

**FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NON-CIL HARDWARE
NUMBER: 05-6BB-2270 -X**

SUBSYSTEM NAME: EPD&C - BRAKE/ANTI SKID

REVISION: 1 08/20/97

PART DATA

	PART NAME	PART NUMBER
	VENDOR NAME	VENDOR NUMBER
LRU	: RESISTOR ASSEMBLY	VO70-763430
SRU	: RESISTOR, ANTI-SKID VALVE	RWR80S1R00FR

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
RESISTOR, ANTI-SKID VALVE COIL CURRENT MEASUREMENT (1 OHM, 2 W)

REFERENCE DESIGNATORS: 40V51A1R1
40V51A1R2
40V51A2R1
40V51A2R2

QUANTITY OF LIKE ITEMS: 4
ONE PER RIGHT HAND BRAKE SEGMENT, FOUR PER VEHICLE

FUNCTION:
PROVIDES MEANS TO MEASURE ANTI-SKID CURRENT (RIGHT HAND SIDE ONLY)

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SUBSYSTEM NAME: EPD&C - BRAKE/ANTI SKID

LRU: FWD LCA 1

CRITICALITY OF THIS

ITEM NAME: RESISTOR, ANTI-SKID VALVE

FAILURE MODE: 1R3

FAILURE MODE:

FAILS OPEN

MISSION PHASE: DO DE-ORBIT

VEHICLE/PAYLOAD/KIT EFFECTIVITY: 103 DISCOVERY

CAUSE:

STRUCTURAL FAILURE, MECHANICAL STRESS, VIBRATION, ELECTRICAL STRESS,
THERMAL STRESS, 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.

(B) INTERFACING SUBSYSTEM(S):

FIRST FAILURE - LOSS OF SKID AND LOCKED WHEEL PROTECTION ON HALF OF ONE BRAKE.

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(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) RESISTORS FAILS OPEN - 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 E, ITEM NO. 3 - RESISTOR, WIRE WOUND

(B) TEST:

REFER TO APPENDIX E, ITEM NO. 3 - RESISTOR, WIRE WOUND

GROUND TURNAROUND TEST

ANY TURNAROUND CHECKOUT TESTING IS ACCOMPLISHED IN ACCORDANCE WITH OMRSD.

(C) INSPECTION:

REFER TO APPENDIX E, ITEM NO. 3 - RESISTOR, WIRE WOUND

(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	: <u>J. Kemura 8/20/97</u>
EDITORIALLY APPROVED	: JSC	: <u>Jim Boney 9/24/97</u>
TECHNICAL APPROVAL	: VIA APPROVAL FORM	: 96-CIL-011_05-6BB