NOT CRITICAL TO FLIGHT. PILOT ALERTED. ALTERNATE STATUS PROVIDED ON OPPOSITE LANDING GEAR CONTROL PANEL.

**(C) MISSION:**

SECOND FAILURE (FAILURE IN ANTI-SKID BRAKING SYSTEM) - POSSIBLE LOSS OF CREW/VEHICLE DUE TO UNCOMMANDED BRAKE APPLICATION PRIOR TO TOUCHDOWN CAUSING TIRE DAMAGE AT TOUCHDOWN.

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

SECOND FAILURE (FAILURE IN ANTI-SKID BRAKING SYSTEM) - POSSIBLE LOSS OF CREW/VEHICLE DUE TO UNCOMMANDED BRAKE APPLICATION PRIOR TO TOUCHDOWN CAUSING TIRE DAMAGE AT TOUCHDOWN.

**(E) FUNCTIONAL CRITICALITY EFFECTS:**

---

**-DISPOSITION RATIONALE-**

---

**(A) DESIGN:**

REFER TO APPENDIX B, ITEM NO. 1 - HYBRID DRIVER CONTROLLER

**(B) TEST:**

REFER TO APPENDIX B, ITEM NO. 1 - HYBRID DRIVER CONTROLLER

**GROUND TURNAROUND TEST**

ANY TURNAROUND CHECKOUT TESTING IS ACCOMPLISHED IN ACCORDANCE WITH OMRSD.

**(C) INSPECTION:**

REFER TO APPENDIX B, ITEM NO. 1 - HYBRID DRIVER CONTROLLER

**(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

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL FAILURE MODE  
NUMBER: 05-6BA-2400-01

---

- APPROVALS -

---

EDITORIALLY APPROVED : BNA : J. Kemura 7/6/99  
TECHNICAL APPROVAL : VIA APPROVAL FORM : 98-CIL-011\_05-6BA(2)