FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL HARDWARE
NUMBER: 05-6BA-2415 -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	MC477-0261-0002

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
CONTROLLER, HYBRID DRIVER (HDC), TYPE I, NOSE LANDING GEAR EXTENTION POWER ASSIST NO. 1 AND NO. 2

REFERENCE DESIGNATORS: 82V76A17AR(2)
83V76A18AR(2)

QUANTITY OF LIKE ITEMS: 4
FOUR, 2/FLCA - 2 & 3

FUNCTION:
AFTER TWO 1-SECOND TIME DELAYS OF NOSE LANDING GEAR DOWN STIMULI, THE HDC'S CONDUCT FIRE COMMANDS TO THE ASSOCIATED PIC FIRE 1 AND THE FIRE 2 CIRCUITS (IF NOSE LANDING GEAR UPLOCK AND NOSE LANDING GEAR DOOR UPLOCK DO NOT INHIBIT) FOR CHARGE INITIATION OF NOSE LANDING GEAR EXTENSION POWERED ASSIST SUBSYSTEM.

FAILURE MODES EFFECTS ANALYSIS FMEA – CIL FAILURE MODE

NUMBER: 05-6BA-2415- 01

REVISION#: 1 06/28/99

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

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 CAPABILITY TO CONDUCT FIRE 1 OR FIRE 2 COMMAND TO ASSOCIATED PIC.

(B) INTERFACING SUBSYSTEM(S):

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FIRST FAILURE - LOSS OF REDUNDANT PIC FIRE CIRCUIT TO DUAL PRESSURE CARTRIDGES FOR NOSE GEAR EXTENSION POWERED ASSIST SUBSYSTEM.

(C) MISSION:
FIRST FAILURE - NO EFFECT. SECOND FAILURE (FAILURE IN REDUNDANT PIC FIRE CIRCUIT) - NOSE LANDING GEAR MAY FAIL TO EXTEND IN REQUIRED TIME RESULTING IN POSSIBLE LOSS OF CREW/VEHICLE.

(D) CREW, VEHICLE, AND ELEMENT(S):
FIRST FAILURE - NO EFFECT. SECOND FAILURE (FAILURE IN REDUNDANT PIC FIRE CIRCUIT) - NOSE LANDING GEAR MAY FAIL TO EXTEND IN REQUIRED TIME RESULTING IN POSSIBLE LOSS OF CREW/VEHICLE.

(E) FUNCTIONAL CRITICALITY EFFECTS:

-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 -

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