

**FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL HARDWARE
NUMBER: 05-6BA-2576 -X**

SUBSYSTEM NAME: EPD&C - LANDING GEAR CONTROL

REVISION: 0 08/15/88

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
SRU : CONTROLLER, PYRO INITIATOR	MC450-0018-0005

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:

CONTROLLER, PYRO INITIATOR, PIC FIRING CIRCUIT, NOSE LANDING GEAR EXTENSION THRUSTER

REFERENCE DESIGNATORS: 82V76A17-PIC
83V76A18-PIC

QUANTITY OF LIKE ITEMS: 2
TWO, ONE PER FLCA 2 AND FLCA 3

FUNCTION:

DUAL PIC'S FIRE DUAL NASA STANDARD INITIATOR (NSI)/PRESSURE CARTRIDGES FOR NOSE LANDING GEAR EXTENSION THRUSTER TO PROVIDE INITIAL NOSE GEAR DEPLOY TWO SECONDS AFTER LANDING GEAR DOWN COMMAND. SELF TEST AND STATUS MONITORS INCLUDED.

FAILURE MODES EFFECTS ANALYSIS FMEA - CIL FAILURE MODE

NUMBER: 05-6BA-2576-01

REVISION#: 1 07/02/99

SUBSYSTEM NAME: EPD&C - LANDING GEAR CONTROL

LRU: FWD LCA 2

CRITICALITY OF THIS

ITEM NAME: CONTROLLER, PYRO INITIATOR

FAILURE MODE: 1R2

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, CONTAMINATION, VIBRATION, MECHANICAL SHOCK, PROCESSING ANOMALY, THERMAL SHOCK.

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 PIC FAILURE IS NOT FLIGHT DETECTABLE.

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:

FIRST FAILURE - LOSS OF CAPABILITY TO COMPLETE IGNITION CIRCUIT TO ONE OF TWO NSI FOR NOSE LANDING GEAR EXTENSION THRUSTER.

(B) INTERFACING SUBSYSTEM(S):

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FIRST FAILURE - LOSS OF REDUNDANT FIRING CIRCUIT TO DUAL CARTRIDGE FOR NOSE GEAR EXTENSION ASSISTANCE.

(C) MISSION:

FIRST FAILURE - NO EFFECT. SECOND FAILURE (PIC IN REDUNDANT CIRCUIT) - POSSIBLE LOSS OF CREW/VEHICLE IF NOSE LANDING GEAR FAILS TO EXTEND WITHIN REQUIRED TIME.

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

FIRST FAILURE - NO EFFECT. SECOND FAILURE (PIC IN REDUNDANT CIRCUIT) - POSSIBLE LOSS OF CREW/VEHICLE IF NOSE LANDING GEAR FAILS TO EXTEND WITHIN REQUIRED TIME.

(E) FUNCTIONAL CRITICALITY EFFECTS:

-DISPOSITION RATIONALE-

(A) DESIGN:

REFER TO APPENDIX H, ITEM NO. 1 - PYRO INITIATOR CONTROLLER

(B) TEST:

REFER TO APPENDIX H, ITEM NO. 1 - PYRO INITIATOR CONTROLLER

GROUND TURNAROUND TEST

ANY TURNAROUND CHECKOUT TESTING IS ACCOMPLISHED IN ACCORDANCE WITH OMRSD.

(C) INSPECTION:

REFER TO APPENDIX H, ITEM NO. 1 PYRO INITIATOR 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

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- APPROVALS -

EDITORIALLY APPROVED : BNA : J. Kimura 7/6/99
TECHNICAL APPROVAL : VIA APPROVAL FORM : 96-CIL-011_05-6BA(2)