PRINT DATE: 08/20/97

FAILURE MODES EFFECTS ANALYSIS (FMEA) – NON-CIL HARDWARE
NUMBER: 05-6BB-2241 -X

SUBSYSTEM NAME: EPD&C - BRAKE/ANTI SKID

REVISION: 1 08/20/97

PART DATA

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: FWD PCA 1	VO70-763320
LRU	: FWD PCA 2	VO70-763340
SRU	: FUSE	ME451-0009-1002

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
FUSE, GENERAL PURPOSE, 2 AMP, ANTI-SKID BUS BRAKE/SKID CONTROL UNIT.

REFERENCE DESIGNATORS:
81V76A22F18
81V76A22F19
81V76A22F20
81V76A22F22
82V76A23F13
82V76A23F14
82V76A23F15
82V76A23F16

QUANTITY OF LIKE ITEMS: 8
ONE PER BRAKE SEGMENT, EIGHT PER VEHICLE

FUNCTION:
PROVIDES CIRCUIT PROTECTION BETWEEN THE ANTI-SKID BUSES AND THE BRAKE/SKID CONTROL UNIT.

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FAILURE MODES EFFECTS ANALYSIS FMEA -- NON-CIL FAILURE MODE
NUMBER: 05-6BB-2241- 01

REVISION#: 1 08/20/97

SUBSYSTEM NAME: EPD&C - BRAKE/ANTI SKID
LRU: FWD PCA 1 & FWD PCA 2
ITEM NAME: FUSE

CRITICALITY OF THIS FAILURE MODE: 1R3

FAILURE MODE:
FAILS OPEN

MISSION PHASE: DO DE-ORBIT

VEHICLE/PAYLOAD/KIT EFFECTIVITY:

102	COLUMBIA
103	DISCOVERY
104	ATLANTIS
105	ENDEAVOUR

CAUSE:
CONTAMINATION, MECHANICAL SHOCK, VIBRATION, THERMAL STRESS, STRUCTURAL FAILURE, 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 - LOSS OF SKID AND LOCKED WHEEL PROTECTION ON HALF OF ONE BRAKE.

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(B) INTERFACING SUBSYSTEM(S):
FIRST FAILURE - LOSS OF SKID AND LOCKED WHEEL PROTECTION ON HALF OF ONE BRAKE.

(C) MISSION:
FIRST FAILURE - NO EFFECT.

(D) CREW, VEHICLE, AND ELEMENT(S):
FIRST FAILURE - LOSS OF SKID AND LOCKED WHEEL PROTECTION ON HALF OF ONE BRAKE.

(E) FUNCTIONAL CRITICALITY EFFECTS:
POSSIBLE LOSS OF CREW/VEHICLE AFTER THREE FAILURES:
1) FUSE OPENS - LOSS OF SKID AND LOCKED WHEEL PROTECTION ON HALF OF ONE BRAKE.
2) BRAKE ISOLATION VALVE OPENS PREMATURELY.
3) UNCOMMANDED BRAKE PRESSURE BEFORE MAIN WHEELS TOUCHDOWN CAUSING TIRE/WHEEL FAILURE (ON THE AFFECTED SIDE) AND UNCONTROLLABLE YAWING FORCE.

-DISPOSITION RATIONALE-

(A) DESIGN:
REFER TO APPENDIX D, ITEM NO. 2 - FUSE, AXIAL LEAD/CARTRIDGE

(B) TEST:
REFER TO APPENDIX D, ITEM NO. 2 - FUSE, AXIAL LEAD/CARTRIDGE

GROUND TURNAROUND TEST
ANY TURNAROUND CHECKOUT TESTING IS ACCOMPLISHED IN ACCORDANCE WITH OMRSD.

(C) INSPECTION:
REFER TO APPENDIX D, ITEM NO. 2 - FUSE, AXIAL LEAD/CARTRIDGE

(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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NUMBER: 05-6BB-2241-01

(E) OPERATIONAL USE:
NONE

- APPROVALS -

EDITORIALLY APPROVED	: BNA	: J. Kemuyan 8/20/97
EDITORIALLY APPROVED	: JSC	: Dan Deese 9/24/97
TECHNICAL APPROVAL	: VIA APPROVAL FORM	: 96-CIL-011_05-6BB