INDEPENDENT ORBITER ASSESSMENT

ANALYSIS OF THE
ELECTRICAL POWER
DISTRIBUTION AND CONTROL
SUBSYSTEM
Vol. 2 of 2

3 APRIL 1987

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

FLIGHT: 2/1R SUBSYSTEM: EPD&C 2/1R ABORT: MDAC ID: 5803

FUSE, 1A TO MMCA-2 & 1 ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA2
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-2 & 1

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

VI.U.U.V			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F34 PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 5804 ABORT: 2/1R

ITEM: FUSE, 1A TO MMCA-2 & 1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB2
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-2 & 1

4)

5)

6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING	: 3/3		·

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F33
PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 5805 ABORT: 2/1R

ITEM: FUSE, 1A TO MMCA-4 & 3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA1
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-4 & 3

4)

5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F18
PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

MDAC ID: 5806

FLIGHT: ABORT:

2/1R 2/1R

ITEM:

FUSE, 1A TO MMCA-4 & 3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-4 & 3

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

V-10-1-V-			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F35 PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

DATE:
SUBSYSTEM: EPD&C
5807 FLIGHT: 2/1R EPD&C 2/1R ABORT:

FUSE, 1A TO MMCA-4 & 3 ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS BC2
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-4 & 3
- 4)
- 5)
- 6)
- 7)
- 8) 9) 05-6

	CRITICALITIES ,		2	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	2/1R	AOA:	2/1R	
DEORBIT:	3/3	ATO:	2/1R	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F28 PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

2/1R

MDAC ID: 5808

ABORT:

2/1R

ITEM:

FUSE, 1A TO MMCA-4 & 3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS BC1
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-4 & 3

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F6

PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

2/1R

MDAC ID:

5809

ABORT:

2/1R

ITEM:

FUSE, 1A TO MMCA-4 & 3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB2
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-4 & 3

4)

5)

6)

7)

8) 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
2/1R	AOA:	2/1R
3/3	ATO:	2/1R
3/3		•
	3/3 3/3 2/1R 3/3	3/3 RTLS: 3/3 TAL: 2/1R AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION:

32V73A13A2F12

PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

2/1R

MDAC ID: 5810

ABORT:

2/1R

ITEM:

FUSE, 1A TO MMCA-4 & 3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA2
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-4 & 3

4)

5)

6)

7) 8)

05-6 9)

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F31

PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/1R

MDAC ID: 5811 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A

4)

5)

6) 7)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3: 3/3		•

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A4CR1
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5812 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A

4)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

41/4 = 41/4 = 41/4			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A4CR1
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

REFERENCES: 76BCl4H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5813 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/1R	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A4CR2
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

3/11/87 DATE:

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/1R

MDAC ID: 5814

ABORT:

3/3

ITEM:

DIODE, ISOLATION 3A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A

4)

5)

6)

7) 8)

05-6 9)

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A4CR2

PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5815 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A

4)

5) 6)

7) 8)

9) 05-6

CRITICALITIES

	V11222V122			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/1R	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		·	

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A4CR3
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

FLIGHT: SUBSYSTEM: EPD&C 3/1R

3/3 MDAC ID: 5816 ABORT:

DIODE, ISOLATION 3A ITEM:

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A4CR3 PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSSES WHICH MAY CAUSE LOSS OF CREW/ VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

REFERENCES: 76BCl4F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5817 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A4CR4
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5818 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A4CR4
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5819 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A5CR4
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5820 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A5CR4
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5821 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A

4)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/1R	AOA:	3/3
3/3	ATO:	3/3
3/3		,
	3/3 3/3 3/1R 3/3	3/3 RTLS: 3/3 TAL: 3/1R AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A5CR3
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5822 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6) 7)
- 8) 9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A5CR3
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/1R

MDAC ID:

5823

ABORT:

3/3

ITEM:

DIODE, ISOLATION 3A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A

4)

5)

6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION:

32V73A13A2A5CR2

PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSSES. FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5824 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4) 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A5CR2
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5825 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		• -

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A5CR1
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5826 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A

4)

5)

6) 7)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A5CR1
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C MDAC ID: 5827

FLIGHT: ABORT:

2/1R 2/1R

ITEM:

SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 1)

FAILURE MODE: FAILS OPEN OR SHORTS TO CASE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUSSES AB1, AB2, CA1, CA2, BC1, & BC2
- 2) R13A2 PANEL
- 3) SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 1)

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	2/2	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION:

32V73A13A2S1

PART NUMBER: ME452-0102-7401

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FAILURE OF THIS ITEM WOULD CAUSE LOSS OF REDUNDANT AC PWR TO P/L LOADS. THE SECOND FAILURE WOULD RESULT IN LOSS OF POWER TO CLOSE P/L BAY DOORS AND/OR RETRACT FREON RADIATORS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 MDAC ID: 5828 ABORT: SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 1) ITEM: FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) CONT BUSSES AB1, AB2, CA1, CA2, BC1, & BC2 R13A2 PANEL 2) SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 1) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A13A2S1
PART NUMBER: ME452-0102-7401

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

NO EFFECT FROM THIS FAILURE AS THE SWITCH IS NORMALLY "ON".

REFERENCES: 76BCl3

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5829 ABORT: 3/3

ITEM: SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 2)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUSSES AB1, AB2, CA1, CA2, BC1, & BC2
- 2) R13A2 PANEL
- 3) SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 2)

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A13A2S2

PART NUMBER: ME452-0102-7401

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK,

PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

NO EFFECT FROM THIS FAILURE AS THE SWITCH IS NORMALLY "ON".

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 5830 ABORT: 2/1R

ITEM: SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 2)

FAILURE MODE: FAILS OPEN OR SHORTS TO CASE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) CONT BUSSES AB1, AB2, CA1, CA2, BC1, & BC2
- 2) R13A2 PANEL
- 3) SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 2)
- 4) 5)
- 5) 6)
- 7)
- 8) 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	2/2	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 32V73A13A2S2
PART NUMBER: ME452-0102-7401

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK,

PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

FAILURÉ OF THIS ITEM WOULD CAUSE LOSS OF REDUNDANT AC PWR TO P/L LOADS. THE SECOND FAILURE WOULD RESULT IN LOSS OF POWER TO CLOSE P/L BAY DOORS AND/OR RETRACT FREON RADIATORS.

REFERENCES: 76BCl3

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C MDAC ID: 5831

FLIGHT: 3/1R ABORT: 3/1R

ITEM:

CIRCUIT BREAKER, 3A (AC CONT 1 A)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAI PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 1 A)

4)

5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB1

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED.

HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BF24H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5832 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 1 A)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIA1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 1 A)

4) 5)

5)

6) 7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1CB1
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF24H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5833 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 1 B)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAL PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 1 B)

4)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB2
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED.

HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BF24E

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT:

3/3 ABORT: MDAC ID: 5834

ITEM: CIRCUIT BREAKER, 3A (AC CONT 1 B)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- RIA1 PANEL 2)
- 3) CIRCUIT BREAKER, 3A (AC CONT 1 B)
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

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	CNIIICALLILLO		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		-

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1CB2

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF24E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5835 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 1 C)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAL PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 1 C)

4) 5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB3
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED.

HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BF24C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 FLIGHT: SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 5836 CIRCUIT BREAKER, 3A (AC CONT 1 C) ITEM: FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 1BC 2) RIA1 PANEL 3) CIRCUIT BREAKER, 3A (AC CONT 1 C) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC 3/3 RTLS: PRELAUNCH: 3/3 3/3 TAL: LIFTOFF: 3/3 ONORBIT: 3/3 AOA: 3/3 ATO: DEORBIT: 3/3 3/3 LANDING/SAFING: 3/3

LOCATION: 32V73AlAlCB3
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

REDUNDANCY SCREENS: A [] B [] C []

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS

AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF24C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5837 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (INVERTER PWR #1)

FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAL PANEL
- 3) MAIN DC DIST ASSY #1
- 4) SWITCH, TOGGLE 3PDT (INVERTER PWR #1)

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1S16
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT OPERATIONS AS THE AC INVERTERS ARE LATCHED ON DURING PRE-LAUNCH. ALTERNATE MEANS OF REMOVING A PHASE FROM THE AC BUS EXIST.

REFERENCES: 76BF24

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5838 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INVERTER PWR #1)

FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIA1 PANEL
- 3) MAIN DC DIST ASSY #1

4) SWITCH, TOGGLE 3PDT (INVERTER PWR #1)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S16
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

EFFECTS/RATIONALE:

IF THIS FAILURE OCCURS TO THE "OFF" SIDE OF THE SWITCH, AT LEAST ONE INVERTER WILL BE SHUT DOWN AND COULD NOT BE RESTARTED. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BF24

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5839 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN A TO INV 1 ON)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 1BC
- 3) FLCA-1
- 4) HYBRID DRIVER TYPE I (MN A TO INV 1 ON)

5) 6)

7)

7) 8)

9) 05-6

CRITICALITIES

	O2/4 4 4 O4:		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

81V76A16AR4

PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BF18F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5840 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN A TO INV 1 ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) GSE POWER

2) ESS BUS 1BC
3) FLCA-1
4) HYBRID DRIVER TY
5)

4) HYBRID DRIVER TYPE I (MN A TO INV 1 ON)

6) 7) 8) 9) 05-6

CRITTCALITTES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	HDW/FUNC 3/3 3/3 3/3 3/3	HDW/FUNC ABORT 3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR4
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BF18F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 5841 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN A TO INV 1 OFF)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) HYBRID DRIVER TYPE I (MN A TO INV 1 OFF)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

V			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR5
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BF18G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 EPD&C 3/3 SUBSYSTEM: FLIGHT: 3/3 ABORT: MDAC ID: 5842 HYBRID DRIVER TYPE I (MN A TO INV 1 OFF) ITEM: FAILURE MODE: FAILS OFF LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE PWR 2) PRE-FLIGHT TEST BUS #1 3) 4) HYBRID DRIVER TYPE I (MN A TO INV 1 OFF) 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE HDW/

DW/FUNC	ABORT	HDW/FUN	
3/3	RTLS:	3/3	
3/3	TAL:	3/3	

LIFTOFF: 3/3 TAL: 3/3
ONORBIT: 3/3 AOA: 3/3
DEORBIT: 3/3 ATO: 3/3

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR5
PART NUMBER: MC477-0261-0002

PRELAUNCH:

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BF18G

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87

3/3 SUBSYSTEM: EPD&C FLIGHT: MDAC ID: 5843 3/3 ABORT:

HYBRID DRIVER TYPE II (INV 1 A ON) ITEM:

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE II (INV 1 A ON)

4) 5)

6)

7) 8)

9) 05-6

CRITICALITIES

	Q2/2 2 2 Q2		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR11

PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED. NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BF17G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 5844 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 1 A ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE II (INV 1 A ON)

4)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

	V::1110::2112		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR11
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BF17G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5845 3/3 ABORT:

ITEM: HYBRID DRIVER TYPE II (INV 1 B ON)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE II (INV 1 B ON)

4)

- 5)
- 6) 7)
- 8)
- 05-6 9)

CRITICALITIES

	01/11/01		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B[] C[]

81V76A16AR12 LOCATION: PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED. NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BF17D

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 FLIGHT: SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 5846

ITEM:

HYBRID DRIVER TYPE II (INV 1 B ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- HYBRID DRIVER TYPE II (INV 1 B ON) 3)

4) 5)

6)

7) 8)

9) 05-6

CRITICALITIES

		~-·	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR12 PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BF17D

3/11/87 HIGHEST CRITICALITY HDW/FUNC DATE:

SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 5847 ABORT:

ITEM: HYBRID DRIVER TYPE II (INV 1 C ON)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE II (INV 1 C ON)

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

81V76A16AR13 PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED. NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BF17A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5848 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 1 C ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE II (INV 1 C ON)

4) 5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR13 PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BF17A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5849 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 A ON)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 A ON)

4) 5)

5) 6)

7) 8)

9) 05-6

CRITICALITIES

V-12			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

81V76A16AR14

PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 5850 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 A ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 A ON)

4) 5)

5) 6)

7) 8)

9) 05-6

CRITTCALITTES

O2/2 2 2 Q4		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
: 3/3		·
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR14
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5851 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 B ON)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 B ON)

4) 5)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC	
3/3	RTLS:	3/3	
3/3	TAL:	3/3	
3/3	AOA:	3/3	
3/3	ATO:	3/3	
: 3/3		•	
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

81V76A16AR15

PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16D

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 5852 HYBRID DRIVER TYPE III (INV 1 B ON) ITEM: FAILURE MODE: FAILS OFF LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: ESS BUS 1BC 2) FLCA-1 HYBRID DRIVER TYPE III (INV 1 B ON) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES

	V11222		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR15
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY DEPT ON DURING A FLIGHT.

REFERENCES: 76BF16D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5853 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 C ON)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 C ON)

4)

5)

6)

7)

9) 05-6

CRITICALITIES

	V-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR16
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16B

3/11/87 HIGHEST CRITICALITY HDW/FUNC DATE: 3/3 SUBSYSTEM: EPD&C FLIGHT:

3/3 ABORT: MDAC ID: 5854

HYBRID DRIVER TYPE III (INV 1 C ON) ITEM:

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- FLCA-1 2)
- 3) HYBRID DRIVER TYPE III (INV 1 C ON)

4) 5)

6)

7) 8)

9) 05-6

CRITICALITIES

	01/T T T 011		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR16

PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16B

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87

3/1R SUBSYSTEM: EPD&C FLIGHT: MDAC ID: 5855 3/1R ABORT:

ITEM: HYBRID DRIVER TYPE III (INV 1 A OFF)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 A OFF)

4)

5) 6)

7) 8)

05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING			-,

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A16AR17 PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF16H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5856 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 A OFF)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 A OFF)
- 4) 5)
- 5) 6)
- 7)
- 8) 9) 05-6

CRITICALITIES

	O1/4 4 4 O1:		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR17
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5857 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 1 B OFF)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 B OFF)

4) 5)

5) 6)

7) 8)

9) 05-6

CRITICALITIES

	V-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFINGS	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A16AR18
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF16E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5858 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 B OFF)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 B OFF)

5) 6) 7) 8)

4)

9) 05-6

CRITICALITIES

	V-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR18
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16E

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5859 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 1 C OFF)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- HYBRID DRIVER TYPE III (INV 1 C OFF) 3)

4)

5)

6)

7)

8) 9) 05-6

CRITICALITIES

	V-14V-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A16AR19 PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF16B

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C MDAC ID: 5860 ABORT: 3/3 HYBRID DRIVER TYPE III (INV 1 C OFF) ITEM: FAILURE MODE: FAILS OFF LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 1BC 2) FLCA-1 3) HYBRID DRIVER TYPE III (INV 1 C OFF) 4) 5) 6) 7) 8) 9) 05-6

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	A1/7 7 7 A1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR19 PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16B

3/11/87 DATE:

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT: 3/1R

MDAC ID:

5861

ABORT:

3/1R

ITEM:

RELAY, LATCHING TO INVERTER 1A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAI PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) RELAY, LATCHING TO INVERTER 1A

6)

7)

8)

9) 05-6

CRITICALITIES

	~-·		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A22K1

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER RESULTING IN THE LOSS IN ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BF13H

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

FLIGHT: SUBSYSTEM: EPD&C 3/3 3/3 MDAC ID: 5862 ABORT:

RELAY, LATCHING TO INVERTER 1A ITEM:

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIA1 PANEL
- 3) FLCA-1
- FPCA-1 4)
- 5) RELAY, LATCHING TO INVERTER 1A

6)

7) 8)

9) 05-6

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22K1

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

# EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BF13H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5863 ABORT: 3/1R

ITEM: RELAY, LATCHING TO INVERTER 1B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIA1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) RELAY, LATCHING TO INVERTER 1B

6) 7)

7) 8)

9) 05-6

## CRITICALITIES

	V-10		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 81V76A22K2 PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

# EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER RESULTING IN THE LOSS IN ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BF13E

HIGHEST CRITICALITY HDW/FUNC 3/11/87

FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 5864

ITEM: RELAY, LATCHING TO INVERTER 1B

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAI PANEL
- 3) FLCA-1
- FPCA-1 4)
- RELAY, LATCHING TO INVERTER 1B 5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22K2

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

# EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BF13E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5865 ABORT: 3/1R

ITEM: RELAY, LATCHING TO INVERTER 1C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAL PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) RELAY, LATCHING TO INVERTER 1C

6)

7)

8)

9) 05-6

#### CRITICALITIES

	~-·		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 81V76A22K3

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER RESULTING IN THE LOSS IN ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BF13C

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C

3/3 ABORT: MDAC ID: 5866

RELAY, LATCHING TO INVERTER 1C ITEM:

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- FLCA-1 3)
- 4) FPCA-1
- RELAY, LATCHING TO INVERTER 1C

6)

7) 8)

05-6 9)

#### CRITICALITIES

	V-1			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		·	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22K3

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BF13C

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5867 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 1 A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) FUSE, 80A TO INV 1 A
- 5)
- 6)
- 7) 8)
- 9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 81V76A22F1

PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF13H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

FLIGHT:

SUBSYSTEM: EPD&C MDAC ID: 5868

3/1R

ABORT:

3/1R

ITEM:

FUSE, 80A TO INV 1 B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- MAIN DC DIST ASSY #1 2)
- 3) FPCA-1
- 4) FUSE, 80A TO INV 1 B

5)

6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION:

81V76A22F2

PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF13E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/1R

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5869 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 1 C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) FUSE, 80A TO INV 1 C
- 5) 6)
- 6) 7)
- 8)
- 9) 05-6

# CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
: 3/3		•
	3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 81V76A22F3

PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

# EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF13C

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 5870 ABORT: RESISTOR, 5.1K 1/4W (TO MDM OF1) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 1BC 2) MAIN DC DIST ASSY #1 3) FPCA-1 RESISTOR, 5.1K 1/4W (TO MDM OF1) 5) 6) 7) 8) 05-6 9) CRITICALITIES FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC RTLS: PRELAUNCH: 3/3 3/3 LIFTOFF: 3/3 3/3 TAL: 3/3 ONORBIT: AOA: 3/3 DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22A1R66
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION.
ALTERNATE INDICATORS (TALKBACKS) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BF12G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5871 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF1)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF1)
- 5)
- 6)
- 7)
- 9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22A1R67 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION. ALTERNATE INDICATORS (TALKBACKS) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BF12E

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 5872

ITEM:

RESISTOR, 5.1K 1/4W (TO MDM OF1)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) MAIN DC DIST ASSY #1
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF1)
- 5)
- 6)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

V-10-1-V-10-1			
HDW/FUNC	ABORT	HDW/FUNC	
3/3	RTLS:	3/3	
3/3	TAL:	3/3	
3/3	AOA:	3/3	
3/3	ATO:	3/3	
3/3			
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22A1R68

PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

# EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION. ALTERNATE INDICATORS (TALKBACKS) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BF12B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5873 ABORT: 3/3

ITEM: DIODE, ISOLATION

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAL PANEL
- 3) FPCA-1
- 4) DIODE, ISOLATION
- 5) 6)
- 6) 7)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
: 3/3		•
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22A1CR1 PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF13G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: 3/3 5874 MDAC ID: DIODE, ISOLATION ITEM: FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 1BC 2) R1A1 PANEL 3) FPCA-1 DIODE, ISOLATION 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: 3/3 PRELAUNCH: 3/3 TAL: 3/3 3/3 LIFTOFF: ONORBIT: 3/3 AOA: 3/3 3/3 DEORBIT: ATO: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [ ] B [ ] C [ ] 81V76A22A1CR1 LOCATION: PART NUMBER: JANTXV1N4246 CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK EFFECTS/RATIONALE: THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON

REFERENCES: 76BF13G

CREW/MISSION/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5875 ABORT: 3/3

ITEM: DIODE, ISOLATION

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAI PANEL
- 3) FPCA-1
- 4) DIODE, ISOLATION

5)

6)

7)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		, -

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22A1CR2 PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF13D

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 5876 DIODE, ISOLATION ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 1BC 2) RIAL PANEL 3) FPCA-1

3) FPCA-1
4) DIODE, ISOLATION
5)
6)
7)
8)
9) 05-6

### CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22A1CR2 PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF13D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 5877 ABORT: 3/3

ITEM:

DIODE, ISOLATION

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- RIA1 PANEL 2)
- 3) FPCA-1
- 4) DIODE, ISOLATION
- 5) 6)
- 7)
- 8)
- 9) 05-6

#### CRITICALITIES

	CIVITON		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

81V76A22A1CR3 PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF13B

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 FLIGHT: SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 5878 DIODE, ISOLATION ITEM: FAILURE MODE: SHORTS SUBSYS LEAD: K. SCHMECKPEPER LEAD ANALYST: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 1BC 2) RIA1 PANEL 3) FPCA-1 4) DIODE, ISOLATION 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE RTLS: 3/3 PRELAUNCH: 3/3 3/3 TAL: 3/3 LIFTOFF: 3/3 3/3 AOA: ONORBIT: 3/3 ATO: 3/3 DEORBIT: LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [ ] B [ ] C [ ] LOCATION: 81V76A22A1CR3 PART NUMBER: JANTXV1N4246 CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF13B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5879 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 1 A

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RPC, 7.5A TO INV 1 A
- 5)
- 6) 7)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22RPC8
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

## EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF. HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS. INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF12F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5880 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 1 A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RPC, 7.5A TO INV 1 A
- 5)
- 6)
- 7)
- 9) 05-6

#### CRITICALITIES

	CVTTTCU	CULTICALITIES	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	-3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		·

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22RPC8
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE GROUND, AN IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BF12F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 5881 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 1 B

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RPC, 7.5A TO INV 1 B
- 5)
- 6) 7)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

	~-·- ~ · ·		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3	•	,

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22RPC9
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

### EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF. HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS. INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF12D

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C

ABORT: 3/3 MDAC ID: 5882

RPC, 7.5A TO INV 1 B ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1 4) RPC, 7.5A TO INV 1 B
- 5)
- 6)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

HDW/FUNC
3/3
3/3
3/3
3/3
•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22RPC9 PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BF12D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5883 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 1 C

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RPC, 7.5A TO INV 1 C
- 5)
- 6)
- 7) 8)
- 9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-/ -

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22RPC10 PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

## EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF. HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS. INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF12A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5884 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 1 C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RPC, 7.5A TO INV 1 C
- 5)
- 6)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A22RPC10
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE GROUND, AN IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BF12A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5885 ABORT: 3/1R

ITEM: INVERTER 1 A

FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIA1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 A

6) 7)

7) 8)

9) 05-6

#### CRITTCALITTES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
3/3		•
	3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION:

81V76A1

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART

STRUCTURAL FAILURE

### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUSS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: MDAC ID: 5886 ABORT: 3/3

ITEM:

INVERTER 1 A

FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAL PANEL
- 3) FLCA-1
- 4) FPCA-1
- INVERTER 1 A 5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		·
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A1

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5887 ABORT: 3/1R

ITEM: INVERTER 1 A

FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIA1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 A

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		-,

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 81V76A1

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87

FLIGHT: 3/1R ABORT: 3/1R SUBSYSTEM: EPD&C MDAC ID: 5888

INVERTER 1 A ITEM:

FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIA1 PANEL
- 3) FLCA-1
- FPCA-1 4)
- 5) INVERTER 1 A
- 6)
- 7)
- 8) 05-6 9)

### CRITICALITIES

	VI.L. I. I. VI.L. I.			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 81V76A1

PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/ VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5889 ABORT: 3/1R

ITEM: INVERTER 1 B

FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAI PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 B

6) 7)

8)

9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION:

81V76A2

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART

STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUSS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3

FLIGHT: 3/3 ABORT: 3/3 SUBSYSTEM: EPD&C MDAC ID: 5890

INVERTER 1 B ITEM:

FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIA1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- INVERTER 1 B 5)
- 6)
- 7)
- 8)
- 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A2

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5891 ABORT: 3/1R

ITEM: INVERTER 1 B

FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAI PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 B

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 81V76A2

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R ABORT: 3/1R MDAC ID: 5892

ITEM: INVERTER 1 B FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1 4) FPCA-1
- 5) INVERTER 1 B
- 7)
- 8)
- 9) 05-6

#### CRITICALITIES

	CKITICKILITIE			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 81V76A2

PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/ VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5893 ABORT: 3/1R

ITEM: INVERTER 1 C

FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAL PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 C

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 81V76A3

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART

STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUSS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5894 ABORT: 3/3

ITEM: INVERTER 1 C

FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAL PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 C
- 6)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

	01/1 1 1 011	101111111	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A3

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5895 ABORT: 3/1R

ITEM: INVERTER 1 C

FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAI PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 C

6)

7) 8)

9) 05-6

#### CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A3

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R 3/1R ABORT: MDAC ID: 5896

ITEM: INVERTER 1 C

FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIA1 PANEL
- 3) FLCA-1
- FPCA-1 4)
- INVERTER 1 C
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

CALILONDITIED			
HDW/FUNC	ABORT	HDW/FUNC	
3/3	RTLS:	3/1R	
3/1R	TAL:	3/1R	
3/1R	AOA:	3/1R	
3/1R	ATO:	3/1R	
3/3		-	
	HDW/FUNC 3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:	

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A3

PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/ VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5897 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INV/AC BUS 1)

FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAI PANEL
- 3) MAIN DC DIST ASSY #1
- 4) SWITCH, TOGGLE 3PDT (INV/AC BUS 1)

5) 6)

7)

8)

9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
: 3/3		•
	3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S19 PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

EFFECTS/RATIONALE:

IF THE AC BUS RELAY IS TRIPPED OFF BY THE AC OVER/UNDER VOLTAGE SENSOR AND THIS FAILURE OCCURS, THE RESULT IS THE LOSS OF ONE PHASE OF THE AC BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BG24F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5898 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INV/AC BUS 1)

FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAI PANEL
- 3) MAIN DC DIST ASSY #1

4) SWITCH, TOGGLE 3PDT (INV/AC BUS 1)

5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	IDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S19
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE COULD DISCONNECT ONE PHASE OF THE AC BUS FROM THE INVERTER. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BG24F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5899 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 1 ON)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
 2) PRE-FLIGHT TEST BUS #1
 3) FLCA-1
 4) HYBRID DRIVER TYPE III (AC BUS 1 ON)
 5)
 6)
 7)
 8)
 9) 05-6
 - CRITICALITIES

	~		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR9
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BG23G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 ABORT: MDAC ID: 5900 ITEM: HYBRID DRIVER TYPE III (AC BUS 1 ON) FAILURE MODE: FAILS OFF LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER PRE-FLIGHT TEST BUS #1 2) 3) FLCA-1 4) HYBRID DRIVER TYPE III (AC BUS 1 ON) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE PRELAUNCH: 3/3 RTLS: 3/3

ONORBIT: 3/3 AOA: 3/3
DEORBIT: 3/3 ATO: 3/3
LANDING/SAFING: 3/3

TAL:

3/3

REDUNDANCY SCREENS: A [] B [] C []

3/3

LOCATION: 81V76A16AR9
PART NUMBER: MC477-0263-0002

LIFTOFF:

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BG23G

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5901 3/3 ABORT:

ITEM: HYBRID DRIVER TYPE III (AC BUS 1 OFF)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) HYBRID DRIVER TYPE III (AC BUS 1 OFF)

5) 6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR10 PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BG23H

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 SUBSYSTEM: EPD&C FLIGHT: ABORT: 3/3 MDAC ID: 5902 HYBRID DRIVER TYPE III (AC BUS 1 OFF) ITEM: FAILURE MODE: FAILS OFF LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER 2) PRE-FLIGHT TEST BUS #1 3) FLCA-1 4) HYBRID DRIVER TYPE III (AC BUS 1 OFF) 5) 6) 7) 8)

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR10
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

9)

05-6

THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BG23H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5903 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 1 CMD

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) FUSE, 3A TO AC BUS 1 CMD
- 5) 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CIRCUIT IS USED FOR GROUND C/O ONLY AND IS NOT POWERED DURING FLIGHT OPERATIONS.

REFERENCES: 76BG23H

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 5904 FUSE, 3A TO AC BUS 1 CMD ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) FUSE, 3A TO AC BUS 1 CMD

5) 6)

7)

8) 9) 05-6

CRITICALITIES

~~~~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

81V76A16F

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

## EFFECTS/RATIONALE:

THIS CIRCUIT IS USED FOR GROUND C/O ONLY AND IS NOT POWERED DURING FLIGHT OPERATIONS.

REFERENCES: 76BG23G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5905 ABORT: 3/1R

ITEM: AC OVER/UNDER VOLT SNSR 1

FAILURE MODE: INADVERTENT OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) AC OVER/UNDER VOLT SNSR 1
- 4) 5)
- 6)
- 7)
- 8) 9) 05-6

#### CRITICALITIES

	O1/2 1 1 O1/11 1 1 1 1 D		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3	•	•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 81V76A35VS1
PART NUMBER: MC431-0129-0011

CAUSES: CONTAMINATION, THERMAL SHOCK, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC BUSSES WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BG

HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 5906 ABORT: ITEM: AC OVER/UNDER VOLT SNSR 1 FAILURE MODE: LOSS OF OUTPUT LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS #1 2) INV DIST & CONT ASSY #1 3) AC OVER/UNDER VOLT SNSR 1 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES

	CKTTTCHTTTTD		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35VS1
PART NUMBER: MC431-0129-0011

CAUSES: CONTAMINATION, THERMAL SHOCK, MECH SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO AUTOMATICALLY DETECT AND INTERRUPT AN OVERLOADED AC INVERTER. MANUAL METHODS OF INVERTER SHUTDOWN ARE AVAILABLE. NO EFFECT TO CREW/MISSION/VEHICLE

REFERENCES: 76BG

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5907 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 A SET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 A SET)

6)

7) 8)

9) 05-6

#### CRITICALITIES

	0112121212		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		· ·

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1CR1

PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BG21G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 5908 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 A SET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 A SET)

6) 7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1CR1
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BG21G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 5909 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 B SET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 B SET)

6) 7)

8)

9) 05-6

#### CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1CR2 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BG21G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5910 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 B SET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 B SET)

6)

7) 8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1CR2 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5911 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 C SET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 C SET)

6)

7)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1CR3
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5912 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 C SET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 C SET)

6) 7)

7) 8)

9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1CR3
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5913 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 1 A RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 A RESET)

6)

7) 8)

9) 05-6

#### CRITICALITIES

21/7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•
•	•		

REDUNDANCY SCREENS: A [ 3 ] B [ F ] C [ P ]

LOCATION: 81V76A35A1CR4
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

3/11/87 HIGHEST CRITICALITY HDW/FUNC DATE: SUBSYSTEM: EPD&C 3/3 FLIGHT: 3/3 MDAC ID: 5914 ABORT: DIODE, BLOCKING 1A (TO 1 A RESET) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GROUND C/O (AC BUS 1) PRE-FLIGHT TEST BUS #1 2) 3) FLCA-1 INV DIST & CONT ASSY #1 4) 5) DIODE, BLOCKING 1A (TO 1 A RESET) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE RTLS: TAL: 3/3 PRELAUNCH: 3/3 3/3 3/3 3/3 LIFTOFF: ONORBIT: 3/3 AOA:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

3/3

LOCATION: 81V76A35A1CR4
PART NUMBER: JANTXV1N4944

LANDING/SAFING: 3/3

DEORBIT:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

ATO:

3/3

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5915 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 B RESET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 B RESET)

6) 7)

8)

9) 05-6

#### CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR5
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5916 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 1 B RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 B RESET)

6) 7)

8)

9) 05-6

CRITICALITIES

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HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
: 3/3		•
	3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [ 3 ] B [ F ] C [ P ]

LOCATION: 81V76A35A1CR5
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5917 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 1 C RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 C RESET)

6)

7)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 3 ] B [ F ] C [ P ]

LOCATION: 81V76A35A1CR6 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 5918 ABORT: 3/3 DIODE, BLOCKING 1A (TO 1 C RESET) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GROUND C/O (AC BUS 1) PRE-FLIGHT TEST BUS #1 3) FLCA-1 INV DIST & CONT ASSY #1 4) DIODE, BLOCKING 1A (TO 1 C RESET) 5) 6)

7) 8) 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1CR6
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5919 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 C RESET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) AC OVER/UNDER VOLT SNSR #1
- 4) DIODE, BLOCKING 1A (TO 1 C RESET)

5)

6)

7)

9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1CR7
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLT SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY.

SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5920 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 C RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) AC OVER/UNDER VOLT SNSR #1
- 4) DIODE, BLOCKING 1A (TO 1 C RESET)

5)

6)

7)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1CR7
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLT SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 5921 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 B RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) AC OVER/UNDER VOLT SNSR #1
- 4) DIODE, BLOCKING 1A (TO 1 B RESET)

5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

V-1			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1CR8
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLT SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5922 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 B RESET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) AC OVER/UNDER VOLT SNSR #1
- 4) DIODE, BLOCKING 1A (TO 1 B RESET)

5) 6)

6) 7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1CR8
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLT SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY.

SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5923 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 A RESET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) AC OVER/UNDER VOLT SNSR #1
- 4) DIODE, BLOCKING 1A (TO 1 A RESET)

5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1CR9
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLT SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY.

SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C 3/3 FLIGHT: 3/3 MDAC ID: 5924 ABORT: ITEM: DIODE, BLOCKING 1A (TO 1 A RESET) FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: AC BUS 1 2) INV DIST & CONT ASSY #1 3) AC OVER/UNDER VOLT SNSR #1 DIODE, BLOCKING 1A (TO 1 A RESET) 5) 6)

7) 8) 9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1CR9
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLT SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 5925 ABORT: 3/3

ITEM:

RESISTOR, 5.1K 1/4W (TO MDM OF1)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- INV DIST & CONT ASSY #1
- AC BUS OVER/UNDER VOLTAGE SNSR 3)
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF1)
- 5)
- 6)
- 7) 8)
- 9) 05-6

### CRITICALITIES

FLIGHT PHASE H	IDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: PART NUMBER: RLR07C512GR

81V76A35A1R2

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO FLIGHT OPERATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 5926 FEIGHT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF1)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) AC BUS OVER/UNDER VOLTAGE SNSR
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF1)
- 5)
- 6)
- 7) 8)
- 9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1R1 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5927 ABORT: 3/3

ITEM: RESISTOR, 2.2K 1/4W

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) 013 PANEL
- 3) RIAL PANEL
- 4) INV DIST & CONT ASSY #1
- 5) RESISTOR, 2.2K 1/4W TO MDM OF1

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		,

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1R6 PART NUMBER: RLR20C222GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MONITORING CIRCUIT.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5928 ABORT: 3/3

ITEM: RESISTOR, 2.2K 1/4W

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) 013 PANEL
- 3) RIAI PANEL
- 4) INV DIST & CONT ASSY #1
- 5) RESISTOR, 2.2K 1/4W TO MDM OF1

6) 7)

8)

9) 05-6

#### CRITICALITIES

	01/1110111111			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1R9
PART NUMBER: RLR20C222GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MONITORING CIRCUIT.

3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 5929 ABORT: 3/3

ITEM:

RESISTOR, 1.8K 1/4W (TO MDM OF1)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST CONT & ASSY #1
- 3) AC OVER/UNDER VOLT SNSR #1
- RESISTOR, 1.8K 1/4W (TO MDM OF1)

5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A35A1R7

PART NUMBER: RLR07C182GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR IS PART OF A MONITORING FUNCTION AND IS NOT CRITICAL FOR VEHICLE OPERATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 5930 3/3 ABORT: ITEM: RESISTOR, 1.8K 1/4W (TO MDM OF1) FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS 1 2) INV DIST CONT & ASSY #1 AC OVER/UNDER VOLT SNSR #1 3) RESISTOR, 1.8K 1/4W (TO MDM OF1) 5) 6) 7) 8) 9) 05-6

#### CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3	•	·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R8
PART NUMBER: RLR07C182GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR IS PART OF A MONITORING FUNCTION AND IS NOT CRITICAL FOR VEHICLE OPERATION.

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5931 3/1R ABORT:

ITEM: SWITCH, TOGGLE SPDT (AC 1 BUS SNSR)

FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) 013 PANEL
- 3) RIAL PANEL
- SWITCH, TOGGLE SPDT (AC 1 BUS SNSR)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

V-10			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/3	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S22 PART NUMBER: ME452-0102-7103

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

EFFECTS/RATIONALE:

WORST CASE FAILURE IS LOSS OF CONTROL OF THE AC OVER/UNDER VOLTAGE SENSOR WHICH COULD PREVENT THE DETECTION AND CORRECTION OF AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL REDUNDANCY COULD LEAD TO LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5932 ABORT: 3/1R

ITEM: SWITCH, TOGGLE SPDT (AC 1 BUS SNSR)

FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) 013 PANEL
- 3) RIAL PANEL
- 4) SWITCH, TOGGLE SPDT (AC 1 BUS SNSR)

5) 6)

6) 7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/3	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S22
PART NUMBER: ME452-0102-7103

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

EFFECTS/RATIONALE:

WORST CASE FAILURE IS LOSS OF CONTROL OF THE AC OVER/UNDER VOLTAGE SENSOR WHICH COULD PREVENT THE DETECTION AND CORRECTION OF AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL REDUNDANCY COULD LEAD TO LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5933 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A TO AC1 BUS SENSOR

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) 013 PANEL
- 3) CIRCUIT BREAKER, 3A TO AC1 BUS SENSOR

4) 5)

6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R ·	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 33V73A13CB3
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

WORST CASE FAILURE OCCURS WHEN THE SENSOR MONITOR/AUTO SWITCH FAILS ALSO. THE RESULT IS LOSS OF CAPABILITY TO DETECT AND CORRECT AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL AC POWER WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO LACK OF POWER TO CRITICAL LOADS.

REFERENCES: 76BF24B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5934 ABORT: 3/1R

CIRCUIT BREAKER, 3A TO ACL BUS SENSOR ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 013 PANEL 2)
- 3) CIRCUIT BREAKER, 3A TO ACL BUS SENSOR
- 4)
- 5) 6)
- 7)
- 8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3		·	

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 33V73A13CB3 PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

WORST CASE FAILURE OCCURS WHEN THE SENSOR MONITOR/AUTO SWITCH FAILS ALSO. THE RESULT IS LOSS OF CAPABILITY TO DETECT AND CORRECT AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL AC POWER WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO LACK OF POWER TO CRITICAL LOADS.

REFERENCES: 76BF24B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5935 ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 1A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) RELAY, LATCHING TO AC BUS 1A

4)

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A35K1

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUSS. REDUNDANT BUSSES WOULD PROVIDE POWER TO CRITICAL LOADS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5936 ABORT: 3/3 ITEM: RELAY, LATCHING TO AC BUS 1A

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) RELAY, LATCHING TO AC BUS 1A
- 4) 5)
- 6)
- 7) 8)
- 05-6 9)

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35K1

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC 3/3 SUBSYSTEM: EPD&C FLIGHT:

MDAC ID: 5937 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 1B

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) RELAY, LATCHING TO AC BUS 1B
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC	
3/3	RTLS:	3/3	
3/3	TAL:	3/3	
3/3	AOA:	3/3	
3/3	ATO:	3/3	
3/3		•	
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35K2

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5938 ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 1B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) RELAY, LATCHING TO AC BUS 1B
- 4)
- 5)
- 6) 7)
- 8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING	3/3		·

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A35K2

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT BUSSES WOULD PROVIDE POWER TO CRITICAL LOADS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/1R

MDAC ID: 5939 ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 1C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) RELAY, LATCHING TO AC BUS 1C

4) 5)

6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A35K3

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT BUSSES WOULD PROVIDE POWER TO CRITICAL LOADS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: SUBSYSTEM: EPD&C 3/3 3/3 MDAC ID: 5940 ABORT: RELAY, LATCHING TO AC BUS 1C ITEM: FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS 1 INV DIST & CONT ASSY #1 2) RELAY, LATCHING TO AC BUS 1C 3) 4) 5) 6) 7) 8) 9) 05-6

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V-12-2-V-12-2-V-1			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35K3

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5941 ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 1 A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST CONT ASSY #1
- 3) AC O/V VOLT SNSR 1
- 4) FUSE, 3A TO AC BUS 1 A
- 5) 6)
- 7)
- 8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3		• •	

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 81V76A35F1

PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

3/1R SUBSYSTEM: EPD&C FLIGHT: MDAC ID: 5942 ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 1 B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- INV DIST CONT ASSY #1
- 3) AC O/V VOLT SNSR 1
- FUSE, 3A TO AC BUS 1 B 4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

VI				
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3	•	·	

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 81V76A35F2

PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5943 ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 1 C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST CONT ASSY #1
- 3) AC O/V VOLT SNSR 1
- 4) FUSE, 3A TO AC BUS 1 C
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC	
3/3	RTLS:	3/1R	
3/1R	TAL:	3/1R	
3/1R	AOA:	3/1R	
3/1R	ATO:	3/1R	
3/3		•	
	3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:	

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 81V76A35F3
PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5944 ABORT: 3/3

ITEM: FUSE, 3A TO AC VOLTMETER

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST CONT ASSY #1
- 3) FUSE, 3A TO AC VOLTMETER
- 4)
- 5)
- 6) 7)
- 7)
- 9) 05-6

CRITICALITIES

V-1				
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		·	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

81V76A35F4

PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON CREW/MISSION/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5945 ABORT: 3/3

ITEM: FUSE, 3A TO AC VOLTMETER

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST CONT ASSY #1
- 3) FUSE, 3A TO AC VOLTMETER
- 4) 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35F5

PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON CREW/MISSION/VEHICLE.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: ABORT: 3/3 MDAC ID: 5946

FUSE, 3A TO AC VOLTMETER ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST CONT ASSY #1
- 3) FUSE, 3A TO AC VOLTMETER
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

CRITTCALITIES

	CNITICA		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35F6

PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BG9B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5947 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF1)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) ESS BUS 1BC
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF1)

5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R3
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BG12H

HIGHEST CRITICALITY HDW/FUNC 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 5948 ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF1) FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS 1 INV DIST & CONT ASSY #1 2) 3) ESS BUS 1BC 4) RESISTOR, 5.1K 1/4W (TO MDM OF1) 5) 6) 7) 8) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC 3/3 RTLS: 3/3 TAL: 3/3 PRELAUNCH: 3/3 LIFTOFF: 3/3 3/3 AOA: ONORBIT:

REDUNDANCY SCREENS: A [] B [] C []

3/3

LOCATION: 81V76A35A1R4 PART NUMBER: RLR07C512GR

LANDING/SAFING: 3/3

DEORBIT:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

ATO:

3/3

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BG12G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 5949 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF1)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) ESS BUS 1BC
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF1)

5) 6)

7)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R5 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BG12G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 5950 ABORT: ITEM: RESISTOR, 4.3K 1/8W (AC BUS 1 A VOLTAGE) FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE PWR MONITOR 2) INV DIST & CONT ASSY #1 3) RESISTOR, 4.3K 1/8W (AC BUS 1 A VOLTAGE) 4) 5) 6) 7) 8) 9) 05-6

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R16 PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BG9A

3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 5951 3/3 ABORT: RESISTOR, 4.3K 1/8W (AC BUS 1 B VOLTAGE) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE PWR MONITOR 2) INV DIST & CONT ASSY #1 3) RESISTOR, 4.3K 1/8W (AC BUS 1 B VOLTAGE) 4) 5) 6) 7) 8)

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R17 PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

9)

05-6

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BG9A

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 MDAC ID: 5952 ABORT: RESISTOR, 4.3K 1/8W (AC BUS 1 C VOLTAGE) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE PWR MONITOR 2) INV DIST & CONT ASSY #1 3) RESISTOR, 4.3K 1/8W (AC BUS 1 C VOLTAGE) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: PRELAUNCH: 3/3 3/3 LIFTOFF: 3/3 TAL: 3/3 3/3 ONORBIT: AOA: 3/3 3/3 DEORBIT: ATO: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R18
PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BG9A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 5953 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 1 A VOLTAGE)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #1
- 3) RESISTOR, 150K 1/2W (AC BUS 1 A VOLTAGE)

4)

5)

7)

8) 9) 05-6

CRITICALITIES

	CILLICA	THILL		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R13 PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BG10E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5954 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 1 B VOLTAGE) FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #1
- 3) RESISTOR, 150K 1/2W (AC BUS 1 B VOLTAGE)

4) 5)

6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3	•	•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R14 PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BG10D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5955 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 1 C VOLTAGE)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #1
- 3) RESISTOR, 150K 1/2W (AC BUS 1 C VOLTAGE)

4)

5)

6) 7)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R15 PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BG10B

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 5956 ABORT: ITEM: RESISTOR, 100K (AC BUS 1 A CURRENT) FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE PWR MONITOR INV DIST & CONT ASSY #1 3) RESISTOR, 100K (AC BUS 1 A CURRENT) 4) 5) 6) 7) 8) 05-6

		IES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R10 PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BG13E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 3/3 5957 ABORT:

ITEM:

RESISTOR, 100K (AC BUS 1 B CURRENT)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- INV DIST & CONT ASSY #1
- RESISTOR, 100K (AC BUS 1 B CURRENT) 3)

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•
DEORBIT:	3/3		

REDUNDANCY SCREENS: A [] B[] C[]

LOCATION:

81V76A35A1R11 PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BG13D

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 MDAC ID: 5958 ABORT: RESISTOR, 100K (AC BUS 1 C CURRENT) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE PWR MONITOR INV DIST & CONT ASSY #1 2) RESISTOR, 100K (AC BUS 1 C CURRENT) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT
3/3 RTLS:
3/3 TAL: FLIGHT PHASE HDW/FUNC 3/3 3/3 3/3 PRELAUNCH: 3/3 LIFTOFF: 3/3 ONORBIT: AOA: 3/3 DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3

LOCATION: 81V76A35A1R12 PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

REDUNDANCY SCREENS: A [] B [] C []

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BG13B

3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 5959 ABORT: 3/3 ITEM: AC VOLTMETER FAILURE MODE: FAILS OPEN OR SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) F9A2 PANEL 2) AC VOLTMETER 3) 4) 5) 6) 7) 8)
- 05-6 9)

CRITICALITIES

	CHITTCHLITTE		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A9A2M1 PART NUMBER: MC432-0237-0002

CAUSES: CONTAMINATION, PIECE-PART FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

NO EFFECT AS THIS METER PROVIDES NON-CRITICAL MEASUREMENTS.

ALTERNATE MEASUREMENT VISABILITY IS AVAILABLE.

REFERENCES: 76BG7H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5960 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV & DIST CONT ASSY #1
- 3) L4 PANEL
- 4) Fl PANEL
- 5) M052J PANEL
- 6) SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)

7)

9) 05-6

CRITICALITIES

	ONTITUTE TELE			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

80V73A124S2

PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BH15B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5961 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV & DIST CONT ASSY #1
- 3) L4 PANEL
- 4) Fl PANEL
- 5) MO52J PANEL
- 6) SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 80V73A124S2 PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BH15B

3/11/87 HIGHEST CRITICALITY HDW/FUNC DATE: SUBSYSTEM: EPD&C 3/3 FLIGHT: ABORT: MDAC ID: 3/3 5962

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- INV & DIST CONT ASSY #1 2)
- 3) L4 PANEL
- 4) F1 PANEL
- SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)

6) 7)

8)

9) 05-6

CRITICALITIES

	V1(1 1 1 V1)111 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A1S2

PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BH15D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5963 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV & DIST CONT ASSY #1
- 3) L4 PANEL
- 4) F1 PANEL
- 5) SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A1S2

PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BH15D

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5964 ABORT: 3/3 ITEM: CIRCUIT BREAKER, 3A 3-P FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: AC BUS #1 INV DIST & CONT ASSY #1 2) 3) L4 PANEL CIRCUIT BREAKER, 3P 3A TO AC UTIL POWER 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING	: 3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

31V73A4CB28

PART NUMBER: MC452-0032-3030

CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO AN AC UTILITY OUTLET. THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BH15G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5965 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A 3-P

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) L4 PANEL
- 4) CIRCUIT BREAKER, 3P 3A TO AC UTIL POWER
- 5) 6)
- 7)
- 8) 9) 05-6

CRITICALITIES

~		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		
	3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 31V73A4CB28
PART NUMBER: MC452-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO AN AC UTILITY OUTLET. THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BH15G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5966 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO FMCA-1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO FMCA-1
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB1
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

REFERENCES: 76BJ22D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 5967 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO FMCA-1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO FMCA-1
- 5) 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB1
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BJ22D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 5968 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-1

5) 6)

6) 7)

/) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	2/1R	
LIFTOFF:	3/3	TAL:	2/1R	
ONORBIT:	2/1R	AOA:	2/1R	
DEORBIT:	2/1R	ATO:	2/1R	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB2
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

AFTER SECOND FAILURE, CREW EVA REQUIRE TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

REFERENCES: 76BJ22G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5969 ABORT: 3/3

ITEM:

CIRCUIT BREAKER TO MMCA-1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- AC BUS 1 1)
- INV DIST & CONT ASSY #1 2)
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-1

5) 6)

7)

8)

9) 05-6

CRITTCALITTES

	CIVITION	CKITICKHITIHD	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	· AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB2

PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BJ22G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 5970 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-3

5)

6)

7) 8)

9) 05-6

CRITICALITIES

	CILLICITELLID		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB3
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

AFTER SECOND FAILURE, CREW EVA REQUIRE TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

REFERENCES: 76BJ22F

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5971 ABORT: 3/3

ITEM:

CIRCUIT BREAKER TO MMCA-3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- AC BUS 1
- INV DIST & CONT ASSY #1 2)
- MA73C PANEL 3)
- 4) CIRCUIT BREAKER TO MMCA-3
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

	01/111111111		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB3 PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BJ22F

HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 2/1R 2/1R MDAC ID: 5972 ABORT:

CIRCUIT BREAKER TO AMCA-1 ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- INV DIST & CONT ASSY #1 2)
- 3) MA73C PANEL
- CIRCUIT BREAKER TO AMCA-1

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB4 PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

REFERENCES: 76BJ22H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5973 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO AMCA-1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO AMCA-1

5)

6)

7) 8)

9) 05-6

CRITICALITIES

	V-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB4
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BJ22H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5974 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 1A TO RCS/OMS-1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 1A TO RCS/OMS-1

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB38
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE ISOLATED.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5975 ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 1A TO RCS/OMS-1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 1A TO RCS/OMS-1

5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB38
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5976 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 1B TO RCS/OMS-1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 1B TO RCS/OMS-1

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB39
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE ISOLATED.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5977 ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 1B TO RCS/OMS-1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 1B TO RCS/OMS-1

5)

6) 7)

7)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		-, -

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB39
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5978 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 1C TO RCS/OMS-1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 1C TO RCS/OMS-1
- 5) 6)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB40
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE ISOLATED.

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C 3/3 FLIGHT:

MDAC ID: 5979 ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 1C TO RCS/OMS-1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 1C TO RCS/OMS-1

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [] B[] C[

LOCATION:

85V73A129CB40 PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 5980 ABORT: 2/1R

ITEM: RELAY TO PLBD AC1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY TO PLBD AC1

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A119K20
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO ENTRY.

REFERENCES: 76BJ14E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5981 ABORT: 3/1R

ITEM: RELAY TO PLBD AC1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY TO PLBD AC1

6)

7) 8)

9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
: 3/3		,
	3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A119K20 PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BJ14E

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

FLIGHT: 2/1R SUBSYSTEM: EPD&C 2/1R MDAC ID: 5982 ABORT:

ITEM: RELAY TO PLBD AC1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- INV DIST & CONT ASSY #1 2)
- 3) MA73C PANEL
- 4) MMCA-3
- RELAY TO PLBD AC1 5)

6)

7) 8)

9) 05-6

CRITICALITIES

	V-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A119K22 PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO ENTRY.

REFERENCES: 76BJ14E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5983 ABORT: 3/1R

ITEM: RELAY TO PLBD AC1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY TO PLBD AC1

6) 7)

7) 8)

9) 05-6

CRITICALITIES

HDW/FUNC
3/1R
3/1R
3/1R
3/1R
,

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A119K22
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BJ14E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 5984 ABORT: 2/1R

ITEM: RELAY TO PLBD AC1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-1
- 5) RELAY TO PLBD AC1
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A117K66
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO ENTRY.

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C MDAC ID: 5985

FLIGHT: ABORT:

3/1R 3/1R

ITEM:

RELAY TO PLBD AC1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-1
- 5) RELAY TO PLBD AC1
- 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A117K66

PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

MDAC ID: 5986

FLIGHT: 2/1R ABORT:

2/1R

ITEM:

RELAY TO PLBD AC1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- AC BUS 1 1)
- INV DIST & CONT ASSY #1 2)
- 3) MA73C PANEL
- 4) MMCA-1
- RELAY TO PLBD AC1 5)

6)

7)

8)

9) 05-6

CRITTCALITTES

	CHITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [1] B [P] C [P] LOCATION: 40V76A117K78

PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5987 ABORT: 3/1R

ITEM: RELAY TO PLBD AC1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-1
- 5) RELAY TO PLBD ACL
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A117K78
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT: 2/1R

MDAC ID: 5988

ABORT:

2/1R

ITEM:

RELAY, 4P TO PLBM-AC1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 31 MA73C PANEL
- 4) MMCA-1
- RELAY, 4P TO PLBM-AC1 5)

6)

7)

8)

9) 05-6

CRITICALITIES

01/11/101		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
2/1R	AOA:	3/3
2/1R	ATO:	2/1R
3/3		•
	HDW/FUNC 3/3 3/3 2/1R 2/1R	3/3 RTLS: 3/3 TAL: 2/1R AOA: 2/1R ATO:

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A117K80
PART NUMBER: MC455-0129-0001 LOCATION:

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5989 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-1
- 5) RELAY, 4P TO PLBM-AC1

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A117K80

PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD CAUSE LOSS OF CREW/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT: 2/1R

MDAC ID: 5990

ABORT:

2/1R

ITEM:

RELAY, 4P TO PLBM-AC1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-1
- RELAY, 4P TO PLBM-AC1

6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A117K84

PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5991 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-1
- 5) RELAY, 4P TO PLBM-AC1

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A117K84
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD CAUSE LOSS OF CREW/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 5992 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY, 4P TO PLBM-AC1

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	UDW /PUMO	3 DODM	HOM / BUING
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A119K7
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BK23D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5993 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY, 4P TO PLBM-AC1
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A119K7
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BK23D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 5994 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY, 4P TO PLBM-AC1

6) 7)

7) 8)

9) 05-6

CRITICALITIES

/FUNC
/3
/3
/3
/1R

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76All9K9
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BK23E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5995 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- MMCA-3 4)
- RELAY, 4P TO PLBM-AC1 5)

6) 7)

8)

05-6 9)

CRITICALITIES

HDW/FUNC
•
3/1R
3/1R
3/1R
3/1R
,

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A119K9

PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BK23E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 5996 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 2 A)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAL PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 2 A)

4)

5)

6) 7)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB4
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED.

HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BM24H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

FLIGHT: SUBSYSTEM: EPD&C 3/3

MDAC ID: 5997 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 2 A)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIA1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 2 A)

4)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

	T-12		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1CB4 PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM24H

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

3/1R SUBSYSTEM: EPD&C FLIGHT:

MDAC ID: 5998 ABORT: 3/1R

CIRCUIT BREAKER, 3A (AC CONT 2 B) ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- RIAL PANEL 2)
- CIRCUIT BREAKER, 3A (AC CONT 2 B) 3)

4)

5)

6)

7) 8)

9) 05-6

CRITTCALITTES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
3/3		
	HDW/FUNC 3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB5

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED.

HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BM24D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 5999 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 2 B)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA 2) RIA1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 2 B)

4) 5)

5) 6)

7) 8)

9) 05-6

CRITICALITIES

	~~		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1CB5
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM24D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6000 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 2 C)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAI PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 2 C)

4) 5)

5)

6) 7)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB6
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED.

HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BM24C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6001 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 2 C)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAL PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 2 C)

4)

5)

6)

7)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1CB6
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM24C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6002 ABORT: SWITCH, TOGGLE 3PDT (INVERTER PWR #2) ITEM: FAILURE MODE: FAILS TO TRANSFER LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 2CA 2) RIA1 PANEL MAIN DC DIST ASSY #2 3) SWITCH, TOGGLE 3PDT (INVERTER PWR #2) 5) 6) 7) 8) 9) 05-6

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73AlAlS17
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON NORMAL FLIGHT OPERATIONS AS THE AC INVERTERS ARE LATCHED ON DURING PRELAUNCH. ALTERNATE MEANS EXIST TO TURN OFF ONE AC BUS PHASE IF REQUIRED.

REFERENCES: 76BM24

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6003 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INVERTER PWR #2)

FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAI PANEL
- 3) MAIN DC DIST ASSY #2
- 4) SWITCH, TOGGLE 3PDT (INVERTER PWR #2)

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		-,

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION:

32V73A1A1S17

PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

EFFECTS/RATIONALE:

IF THIS FAILURE OCCURS TO THE "OFF" SIDE OF THE SWITCH, AT LEAST ONE INVERTER WILL BE SHUT DOWN AND COULD NOT BE RESTARTED. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BM24

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6004 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN B TO INV 2 ON)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR
- 2) ESS BUS 2CA
- 3) FLCA-2
- 4) HYBRID DRIVER TYPE I (MN B TO INV 2 ON)
- 5)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR4

PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BM18F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6005 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN B TO INV 2 ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR
- 2) ESS BUS 2CA
- 3) FLCA-2

4) HYBRID DRIVER TYPE I (MN B TO INV 2 ON)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR4

PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BM18F

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: SUBSYSTEM: EPD&C FLIGHT: 3/3

3/3 MDAC ID: 6006 ABORT:

HYBRID DRIVER TYPE I (MN B TO INV 2 OFF) ITEM:

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- HYBRID DRIVER TYPE I (MN B TO INV 2 OFF)
- 5) 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

	ONT I TOUR I TIED			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR5

PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BM18G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6007 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN B TO INV 2 OFF)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) HYBRID DRIVER TYPE I (MN B TO INV 2 OFF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		- / -

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A17AR5

PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BM18G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6008 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 2 A ON)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE II (INV 2 A ON)

4) 5)

- 3 J 6 N
- 6) 7)
- 7) 8)
- 9) 05-6

CRITICALITIES

	CIVITATOR	CKITICHLITID	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR11
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED. NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BM17G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 6009 MDAC ID: ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 2 A ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE II (INV 2 A ON)

4)

5)

6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR11

PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BM17G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT:

3/3 MDAC ID: 6010 ABORT:

HYBRID DRIVER TYPE II (INV 2 B ON) ITEM:

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- HYBRID DRIVER TYPE II (INV 2 B ON)

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR12

PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED. NO EFFECT ON CREW/VEHICLE/MISSION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6011 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 2 B ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

1) ESS BUS 2CA

2) FLCA-2

3) HYBRID DRIVER TYPE II (INV 2 B ON)

4)

5)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR12 PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6012 ITEM: HYBRID DRIVER TYPE II (INV 2 C ON) FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 2CA 2) FLCA-2 3) HYBRID DRIVER TYPE II (INV 2 C ON) 4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES

	C1/1 1 C2		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		,

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR13 PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED. NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BM17A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6013 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 2 C ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE II (INV 2 C ON)

4)

5) 6)

7) 8)

9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR13 PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BM17A

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 SUBSYSTEM: EPD&C FLIGHT: ABORT: 3/3 MDAC ID: 6014

ITEM:

HYBRID DRIVER TYPE III (INV 2 A ON)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- FLCA-2 2)
- HYBRID DRIVER TYPE III (INV 2 A ON) 3)
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

	71/1 1 T 71111 1 T 1 T 1 T 1 T 1 T 1 T 1 T			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING	: 3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR14

PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND. AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6015 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 A ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 A ON)

4) 5)

6)

7) 8)

9) 05-6

CRITICALITIES

	~-·~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		,	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A17AR14

PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16G

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 6016 MDAC ID: HYBRID DRIVER TYPE III (INV 2 B ON) ITEM: FAILURE MODE: FAILS ON SUBSYS LEAD: K. SCHMECKPEPER LEAD ANALYST: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 2CA 2) FLCA-2 3) HYBRID DRIVER TYPE III (INV 2 B ON) 4) 5) 6)

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		-

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR15
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

7) 8) 9)

05-6

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6017 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 B ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 B ON)

4) 5)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A17AR15

PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: MDAC ID: 6018 ITEM: HYBRID DRIVER TYPE III (INV 2 C ON) FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 2CA 2) FLCA-2 HYBRID DRIVER TYPE III (INV 2 C ON) 3) 4) 5) 6) 7) 8) 05-6 COTMTCATIMITEC

CRITICA	LITTES	
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR16
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6019 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 C ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 C ON)

4)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR16
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6020 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 2 A OFF)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 A OFF)

4)

5) 6)

7) 8)

9) 05-6

CRITTCALITTES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A17AR17
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM16H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6021 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 A OFF)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 A OFF)

4) 5)

5) 6)

7)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR17
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C MDAC ID: 6022

FLIGHT: 3/1R ABORT:

3/1R

ITEM:

HYBRID DRIVER TYPE III (INV 2 B OFF)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- HYBRID DRIVER TYPE III (INV 2 B OFF) 3)

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A17AR18

PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM16E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6023 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 B OFF)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 B OFF)
- 4) 5)
- 5) 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR18
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6024 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 2 C OFF)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 C OFF)
- 4)
- 5)
- 6) 7)
- 7) 8)
- 9) 05-6

CRITICALITIES

	O1/2 4 4 O1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A17AR19
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM16C

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6025 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 C OFF)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 C OFF)

4)

- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR19 PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 FLIGHT: SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6026 FUSE, 3A TO AC BUS 2 CMD ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER PRE-FLIGHT TEST BUS #2 2) FLCA-2 3) 4) FUSE, 3A TO AC BUS 2 CMD 5) 6) 7)

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HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

8) 9)

82V76A17F

05-6

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CIRCUIT IS USED FOR GROUND C/O ONLY AND IS NOT POWERED DURING FLIGHT OPERATIONS.

REFERENCES: 76BN23H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6027 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 2 CMD

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) FUSE, 3A TO AC BUS 2 CMD

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A17F

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CIRCUIT IS USED FOR GROUND C/O ONLY AND IS NOT POWERED DURING FLIGHT OPERATIONS.

REFERENCES: 76BN23G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6028 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 2C OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) FUSE, 3A TO AC BUS 2C OFF

4)

5)

6) 7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A17F5

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BM16

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6029 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 2B OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

1) ESS BUS 2CA

2) FLCA-2

3) FUSE, 3A TO AC BUS 2B OFF

4) 5)

5) 6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A17F6

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BM16E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6030 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 2A OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) FUSE, 3A TO AC BUS 2A OFF

4)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A17F7

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BM16H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6031 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 2C ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) FUSE, 3A TO AC BUS 2C ON

4)

5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A17F8

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BM16B

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

SUBSYSTEM: EPD&C FLIGHT: 3/1R 3/1R ABORT: MDAC ID: 6032

ITEM: FUSE, 80A TO INV 2 A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- FUSE, 80A TO INV 2 A 4)
- 5) 6)
- 7) 8)
- 05-6 9)

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 82V76A23F1

PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM13H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6033 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 2 B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) FUSE, 80A TO INV 2 B

5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION:

82V76A23F2

PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM13E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R

MDAC ID: 6034 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 2 C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS'B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) FUSE, 80A TO INV 2 C

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING	3: 3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION:

82V76A23F3

PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM13C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6035 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF2)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF2)
- 5) 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1R3 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION. ALTERNATE INDICATORS (TALKBACKS) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BM14H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6036 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF2)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF2)
- 5) 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	: 3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1R4 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION. ALTERNATE INDICATORS (TALKBACKS) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BM14E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6037 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF2)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF2)
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1R5 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION. ALTERNATE INDICATORS (TALKBACKS) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BM14B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6038 ABORT: 3/3

ITEM: DIODE, ISOLATION

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FPCA-2
- 4) DIODE, ISOLATION
- 5) 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

01/T T T 01/D T T T D			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1CR1
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON

CREW/MISSION/VEHICLE.

REFERENCES: 76BM13G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6039 ABORT: 3/3

ITEM: DIODE, ISOLATION

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAL PANEL
- 3) FPCA-2
- 4) DIODE, ISOLATION

5)

6)

7) 8)

9) 05-6

CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1CR1 PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM13G

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 FLIGHT: SUBSYSTEM: EPD&C 3/3 6040 ABORT: MDAC ID: DIODE, ISOLATION ITEM: FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 2CA 2) RIAI PANEL 3) FPCA-2 DIODE, ISOLATION 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC 3/3 3/3 RTLS: PRELAUNCH: 3/3 3/3 TAL: LIFTOFF: 3/3 AOA: 3/3 ONORBIT: ATO: 3/3 DEORBIT: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [] B [] C [] LOCATION: 82V76A23A1CR4 PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON

CREW/MISSION/VEHICLE.

REFERENCES: 76BM13D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6041 ABORT: 3/3

ITEM: DIODE, ISOLATION

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAI PANEL
- 3) FPCA-2
- 4) DIODE, ISOLATION

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1CR4
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM13D

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 FLIGHT: SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6042 ITEM: DIODE, ISOLATION FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 2CA 2) RIAI PANEL 3) FPCA-2 4) DIODE, ISOLATION 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE 3/3 RTLS: 3/3 PRELAUNCH: 3/3 TAL: 3/3 LIFTOFF: 3/3 AOA: 3/3 ONORBIT: 3/3 DEORBIT: ATO: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1CR3
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM13B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6043 ABORT: 3/3

ITEM: DIODE, ISOLATION

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAI PANEL
- 3) FPCA-2
- 4) DIODE, ISOLATION

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1CR3
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM13B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6044 ABORT: 3/3

ITEM: DIODE TO INV 2 A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) DIODE TO INV 2 A

5)

6) 7\

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A23CR22

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSSES TO HANDLE THE LOADS.

REFERENCES: 76BM12F

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6045 ABORT: ITEM: DIODE TO INV 2 A FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) DIODE TO INV 2 A

5)

6) 7)

8)

9) 05-6

CRITTCALITTES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23CR22

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START UP.

REFERENCES: 76BM12F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6046 FLIGHT: 3/3

ITEM: DIODE TO INV 2 B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) DIODE TO INV 2 B

5) 6)

6) 7)

7) 8)

9) 05-6

CRITICALITIES

01/11/01/11/11/10		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		-
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A23CR23

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSSES TO HANDLE THE LOADS.

REFERENCES: 76BM12D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6047 3/3 ABORT:

ITEM: DIODE TO INV 2 B

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) DIODE TO INV 2 B
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23CR23

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START UP.

REFERENCES: 76BM12D

HIGHEST CRITICALITY HDW/FUNC 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6048

ITEM:

DIODE TO INV 2 C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) DIODE TO INV 2 C

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23CR24

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSSES TO HANDLE THE LOADS.

REFERENCES: 76BM12B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6049 ABORT: 3/3

ITEM:

DIODE TO INV 2 C

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) DIODE TO INV 2 C

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A23CR24

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START UP.

REFERENCES: 76BM12B

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6050

ITEM:

RPC, 7.5A TO INV 2 A

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RPC, 7.5A TO INV 2 A
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23RPC7

PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF. HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS. INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM12F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6051 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 2 A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RPC, 7.5A TO INV 2 A

5)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23RPC7
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE GROUND AN IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BM12F

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6052

ITEM:

RPC, 7.5A TO INV 2 B

FAILURE MODE: FAILS CLOSED

SUBSYS LEAD: K. SCHMECKPEPER LEAD ANALYST: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- MAIN DC DIST ASSY #2 2)
- FPCA-2 3)
- RPC, 7.5A TO INV 2 B 4)
- 5) 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

	CKITICADITIED		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23RPC8

PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF. HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS. INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM12D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6053 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 2 B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RPC, 7.5A TO INV 2 B

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23RPC8
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE GROUND AN IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BM12D

HIGHEST CRITICALITY HDW/FUNC 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6054 RPC, 7.5A TO INV 2 C ITEM: FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS B 2) MAIN DC DIST ASSY #2 3) FPCA-2 4) RPC, 7.5A TO INV 2 C 5) 6) 7) 8) 05-6

CRITIC	ALI	TI	ES
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IDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23RPC9 PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF. HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS. INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM12A

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6055 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 2 C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RPC, 7.5A TO INV 2 C

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23RPC9

PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE GROUND AN IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BM12A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6056 ABORT: 3/1R

ITEM: RELAY, LATCHING TO INVERTER 2A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAL PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) RELAY, LATCHING TO INVERTER 2A

6) 7)

8)

9) 05-6

CRITICALITIES

HDW/FUNC
3/1R
3/1R
3/1R
3/1R

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION:

82V76A23K1

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6057 ABORT:

RELAY, LATCHING TO INVERTER 2A ITEM:

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAL PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) RELAY, LATCHING TO INVERTER 2A

6) 7)

8)

05-6 9)

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		·
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23K1

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C MDAC ID:

6058

FLIGHT: 3/1R ABORT:

3/1R

ITEM:

RELAY, LATCHING TO INVERTER 2B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIA1 PANEL
- FLCA-2 3)
- FPCA-2 4)
- 5) RELAY, LATCHING TO INVERTER 2B

6)

7)

8)

9) 05-6

CRITICALITIES

V. 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
TANDING/SAFING:	3/3		

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A23K2

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 3/3 6059 ABORT:

ITEM: RELAY, LATCHING TO INVERTER 2B

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIA1 PANEL
- FLCA-2 3)
- FPCA-2 4)
- 5) RELAY, LATCHING TO INVERTER 2B

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE H	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•
ONORBIT: DEORBIT:	3/3 3/3	AOA:	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23K2

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL FLIGHT CONFIGURATION.

3/11/87 DATE:

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT: 3/1R

MDAC ID: 6060

ABORT:

3/1R

ITEM:

RELAY, LATCHING TO INVERTER 2C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAL PANEL
- 3) FLCA-2
- 4) FPCA-2
- RELAY, LATCHING TO INVERTER 2C 5)

7)

8)

05-6 9)

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A23K3

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6061 ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 2C

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIA1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) RELAY, LATCHING TO INVERTER 2C

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A23K3

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL FLIGHT CONFIGURATION.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

3/1R SUBSYSTEM: EPD&C FLIGHT: ABORT: 3/1R MDAC ID: 6062

INVERTER 2 A ITEM:

FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIA1 PANEL
- FLCA-2 FPCA-2 3)
- 4)
- 5) INVERTER 2 A

6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A4

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART

STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6063 ABORT: 3/3

ITEM: INVERTER 2 A

FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIA1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 A

6)

7)

8)

9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
G: 3/3		•
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A4

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

FLIGHT: 3/1R SUBSYSTEM: EPD&C ABORT: 3/1R MDAC ID: 6064

ITEM: INVERTER 2 A

FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAI PANEL
- FLCA-2 3)
- FPCA-2 4)
- INVERTER 2 A 5)

6)

7)

8)

9) 05-6

CRITICALITIES

01/11101111			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A4

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6065 ABORT: 3/1R

ITEM: INVERTER 2 A

FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAI PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 A

6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION:

82V76A4

PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

3/1R SUBSYSTEM: EPD&C FLIGHT: 3/1R ABORT: MDAC ID: 6066

ITEM: INVERTER 2 B

FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- RIA1 PANEL 2)
- 3) FLCA-2
- 4) FPCA-2
- INVERTER 2 B 5)

6)

7) 8)

9) 05-6

CRITICALITIES

	O1/4 1 1 O1/		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING /SAFING	3/3		

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A5

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART

STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6067 ABORT: 3/3

ITEM: INVERTER 2 B

FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 B

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A5

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

3/1R SUBSYSTEM: EPD&C FLIGHT: 3/1R ABORT: MDAC ID: 6068

ITEM: INVERTER 2 B

FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- R1A1 PANEL 2)
- FLCA-2 3)
- 4) FPCA-2
- INVERTER 2 B 5)

6) 7)

8)

9) 05-6

CRITICALITIES

	~-·			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING	3/3			

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION:

82V76A5

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6069 ABORT: 3/1R

ITEM: INVERTER 2 B FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIA1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 B

6)

7)

8)

9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
: 3/3		•
	3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A5

PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

3/11/87 DATE:

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/1R

MDAC ID: 6070

ABORT:

3/1R

ITEM:

INVERTER 2 C

FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAL PANEL
- 3) FLCA-2
- FPCA-2 4)
- 5) INVERTER 2 C

6)

7)

8)

9) 05-6

CRITICALITIES

	O1/T T T O1/		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A6

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART

STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6071 ABORT: 3/3

ITEM: INVERTER 2 C

FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIA1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 C

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A6

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6072 ABORT: 3/1R

ITEM: INVERTER 2 C

FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAI PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 C
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 8

82V76A6

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6073 3/1R ABORT:

ITEM: INVERTER 2 C

FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAL PANEL
- 3) FLCA-2
- 4) FPCA-2
- INVERTER 2 C 5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A6

PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/ VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: MDAC ID: 6074 ABORT: 3/3 HYBRID DRIVER TYPE III (AC BUS 2 ON) ITEM: FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER PRE-FLIGHT TEST BUS #2 2) FLCA-2 HYBRID DRIVER TYPE III (AC BUS 2 ON) 4) 6) 7) 8) 9) 05-6

CRITI	CALIT	IES

	41/4 4 4 41		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR9 PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6075 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 2 ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) HYBRID DRIVER TYPE III (AC BUS 2 ON)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR9
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: 3/3 6076 MDAC ID: HYBRID DRIVER TYPE III (AC BUS 2 OFF) ITEM: FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER 2) PRE-FLIGHT TEST BUS #2 FLCA-2 3) HYBRID DRIVER TYPE III (AC BUS 2 OFF) 4) 6) 7) 8) 9) 05-6

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	O2/2 2 2 O2		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR10
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BN23H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6077 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 2 OFF)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) HYBRID DRIVER TYPE III (AC BUS 2 OFF)
- 5) 6)
- 7)
- 8) 9) 05-6

CRITICALITIES

	C1/T 1 T C1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR10
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BN23H

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3

ABORT:

ITEM:

FUSE, 3A TO AC BUS 2B ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

1) ESS BUS 2CA

MDAC ID: 6078

- FLCA-2 2)
- 3) FUSE, 3A TO AC BUS 2B ON

4) 5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17F9

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BM16D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6079 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 2A ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) FUSE, 3A TO AC BUS 2A ON

4) 5)

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17F10

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BM16G

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/1R

MDAC ID:

6080

ABORT:

3/1R

ITEM:

SWITCH, TOGGLE 3PDT (INV/AC BUS 2)

FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIA1 PANEL
- 3) MAIN DC DIST ASSY #2
- SWITCH, TOGGLE 3PDT (INV/AC BUS 2) 4)

5)

6)

7)

8) 05-6 9)

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
3/3		•
	3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S20

PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

EFFECTS/RATIONALE:

IF THE AC BUS RELAY IS TRIPPED OFF BY THE AC OVER/UNDER VOLTAGE SENSOR AND THIS FAILURE OCCURS, THE RESULT IS THE LOSS OF ONE PHASE OF THE AC BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BN24F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6081 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INV/AC BUS 2)

FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIA1 PANEL
- 3) MAIN DC DIST ASSY #2

4) SWITCH, TOGGLE 3PDT (INV/AC BUS 2)

5)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S20 PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE COULD DISCONNECT ONE PHASE OF THE AC BUS FROM THE INVERTER. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BN24F

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/1R

MDAC ID: 6082

ABORT:

3/1R

ITEM:

CIRCUIT BREAKER, 3A TO AC2 BUS SENSOR

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) 013 PANEL
- 3) CIRCUIT BREAKER, 3A TO AC2 BUS SENSOR

4) 5)

6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		= / ===

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 33V73A13CB11 PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

WORST CASE FAILURE OCCURS WHEN THE SENSOR MONITOR/AUTO SWITCH FAILS ALSO. THE RESULT IS LOSS OF CAPABILITY TO DETECT AND CORRECT AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL AC POWER WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO LACK OF POWER TO CRITICAL LOADS.

REFERENCES: 76BN24B

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6083 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A TO AC2 BUS SENSOR

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) 013 PANEL
- 3) CIRCUIT BREAKER, 3A TO AC2 BUS SENSOR

4)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 33V73A13CB11

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

WORST CASE FAILURE OCCURS WHEN THE SENSOR MONITOR/AUTO SWITCH FAILS ALSO. THE RESULT IS LOSS OF CAPABILITY TO DETECT AND CORRECT AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL AC POWER WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO LACK OF POWER TO CRITICAL LOADS.

REFERENCES: 76BN24B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6084 ABORT: 3/1R

ITEM: SWITCH, TOGGLE SPDT (AC 2 BUS SNSR)

FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) 013 PANEL
- 3) RIA1 PANEL
- 4) SWITCH, TOGGLE SPDT (AC 2 BUS SNSR)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

	V-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/3	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S23
PART NUMBER: ME452-0102-7103

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

EFFECTS/RATIONALE:

WORST CASE FAILURE IS LOSS OF CONTROL OF THE AC OVER/UNDER VOLTAGE SENSOR WHICH COULD PREVENT THE DETECTION AND CORRECTION OF AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL REDUNDANCY COULD LEAD TO LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO LOADS.

REFERENCES: 76BN22B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6085 ABORT: 3/1R

ITEM: SWITCH, TOGGLE SPDT (AC 2 BUS SNSR)

FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) 013 PANEL
- 3) RIAI PANEL
- 4) SWITCH, TOGGLE SPDT (AC 2 BUS SNSR)

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/3	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S23 PART NUMBER: ME452-0102-7103

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

EFFECTS/RATIONALE:

WORST CASE FAILURE IS LOSS OF CONTROL OF THE AC OVER/UNDER VOLTAGE SENSOR WHICH COULD PREVENT THE DETECTION AND CORRECTION OF AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL REDUNDANCY COULD LEAD TO LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO LOADS.

REFERENCES: 76BN22B

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6086 DIODE, BLOCKING 1A (TO 2 A SET) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GROUND C/O (AC BUS 2) PRE-FLIGHT TEST BUS #2 2) FLCA-2 3) INV DIST & CONT ASSY #2 4) 5) DIODE, BLOCKING 1A (TO 2 A SET) 6) 7) 8) 9) 05-6 CRITICALITIES F

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORRIT.	3/3	ΣΤΩ•	3/3

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR1 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6087 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 A SET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 A SET)

6) 7)

7)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR1 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: ABORT: 3/3 MDAC ID: 6088 DIODE, BLOCKING 1A (TO 2 B SET) ITEM: FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GROUND C/O (AC BUS 2) PRE-FLIGHT TEST BUS #2 2) 3) FLCA-2 4) INV DIST & CONT ASSY #2 5) DIODE, BLOCKING 1A (TO 2 B SET) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC FLIGHT PHASE

FUNC	ABORT	HDW/FUNC
3	RTLS:	3/3
3	TAL:	3/3

PRELAUNCH: 3/3 3/3 LIFTOFF: 3/3 ONORBIT: AOA: 3/3 ATO: DEORBIT: 3/3 3/3

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR2 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6089 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 B SET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
 - 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 B SET)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR2 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 FLIGHT: SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6090 DIODE, BLOCKING 1A (TO 2 C SET) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: GROUND C/O (AC BUS 2) PRE-FLIGHT TEST BUS #2 2) 3) FLCA-2 INV DIST & CONT ASSY #2 4) 5) DIODE, BLOCKING 1A (TO 2 C SET) 6) 7) 8) 9) 05-6

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	CKITICKLITID		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR3
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6091 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 C SET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 C SET)

6)

7)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		•
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR3
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

FLIGHT: 3/1R SUBSYSTEM: EPD&C 3/1R ABORT: MDAC ID: 6092

DIODE, BLOCKING 1A (TO 2 A RESET) ITEM:

FAILURE MODE: SHORTS

SUBSYS LEAD: K. SCHMECKPEPER LEAD ANALYST: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- PRE-FLIGHT TEST BUS #2 2)
- 3)
- INV DIST & CONT ASSY #2 4)
- DIODE, BLOCKING 1A (TO 2 A RESET) 5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 82V76A36A1CR4 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6093 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 A RESET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 A RESET)
- 6) 7)
- 7)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		.,

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR4
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C

3/3 MDAC ID: 6094 ABORT:

DIODE, BLOCKING 1A (TO 2 B RESET) ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- INV DIST & CONT ASSY #2 4)
- DIODE, BLOCKING 1A (TO 2 B RESET) 5)

6) 7)

8) 05-6 9)

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A36A1CR5 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6095 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 2 B RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
 - 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 B RESET)

6) 7)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 82V76A36A1CR5
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6096 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 2 C RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 C RESET)

6) 7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 82V76A36A1CR6
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6097 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 C RESET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 C RESET)

6) 7)

8)

9) 05-6

CRITICALITIES

	V1/2 2 2 V1/		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR6
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 6098 MDAC ID: DIODE, BLOCKING 1A (TO 2 C RESET) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: AC BUS 2 1) INV DIST & CONT ASSY #2 2) 3) AC OVER/UNDER VOLT SNSR #2 4) DIODE, BLOCKING 1A (TO 2 C RESET) 5) 6) 7) 8) 9) 05-6 CRITTICALITYTES.

	CNTTTCADTTT			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
	•		•	

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR7
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLTAGE SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY.

SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C 3/3 FLIGHT: 3/3 MDAC ID: 6099 ABORT:

ITEM: DIODE, BLOCKING 1A (TO 2 C RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) AC OVER/UNDER VOLT SNSR #2
- 4) DIODE, BLOCKING 1A (TO 2 C RESET)

5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: PART NUMBER: JANTXV1N4944

82V76A36A1CR7

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLT SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: 6100 MDAC ID: DIODE, BLOCKING 1A (TO 2 B RESET) ITEM: FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS 2 INV DIST & CONT ASSY #2 2) 3) AC OVER/UNDER VOLT SNSR #2 DIODE, BLOCKING 1A (TO 2 B RESET) 5) 6)

CRITICALITIES

	CVIIICULIII		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR8
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

7) 8)

9)

05-6

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLTAGE SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6101 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 B RESET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) AC OVER/UNDER VOLT SNSR #2
- 4) DIODE, BLOCKING 1A (TO 2 B RESET)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR8
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLT SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY.

SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6102 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 A RESET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) AC OVER/UNDER VOLT SNSR #2
- 4) DIODE, BLOCKING 1A (TO 2 A RESET)

5)

6)

7).

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR9
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLTAGE SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY.

SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6103 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 A RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) AC OVER/UNDER VOLT SNSR #2
- 4) DIODE, BLOCKING 1A (TO 2 A RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR9
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLTAGE SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

SUBSYSTEM: EPD&C FLIGHT: 3/1R ABORT: 3/1R MDAC ID: 6104

FUSE, 3A TO AC BUS 2 A ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- INV DIST CONT ASSY #2 2)
- 3) AC O/V VOLT SNSR 2
- FUSE, 3A TO AC BUS 2 A 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

7.14 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
3/3		·
	3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 82V76A36F1

PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6105 ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 2 B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) AC O/V VOLT SNSR 2
- 4) FUSE, 3A TO AC BUS 2 B

5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION:

82V76A36F2

PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC

FLIGHT: 3/1R SUBSYSTEM: EPD&C 6106 MDAC ID: ABORT: 3/1R

FUSE, 3A TO AC BUS 2 C ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- INV DIST CONT ASSY #2
- 3) AC O/V VOLT SNSR 2
- 4) FUSE, 3A TO AC BUS 2 C
- 5)
- 6)
- 7) . 8)
 - 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 82V76A36F3

PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6107 ABORT: 3/3

ITEM: FUSE, 3A TO AC VOLTMETER

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) FUSE, 3A TO AC VOLTMETER
- 4)
- 5)
- 6) 7)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		-, -

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36F4

PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON CREW/MISSION/VEHICLE.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6108 ABORT: ITEM: FUSE, 3A TO AC VOLTMETER FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS 2 INV DIST CONT ASSY #2 3) FUSE, 3A TO AC VOLTMETER 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC RTLS: PRELAUNCH: 3/3 3/3 LIFTOFF: 3/3 TAL: 3/3 ONORBIT: 3/3 AOA: 3/3

ATO:

3/3

REDUNDANCY SCREENS: A [] B [] C []

3/3

LOCATION:

82V76A36F5

LANDING/SAFING: 3/3

PART NUMBER: MC451-0009-1003

DEORBIT:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON CREW/MISSION/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6109 ABORT: 3/3

ITEM: FUSE, 3A TO AC VOLTMETER

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) FUSE, 3A TO AC VOLTMETER

4)

5)

6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

82V76A36F6

PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON CREW/MISSION/VEHICLE.

3/11/87 HIGHEST CRITICALITY HDW/FUNC DATE:

FLIGHT: SUBSYSTEM: EPD&C 3/1R 3/1R ABORT: MDAC ID: 6110

RELAY, LATCHING TO AC BUS 2A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- INV DIST CONT ASSY #2 2)
- RELAY, LATCHING TO AC BUS 2A
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3		·	

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A36K1

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUSS. REDUNDANT BUSSES WOULD PROVIDE POWER TO CRITICAL LOADS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6111 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 2A

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) RELAY, LATCHING TO AC BUS 2A
- 4)
- 5)
- 6) 7)
- 7) 8)
- 9) 05-6

CRITICALITIES

	~-·-~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36K1

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R ABORT: 3/1R MDAC ID: 6112

ITEM: RELAY, LATCHING TO AC BUS 2B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- INV DIST CONT ASSY #2
- 3) RELAY, LATCHING TO AC BUS 2B
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A36K2

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT BUSSES WOULD PROVIDE POWER TO CRITICAL LOADS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6113 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 2B

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) RELAY, LATCHING TO AC BUS 2B
- 4)
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITTCALITTES

	CUTTICATITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36K2

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT: 3/1R

MDAC ID: 6114

ABORT:

3/1R

ITEM:

RELAY, LATCHING TO AC BUS 2C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) RELAY, LATCHING TO AC BUS 2C

4)

5)

6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A36K3

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT BUSSES WOULD PROVIDE POWER TO CRITICAL LOADS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6115 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 2C

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) RELAY, LATCHING TO AC BUS 2C

4)

5)

6) 7)

7)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 827

82V76A36K3

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: SUBSYSTEM: EPD&C 3/3 MDAC ID: 6116 ABORT: 3/3 ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF2) FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS 2 2) INV DIST & CONT ASSY #2 AC BUS OVER/UNDER VOLTAGE SNSR RESISTOR, 5.1K 1/4W (TO MDM OF2) 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC 3/3 3/3 3/3 RTLS: TAL: 3/3 PRELAUNCH: LIFTOFF: 3/3 ONORBIT: AOA: 3/3 DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R1
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6117 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF2)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) AC BUS OVER/UNDER VOLTAGE SNSR
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF2)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
: 3/3		•
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R2 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6118 ABORT: RESISTOR, 5.1K 1/4W (TO MDM OF2) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS 2 2) INV DIST & CONT ASSY #2 3) ESS BUS 2CA RESISTOR, 5.1K 1/4W (TO MDM OF2)

4) RESISTOR, 5.1K 1/4W (TO 15)
6)
7)
8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R3 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6119 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF2)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) ESS BUS 2CA
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF2)

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R4 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

3/11/87 HIGHEST CRITICALITY HDW/FUNC DATE: 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6120 ABORT:

ITEM:

RESISTOR, 5.1K 1/4W (TO MDM OF2)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- INV DIST & CONT ASSY #2 2)
- 3) ESS BUS 2CA
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF2)
- 5) 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

V-12-1-V-12-1			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R5

PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6121 ABORT: 3/3

ITEM: RESISTOR, 2.2K 1/4W (TO MDM OF2)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) 013 PANEL
- 3) RIAL PANEL
- 4) INV DIST & CONT ASSY #2
- 5) RESISTOR, 2.2K 1/4W (TO MDM OF2)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R6 PART NUMBER: RLR20C222GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MONITORING CIRCUIT.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6122 ABORT: 3/3

ITEM: RESISTOR, 1.8K 1/4W (TO MDM OF2)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT & ASSY #2
- 3) AC OVER/UNDER VOLT SNSR #2
- 4) RESISTOR, 1.8K 1/4W (TO MDM OF2)

5)

6) 7)

8)

9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC	
3/3	RTLS:	3/3	
3/3	TAL:	3/3	
3/3	AOA:	3/3	
3/3	ATO:	3/3	
3: 3/3		•	
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R7 PART NUMBER: RLR07C182GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR IS PART OF A MONITORING FUNCTION AND IS NOT CRITICAL FOR VEHICLE OPERATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6123 ABORT: 3/3

ITEM: RESISTOR, 1.8K 1/4W (TO MDM OF2)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT & ASSY #2
- 3) AC OVER/UNDER VOLT SNSR #2
- 4) RESISTOR, 1.8K 1/4W (TO MDM OF2)

5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R8 PART NUMBER: RLR07C182GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR IS PART OF A MONITORING FUNCTION AND IS NOT CRITICAL FOR VEHICLE OPERATION.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C 3/3 FLIGHT: 3/3 ABORT: MDAC ID: 6124

ITEM:

RESISTOR, 2.2K 1/4W (TO MDM OF2)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) 013 PANEL
- 3) RIAI PANEL
- INV DIST & CONT ASSY #2 4)
- 5) RESISTOR, 2.2K 1/4W (TO MDM OF2)

6) 7)

8)

9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

82V76A36A1R9

PART NUMBER: RLR20C222GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MONITORING CIRCUIT.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6125 3/3 ABORT: ITEM: RESISTOR, 100K (AC BUS 2 A CURRENT) FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #2
- 3) RESISTOR, 100K (AC BUS 2 A CURRENT)

4)

5) 6)

7)

8)

9) 05-6

#### CRITICALITIES

ONTITUDE OF THE PROPERTY OF TH			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

82V76A36A1R10 PART NUMBER: RLR05Cl003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 MDAC ID: 6126 ABORT: RESISTOR, 100K (AC BUS 2 B CURRENT) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE PWR MONITOR INV DIST & CONT ASSY #2 3) RESISTOR, 100K (AC BUS 2 B CURRENT) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/ FLIGHT PHASE

DW/FUNC	ABORT	HDW/FUNC	
3/3	RTLS:	3/3	
3/3	TAL:	3/3	
- · · · -			

3/ LIFTOFF: ONORBIT: AOA: 3/3 3/3 3/3 DEORBIT: ATO: 3/3

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B[] C[]

LOCATION: 82V76A36A1R11 PART NUMBER: RLR05Cl003GR

PRELAUNCH:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BN13D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6127 ABORT: 3/3

ITEM: RESISTOR, 100K (AC BUS 2 C CURRENT)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #2
- 3) RESISTOR, 100K (AC BUS 2 C CURRENT)

4)

5) 6)

7)

8) 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A36A1R12 PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BN13B

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6128 ABORT: ITEM: RESISTOR, 150K 1/2W (AC BUS 2 A VOLTAGE) FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: GSE PWR MONITOR INV DIST & CONT ASSY #2 2) 3) RESISTOR, 150K 1/2W (AC BUS 2 A VOLTAGE) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC PRELAUNCH: 3/3 RTLS: 3/3 3/3 TAL: LIFTOFF: 3/3 3/3 AOA: ONORBIT: 3/3 3/3 DEORBIT: ATO: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A36A1R13 PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BN10E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6129 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 2 B VOLTAGE)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #2
- 3) RESISTOR, 150K 1/2W (AC BUS 2 B VOLTAGE)

4) 5)

5) 6)

7) 8)

9) 05-6

#### CRITICALITIES

	CVIIICHTIIID		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A36A1R14 PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BN10D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6130 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 2 C VOLTAGE)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #2
- 3) RESISTOR, 150K 1/2W (AC BUS 2 C VOLTAGE)
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A36A1R15 PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BN10B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6131 ABORT: 3/3

ITEM: RESISTOR, 4.3K 1/8W (AC BUS 2 A VOLTAGE)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #2
- 3) RESISTOR, 4.3K 1/8W (AC BUS 2 A VOLTAGE)

4)

5)

6) 7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A36A1R16 PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BN9A

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6132 ITEM: RESISTOR, 4.3K 1/8W (AC BUS 2 B VOLTAGE) FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: GSE PWR MONITOR 1) INV DIST & CONT ASSY #2 2) RESISTOR, 4.3K 1/8W (AC BUS 2 B VOLTAGE) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE RTLS: 3/3 PRELAUNCH: 3/3 3/3 TAL: 3/3 LIFTOFF: 3/3 AOA: 3/3 ONORBIT: DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A36A1R17

PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BN9A

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C 3/3 FLIGHT: 3/3 MDAC ID: 6133 ABORT: ITEM: RESISTOR, 4.3K 1/8W (AC BUS 2 C VOLTAGE) FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE PWR MONITOR INV DIST & CONT ASSY #2 3) RESISTOR, 4.3K 1/8W (AC BUS 2 C VOLTAGE)

6) 7) 8) 9) 05-6

4) 5)

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A36A1R18 PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BN9A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6134 ABORT: 3/1R

ITEM: AC OVER/UNDER VOLT SNSR 2

FAILURE MODE: INADVERTENT OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) AC OVER/UNDER VOLT SNSR 2
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 82V76A36VS1
PART NUMBER: MC431-0129-0011

CAUSES: CONTAMINATION, THERMAL SHOCK, MECH SHOCK

# EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC BUSSES WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BN

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6135 ABORT: 3/3 ITEM: AC OVER/UNDER VOLT SNSR 2 FAILURE MODE: LOSS OF OUTPUT LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS #2 2) INV DIST & CONT ASSY #2 3) AC OVER/UNDER VOLT SNSR 2 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A36VS1
PART NUMBER: MC431-0129-0011

CAUSES: CONTAMINATION, THERMAL SHOCK, MECH SHOCK

# EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC BUSSES WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BN

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: 3/3

MDAC ID: 6136

CIRCUIT BREAKER, 3A 3-P

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- INV DIST & CONT ASSY #2 2)
- MA73C PANEL
- 4) CIRCUIT BREAKER, 3P 3A TO PAYLOAD
- 5) 6)

ITEM:

- 7) 8)
- 9) 05-6

#### CRITICALITIES

V1.12.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB15

PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO A PAYLOAD PATCH PANEL. THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BP9C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: ABORT: 3/3 6137

ITEM:

CIRCUIT BREAKER, 3A 3-P

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3P 3A TO PAYLOAD

5)

6) 7)

8)

9) 05-6

#### CRITICALITIES

	T-1	71,1111111111	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB15

PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

### EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO A PAYLOAD PATCH PANEL. THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BP9C

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3

SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6138

CIRCUIT BREAKER AC 2A TO RCS/OMS-2 ITEM:

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- INV DIST & CONT ASSY #2 2)
- 3) MA73C PANEL
- CIRCUIT BREAKER AC 2A TO RCS/OMS-2 4)
- 5) 6)
- 7)
- 8)
- 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB41 PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT CONFIGURATION.

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: 3/1R EPD&C FLIGHT: 6139 MDAC ID: ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 2A TO RCS/OMS-2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 2A TO RCS/OMS-2

5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

71,2 2 2 71,2 2 2 2 2 2			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 85V73A129CB41

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE ISOLATED.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: 3/3 MDAC ID: 6140 ABORT: ITEM: CIRCUIT BREAKER AC 2B TO RCS/OMS-2 FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: AC BUS 2 1) INV DIST & CONT ASSY #2 2) 3) MA73C PANEL CIRCUIT BREAKER AC 2B TO RCS/OMS-2 4) 5) 6) 7) 8) 05-6 9) CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB42
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6141 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 2B TO RCS/OMS-2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 2B TO RCS/OMS-2
- 5) 6)
- 6) 7)
- 7) 8)
- 9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 85V73A129CB42
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE ISOLATED.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: 3/3 MDAC ID: 6142 CIRCUIT BREAKER AC 2C TO RCS/OMS-2 ITEM: FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS 2 2) INV DIST & CONT ASSY #2 3) MA73C PANEL 4) CIRCUIT BREAKER AC 2C TO RCS/OMS-2 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: 3/3 PRELAUNCH: 3/3 3/3 3/3 LIFTOFF: TAL: 3/3 ONORBIT: 3/3 AOA: 3/3 3/3 DEORBIT: ATO: LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB43
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6143 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 2C TO RCS/OMS-2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 2C TO RCS/OMS-2

5) 6)

7)

8)

9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 85V73A129CB43
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE ISOLATED.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 6144 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO FMCA-2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO FMCA-2
- 5) 6)
- 9) 7)
- 8)
- 9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [PP ]

LOCATION: 85V73A129CB5
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6145 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO FMCA-2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO FMCA-2

5)

6) 7)

8)

9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB5
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6146 ITEM: CIRCUIT BREAKER TO MMCA-1 FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: AC BUS 2 INV DIST & CONT ASSY #2 2) 3) MA73C PANEL 4) CIRCUIT BREAKER TO MMCA-1 5) 6)

7) 8) 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB6
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 6147 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-1

5)

6) 7)

8)

9) 05-6

#### CRITICALITIES

	V1/2 1 2 V112 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 85V73A129CB6
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

AFTER SECOND FAILURE, CREW EVA REQUIRE TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 6148 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-2

5) 6)

7)

8)

9) 05-6

#### CRITICALITIES

DW/FUNC
2/1R
2/1R
2/1R
2/1R
•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 85V73A129CB7
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

AFTER SECOND FAILURE, CREW EVA REQUIRE TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6149 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO MMCA-2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-2
- 5)
- 6)
- 7) 8)
- 9) 05-6

## **CRITICALITIES**

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB7
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6150 CIRCUIT BREAKER TO MMCA-3 ITEM: FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS 2 INV DIST & CONT ASSY #2 2) 3) MA73C PANEL CIRCUIT BREAKER TO MMCA-3 4) 5) 6) 7) 8) 05-6 9) CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE 3/3 3/3 3/3 RTLS: TAL: AOA: PRELAUNCH: 3/3 3/3 LIFTOFF: 3/3 ONORBIT: ATO: DEORBIT: 3/3 3/3 LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB8
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 6151 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-3

5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 85V73A129CB8
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

AFTER SECOND FAILURE, CREW EVA REQUIRE TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 6152 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-4

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-4

5) 6)

9) 7)

/) 8)

9) 05-6

## CRITICALITIES

V-10-1-1-1-1			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 85V73A129CB9

PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

# EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

AFTER SECOND FAILURE, CREW EVA REQUIRE TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6153 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO MMCA-4

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-4

5)

6) 7)

8)

9) 05-6

#### CRITTCALITTES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB9 PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C 3/3 FLIGHT: 3/3 MDAC ID: 6154 ABORT: CIRCUIT BREAKER TO AMCA-2 ITEM: FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS 2 2) INV DIST & CONT ASSY #2 3) MA73C PANEL 4) CIRCUIT BREAKER TO AMCA-2 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC 3/3 RTLS: PRELAUNCH: 3/3 3/3 TAL: 3/3 LIFTOFF: 3/3 3/3 ONORBIT: AOA: DEORBIT: ATO: 3/3 3/3 LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB10
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 2/1R 6155 MDAC ID: ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO AMCA-2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO AMCA-2

5)

6) 7)

8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 85V73A129CB10 PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

FLIGHT: 2/1R SUBSYSTEM: EPD&C 2/1R ABORT: MDAC ID: 6156

RELAY, 4P TO PLBM-AC2 ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- INV DIST & CONT ASSY #2 2)
- 3) MA73C PANEL
- 4) MMCA-3
- RELAY, 4P TO PLBM-AC2 5)

6) 7)

8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING	3/3		·

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 40V76A119K65

PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

# EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6157 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY, 4P TO PLBM-AC2

6)

7)

8)

9) 05-6

## CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A119K65
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD CAUSE LOSS CREW/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6158 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY, 4P TO PLBM-AC2
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A119K77
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD CAUSE LOSS CREW/VEHICLE.

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

2/1R

MDAC ID:

6159

ABORT:

2/1R

ITEM:

RELAY, 4P TO PLBM-AC2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- INV DIST & CONT ASSY #2 2)
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY, 4P TO PLBM-AC2

6)

7)

8)

9) 05-6

CRITICALITIES

	V-1V-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A119K77

PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R

MDAC ID: 6160 ABORT: 2/1R

ITEM: RELAY TO PLBD AC2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC2

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K37
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO ENTRY.

HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6161 ABORT: 3/1R

RELAY TO PLBD AC2 ITEM:

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC2

6)

7) 8)

9) 05-6

CRITTICALITYTES

	O.(1110:1111)		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K37 PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6162 ABORT: 3/1R

ITEM: RELAY TO PLBD AC2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC2

6)

7) 8)

9) 05-6

CRITICALITIES

CHITTCHLITTE		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
3/3		-
	HDW/FUNC 3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K39
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 6163 ABORT: 2/1R

ITEM: RELAY TO PLBD AC2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC2

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K39 PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO ENTRY.

3/11/87 DATE:

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT: 2/1R

MDAC ID: 6164

ABORT:

2/1R

ITEM:

RELAY, 4P TO PLBM-AC2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- RELAY, 4P TO PLBM-AC2

6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	2/1R	AOA:	3/3	
DEORBIT:	3/3	ATO:	2/1R	
LANDING/SAFING	3/3		•	

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A118K56

PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6165 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY, 4P TO PLBM-AC2

6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A118K56
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD CAUSE LOSS CREW/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6166 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY, 4P TO PLBM-AC2

6)

7) 8)

9) 05-6

CRITICALITIES

	CKITICADITI		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING	: 3/3		-

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A118K58
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD CAUSE LOSS CREW/VEHICLE.

REFERENCES: 76BR16D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 6167 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY, 4P TO PLBM-AC2

6)

7)

8)

9) 05-6

CRITICALITIES

	VI.II I VIII I I I		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A118K58
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BR16D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6168 ABORT: 2/1R

ITEM: RELAY TO PLBD AC2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC2

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	2/1R	AOA:	3/3	
DEORBIT:	3/3	ATO:	2/1R	
LANDING/SAFING:	3/3		·	

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K29
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO ENTRY.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: EPD&C 3/1R FLIGHT: 3/1R MDAC ID: 6169 ABORT:

ITEM: RELAY TO PLBD AC2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- MMCA-4 4)
- RELAY TO PLBD AC2 5)

6)

7) 8)

05-6 9)

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K29 PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6170 ABORT: 3/1R

ITEM: RELAY TO PLBD AC2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC2

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K41
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6171 ABORT: 2/1R

ITEM: RELAY TO PLBD AC2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC2

6)

7)

8)

9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
2/1R	AOA:	3/3
3/3	ATO:	2/1R
3/3		•
	HDW/FUNC 3/3 3/3 2/1R 3/3	3/3 RTLS: 3/3 TAL: 2/1R AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K41
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 6172 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC2

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	2/1R	AOA:	3/3	
DEORBIT:	3/3	ATO:	2/1R	
LANDING/SAFING:	3/3		-	

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K49
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BR8D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C 3/1R FLIGHT: MDAC ID: 6173 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- INV DIST & CONT ASSY #2 2)
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC2

6)

7) 8)

9) 05-6

CRITICALITIES

TIPLE / TETTALO
HDW/FUNC
3/1R
3/1R
3/1R
3/1R
•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K49 PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD CAUSE LOSS CREW/VEHICLE.

REFERENCES: 76BR8D

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT: 3/1R

MDAC ID: 6174

ITEM:

ABORT:

3/1R

RELAY, 4P TO PLBM-AC2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC2

6)

7)

8)

9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
3/3		•
	3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K61

PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD CAUSE LOSS CREW/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 6175 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC2

6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K61
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/1R

MDAC ID:

6176

ABORT:

3/1R

ITEM:

CIRCUIT BREAKER, 3A (AC CONT 3 A)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- ESS BUS 3AB 1)
- RIA1 PANEL 2)
- 3) CIRCUIT BREAKER, 3A (AC CONT 3 A)

4)

5)

6)

7) 8)

05-6

CRITICALITIES

V.14-1-VIII-U-U-U-U-U-U-U-U-U-U-U-U-U-U-U-U-U-			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB7

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED.

HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BU24H

3/11/87 HIGHEST CRITICALITY HDW/FUNC DATE: 3/3 SUBSYSTEM: EPD&C FLIGHT:

3/3 MDAC ID: 6177 ABORT:

CIRCUIT BREAKER, 3A (AC CONT 3 A) ITEM:

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- ESS BUS 3AB
- 2) RIA1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 3 A)

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A1A1CB7 PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

## EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU24H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6178 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 3 B)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIA1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 3 B)
- 4) 5)
- 6)
- 7)
- 8) 9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A1A1CB8
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

## EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU24D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6179 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 3 B)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 3 B)

4)

5)

6) 7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 32V73A1A1CB8
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED.

HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BU24D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6180 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 3 C)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAL PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 3 C)

4) 5)

**5)** 

6) 7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 32V73A1A1CB9
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

# EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED.

HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BU24C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6181 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 3 C)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIA1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 3 C)

4)

5)

6)

7) 8)

9) 05-6

### CRITICALITIES

V-1-2-2-3-3-0			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A1A1CB9
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

## EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU24C

3/11/87 HIGHEST CRITICALITY HDW/FUNC DATE:

FLIGHT: 3/1R SUBSYSTEM: EPD&C 3/1R MDAC ID: 6182 ABORT:

ITEM: SWITCH, TOGGLE 3PDT (INVERTER PWR #3)

FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- RIA1 PANEL 2)
- MAIN DC DIST ASSY #3 3)
- SWITCH, TOGGLE 3PDT (INVERTER PWR #3)

6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 32V73A1A1S18 PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

## EFFECTS/RATIONALE:

IF THIS FAILURE OCCURS TO THE "OFF" SIDE OF THE SWITCH, AT LEAST ONE INVERTER WILL BE SHUT DOWN AND COULD NOT BE RESTARTED. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BU24

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6183 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (INVERTER PWR #3)

FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) MAIN DC DIST ASSY #3
- 4) SWITCH, TOGGLE 3PDT (INVERTER PWR #3)

5) 6)

7)

8)

9) 05-6

## CRITICALITIES

V1/2 2 2 V1.22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

32V73A1A1S18

PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT OPERATIONS AS THE AC INVERTERS ARE LATCHED ON DURING PRE-LAUNCH. ALTERNATE MEANS OF REMOVING A PHASE FROM THE AC BUS EXIST.

REFERENCES: 76BU24

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6184 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN C TO INV 3 ON)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 3AB
- 3) FLCA-3
- 4) HYBRID DRIVER TYPE I (MN C TO INV 3 ON)
- 5) 6)
- 7)
- 8)
- 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR4
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

### EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BU18F

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: ABORT: 6185

ITEM:

HYBRID DRIVER TYPE I (MN C TO INV 3 ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- GSE POWER 1)
- 2) ESS BUS 3AB
- 3) FLCA-3
- 4) HYBRID DRIVER TYPE I (MN C TO INV 3 ON)

5) 6)

7)

8)

9) 05-6

### CRITICALITIES

	01/11/01/11/11		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR4

PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

# EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BU18F

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: ABORT: 3/3 6186

ITEM:

HYBRID DRIVER TYPE I (MN C TO INV 3 OFF)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GSE POWER
- PRE-FLIGHT TEST BUS #2 2)
- FLCA-3
- 4) HYBRID DRIVER TYPE I (MN C TO INV 3 OFF)

5)

6) 7)

8)

9) 05-6

## CRITICALITIES

	VI.I.I.		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR5

PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

# EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR

FLIGHT OPERATIONS.

REFERENCES: 76BU18G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6187 ABORT: ITEM: HYBRID DRIVER TYPE I (MN C TO INV 3 OFF) FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: GSE POWER 2) PRE-FLIGHT TEST BUS #2 3) FLCA-3 4) HYBRID DRIVER TYPE I (MN C TO INV 3 OFF) 5)

7) 8) 9) 05-6

6)

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR5
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BU18G

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 FLIGHT: SUBSYSTEM: EPD&C 3/3 ABORT: 6188 MDAC ID:

HYBRID DRIVER TYPE II (INV 3 A ON) ITEM:

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- FLCA-3 2)
- 3) HYBRID DRIVER TYPE II (INV 3 A ON)

4)

5) 6)

7) 8)

05-6 9)

## CRITICALITIES

	U+14 + 4 U-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR11 PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

## **EFFECTS/RATIONALE:**

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED. NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BU17G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: 3/3 EPD&C FLIGHT: MDAC ID: 6189 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 3 A ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE II (INV 3 A ON)

4) 5)

6)

7)

8) 9) 05-6

### CRITICALITIES

	V			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A[] B[] C[]

LOCATION: 83V76A18AR11 PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BU17G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6190 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 3 B ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE II (INV 3 B ON)
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		·	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR12 PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BU17D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6191 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 3 B ON)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE II (INV 3 B ON)

4) 5)

6)

7) 8)

9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR12 PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED. NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BU17D

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 MDAC ID: 6192 ABORT: HYBRID DRIVER TYPE II (INV 3 C ON) ITEM: FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB 2) FLCA-3 HYBRID DRIVER TYPE II (INV 3 C ON) 3) 4) 5) 6) 7) 8) 05-6 9)

CRITICAL	LITIES
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<b>4-1</b>		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR13 PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED. NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BU17B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6193 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 3 C ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE II (INV 3 C ON)

4) 5)

6)

7)

9) 05-6

#### CRITICALITIES

	O1/1 1 1 01/		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR13 PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BU17B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6194 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 3 A ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 A ON)

4) 5)

6)

7) 8)

9) 05-6

## CRITICALITIES

A DODM	
ABORT	HDW/FUNC
RTLS:	3/3
TAL:	3/3
AOA:	3/3
ATO:	3/3
	•
	RTLS: TAL: AOA:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR14 PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16G

3/11/87 HIGHEST CRITICALITY HDW/FUNC DATE: SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6195 ABORT: ITEM: HYBRID DRIVER TYPE III (INV 3 A ON) FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB 2) FLCA-3 3) HYBRID DRIVER TYPE III (INV 3 A ON) 4) 5) 6) 7) 8) 9) 05-6

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	CVTTTC		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR14
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16G

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 MDAC ID: 6196 ABORT: ITEM: HYBRID DRIVER TYPE III (INV 3 B ON) FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB 2) FLCA-3 HYBRID DRIVER TYPE III (INV 3 B ON) 3) 4) 5) 6) 7) 8) 05-6 9) CRITICALITIES

FUNC	ABORT	H
^	TOTAL .	

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR15 PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6197 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 3 B ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 B ON)

4) 5)

6) 7)

7) 8)

9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR15
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE

# EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16D

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: 3/3 MDAC ID: 6198 HYBRID DRIVER TYPE III (INV 3 C ON) ITEM: FAILURE MODE: FAILS OFF LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB 2) FLCA-3 HYBRID DRIVER TYPE III (INV 3 C ON) 3) 4) 5) 6) 7) 8) 9) 05-6

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3

CRITICALITIES

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR16
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16B

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6199 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 3 C ON)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 C ON)
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

#### CRITTCALITTES

	CICLICA	VIII CHIII I I IIO	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR16 PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16B

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

3/1R SUBSYSTEM: FLIGHT: EPD&C

3/1R ABORT: MDAC ID: 6200

HYBRID DRIVER TYPE III (INV 3 A OFF) ITEM:

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- ESS BUS 3AB
- FLCA-3 2)
- HYBRID DRIVER TYPE III (INV 3 A OFF) 3)
- 4)
- 5) 6)
- 7)
- 8) 9) 05-6

### CRITICALITIES

01/11/01/11/1			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING	: 3/3		

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 83V76A18AR17 PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU16H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

EPD&C 3/3 SUBSYSTEM: FLIGHT: 3/3 MDAC ID: 6201 ABORT:

ITEM: HYBRID DRIVER TYPE III (INV 3 A OFF)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 A OFF)

4) 5)

6)

7)

8) 9) 05-6

#### CRITTCALITTES

		~·~~	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR17 PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6202 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 3 B OFF)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 B OFF)

4) 5)

6)

7) 8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		·

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR18
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6203 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 3 B OFF)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 B OFF)

4) 5)

6)

7)

8) 9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 83V76A18AR18
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU16E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6204 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 3 C OFF)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 C OFF)
- 4) 5)
- 3 ) 6 \
- 6)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

71,1222222		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
3/3		•
	3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 83V76A18AR19
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

## EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU16C

3/11/87 DATE: HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6205 3/3 ABORT:

ITEM: HYBRID DRIVER TYPE III (INV 3 C OFF)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 C OFF)

4) 5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR19 PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16C

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C

3/3 MDAC ID: 6206 ABORT:

FUSE, 3A TO AC BUS 3C OFF ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- FUSE, 3A TO AC BUS 3C OFF 3)

4) 5)

6)

7) 8)

9) 05-6

#### CRITTCALITTES

	CKITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18F5

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

## EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BU16C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6207 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3B OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) FUSE, 3A TO AC BUS 3B OFF

4) 5)

6)

7) 8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18F6

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

## EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BU16E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6208 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3A OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) FUSE, 3A TO AC BUS 3A OFF
- 4) 5)
- 6)
- 7)
- 8) 9) 05-6

#### CRITICALITIES

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HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18F7

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BU16H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6209 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3C ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) FUSE, 3A TO AC BUS 3C ON

4) 5)

5) 6)

7) 8)

9) 05-6

CRITICALITIES

	~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18F8

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BU16B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6210 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3B ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) FUSE, 3A TO AC BUS 3B ON
- 4) 5)
- 6)
- 7)
- 8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18F9

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BU16D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6211 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3A ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) FUSE, 3A TO AC BUS 3A ON

4) 5)

6)

7) 8)

9) 05-6

CRITICALITIES

	V-12-2-41		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18F10
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BU16G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6212 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 3 A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) FUSE, 80A TO INV 3 A

5)

6) 7)

7) 8)

9) 05-6

CRITICALITIES

O1/2 2 2 O1/	01/1110111111		
HDW/FUNC	ABORT	HDW/FUNC	
3/3	RTLS:	3/1R	
3/1R	TAL:	3/1R	
3/1R	AOA:	3/1R	
3/1R	ATO:	3/1R	
: 3/3			
	HDW/FUNC 3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:	

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 83V7

83V76A24F1

PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BUl3H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

FLIGHT: SUBSYSTEM: EPD&C 3/1R MDAC ID: 6213 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 3 B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) FUSE, 80A TO INV 3 B
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC	
3/3	RTLS:	3/1R	
3/1R	TAL:	3/1R	
3/1R	AOA:	3/1R	
3/1R	ATO:	3/1R	
3/3		·	
	3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:	

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 83V76A24F2

PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU13E

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

SUBSYSTEM: EPD&C FLIGHT: ABORT: 3/1R 3/1R MDAC ID: 6214

FUSE, 80A TO INV 3 C ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) FUSE, 80A TO INV 3 C
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 83V76A24F3

PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU13C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6215 ABORT: 3/3

ITEM: DIODE, ISOLATION

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) FPCA-3
- 4) DIODE, ISOLATION

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1CR1 PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU13G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 MDAC ID: 6216 ABORT: ITEM: DIODE, ISOLATION FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB 2) RIAI PANEL FPCA-3 3) 4) DIODE, ISOLATION 5) 6) 7) 8)

CRITICALITIES

CRITICA		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
: 3/3		·
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1CR1 PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

9)

05-6

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU13G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6217 ABORT: 3/3

ITEM: DIODE, ISOLATION

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIA1 PANEL
- 3) FPCA-3
- 4) DIODE, ISOLATION
- 5) 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1CR2 PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BUl3D

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6218 ITEM: DIODE, ISOLATION FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB 2) RIAL PANEL
3) FPCA-3 4) DIODE, ISOLATION 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC

3/3 RTLS: 3/3

3/3 TAL: 3/3

3/3 AOA: 3/3 PRELAUNCH: LIFTOFF: ONORBIT:

REDUNDANCY SCREENS: A [] B [] C []

3/3

LOCATION: 83V76A24A1CR2 PART NUMBER: JANTXV1N4246

LANDING/SAFING: 3/3

DEORBIT:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

ATO:

3/3

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU13D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6219 ABORT: 3/3

ITEM: DIODE, ISOLATION

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) FPCA-3
- 4) DIODE, ISOLATION

5) 6)

7) 8)

9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		• .
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1CR3
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BUl3B

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6220 ITEM: DIODE, ISOLATION FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB 2) RIAL PANEL 3) FPCA-3 4) DIODE, ISOLATION 5) 6) 7) 8) 9) 05-6

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	CKITICA	TITIES	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		-

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1CR3
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU13B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 MDAC ID: ABORT: 6221

ITEM: DIODE TO INV 3 A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) DIODE TO INV 3 A

5) 6)

7) 8)

05-6 9)

CRITICALITIES

	V-1V1	~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC		
PRELAUNCH:	3/3	RTLS:	3/3		
LIFTOFF:	3/3	TAL:	3/3		
ONORBIT:	3/3	AOA:	3/3		
DEORBIT:	3/3	ATO:	3/3		
LANDING/SAFING:	3/3		•		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24CR13

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSSES TO HANDLE THE LOADS.

REFERENCES: 76BU12F

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6222 DIODE TO INV 3 A ITEM: FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C 2) MAIN DC DIST ASSY #3 3) FPCA-3 4) DIODE TO INV 3 A 5) 6) 7) 8) 05-6 9) CRITICALITIES HDW/I FLIGHT PHASE

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
		~

LIFTOFF: 3/3 3/3 ONORBIT: AOA: 3/3 DEORBIT: 3/3 ATO: 3/3

LANDING/SAFING: 3/3

PRELAUNCH:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24CR13

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START UP.

REFERENCES: 76BU12F

3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C 3/3 FLIGHT: 3/3 MDAC ID: 6223 ABORT:

ITEM: DIODE TO INV 3 B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- MAIN DC DIST ASSY #3 2)
- 3) FPCA-3
- 4) DIODE TO INV 3 B
- 5) 6)
- 7)
- 8) 05-6 9)

CRITICALITIES

7112 2 2 7112 3 2 2 2 2			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

83V76A24CR14

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSSES TO HANDLE THE LOADS.

REFERENCES: 76BU12D

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6224 ITEM: DIODE TO INV 3 B FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C 2) MAIN DC DIST ASSY #3 3) FPCA-3 4) DIODE TO INV 3 B 5) 6) 7) 8)

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HDW/FUNC	ABORT	HDW/FUNC	
3/3	RTLS:	3/3	
3/3	TAL:	3/3	
3/3	AOA:	3/3	
3/3	ATO:	3/3	
: 3/3		•	
	HDW/FUNC 3/3 3/3 3/3 3/3	HDW/FUNC ABORT 3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

9)

05-6

83V76A24CR14

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START UP.

REFERENCES: 76BU12D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6225 3/3 ABORT:

ITEM:

DIODE TO INV 3 C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) DIODE TO INV 3 C

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24CR15

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSSES TO HANDLE THE LOADS.

REFERENCES: 76BU12B

HIGHEST CRITICALITY HDW/FUNC 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6226 DIODE TO INV 3 C ITEM: FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C 2) MAIN DC DIST ASSY #3 FPCA-3 3) 4) DIODE TO INV 3 C 5) 6) 7) 8) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC
3/3 RTLS: 3/3
3/3 TAL: 3/3 FLIGHT PHASE 3/3 3/3 3/3 PRELAUNCH: LIFTOFF: ONORBIT: AOA: 3/3 3/3 ATO: DEORBIT: 3/3 LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [] B [] C []

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

LOCATION: 83V76A24CR15

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START UP.

REFERENCES: 76BU12B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6227 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF3)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF3)

5) 6)

7)

8)

9) 05-6

CRITICALITIES

~		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

83V76A24A1R3

PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION. ALTERNATE INDICATORS (TALKBACK) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BU14H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6228 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF3)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF3)
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1R4
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION. ALTERNATE INDICATORS (TALKBACK) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BU14E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6229 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF3)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF3)

5) 6)

7) 8)

9) 05-6

CRITICALITIES

01/1110111111			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1R5 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION. ALTERNATE INDICATORS (TALKBACK) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BU14B

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6230 ABORT: 3/3

RPC, 7.5A TO INV 3 A ITEM:

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RPC, 7.5A TO INV 3 A

5) 6)

7) 8)

9) 05-6

CRITICALITIES

	~		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24RPC8

PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF. HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS. INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU12F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6231 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 3 A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RPC, 7.5A TO INV 3 A

5)

6) 7)

7) 8)

9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A24RPC8
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BU12F

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6232

ITEM:

RPC, 7.5A TO INV 3 B

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- RPC, 7.5A TO INV 3 B 4)
- 5) 6)
- 7)
- 8)
- 9) 05-6

#### CRITICALITIES

	O1/2 2 2 O1;		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A24RPC9 PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

## EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF. HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS. INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU12D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6233 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 3 B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RPC, 7.5A TO INV 3 B
- 5)
- 6)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

	V-1-2-01			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A24RPC9
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BU12D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6234 ABORT: 3/3

ITEM:

RPC, 7.5A TO INV 3 C

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RPC, 7.5A TO INV 3 C
- 5)
- 6)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

	ONT TI CHILL TILD			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING	3/3		-	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A24RPC10 PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF. HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS. INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU12A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6235 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 3 C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RPC, 7.5A TO INV 3 C
- 5)
- 6)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

7112 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A24RPC10 PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

# EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BU12A

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

FLIGHT: 3/1R SUBSYSTEM: EPD&C ABORT: 3/1R MDAC ID: 6236

RELAY, LATCHING TO INVERTER 3A ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIA1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) RELAY, LATCHING TO INVERTER 3A

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 83V76A24K1

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6237 ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 3A

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIA1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) RELAY, LATCHING TO INVERTER 3A

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A24K1

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL FLIGHT CONFIGURATION.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6238

ITEM: RELAY, LATCHING TO INVERTER 3B

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIA1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) RELAY, LATCHING TO INVERTER 3B

6) 7)

8)

05-6 9)

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A24K2

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

## EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BUl3E

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R ABORT: 3/1R MDAC ID: 6239

ITEM: RELAY, LATCHING TO INVERTER 3B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) RELAY, LATCHING TO INVERTER 3B

6)

7)

8)

9) 05-6

#### CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	: 3/3		-
DEORBIT:	3/1R		

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 83V76A24K2

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BU13E

HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R

3/1R ABORT: MDAC ID: 6240

ITEM: RELAY, LATCHING TO INVERTER 3C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- RIA1 PANEL 2)
- 3) FLCA-3
- FPCA-3 4)
- 5) RELAY, LATCHING TO INVERTER 3C

6)

7) 8)

05-6 9)

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 83V76A24K3

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER RESULTING IN THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6241 ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 3C

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) RELAY, LATCHING TO INVERTER 3C

6)

7) 8)

9) 05-6

#### CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A24K3

PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL FLIGHT CONFIGURATION.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

FLIGHT: SUBSYSTEM: EPD&C 3/1R 3/1R ABORT: MDAC ID: 6242

ITEM: INVERTER 3 A

FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIA1 PANEL
- 3) FLCA-3
- FPCA-3 4)
- INVERTER 3 A 5)

6)

7) 8)

9) 05-6

#### CRITTCALITTES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 83V76A7

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART

STRUCTURAL FAILURE

### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUSS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6243 ABORT: 3/3

ITEM: INVERTER 3 A

FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAL PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 A

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A7

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

# EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

FLIGHT: 3/1R SUBSYSTEM: EPD&C ABORT: 3/1R MDAC ID: 6244

INVERTER 3 A ITEM:

FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) FLCA-3
- FPCA-3 4)
- INVERTER 3 A 5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
3/3		-
	HDW/FUNC 3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 83V76A7

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6245 ABORT: 3/1R

ITEM: INVERTER 3 A FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAL PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 A

6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION:

83V76A7

PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

# EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

3/11/87 DATE:

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/1R

MDAC ID: 6246

ABORT:

3/1R

ITEM:

INVERTER 3 B

FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- RIA1 PANEL 2)
- FLCA-3 3)
- FPCA-3 4)
- 5) INVERTER 3 B

6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION:

83V76A8

PART NUMBER: MC495-0012-0004

TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART CAUSES:

STRUCTURAL FAILURE

#### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUSS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6247 ABORT:

ITEM:

INVERTER 3 B

FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) FLCA-3
- FPCA-3 4)
- 5) INVERTER 3 B

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A8

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

# EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

REFERENCES: 76BULOE

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6248 ABORT: 3/1R

ITEM: INVERTER 3 B

FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 B

6)

7)

8)

9) 05-6

#### CRITTCALITTES

	CNTTTCADTTTD		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 83V76A8

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6249 ABORT: 3/1R

ITEM: INVERTER 3 B
FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAL PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 B

6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 83V76A8

PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

3/11/87 HIGHEST CRITICALITY HDW/FUNC DATE:

SUBSYSTEM: EPD&C FLIGHT: 3/1R 3/1R MDAC ID: 6250 ABORT:

ITEM: INVERTER 3 C

FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAL PANEL
- 3) FLCA-3
- FPCA-3 4)
- INVERTER 3 C 5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 83V76A9

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART

STRUCTURAL FAILURE

### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUSS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6251 ABORT: 3/3

ITEM: INVERTER 3 C

FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIA1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 C

6)

7) 8)

9) 05-6

#### CRITTCALITTES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A9

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

FLIGHT: 3/1R SUBSYSTEM: EPD&C ABORT: 3/1R MDAC ID: 6252

ITEM:

INVERTER 3 C

FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- RIA1 PANEL 2)
- FLCA-3 3)
- FPCA-3 4)
- 5) INVERTER 3 C

6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 83V76A9

PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6253 ABORT: 3/1R

ITEM:

INVERTER 3 C

FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAL PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 C

6)

7)

8)

9) 05-6

#### CRITICALITIES

	71,222 71,222			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION:

83V76A9

PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

# EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C 3/3 FLIGHT: 3/3 MDAC ID: 6254 ABORT: HYBRID DRIVER TYPE III (AC BUS 3 ON) ITEM: FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER PRE-FLIGHT TEST BUS #2 2) 3) FLCA-3 4) HYBRID DRIVER TYPE III (AC BUS 3 ON) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: TAL: 3/3 PRELAUNCH: 3/3 3/3 LIFTOFF: 3/3 3/3 AOA: 3/3 ONORBIT: 3/3 3/3 ATO: DEORBIT:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR9

PART NUMBER: MC477-0263-0002

LANDING/SAFING: 3/3

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6255 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 3 ON)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) HYBRID DRIVER TYPE III (AC BUS 3 ON)

5) 6)

6) 7)

8)

9) 05-6

#### CRITICALITIES

	V-11		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 837

83V76A18AR9

PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

# EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 FLIGHT: SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6256 ITEM: HYBRID DRIVER TYPE III (AC BUS 3 OFF) FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: GSE POWER PRE-FLIGHT TEST BUS #2 2) 3) 4) HYBRID DRIVER TYPE III (AC BUS 3 OFF) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: 3/3 PRELAUNCH: 3/3 3/3 TAL: 3/3 LIFTOFF: ONORBIT: 3/3 AOA: 3/3 3/3 ATO: 3/3 DEORBIT: LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [ ] B [ ] C [ ] LOCATION: 83V76A18AR10 PART NUMBER: MC477-0263-0002 CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION, PIECE PART STRUCTURAL FAILURE EFFECTS/RATIONALE: THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BV22H

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6257 ABORT: ITEM: HYBRID DRIVER TYPE III (AC BUS 3 OFF) FAILURE MODE: FAILS OFF LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER 2) PRE-FLIGHT TEST BUS #2 3) 4) HYBRID DRIVER TYPE III (AC BUS 3 OFF) 5) 6) 7) 8) 9) 05-6

CD	TMT	CAT	TTI	70
LK	TIL	CAL	11. I. T	F. 5

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18AR10 PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,

PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BV22H

3/11/87 DATE:

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/1R

MDAC ID:

6258

ABORT:

3/1R

ITEM:

SWITCH, TOGGLE 3PDT (INV/AC BUS 3)

FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAL PANEL
- 3) MAIN DC DIST ASSY #3
- 4) SWITCH, TOGGLE 3PDT (INV/AC BUS 3)

5) 6)

7) 8)

9) 05-6

#### CDITTCALITTES

	CIVITATOR		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 32V73A1A1S21

PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

## EFFECTS/RATIONALE:

IF THE AC BUS RELAY IS TRIPPED OFF BY THE AC OVER/UNDER VOLTAGE SENSOR AND THIS FAILURE OCCURS, THE RESULT IS THE LOSS OF ONE PHASE OF THE AC BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BV24F

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

FLIGHT: SUBSYSTEM: EPD&C 3/1R MDAC ID: 6259 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INV/AC BUS 3)

FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) MAIN DC DIST ASSY #3
- 4) SWITCH, TOGGLE 3PDT (INV/AC BUS 3)

5)

6) 7)

8)

9) 05-6

#### CRITICALITIES

HDW/FUNC
3/1R
3/1R
3/1R
3/1R
•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 32V73A1A1S21 PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

# EFFECTS/RATIONALE:

THIS FAILURE COULD DISCONNECT ONE PHASE OF THE AC BUS FROM THE INVERTER. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BV24F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6260 ABORT: 3/1R

ITEM: SWITCH, TOGGLE SPDT (AC 3 BUS SNSR)

FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) 013 PANEL
- 3) RIA1 PANEL
- 4) SWITCH, TOGGLE SPDT (AC 3 BUS SNSR)

5) 6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/3	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	•		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 32V73A1A1S24
PART NUMBER: ME452-0102-7103

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

CONTAMINATION

### EFFECTS/RATIONALE:

WORST CASE FAILURE IS LOSS OF CONTROL OF THE AC OVER/UNDER VOLTAGE SENSOR WHICH COULD PREVENT THE DETECTION AND CORRECTION OF AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL REDUNDANCY COULD LEAD TO LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO LOADS.

REFERENCES: 76BV22B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6261 ABORT: 3/1R

ITEM: SWITCH, TOGGLE SPDT (AC 3 BUS SNSR)

FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) 013 PANEL
- 3) RIAI PANEL
- 4) SWITCH, TOGGLE SPDT (AC 3 BUS SNSR)

5) 6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/3	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 32V73A1A1S24
PART NUMBER: ME452-0102-7103

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, CONTAMINATION

#### EFFECTS/RATIONALE:

WORST CASE FAILURE IS LOSS OF CONTROL OF THE AC OVER/UNDER VOLTAGE SENSOR WHICH COULD PREVENT THE DETECTION AND CORRECTION OF AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL REDUNDANCY COULD LEAD TO LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO LOADS.

REFERENCES: 76BV22B

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

FLIGHT: 3/1R SUBSYSTEM: EPD&C 3/1R MDAC ID: 6262 ABORT:

ITEM: CIRCUIT BREAKER, 3A TO AC3 BUS SENSOR

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) 013 PANEL
- CIRCUIT BREAKER, 3A TO AC3 BUS SENSOR 3)

4) 5)

6)

7) 8)

9) 05-6

### CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
3/3		·
	3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 33V73A13CB17 PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

#### EFFECTS/RATIONALE:

WORST CASE FAILURE OCCURS WHEN THE SENSOR MONITOR/AUTO SWITCH FAILS ALSO. THE RESULT IS LOSS OF CAPABILITY TO DETECT AND CORRECT AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL AC POWER WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO LACK OF POWER TO CRITICAL LOADS.

REFERENCES: 76BV24B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6263 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A TO AC3 BUS SENSOR

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) 013 PANEL
- 3) CIRCUIT BREAKER, 3A TO AC3 BUS SENSOR

4) 5)

6)

7)

8) 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 33V73A13CB17
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

## EFFECTS/RATIONALE:

WORST CASE FAILURE OCCURS WHEN THE SENSOR MONITOR/AUTO SWITCH FAILS ALSO. THE RESULT IS LOSS OF CAPABILITY TO DETECT AND CORRECT AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL AC POWER WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO LACK OF POWER TO CRITICAL LOADS.

REFERENCES: 76BV24B

3/11/87 DATE:

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT: 3/1R ABORT: 3/1R

MDAC ID: 6264

ITEM:

AC OVER/UNDER VOLT SNSR 3

FAILURE MODE: INADVERTENT OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) AC OVER/UNDER VOLT SNSR 3

4)

5)

6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 83V76A37VS1

PART NUMBER: MC431-0129-0011

CAUSES: CONTAMINATION, THERMAL SHOCK, MECH SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC BUSSES WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6265 ABORT: 3/3

ITEM:

AC OVER/UNDER VOLT SNSR 3

FAILURE MODE: LOSS OF OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) AC OVER/UNDER VOLT SNSR 3
- 4)
- 5)
- 6)
- 7)
- 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

83V76A37VS1

PART NUMBER: MC431-0129-0011

CAUSES: CONTAMINATION, THERMAL SHOCK, MECH SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC BUSSES WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 FLIGHT: SUBSYSTEM: EPD&C

3/3 ABORT: MDAC ID: 6266

ITEM: DIODE, BLOCKING 1A (TO 3 A SET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- PRE-FLIGHT TEST BUS #2 2)
- 3) FLCA-3
- INV DIST & CONT ASSY #3 4)
- 5) DIODE, BLOCKING 1A (3 TO A SET)

6)

7) 8)

05-6 9)

#### CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

83V76A37A1CR1 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6267 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 A SET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 A SET)

6)

7)

8)

9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
: 3/3		•
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR1 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6268 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 B SET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 B SET)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR2 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6269 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 B SET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 B SET)

6) 7)

7) 8)

9) 05-6

CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR2 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6270 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 C SET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 C SET)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR3
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6271 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 C SET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 C SET)

6)

7) 8)

9) 05-6

CRITICALITIES

CIVITATOR		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR3
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: MDAC ID: 6272

ITEM:

DIODE, BLOCKING 1A (TO 3 A RESET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- PRE-FLIGHT TEST BUS #2 2)
- 3) FLCA-3
- INV DIST & CONT ASSY #3 4)
- DIODE, BLOCKING 1A (TO 3 A RESET) 5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR4 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R ABORT: 3/1R MDAC ID: 6273

ITEM: DIODE, BLOCKING 1A (TO 3 A RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 A RESET)

6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 83V76A37A1CR4 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6274

DIODE, BLOCKING 1A (TO 3 B RESET) ITEM: FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3) PRE-FLIGHT TEST BUS #2 2)
- 3) FLCA-3
- INV DIST & CONT ASSY #3 4)
- 5) DIODE, BLOCKING 1A (TO 3 B RESET)

6) 7) 8)

9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		-
	3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR5 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6275 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 3 B RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 B RESET)

6)

7)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 83V76A37A1CR5 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C

3/3 ABORT: MDAC ID: 6276

ITEM: DIODE, BLOCKING 1A (TO 3 C RESET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- PRE-FLIGHT TEST BUS #2 2)
- 3) FLCA-3
- INV DIST & CONT ASSY #3 4)
- 5) DIODE, BLOCKING 1A (TO 3 C RESET)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR6

PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6277 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 3 C RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 C RESET)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 83V76A37A1CR6 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

3/3 FLIGHT: SUBSYSTEM: EPD&C 3/3 ABORT: 6278 MDAC ID:

DIODE, BLOCKING 1A (TO 3 C RESET) ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- INV DIST & CONT ASSY #3 2)
- 3) AC OVER/UNDER VOLT SNSR #3
- DIODE, BLOCKING 1A (TO 3 C RESET)

5)

6) 7)

8)

05-6 9)

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

83V76A37A1CR7 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLT SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY.

SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6279 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 C RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) AC OVER/UNDER VOLT SNSR #3
- 4) DIODE, BLOCKING 1A (TO 3 C RESET)

5) 6)

7)

8)

9) 05-6

### CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A37A1CR7
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLT SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

SUBSYSTEM: EPD&C 3/3 FLIGHT: 3/3 ABORT: MDAC ID: 6280

ITEM: DIODE, BLOCKING 1A (TO 3 B RESET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) AC OVER/UNDER VOLT SNSR #3
- 4) DIODE, BLOCKING 1A (TO 3 B RESET)

5) 6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

83V76A37A1CR8 PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLT SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY. SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6281 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 B RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) AC OVER/UNDER VOLT SNSR #3
- 4) DIODE, BLOCKING 1A (TO 3 B RESET)

5) 6)

7)

8)

9) 05-6

#### CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		·
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A37A1CR8
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLT SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6282 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 A RESET)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) AC OVER/UNDER VOLT SNSR #3
- 4) DIODE, BLOCKING 1A (TO 3 A RESET)
- 5) 6)
- 7)
- 8) 9) 05-6

#### CRITICALITIES

	Q1/2 1 4 Q1	C1/2 1 2 C1111 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC		
PRELAUNCH:	3/3	RTLS:	3/3		
LIFTOFF:	3/3	TAL:	3/3		
ONORBIT:	3/3	AOA:	3/3		
DEORBIT:	3/3	ATO:	3/3		
LANDING/SAFING	: 3/3		-		

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A37A1CR9
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLT SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY. SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6283 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 A RESET)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) AC BUS 3
  - 2) INV DIST & CONT ASSY #3
  - 3) AC OVER/UNDER VOLT SNSR #3
  - 4) DIODE, BLOCKING 1A (TO 3 A RESET)

5) 6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A37A1CR9
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLT SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: ABORT: 3/3 6284 MDAC ID: RESISTOR, 5.1K 1/4W (TO MDM OF3) ITEM: FAILURE MODE: FAILS OPEN SUBSYS LEAD: K. SCHMECKPEPER LEAD ANALYST: K. SCHMECKPEPER BREAKDOWN HIERARCHY: AC BUS 3 1) INV DIST & CONT ASSY #3 2) 3) AC BUS OVER/UNDER VOLTAGE SNSR RESISTOR, 5.1K 1/4W (TO MDM OF3) 4) 5) 6) 7)

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R1 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

8) 9)

05-6

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BV19C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6285 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF3)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) AC BUS OVER/UNDER VOLTAGE SNSR
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF3)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R2 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BV19C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: SUBSYSTEM: EPD&C 3/3 ABORT: 3/3 MDAC ID: 6286 RESISTOR, 5.1K 1/4W (TO MDM OF3) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: AC BUS 3 1) INV DIST & CONT ASSY #3 2) 3) ESS BUS 3AB RESISTOR, 5.1K 1/4W (TO MDM OF3) 4) 5) 6) 7) 8) 9) 05-6

CRI	TI	CAL	ITI	ES
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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R3 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6287 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF3)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) ESS BUS 3AB
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF3)
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R4 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BV12G

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: 3/3 MDAC ID: 6288

ITEM:

RESISTOR, 5.1K 1/4W (TO MDM OF3)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- AC BUS 3
- INV DIST & CONT ASSY #3 2)
- 3) ESS BUS 3AB
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF3)
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

	V-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R5

PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BV12G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6289 ABORT: 3/3

ITEM: RESISTOR, 2.2K 1/4W

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) 013 PANEL
- 3) RIA1 PANEL
- 4) INV DIST & CONT ASSY #3
- 5) RESISTOR, 2.2K 1/4W TO MDM OF3

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R6 PART NUMBER: RLR20C222GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MONITORING CIRCUIT.

REFERENCES: 76BV19C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6290 RESISTOR, 1.8K 1/4W (TO MDM OF3) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: AC BUS 3 2) INV DIST CONT & ASSY #3 3) AC OVER/UNDER VOLT SNSR #3 RESISTOR, 1.8K 1/4W (TO MDM OF3) 5) 6) 7) 8) 9) 05-6 CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		-

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R7 PART NUMBER: RLR07C182GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR IS PART OF A MONITORING FUNCTION AND IS NOT CRITICAL FOR VEHICLE OPERATION.

REFERENCES: 76BV20C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6291 ABORT: 3/3

ITEM: RESISTOR, 1.8K 1/4W (TO MDM OF3)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT & ASSY #3
- 3) AC OVER/UNDER VOLT SNSR #3
- 4) RESISTOR, 1.8K 1/4W (TO MDM OF3)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R8
PART NUMBER: RLR07C182GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR IS PART OF A MONITORING FUNCTION AND IS NOT CRITICAL FOR VEHICLE OPERATION.

REFERENCES: 76BV20C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6292 RESISTOR, 2.2K 1/4W ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB 2) 013 PANEL 3) RIAI PANEL 4) INV DIST & CONT ASSY #3 5) RESISTOR, 2.2K 1/4W TO MDM OF3 6) 7) 8) 05-6 9) CRITICALITIES HDW/FUNC ABORT HDW/FUNC
3/3 RTLS: 3/3
3/3 TAL: 3/3
3/3 AOA: 3/3 FLIGHT PHASE PRELAUNCH: LIFTOFF: ONORBIT:

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [] B [] C []

3/3

LOCATION: 83V76A37A1R9
PART NUMBER: RLR20C222GR

DEORBIT:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

ATO:

3/3

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MONITORING CIRCUIT.

REFERENCES: 76BV19C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6293 ABORT: 3/3

ITEM: RESISTOR, 100K (AC BUS 3 A CURRENT)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #3
- 3) RESISTOR, 100K (AC BUS 3 A CURRENT)

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

V-12-12-12-12-12-12-12-12-12-12-12-12-12-			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R10 PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BV13E

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6294 ABORT: RESISTOR, 100K (AC BUS 3 B CURRENT) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE PWR MONITOR 2) INV DIST & CONT ASSY #3 3) RESISTOR, 100K (AC BUS 3 B CURRENT) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC
3/3 RTLS: 3/3
3/3 TAL: 3/3 FLIGHT PHASE PRELAUNCH: 3/3 3/3 LIFTOFF: AOA: 3/3 ONORBIT: ATO: 3/3 DEORBIT: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [] B [] C [] LOCATION: 83V76A37A3R11 PART NUMBER: RLR05C1003GR CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK EFFECTS/RATIONALE: THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BV13D

HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6295 ABORT: 3/3 ITEM: RESISTOR, 100K (AC BUS 3 C CURRENT) FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE PWR MONITOR 2) INV DIST & CONT ASSY #3 3) RESISTOR, 100K (AC BUS 3 C CURRENT) 4) 5) 6) 7) 8) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE RTLS: PRELAUNCH: 3/3 3/3 LIFTOFF: 3/3 TAL: 3/3 3/3 ONORBIT: AOA: 3/3 3/3 DEORBIT: ATO: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A3R12 PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BV13B

HIGHEST CRITICALITY HDW/FUNC 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6296 RESISTOR, 150K 1/2W (AC BUS 3 A VOLTAGE) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE PWR MONITOR 2) INV DIST & CONT ASSY #3 RESISTOR, 150K 1/2W (AC BUS 3 A VOLTAGE) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC

3/3 RTLS: 3/3

3/3 TAL: 3/3

3/3 AOA: 3/3 FLIGHT PHASE PRELAUNCH: LIFTOFF: ONORBIT: 3/3 3/3 ATO: DEORBIT:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R13

LANDING/SAFING: 3/3

PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BV10E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6297 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 3 B VOLTAGE)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #3
- 3) RESISTOR, 150K 1/2W (AC BUS 3 B VOLTAGE)

4) 5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R14 PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BV10D

HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 ABORT: MDAC ID: 6298 RESISTOR, 150K 1/2W (AC BUS 3 C VOLTAGE) ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: GSE PWR MONITOR 1) INV DIST & CONT ASSY #3 RESISTOR, 150K 1/2W (AC BUS 3 C VOLTAGE) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC 3/3 RTLS: 3/3 PRELAUNCH: 3/3 TAL: 3/3 LIFTOFF: 3/3 AOA: ONORBIT: 3/3 3/3 3/3 ATO: DEORBIT: LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [] B [] C [] LOCATION: 83V76A37A1R15 PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BV10B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6299 ABORT: 3/3

ITEM: RESISTOR, 4.3K 1/8W (AC BUS 3 A VOLTAGE)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #3
- 3) RESISTOR, 4.3K 1/8W (AC BUS 3 A VOLTAGE)

4)

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R16 PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BV9A

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6300 ITEM: RESISTOR, 4.3K 1/8W (AC BUS 3 B VOLTAGE) FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE PWR MONITOR 2) INV DIST & CONT ASSY #3 RESISTOR, 4.3K 1/8W (AC BUS 3 B VOLTAGE) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: PRELAUNCH: 3/3 3/3 3/3 TAL: 3/3 LIFTOFF: 3/3 3/3 AOA: ONORBIT: ATO: DEORBIT: 3/3 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [] B [] C [] LOCATION: 83V76A37A1R17 PART NUMBER: RLR05C432GR CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BV9A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6301 ABORT: 3/3 ITEM: RESISTOR, 4.3K 1/8W (AC BUS 3 C VOLTAGE) FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE PWR MONITOR 2) INV DIST & CONT ASSY #3 3) RESISTOR, 4.3K 1/8W (AC BUS 3 C VOLTAGE) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R18 PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BV9A

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

FLIGHT: 3/1R SUBSYSTEM: EPD&C 3/1R ABORT: MDAC ID: 6302

ITEM: FUSE, 3A TO AC BUS 3 A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- INV DIST CONT ASSY #3 2)
- 3) AC O/V VOLT SNSR 3
- 4) FUSE, 3A TO AC BUS 3 A
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

01/1 1 1 01/11 1 1 1 1 1 1 1 1 1 1 1 1 1			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 83V76A37F1

PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BV9E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C 3/1R FLIGHT: MDAC ID: 6303 ABORT: 3/1R

FUSE, 3A TO AC BUS 3 B ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) AC O/V VOLT SNSR 3
- 4) FUSE, 3A TO AC BUS 3 B

5)

6)

7) 8)

9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 83V76A37F2

PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

#### EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BV9D

3/11/87 DATE:

HIGHEST CRITICALITY HDW/FUNC

FLIGHT: 3/1R SUBSYSTEM: EPD&C

ABORT: 3/1R

ITEM:

FUSE, 3A TO AC BUS 3 C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

1) AC BUS 3

MDAC ID: 6304

- INV DIST CONT ASSY #3 2)
- 3) AC O/V VOLT SNSR 3
- FUSE, 3A TO AC BUS 3 C 4)

5)

6) 7)

8)

05-6 9)

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 83V76A37F3

PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

#### EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BV9B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6305 ABORT: 3/3

ITEM:

FUSE, 3A TO AC VOLTMETER

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) FUSE, 3A TO AC VOLTMETER
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

#### CRITICALITIES

	V::		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

83V76A37F4

PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

### EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BV9E

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 FLIGHT: SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6306 FUSE, 3A TO AC VOLTMETER ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS 3 INV DIST CONT ASSY #3 2) 3) FUSE, 3A TO AC VOLTMETER 4) 5) 6) 7). 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: PRELAUNCH: 3/3 3/3 3/3 TAL: 3/3 LIFTOFF: 3/3 AOA: 3/3 ONORBIT: 3/3 ATO: 3/3 DEORBIT: LANDING/SAFING: 3/3

LOCATION: 83V76A37F5

PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

### EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON CREW/MISSION/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6307 ABORT: 3/3

ITEM:

FUSE, 3A TO AC VOLTMETER

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) FUSE, 3A TO AC VOLTMETER
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

#### CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

83V76A37F6

PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON CREW/MISSION/VEHICLE.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

3/1R SUBSYSTEM: EPD&C FLIGHT: 3/1R ABORT: MDAC ID: 6308

RELAY, LATCHING TO AC BUS 3A ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

1) AC BUS 3

INV DIST CONT ASSY #3

RELAY, LATCHING TO AC BUS 3A 3)

4)

5)

6) 7)

8) 05-6 9)

CRITICALITIES

7-12-2-3-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A37K1

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT BUSSES WOULD PROVIDE POWER TO CRITICAL LOADS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6309 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 3A

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- INV DIST CONT ASSY #3 2)
- 3) RELAY, LATCHING TO AC BUS 3A
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37K1

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

FLIGHT: 3/1R SUBSYSTEM: EPD&C 3/1R MDAC ID: 6310 ABORT:

RELAY, LATCHING TO AC BUS 3B ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- INV DIST CONT ASSY #3
- RELAY, LATCHING TO AC BUS 3B

4) 5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A37K2

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT BUSSES WOULD PROVIDE POWER TO CRITICAL LOADS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6311 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 3B

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) RELAY, LATCHING TO AC BUS 3B

4)

5)

6)

7)

9) 05-6

CRITTCALITTES

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HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37K2

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

FLIGHT: 3/1R SUBSYSTEM: EPD&C ABORT: 3/1R MDAC ID: 6312

ITEM: RELAY, LATCHING TO AC BUS 3C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- RELAY, LATCHING TO AC BUS 3C 3)
- 4)
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A37K3

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT BUSSES WOULD PROVIDE POWER TO CRITICAL LOADS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6313 3/3 ABORT:

ITEM: RELAY, LATCHING TO AC BUS 3C

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) RELAY, LATCHING TO AC BUS 3C

4)

5)

6)

7) 8)

9) 05-6

CRITTCALITTES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37K3

PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 3/3 FLIGHT: SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6314

ITEM:

CIRCUIT BREAKER, 3A 3-P

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) L4 PANEL
- 4) CIRCUIT BREAKER, 3P 3A TO AC UTIL POWER
- 5) 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		·
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 31V73A4CB29

PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO AN AC UTILITY OUTLET. THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BW15G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6315 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A 3-P

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) L4 PANEL
- 4) CIRCUIT BREAKER, 3P 3A TO AC UTIL POWER
- 5) 6)
- 7)
- 8) 9) 05-6

CRITICALITIES

V1\2 2 4 V1.2 4 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 31V73A4CB29
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO AN AC UTILITY OUTLET. THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BW15G

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 FLIGHT: SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6316 ITEM: CIRCUIT BREAKER, 3A 3-P FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS #3 INV DIST & CONT ASSY #3 2) 3) MA73C PANEL 4) CIRCUIT BREAKER, 3P 3A TO PAYLOAD 5) 6) 7) 8) 05-6 9) CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB16
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO A PAYLOAD PATCH PANEL. THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BW9C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6317 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A 3-P

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3P 3A TO PAYLOAD

5) 6)

7)

8) 9) 05-6

CRITICALITIES

	Q1/2 2 2 Q1/	71/2 1 1 411D1 1 1 D	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB16
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO A PAYLOAD PATCH PANEL. THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BW9C

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 FLIGHT:

SUBSYSTEM: EPD&C 3/3 6318 ABORT: MDAC ID:

SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR) ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- AC BUS #3
- INV & DIST CONT ASSY #3 2)
- 3) L4 PANEL
- A15 PANEL 4)
- SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR) 5)
- 7)
- 8)
- 05-6 9)

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 36V73A15S3

PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BW15D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6319 3/3 ABORT:

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- AC BUS #3 l)
- 2) INV & DIST CONT ASSY #3
- 3) L4 PANEL
- 4) A15 PANEL
- 5) SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)

6) 7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B[] C[]

LOCATION:

36V73A15S3

PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BW15D

HIGHEST CRITICALITY HDW/FUNC 3/11/87 3/3 FLIGHT:

SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6320

SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR) ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- INV & DIST CONT ASSY #3 2)
- 3) L4 PANEL
- A15 PANEL 4)
- M013Q PANEL 5)
- SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR) 6)

7) 8)

9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 80V73A81S12

PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BW15B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6321 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV & DIST CONT ASSY #3
- 3) L4 PANEL
- 4) Als PANEL
- 5) M013Q PANEL
- 6) SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)

7)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 80V73A81S12 PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BW15B

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

FLIGHT: 3/1R SUBSYSTEM: EPD&C 3/1R ABORT: MDAC ID: 6322

ITEM: CIRCUIT BREAKER AC 3A TO RCS/OMS-3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- AC BUS 3 1)
- INV DIST & CONT ASSY #3 2)
- MA73C PANEL 3)
- CIRCUIT BREAKER AC 3A TO RCS/OMS-3 4)

5) 6)

7) 8)

05-6 9)

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [11] B [P] C [P]

LOCATION: 85V73A129CB44

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE ISOLATED.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6323 ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 3A TO RCS/OMS-3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 3A TO RCS/OMS-3

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

85V73A129CB44

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6324 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 3B TO RCS/OMS-3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 3B TO RCS/OMS-3

5)

6)

7)

8) 9) 05-6

CRITICALITIES

CNIIICNIII			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING	: 3/3		·

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB45
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE ISOLATED.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6325 ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 3B TO RCS/OMS-3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 3B TO RCS/OMS-3
- 5) 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

41/11/11/11			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB45
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT CONFIGURATION.

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/1R

MDAC ID: 6326

ABORT:

3/1R

ITEM:

CIRCUIT BREAKER AC 3C TO RCS/OMS-3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- AC BUS 3 1)
- INV DIST & CONT ASSY #3 2)
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 3C TO RCS/OMS-3
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

ANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [11] B [P] C [P]

LOCATION: 85V73A129CB46

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE ISOLATED.

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6327 ABORT: 3/3

ITEM:

CIRCUIT BREAKER AC 3C TO RCS/OMS-3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 3C TO RCS/OMS-3

5)

6)

7) 8)

9) 05-6

CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB46

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT CONFIGURATION.

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT: 2/1R

MDAC ID: 6328

ABORT:

2/1R

ITEM:

CIRCUIT BREAKER TO FMCA-3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

1) AC BUS 3

- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- CIRCUIT BREAKER TO FMCA-3 4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB11

PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6329 ABORT: 3/3

ITEM:

CIRCUIT BREAKER TO FMCA-3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO FMCA-3
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

~-········			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

85V73A129CB11

PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 2/1R SUBSYSTEM: EPD&C 2/1R ABORT: MDAC ID: 6330

ITEM:

CIRCUIT BREAKER TO MMCA-2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- INV DIST & CONT ASSY #3 2)
- MA73C PANEL 3)
- CIRCUIT BREAKER TO MMCA-2 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:			•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB12

PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD CAUSE LOSS OF ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL

DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED. AFTER SECOND FAILURE, CREW EVA REQUIRED TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6331 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO MMCA-2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-2

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB12
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6332 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-4

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-4
- 5)
- 6)
- 7)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB13
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD CAUSE LOSS OF ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED. AFTER SECOND FAILURE, CREW EVA REQUIRED TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6333 ABORT: 3/3

ITEM: CIRCU

CIRCUIT BREAKER TO MMCA-4

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-4

5) 6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

85V73A129CB13

PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

2/1R

MDAC ID: 6334

ABORT:

2/1R

ITEM:

CIRCUIT BREAKER TO AMCA-3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO AMCA-3

5)

6)

7) 8)

9) 05-6

CRITICALITIES

W/FUNC
2/1R
2/1R
2/1R
2/1R
•
2

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB14

PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD CAUSE LOSS OF ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6335 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO AMCA-3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO AMCA-3
- 5) 6)
- 7)
- 8) 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
: 3/3		•
	HDW/FUNC 3/3 3/3 3/3 3/3	HDW/FUNC ABORT 3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB14
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6336 ABORT: 2/1R

ITEM: RELAY TO PLBD AC3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC3

6)

7) 8)

9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
2/1R	AOA:	3/3
3/3	ATO:	2/1R
: 3/3		•
	3/3 3/3 2/1R 3/3	3/3 RTLS: 3/3 TAL: 2/1R AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K42
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6337 ABORT: 3/1R

ITEM: RELAY TO PLBD AC3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC3

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K42
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

2/1R

MDAC ID: 6338

ABORT:

2/1R

ITEM:

RELAY TO PLBD AC3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- RELAY TO PLBD AC3 5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K54

PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/1R

MDAC ID: 6339 ABORT: 3/1R

ITEM: RELAY TO PLBD AC3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC3
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

	01/11/10	O1/T T T O1/T T T T D	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76All8K54
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6340 ABORT: 2/1R

ITEM: RELAY TO PLBD AC3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC3

6)

7) 8)

9) 05-6

CRITICALITIES

	01/1110111111			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	2/1R	AOA:	3/3	
DEORBIT:	3/3	ATO:	2/1R	
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K8
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO ENTRY.

REFERENCES: 76BY16C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6341 ABORT: 3/1R

ITEM: RELAY TO PLBD AC3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC3

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K8
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BY16C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 6342 ABORT: 2/1R

ITEM: RELAY TO PLBD AC3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC3
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K20
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/1R

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6343 ABORT: 3/1R

ITEM: RELAY TO PLBD AC3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC3

6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K20
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

3/11/87 DATE:

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

MDAC ID: 6344

FLIGHT:

2/1R

ABORT:

2/1R

ITEM:

RELAY, 4P TO PLBM-AC3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- RELAY, 4P TO PLBM-AC3

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K30

PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R

MDAC ID: 6345 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC3

6) 7)

/) 8)

9) 05-6

CRITICALITIES

VI.L VI.		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/1R	AOA:	3/1R
3/1R	ATO:	3/1R
3/3		•
	HDW/FUNC 3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R ATO:

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K30
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD CAUSE LOSS OF CREW/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 6346 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC3
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

CKTITCKHIII		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
2/1R	AOA:	3/3
3/3	ATO:	2/1R
: 3/3		
	HDW/FUNC 3/3 3/3 2/1R 3/3	3/3 RTLS: 3/3 TAL: 2/1R AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K42
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6347 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC3

6) 7)

8)

9) 05-6

CRITICALITIES

	01/4 4 4 017	*****	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K42
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION

EFFECTS/RATIONALE:
FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS OF CREW/VEHICLE.

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

2/1R

MDAC ID:

6348

ABORT:

2/1R

ITEM:

RELAY, 4P TO PLBM-AC3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- INV DIST & CONT ASSY #3 2)
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY, 4P TO PLBM-AC3

6)

7)

8) 9) 05-6

CRITICALITIES

	V-1V-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A118K61

PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BZ2D

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R

MDAC ID: 6349 ABORT: 3/1R

ITEM:

RELAY, 4P TO PLBM-AC3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY, 4P TO PLBM-AC3

6)

7) 8)

9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION:

40V76A118K61 PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION

# EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BZ2D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

FLIGHT: 2/1R

SUBSYSTEM: EPD&C MDAC ID: 6350

ABORT:

2/1R

ITEM:

RELAY, 4P TO PLBM-AC3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- RELAY, 4P TO PLBM-AC3
- 6)

7)

8)

05-6 9)

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 40V76A118K63

PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,

CONTAMINATION

#### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BZ2E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6351 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY, 4P TO PLBM-AC3

6) 7)

8)

9) 05-6

#### CRITICALITIES

	~-·- ~ ~ ·		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 40V76A118K63
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION

#### EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BZ2E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6352 ABORT: 3/1R

ITEM: RESISTOR, 1.2K 2W (TO MEC #1)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) 017 PANEL
- 3) RESISTOR, 1.2K 2W (TO MEC #1)

4)

5) 6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING	: 3/3		-

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 33V73A17A8R1 PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF REDUNDANT POWER TO ONE MEC. THE LOSS OF ALL POWER TO BOTH MECS COULD CAUSE LOSS OF VEHICLE/CREW DUE TO INABILITY TO SEPERATE THE ET AND SRBS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/1R

MDAC ID: 6353 ABORT: 3/1R

ITEM: RESISTOR, 1.2K 2W (TO MEC #1)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) CONT BUS AB2
- 2) 017 PANEL
- 3) RESISTOR, 1.2K 2W (TO MEC #1)

4) 5)

5) 6)

7)

8) 9) 05-6

#### CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/3	AOA:	3/1R
3/3	ATO:	3/1R
3/3		•
	HDW/FUNC 3/3 3/1R 3/3 3/3	3/3 RTLS: 3/1R TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 33V73A17A8R2 PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF REDUNDANT POWER TO ONE MEC. THE LOSS OF ALL POWER TO BOTH MECS COULD CAUSE LOSS OF VEHICLE/CREW DUE TO INABILITY TO SEPERATE THE ET AND SRBS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 FLIGHT: 3/1R SUBSYSTEM: EPD&C 3/1R

ABORT: MDAC ID: 6354

RESISTOR, 1.2K 2W (TO MEC #2) ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- CONT BUS BC1
- 2) 017 PANEL
- RESISTOR, 1.2K 2W (TO MEC #2) 3)
- 4) 5)
- 6)
- 7)
- 8)
- 05-6 9)

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 33V73A17A9R2 PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF REDUNDANT POWER TO ONE MEC. THE LOSS OF ALL POWER TO BOTH MECS COULD CAUSE LOSS OF VEHICLE/CREW DUE TO INABILITY TO SEPERATE THE ET AND SRBS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6355 ABORT: 3/1R

ITEM: RESISTOR, 1.2K 2W (TO MEC #2)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) CONT BUS BC2
- 2) 017 PANEL
- 3) RESISTOR, 1.2K 2W (TO MEC #2)

4)

5)

6) 7)

8)

9) 05-6

#### CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 33V73A17A9R1 PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF REDUNDANT POWER TO ONE MEC. THE LOSS OF ALL POWER TO BOTH MECS COULD CAUSE LOSS OF VEHICLE/CREW DUE TO INABILITY TO SEPERATE THE ET AND SRBS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6356 SWITCH, TOGGLE DPDT (MEC 1) ITEM: FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) CONTROL BUSSES AB1 & AB2 2) 017 PANEL SWITCH, TOGGLE DPDT (MEC 1) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE 3/3 RTLS: TAL: PRELAUNCH: 3/3 3/3 3/3 3/3 LIFTOFF: AOA: 3/3 ONORBIT: ATO: 3/3 DEORBIT: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [ ] B [ ] C [ ] LOCATION: 33V73A17S5 PART NUMBER: ME452-0102-7301 CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECH SHOCK EFFECTS/RATIONALE: NO EFFECT AS THIS IS NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C 3/1R FLIGHT: MDAC ID: 6357 ABORT: 3/1R

ITEM: SWITCH, TOGGLE DPDT (MEC 1)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- CONTROL BUSSES AB1 & AB2
- 2) 017 PANEL
- 3) SWITCH, TOGGLE DPDT (MEC 1)

4)

5)

6)

7) 8)

9) 05-6

# **CRITICALITIES**

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 33V73A17S5

PART NUMBER: ME452-0102-7301

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECH SHOCK

# EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO ONE MEC. LOSS OF ALL POWER TO MECS DURING LIFTOFF OR ABORT PHASES WOULD LIKELY RESULT IN LOSS OF CREW/VEHICLE DUE TO INABILITY TO COMPLETE MEC FUNCTIONS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6358 SWITCH, TOGGLE DPDT (MEC 2) ITEM: FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) CONTROL BUSSES BC1 & BC2 2) 017 PANEL SWITCH, TOGGLE DPDT (MEC 2) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE RTLS: PRELAUNCH: 3/3 3/3 3/3 3/3 TAL: LIFTOFF: 3/3 ONORBIT: 3/3 AOA: 3/3 ATO: 3/3 DEORBIT: LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [ ] B [ ] C [ ] LOCATION: 33V73A17S6 PART NUMBER: ME452-0102-7301 CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECH SHOCK EFFECTS/RATIONALE: NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C MDAC ID:

6359

FLIGHT: ABORT:

3/1R 3/1R

ITEM:

SWITCH, TOGGLE DPDT (MEC 2)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- CONTROL BUSSES BC1 & BC2 1)
- 2) 017 PANEL
- 3) SWITCH, TOGGLE DPDT (MEC 2)

4)

5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 33V73A17S6

PART NUMBER: ME452-0102-7301

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION,

MECH SHOCK

#### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO ONE MEC. LOSS OF ALL POWER TO MECS DURING LIFTOFF OR ABORT PHASES WOULD LIKELY RESULT IN LOSS OF CREW/VEHICLE DUE TO INABILITY TO COMPLETE MEC FUNCTIONS.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 ABORT: MDAC ID: 6360 RESISTOR, 5.1K 1/4W TO MDM OA1 ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) CONT BUS AB1 2) 017 PANEL 3) APCA-1 RESISTOR, 5.1K 1/4W TO MDM OA1 4) 5) 6) 7) 8) 05-6 9)

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 54V76A131A1R4
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MEASUREMENT CIRCUIT.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6361 ABORT: 3/3

ITEM:

RESISTOR, 5.1K 1/4W TO MDM OA2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) CONT BUS BC1
- 2) 017 PANEL
- 3) APCA-2
- 4) RESISTOR, 5.1K 1/4W TO MDM OA2

5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3	•	, -

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

55V76A132A1R12 PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MEASUREMENT CIRCUIT.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6362 ABORT: 3/1R

ITEM: RPC, 10A TO MEC #2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) APCA-5
- 4) APCA-2
- 5) RPC, 10A TO MEC #2

6) 7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/3	AOA:	3/1R	
DEORBIT:	3/3	ATO:	3/1R	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 55V76A132RPC3

PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE OF TWO POWER SOURCES TO ONE MEC. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL FUNCTIONS.

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6363 ABORT: 3/3

ITEM: RPC, 10A TO MEC #2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) APCA-5
- 4) APCA-2
- 5) RPC, 10A TO MEC #2

6)

7) 8)

9) 05-6

### CRITICALITIES

	CKITICALLIED		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 55V76A132RPC3

PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

# EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF RPC CONTROL TO ONE OF TWO POWER SOURCES TO ONE MEC. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6364 ABORT: 3/1R

ITEM: RPC, 10A TO MEC #2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) APCA-6
- 4) APCA-3
- 5) RPC, 10A TO MEC #2

6)

7)

9) 05-6

#### CRITICALITIES

CMIIICMDIIID			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 56V76A133RPC5

PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

# EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE OF TWO POWER SOURCES TO ONE MEC. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL FUNCTIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6365 ABORT: 3/3

ITEM:

RPC, 10A TO MEC #2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) APCA-6
- 4) APCA-3
- 5) RPC, 10A TO MEC #2

6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

56V76A133RPC5

PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

# EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF RPC CONTROL TO ONE OF TWO POWER SOURCES TO ONE MEC. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6366 ABORT: 3/1R

ITEM: RPC, 10A TO MEC #1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) APCA-5
- 4) APCA-2
- 5) RPC, 10A TO MEC #1

6)

7)

9) 05-6

#### CRITICALITIES

V1/1 1 V1/11 1 11V			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING	3/3		·

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 55V76A132RPC2

PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE OF TWO POWER SOURCES TO ONE MEC. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL FUNCTIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6367 ABORT: 3/3

ITEM: RPC, 10A TO MEC #1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) APCA-5
- 4) APCA-2
- 5) RPC, 10A TO MEC #1

6)

7) 8)

9) 05-6

#### CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 55V76A132RPC2

PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

# EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF RPC CONTROL TO ONE OF TWO POWER SOURCES TO ONE MEC. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/1R

MDAC ID: 6368 ABORT: 3/1R

ITEM: RPC, 10A TO MEC #1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) APCA-4
- 4) APCA-1
- 5) RPC, 10A TO MEC #1

6) 7)

8)

9) 05-6

#### CRITICALITIES

	70.000		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 54V76A131RPC5

PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE OF TWO POWER SOURCES TO ONE MEC. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL FUNCTIONS.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6369 ABORT: 3/3

ITEM: RPC, 10A TO MEC #1

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) APCA-4
- 4) APCA-1
- 5) RPC, 10A TO MEC #1

6) 7)

7) 8)

9) 05-6

#### CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 54V76A131RPC5

PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH

SHOCK, THERMAL STRESS, VIBRATION

### EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF RPC CONTROL TO ONE OF TWO POWER SOURCES TO ONE MEC. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

3/1R

MDAC ID: 6370

ABORT:

FLIGHT:

3/1R

ITEM:

DIODE, ISOLATION 12A (TO CONT BUS CA1)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- MAIN DC DIST ASSY #2
- 3) R15 PANEL
- 4) R2 PANEL
- DIODE, ISOLATION 12A (TO CONT BUS CA1) 5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ 2 ] B [ F ] C [ P ]

LOCATION:

32V73A2CR7

PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

# EFFECTS/RATIONALE:

ONE FAILURE WOULD HAVE NO EFFECT AS THE CONTROL BUS HAS REDUNDANT POWER SUPPLIED THROUGH TWO RPC'S. LOSS OF ALL REDUNDANT POWER TO THE NINE CONTROL BUSSES WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF CRITICAL FUNCTION CONTROL.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6371 ABORT: 3/3

ITEM: DIODE, ISOLATION 12A (TO CONT BUS CA1)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) R15 PANEL
- 4) R2 PANEL
- 5) DIODE, ISOLATION 12A (TO CONT BUS CA1)

6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE HDW/FUNC ABORT HDW/FU			
HDW/FUNC	ABORT	HDW/FUNC	
3/3	RTLS:	3/3	
3/3	TAL:	3/3	
3/3	AOA:	3/3	
3/3	ATO:	3/3	
3/3		-, -	
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A2CR7
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

# EFFECTS/RATIONALE:

LOSS OF REVERSE CURRENT PROTECTION BETWEEN ONE TRIAD OF CONTROL BUSSES. CONTROL BUS CIRCUIT IS FURTHER PROTECTED BY 10 A CIRCUIT BREAKER. THE NET RESULT IS NO EFFECT.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: 3/3 MDAC ID: 6372 DIODE, ISOLATION 12A (TO CONT BUS CA2) ITEM: FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: MAIN DC BUS B 1) MAIN DC DIST ASSY #2 3) R15 PANEL 4) R2 PANEL DIODE, ISOLATION 12A (TO CONT BUS CA2) 6) 7) 8) 05-6 9)

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CILLICA		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		-
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A2CR8
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

# EFFECTS/RATIONALE:

LOSS OF REVERSE CURRENT PROTECTION BETWEEN ONE TRIAD OF CONTROL BUSSES. CONTROL BUS CIRCUIT IS FURTHER PROTECTED BY 10 A CIRCUIT BREAKER. THE NET RESULT IS NO EFFECT.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6373 ABORT: 3/1R

ITEM: DIODE, ISOLATION 12A (TO CONT BUS CA2)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) R15 PANEL
- 4) R2 PANEL
- 5) DIODE, ISOLATION 12A (TO CONT BUS CA2)

6) 7)

8)

9) 05-6

# CRITICALITIES

~			
HDW/FUNC	ABORT	HDW/FUNC	
3/3	RTLS:	3/1R	
3/1R	TAL:	3/1R	
3/1R	AOA:	3/1R	
3/1R1	ATO:	3/1R	
3/3		,	
	3/3 3/1R 3/1R 3/1R	3/3 RTLS: 3/1R TAL: 3/1R AOA: 3/1R1 ATO:	

REDUNDANCY SCREENS: A [ 2 ] B [ F ] C [ P ]

LOCATION: 32V73A2CR8
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

ONE FAILURE WOULD HAVE NO EFFECT AS THE CONTROL BUS HAS REDUNDANT POWER SUPPLIED THROUGH TWO RPC'S. LOSS OF ALL REDUNDANT POWER TO THE NINE CONTROL BUSSES WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF CRITICAL FUNCTION CONTROL.

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

FLIGHT: 3/1R SUBSYSTEM: EPD&C ABORT: 3/1R MDAC ID: 6374

DIODE, ISOLATION 12A (TO CONT BUS CA3) ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) R15 PANEL
- R2 PANEL 4)
- 5) DIODE, ISOLATION 12A (TO CONT BUS CA3)

6) 7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 2 ] B [ F ] C [ P ]

LOCATION: 32V73A2CR9 PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

# EFFECTS/RATIONALE:

ONE FAILURE WOULD HAVE NO EFFECT AS THE CONTROL BUS HAS REDUNDANT POWER SUPPLIED THROUGH TWO RPC'S. LOSS OF ALL REDUNDANT POWER TO THE NINE CONTROL BUSSES WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF CRITICAL FUNCTION CONTROL.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6375 ABORT: 3/3

ITEM: DIODE, ISOLATION 12A (TO CONT BUS CA3)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) R15 PANEL
- 4) R2 PANEL
- 5) DIODE, ISOLATION 12A (TO CONT BUS CA3)

6) 7)

8)

9) 05-6

#### CRITICALITIES

	O1/7 7 7 Of		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A2CR9
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

# EFFECTS/RATIONALE:

LOSS OF REVERSE CURRENT PROTECTION BETWEEN ONE TRIAD OF CONTROL BUSSES. CONTROL BUS CIRCUIT IS FURTHER PROTECTED BY 10 A CIRCUIT BREAKER. THE NET RESULT IS NO EFFECT.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6376 ABORT: 3/3

ITEM: DIODE, ISOLATION 12A

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) 013 PANEL
- 3) MAIN DC BUS A
- 4) MAIN C CONTR
- 5) DIODE, ISOLATION 12A

6) 7)

8)

9) 05-6

#### CRITICALITIES

VI(1 1 VIII 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 33V73A13CR5
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

LOSS OF REDUNDANT ISOLATION CAPABILITY BETWEEN ESS BUS AND MAIN BUS. CIRCUIT BREAKERS COULD BE OPENED IF ISOLATION REQUIRED. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: NOT SHOWN ON 76Y19H

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/1R

MDAC ID:

6377

ABORT:

3/1R

ITEM:

DIODE, ISOLATION 12A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) 013 PANEL
- 3) MAIN DC BUS A
- 4) MAIN C CONTR
- DIODE, ISOLATION 12A 5)

6)

7)

8)

9) 05-6

#### CRITICALITIES

	~~~~~~~		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 33V73A13CR5

PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/VEHICLE UNTIL THIRD FAILURE AND A MAIN DC BUS OR FUEL CELL MUST BE ISOLATED AND MAIN DC BUSSES TIED. POSSIBLE LOSS OF CREW/VEHICLE COULD RESULT IN THIS CASE.

REFERENCES: NOT SHOWN ON 76Y19H

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT: 3/1R

MDAC ID: 6378

ABORT:

3/1R

ITEM:

DIODE, ISOLATION 12A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- MAIN DC BUS C
- 2) 013 PANEL
- 3) ESS BUS 3AB
- 4) MAIN C CONTR
- DIODE, ISOLATION 12A

6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/1R	
LIFTOFF:	3/1R	TAL:	3/1R	
ONORBIT:	3/1R	AOA:	3/1R	
DEORBIT:	3/1R	ATO:	3/1R	
LANDING/SAFING:	3/3		•	

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 33V73A13CR6 PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/VEHICLE UNTIL THIRD FAILURE AND A MAIN DC BUS OR FUEL CELL MUST BE ISOLATED AND MAIN DC BUSSES TIED. POSSIBLE LOSS OF CREW/VEHICLE COULD RESULT IN THIS CASE.

REFERENCES: SHOWN AS CR16 ON 76Y19H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6379 FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION 12A

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) 013 PANEL
- 3) ESS BUS 3AB
- 4) MAIN C CONTR
- 5) DIODE, ISOLATION 12A

6)

7) 8)

9) 05-6

CRITICALITIES

	CHILICALITED		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 33V73A13CR6
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

LOSS OF REDUNDANT ISOLATION CAPABILITY BETWEEN ESS BUS AND MAIN BUS. CIRCUIT BREAKERS COULD BE OPENED IF ISOLATION REQUIRED. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: SHOWN AS CR16 ON 76Y19H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6380 ABORT: 3/3

ITEM: DIODE TO INV 1 A

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) DIODE TO INV 1 A

5) 6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		-	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

81V76A22CR15

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER.

SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSSES TO

HANDLE THE LOADS.

REFERENCES: 76BF12F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6381 ABORT: 3/3

ITEM:

DIODE TO INV 1 A

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) DIODE TO INV 1 A
- 5) 6)
- 7)
- 8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

81V76A22CR15

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START UP.

REFERENCES: 76BF12F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6382 ABORT: 3/3

ITEM: DIODE TO INV 1 B

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) DIODE TO INV 1 B

5)

6) 7)

7)

9) 05-6

CRITICALITIES

	CICLICALLIA		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

81V76A22CR16

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSSES TO HANDLE THE LOADS.

REFERENCES: 76BF12D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: 3/3

MDAC ID: 6383 ABORT: 3/3

ITEM: DIODE TO INV 1 B FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY:

1) MAIN DC BUS A

2) MAIN DC DIST ASSY #1

2) MAIN DC BUS A
3) FPCA-1
4) DIODE TO INV 1 B
5)
6)
7)

8) 9) 05-6

CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

81V76A22CR16

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START UP.

REFERENCES: 76BF12D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6384 ABORT: 3/3

ITEM:

DIODE TO INV 1 C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) DIODE TO INV 1 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

81V76A22CR17

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSSES TO HANDLE THE LOADS.

REFERENCES: 76BF12B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6385 ABORT: 3/3 ITEM: DIODE TO INV 1 C FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: MAIN DC BUS A 2) MAIN DC DIST ASSY #1 3) FPCA-1 4) DIODE TO INV 1 C 5) 6) 7) 8) 9) 05-6 CRITICALITIES F

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3

DEORBIT: 3/3 LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

81V76A22CR17

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START UP.

REFERENCES: 76BF12B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6386 FLIGHT: 3/3
ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 1C OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) FUSE, 3A TO AC BUS 1C OFF

4) 5)

6)

7)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F5

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BF16C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6387 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 1B OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) FUSE, 3A TO AC BUS 1B OFF

4) 5)

5) 6)

7) 8)

9) 05-6

CRITICALITIES

	~		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F6

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BF16E

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6388 3/3 ABORT:

ITEM: FUSE, 3A TO AC BUS 1A OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- FUSE, 3A TO AC BUS 1A OFF 3)

4)

5) 6)

7) 8)

05-6 9)

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F7

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BF16H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6389 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 1C ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) FUSE, 3A TO AC BUS 1C ON

4) 5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F8

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BF16B

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 SUBSYSTEM: EPD&C FLIGHT: MDAC ID: 6390 ABORT: 3/3

ITEM:

FUSE, 3A TO AC BUS 1B ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) FUSE, 3A TO AC BUS 1B ON
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F9

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BF16D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6391 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 1A ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) FUSE, 3A TO AC BUS 1A ON
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F10
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BF16G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 ABORT: MDAC ID: 6392 FUSE, 3A TO AC BUS 3 CMD ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER PRE-FLIGHT TEST BUS #2 2) 3) FLCA-3 FUSE, 3A TO AC BUS 3 CMD 5) 6) 7) 8) 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18F

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CIRCUIT IS USED FOR GROUND C/O ONLY AND IS NOT POWERED DURING FLIGHT OPERATIONS.

REFERENCES: 76BV23H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6393 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3 CMD

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) FUSE, 3A TO AC BUS 3 CMD

5) 6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

83V76A18F

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CIRCUIT IS USED FOR GROUND C/O ONLY AND IS NOT POWERED DURING FLIGHT OPERATIONS.

REFERENCES: 76BV23G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6394 DIODE, ISOLATION TO INV 1A OFF ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 1BC 2) RIAI PANEL 3) FLCA-1 DIODE, ISOLATION TO INV 1A OFF 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6395 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAI PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1B OFF

5) 6)

7) 8)

9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6396 FLIGHT: 3/3

ITEM: DIODE, ISOLATION TO INV 1C OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAI PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1C OFF

5) 6)

7)

8) 9) 05-6

#### CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	•	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			-

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

# EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6397 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2A OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIA1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2A OFF

5) 6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17H

HIGHEST CRITICALITY HDW/FUNC 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: MDAC ID: 6398 ITEM: DIODE, ISOLATION TO INV 2B OFF FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 2CA 2) R1A1 PANEL 3) FLCA-2 DIODE, ISOLATION TO INV 2B OFF 4) 5) 6) 7) 8) 9) 05-6

•	CRITICA		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17E

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6399 ABORT: 3/3

ITEM:

DIODE, ISOLATION TO INV 2C OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIA1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2C OFF

5) 6)

7) 8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		, -

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

# EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6400 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3A OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3A OFF

5) 6) 7) 8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6401 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3B OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3B OFF

5) 6)

7) .

8) 9) 05-6

### CRITICALITIES

	CKTTTCKTTTTD		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17E

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: MDAC ID: 6402 DIODE, ISOLATION TO INV 3C OFF ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB 2) R1A1 PANEL 3) FLCA-3 4) DIODE, ISOLATION TO INV 3C OFF 5) 6) 7) 8)

CRITICALITIES
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CHITTCHLITTE		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

9)

05-6

83V76A18CR

PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6403 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1A OFF

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAL PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1A OFF

5)

6)

7)

8)

9) 05-6

#### CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
: 3/3		,
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

# EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17H

HIGHEST CRITICALITY HDW/FUNC 3/11/87 FLIGHT: SUBSYSTEM: EPD&C 3/3 ABORT: 3/3 MDAC ID: 6404 DIODE, ISOLATION TO INV 1B OFF ITEM: FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 1BC 2) RIA1 PANEL 3) FLCA-1 DIODE, ISOLATION TO INV 1B OFF 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE 3/3 RTLS: 3/3 PRELAUNCH: LIFTOFF: 3/3 TAL: 3/3 3/3 3/3 ONORBIT: AOA: 3/3 ATO: DEORBIT: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

LANDING/SAFING: 3/3

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6405 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1C OFF

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAI PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1C OFF
- 5) 6)
- 6) 7)
- 8)
- 9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

# EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6406 ITEM: DIODE, ISOLATION TO INV 2A OFF FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 2CA 2) RIAL PANEL 3) FLCA-2 4) DIODE, ISOLATION TO INV 2A OFF

5) 6) 7) 8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	'TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6407 ABORT: 3/3

ITEM:

DIODE, ISOLATION TO INV 2B OFF

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAI PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2B OFF

5) 6)

7)

8) 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [

LOCATION: 82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6408 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2C OFF FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
  2) R1A1 PANEL
  3) FLCA-2
  4) DIODE, ISOLATION TO INV 2C OFF
  5)
- 6) 7) 8) 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6409 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3A OFF

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIA1 PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3A OFF

5) 6)

7)

8) 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

# EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6410 ABORT: 3/3

ITEM:

DIODE, ISOLATION TO INV 3B OFF

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3B OFF

5)

6)

7)

8)

9) 05-6

#### CRITICALITIES

	V-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6411 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3C OFF

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3C OFF

5) 6)

7) 8)

9) 05-6

### CRITICALITIES

~=:===		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		, -
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6412 DIODE, ISOLATION TO INV 3C ON ITEM: FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB 2) RIAI PANEL 3) FLCA-3 DIODE, ISOLATION TO INV 3C ON 4) 5) 6) 7) 8) 9) 05-6

CRITI	CALI	TIES
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	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6413 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3B ON

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIA1 PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3B ON

5) 6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6414 ITEM: DIODE, ISOLATION TO INV 3A ON FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB 2) RIAL PANEL FLCA-3 3) 4) DIODE, ISOLATION TO INV 3A ON 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE 3/3 3/3 3/3 RTLS: TAL: PRELAUNCH: 3/3 LIFTOFF: 3/3 3/3 AOA: 3/3 ONORBIT: 3/3 DEORBIT: ATO: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LANDING/SAFING: 3/3

LOCATION: 83V76A18CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6415 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2C ON

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAI PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2C ON

5) 6)

7)

8) 9) 05-6

#### CRITICALITIES

	CIVITATON		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17A

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6416 ABORT: DIODE, ISOLATION TO INV 2B ON ITEM: FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 2CA RIAI PANEL 2) FLCA-2 3) DIODE, ISOLATION TO INV 2B ON 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE 3/3 3/3 PRELAUNCH: RTLS: 3/3 TAL: LIFTOFF: 3/3 3/3 ONORBIT: AOA: 3/3 3/3 DEORBIT: ATO: 3/3 LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6417 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2A ON

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAI PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2A ON

5)

6) 7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		Ť

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

# EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17F

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6418 ABORT: ITEM: DIODE, ISOLATION TO INV 1C ON FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 1BC 2) RIA1 PANEL 3) FLCA-1 4) DIODE, ISOLATION TO INV 1C ON 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC 3/3 PRELAUNCH: RTLS: 3/3 3/3 TAL: LIFTOFF: 3/3 3/3 ONORBIT: AOA: 3/3 3/3 DEORBIT: ATO: 3/3 LANDING/SAFING: 3/3

LOCATION: 81V76A16CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6419 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B ON

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAI PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1B ON

5)

6) 7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: MDAC ID: 6420 ABORT: 3/3 ITEM: DIODE, ISOLATION TO INV 1A FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 1BC RIAL PANEL 2) FLCA-1 3) DIODE, ISOLATION TO INV 1A 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: PRELAUNCH: 3/3 3/3 3/3 TAL: 3/3 LIFTOFF: AOA: 3/3 3/3 ONORBIT: 3/3 DEORBIT: ATO: 3/3 LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6421 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3C ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAL PANEL
- FLCA-3 3)
- DIODE, ISOLATION TO INV 3C ON 4)

5) 6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		- / -

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

83V76A18CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17A

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6422 ABORT: ITEM: DIODE, ISOLATION TO INV 3B ON FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB 2) RIA1 PANEL 3) FLCA-3 DIODE, ISOLATION TO INV 3B ON 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC 3/3 RTLS: TAL: PRELAUNCH: 3/3 3/3 3/3 LIFTOFF: 3/3 ONORBIT: AOA: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

3/3

LOCATION: 83V76A18CR PART NUMBER: JANTXV1N5551

LANDING/SAFING: 3/3

DEORBIT:

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

ATO:

3/3

REFERENCES: 76BU17C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6423 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3A ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) RIAI PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3A ON

5) 6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17F

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6424 ABORT: 3/3 ITEM: DIODE, ISOLATION TO INV 2C ON FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 2CA 2) RIAI PANEL 3) FLCA-2 DIODE, ISOLATION TO INV 2C ON 4) 5) 6) 7)

	CRITICA	LITIES	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	T'AL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

8) 9)

05-6

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6425 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2B ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIAL PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2B ON
- 5) 6)
- 7)
- 8)
- 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6426 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2A ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) RIA1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2A ON

5) 6)

7) 8)

9) 05-6

#### CRITICALITIES

72/2 2 2 72		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
: 3/3		·
	HDW/FUNC 3/3 3/3 3/3 3/3	HDW/FUNC ABORT 3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6427 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1C ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIA1 PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1C ON

5)

6) 7)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

# EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6428 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIA1 PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1B ON

5)

6)

7)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6429 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1A ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) RIAI PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1A ON

5) 6)

7) 8)

9) 05-6

#### CRITICALITIES

IDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17F

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 FLIGHT: SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6430 ITEM: DIODE, ISOLATION TO INV 1A OFF FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER 2) PRE-FLIGHT TEST BUS #1 FLCA-1 3) 4) DIODE, ISOLATION TO INV 1A OFF 5) 6) 7) 8)

CRITICA	LITIES	
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	'TAL:	3/3
3/3	AOA:	3/3

ONORBIT: 3/3 AOA: 3/3 DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

05-6

FLIGHT PHASE PRELAUNCH: LIFTOFF:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6431 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1B OFF

5) 6)

7) 8)

9) 05-6

#### CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		,
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17E

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: 3/3 MDAC ID: 6432 DIODE, ISOLATION TO INV 1C OFF ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER PRE-FLIGHT TEST BUS #1 2) 3) FLCA-1 4) DIODE, ISOLATION TO INV 1C OFF 5) 6) 7) 8) 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		·

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6433 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2A OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2A OFF

5) 6)

7)

8) 9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

# EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6434 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2B OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2B OFF
- 5)
- 6) 7)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6435 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2C OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2C OFF

5)

6) 7)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17C

HIGHEST CRITICALITY HDW/FUNC RITICAL. FLIGHT: 3/11/87 SUBSYSTEM: EPD&C 3/3 3/3 MDAC ID: 6436 ITEM: DIODE, ISOLATION TO INV 3A OFF FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER PRE-FLIGHT TEST BUS #2 FLCA-3 3) 4) DIODE, ISOLATION TO INV 3A OFF 5)

6) 7) 8) 9) 05-6

CRITTCALITTES

	CKITICN	CRITICALLIES	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6437 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3B OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3B OFF
- 5) 6)
- 7)
- 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17E

HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: 3/3 MDAC ID: 6438 DIODE, ISOLATION TO INV 3C OFF ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER PRE-FLIGHT TEST BUS #2 2) 3) 4) DIODE, ISOLATION TO INV 3C OFF 5) 6) 7)

CRITICALITIES

CKITICALITIES		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	HDW/FUNC 3/3 3/3 3/3 3/3	HDW/FUNC ABORT  3/3 RTLS:  3/3 TAL:  3/3 AOA:  3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

8) 9)

05-6

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6439 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1A OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1A OFF
- 5)
- 6) 7)
- 8)
- 9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

# EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6440 ABORT: 3/3

ITEM: DI

DIODE, ISOLATION TO INV 1B OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1B OFF
- 5)
- 7)
- 8)
- 9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6441 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1C OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1C OFF

5)

7) 8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR

PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: 3/3 MDAC ID: 6442

ITEM:

DIODE, ISOLATION TO INV 2A OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- GSE POWER
- PRE-FLIGHT TEST BUS #2 2)
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2A OFF
- 5)
- 6)
- 7) 8)
- 9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR

PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6443 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2B OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GSE POWER
- PRE-FLIGHT TEST BUS #2
- FLCA-2 3)
- 4) DIODE, ISOLATION TO INV 2B OFF

5) 6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [

LOCATION:

82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17E

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6444 ABORT: DIODE, ISOLATION TO INV 2C OFF ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: GSE POWER 1) PRE-FLIGHT TEST BUS #2 2) 3) FLCA-2 DIODE, ISOLATION TO INV 2C OFF 4) 5) 6) 7) 8)

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

9)

05-6

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6445 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3A OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3A OFF

5) 6)

7) 8)

9) 05-6

### CRITICALITIES

	~		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6446 ABORT: 3/3

ITEM:

DIODE, ISOLATION TO INV 3B OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3B OFF

5) 6)

7)

8)

9) 05-6

#### CRITTCALITTES

	CMITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

83V76A18CR

PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6447 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3C OFF

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3C OFF

5) 6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR

PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6448 ABORT: 3/3 DIODE, ISOLATION TO INV 1A ON ITEM: FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

9)

GSE POWER ESS BUS 1BC 2) 3) FLCA-1 4) DIODE, ISOLATION TO INV 1A ON 5) 6) 7) 8) 05-6

CRITICALITIES

	CNTITCHLITIE		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6449 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 1BC
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1B ON

5) 6)

7)

8) 9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

81V76A16CR

PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17D

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 MDAC ID: 6450 ABORT: ITEM: DIODE, ISOLATION TO INV 1C ON FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER 2) ESS BUS 1BC 3) FLCA-1 DIODE, ISOLATION TO INV 1C ON 4) 5) 6) 7) 8)

CRITICA	LITIES	
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3

ONORBIT: 3/3 AOA: 3/3 DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

9)

05-6

FLIGHT PHASE PRELAUNCH: LIFTOFF:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6451 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2A ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 2CA
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2A ON

5) 6)

7)

8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6452 ABORT: DIODE, ISOLATION TO INV 2B ON ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER 2) ESS BUS 2CA 3) FLCA-2 4) DIODE, ISOLATION TO INV 2B ON 5) 6) 7) 8) 9) 05-6

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		-c	_		_	

	CIVITION		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6453 3/3 ABORT:

ITEM: DIODE, ISOLATION TO INV 2C ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 2CA
- 3) FLCA-2
- DIODE, ISOLATION TO INV 2C ON 4)

5) 6)

7)

8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		, -

REDUNDANCY SCREENS: A [ ] B [ ] C [

LOCATION:

82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17B

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6454 ABORT: ITEM: DIODE, ISOLATION TO INV 3A ON FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER 2) ESS BUS 3AB 3) FLCA-3 4) DIODE, ISOLATION TO INV 3A ON 5) 6) 7) 8) 05-6 9)

CRITI	CALI	TIES
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ATT / TTTTATO
DW/FUNC
3/3
3/3
3/3
3/3
·

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

### EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6455 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3B ON

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 3AB
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3B ON

5)

6) 7)

8)

9) 05-6

### CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
: 3/3		•
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17D

HIGHEST CRITICALITY HDW/FUNC 3/11/87 FLIGHT: 3/3 ABORT: 3/3 SUBSYSTEM: EPD&C MDAC ID: 6456 ITEM: DIODE, ISOLATION TO INV 3C ON FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER 2) ESS BUS 3AB 3) FLCA-3 4) DIODE, ISOLATION TO INV 3C ON 5) 6) 7) 8) 05-6 CRITICALITIES FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC PRELAUNCH: 3/3 RTLS: 3/3

LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6457 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1A ON

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 1BC
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1A ON
- 5) 6)
- 7)
- 8)
- 9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 81V76A16CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: MDAC ID: 6458 DIODE, ISOLATION TO INV 1B ON ITEM: SHORTS FAILURE MODE: LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER 2) ESS BUS 1BC 3) FLCA-1 4) DIODE, ISOLATION TO INV 1B ON 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: 3/3 3/3 PRELAUNCH: 3/3 3/3 LIFTOFF: TAL: 3/3 ONORBIT: AOA: 3/3 3/3 ATO: DEORBIT: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [ ] B [ ] C [ ] LOCATION: 81V76A16CR

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6459 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1C ON

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 1BC
- FLCA-1
- 4) DIODE, ISOLATION TO INV 1C ON

5) 6)

7) 8)

9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		- / -

REDUNDANCY SCREENS: A [ ] B [ ] C [

LOCATION:

81V76A16CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17B

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 MDAC ID: 6460 ABORT: DIODE, ISOLATION TO INV 2A ON ITEM: FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER 2) ESS BUS 2CA 3) FLCA-2 4) DIODE, ISOLATION TO INV 2A ON 5) 6) 7) 8) 05-6

	CKTITCW	TITIES	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		•

COTOTOXITOTES

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6461 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2B ON

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 2CA
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2B ON

5) 6)

7) 8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17D

HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C 3/3 FLIGHT: 3/3 ABORT: MDAC ID: 6462 DIODE, ISOLATION TO INV 2C ON ITEM: FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER 2) ESS BUS 2CA 3) FLCA-2 DIODE, ISOLATION TO INV 2C ON 4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		-

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT:

MDAC ID: 6463 3/3 ABORT:

ITEM:

DIODE, ISOLATION TO INV 3A ON

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 3AB
- FLCA-3 3)
- DIODE, ISOLATION TO INV 3A ON 4)

5) 6)

7) 8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		.,

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

83V76A18CR PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17G

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: MDAC ID: 6464 DIODE, ISOLATION TO INV 3B ON ITEM: FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) GSE POWER 2) ESS BUS 3AB 3) FLCA-3 DIODE, ISOLATION TO INV 3B ON

6) 7) 8) 9) 05-6

5)

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6465 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3C ON

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 3AB
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3C ON

5)

6) 7)

8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		, -

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

## EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17B

3/11/87 HIGHEST CRITICALITY HDW/FUNC DATE: SUBSYSTEM: EPD&C 3/3 FLIGHT: 3/3 MDAC ID: 6466 ABORT: SWITCH, ROTARY 4P9P, DC INDICATOR SELECT ITEM: FAILURE MODE: FAILS OPEN OR SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: F9A2 PANEL 1) SWITCH, ROTARY 4P9P, DC INDICATOR SELECT 2) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: PRELAUNCH: 3/3 3/3 3/3 TAL: LIFTOFF: 3/3. 3/3 AOA: ONORBIT: 3/3 DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [ ] B [ ] C [ ] LOCATION: 34V73A9A2S2 PART NUMBER: ME452-0093-5029 CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK EFFECTS/RATIONALE: THIS SWITCH PROVIDES THE CAPABILITY TO VISUALLY MONITER DC VOLTAGES, AMPERAGES, AND SIGNAL STRENGTHS. THESE ARE NON-CRITICAL MEASUREMENTS BECAUSE ALTERNATE METHODS OF MEASUREMENT

REFERENCES: 76B-G

ARE AVAILABLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6467 ABORT: 3/3

ITEM: SWITCH, ROTARY DP9P, AC DISPLAY SELECT

FAILURE MODE: FAILS OPEN OR SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) F9A2 PANEL
- 2) SWITCH, ROTARY DP9P, AC DISPLAY SELECT
- 3) 4)
- 5)
- 6)
- 7)
- 8) 9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 34V73A9A2S1
PART NUMBER: ME452-0093-5023

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

## EFFECTS/RATIONALE:

THIS SWITCH PROVIDES THE CAPABILITY TO VISUALLY MONITER AC VOLTAGES. THESE ARE NON-CRITICAL MEASUREMENTS BECAUSE ALTERNATE METHODS OF MEASUREMENT ARE AVAILABLE.

REFERENCES: 76BG-G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6468 ABORT: ITEM: INDICATOR, EVENT (FC/MAIN BUS A) FAILURE MODE: FAILS TO INDICATE PROPER STATUS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: ESS BUS 1BC MAIN DC DIST ASSY #1 2) 3) RIA1 PANEL INDICATOR, EVENT (FC/MAIN BUS A) 4) 5) 6) 7) 8) 9) 05-6

		IES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING	: 3/3		-	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A1A1DS1
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76B12H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6469 ABORT: 3/3

ITEM: INDICATOR, EVENT (FC/MAIN BUS B) FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) MAIN DC DIST ASSY #2
- 3) RIAI PANEL
- 4) INDICATOR, EVENT (FC/MAIN BUS B)
- 5)
- 6) 7)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A1A1DS3
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76L13H

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6470 ABORT: INDICATOR, EVENT (FC/MAIN BUS C) ITEM: FAILURE MODE: FAILS TO INDICATE PROPER STATUS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB MAIN DC DIST ASSY #3 2) 3) RIAL PANEL INDICATOR, EVENT (FC/MAIN BUS C) 4) 5) 6) 7) 8) 9) 05-6

/FUNC
/3
/3
/3
/3

OD TOTAL TOTAL

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A1A1DS5
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76Y13H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6471 ABORT: 3/3

ITEM: INDICATOR, EVENT (MAIN TIE BUS A) FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) MAIN DC DIST ASSY #1
- 3) RIA1 PANEL
- 4) INDICATOR, EVENT (MAIN TIE BUS A)

5) 6)

7)

8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-/ -

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

**32V73A1A1DS2** 

PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

## EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76B16H

3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6472 3/3 ABORT: INDICATOR, EVENT (MAIN TIE BUS B) ITEM: FAILURE MODE: FAILS TO INDICATE PROPER STATUS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 2CA MAIN DC DIST ASSY #2 2) 3) RIAL PANEL INDICATOR, EVENT (MAIN TIE BUS B) 4) 5)

6) 7) 8) 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A1A1DS4
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76L16H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6473 ABORT: 3/3

ITEM: INDICATOR, EVENT (MAIN TIE BUS C) FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) MAIN DC DIST ASSY #3
- 3) RIAL PANEL
- 4) INDICATOR, EVENT (MAIN TIE BUS C)

5)

6)

7)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A1A1DS6
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

## EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76Y16H

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6474 ABORT: ITEM: INDICATOR, EVENT (INV/AC BUS #1) FAILURE MODE: FAILS TO INDICATE PROPER STATUS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 1BC 2) INV DIST & CONT ASSY #1 3) RIA1 PANEL INDICATOR, EVENT (INV/AC BUS #1) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE PRELAUNCH: HDW/FUNC ABORT HDW/FUNC 3/3 RTLS: 3/3

	J/ J	1/1 201	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
	~		•	

LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A1A1DS8
PART NUMBER: MC432-0222-0032

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BG8H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6475 ABORT: 3/3

ITEM: INDICATOR, EVENT (INV/AC BUS #2) FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- INV DIST & CONT ASSY #2
- 3) RIAI PANEL
- 4) INDICATOR, EVENT (INV/AC BUS #2)
- 5) 6)
- 7)
- 8) 9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B[] C[]

LOCATION:

32V73A1A1DS10 PART NUMBER: MC432-0222-0032

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BN8H

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 MDAC ID: 6476 ABORT: ITEM: INDICATOR, EVENT (INV/AC BUS #3) FAILURE MODE: FAILS TO INDICATE PROPER STATUS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB INV DIST & CONT ASSY #3 3) R1A1 PANEL INDICATOR, EVENT (INV/AC BUS #3) 4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES

	Q1/2 2 2 Q1/		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A1A1DS12 PART NUMBER: MC432-0222-0032

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BV8H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6477 ABORT: 3/3

ITEM: INDICATER, EVENT (INVERTER PWR #1)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FPCA-1
- 3) RIAI PANEL
- 4) INDICATER, EVENT (INVERTER PWR 1)

5) 6)

7) 8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

32V73A1A1DS7

PART NUMBER: MC432-0222-0032

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

## EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF24A

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C MDAC ID: 6478 ABORT: 3/3 ITEM: INDICATER, EVENT (INVERTER PWR #2) FAILURE MODE: FAILS TO INDICATE PROPER STATUS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 2CA 2) FPCA-2 3) RIAL PANEL INDICATER, EVENT (INVERTER PWR #2) 5) 6) 7) 8) 05-6 CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3

LIFTOFF: 3/3 TAL: 3/3
ONORBIT: 3/3 AOA: 3/3
DEORBIT: 3/3 ATO: 3/3
LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A1A1DS9
PART NUMBER: MC432-0222-0032

FLIGHT PHASE

PRELAUNCH:

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM24A

3/11/87 DATE: HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6479 ABORT: 3/3

ITEM: INDICATER, EVENT (INVERTER PWR #3)

FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FPCA-3
- 3) RIA1 PANEL
- 4) INDICATER, EVENT (INVERTER PWR #3)

5) 6)

7)

8)

9) 05-6

### CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B[] C[]

LOCATION:

32V73A1A1DS11 PART NUMBER: MC432-0222-0032

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

## EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU24H

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: SUBSYSTEM: EPD&C 3/3 MDAC ID: 6480 ABORT: 3/3 INDICATER, EVENT (PAYLOAD PRI MN B) ITEM: FAILURE MODE: FAILS TO INDICATE PROPER STATUS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 2CA 2) MAIN DC DIST ASSY #2 RIAL PANEL INDICATER, EVENT (PAYLOAD PRI MN B) 4) 5) 6) 7) 8) 9) 05-6

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	Q1/4 4 4 V		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		·

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 32V73A1A1DS15
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

## EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76U13F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6481 ABORT: 3/3

ITEM: INDICATER, EVENT (PAYLOAD PRI MN C)

FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) MAIN DC DIST ASSY #3
- 3) RIAI PANEL
- 4) INDICATER, EVENT (PAYLOAD PRI MN C)
- 5)
- 6)
- 7) 8)
- 9) 05-6

### CRITTCALITTES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS17
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76U13D

3/11/87 HIGHEST CRITICALITY HDW/FUNC DATE: SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6482 ABORT: INDICATER, EVENT (PAYLOAD PRI FC3) ITEM: FAILURE MODE: FAILS TO INDICATE PROPER STATUS SUBSYS LEAD: K. SCHMECKPEPER LEAD ANALYST: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) ESS BUS 3AB 2) MAIN DC DIST ASSY #3 3) RIA1 PANEL 4) INDICATER, EVENT (PAYLOAD PRI FC3) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: PRELAUNCH: 3/3 3/3 3/3 LIFTOFF: TAL: 3/3 ONORBIT: 3/3 AOA: 3/3 3/3 DEORBIT: ATO: 3/3 LANDING/SAFING: 3/3

LOCATION: 32V73A1A1DS16
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REDUNDANCY SCREENS: A [] B [] C []

REFERENCES: 76U13C

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DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6483 ABORT: 3/3

ITEM: INDICATER, EVENT (STRUCT RTN) FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- MAIN DC DIST ASSY #3 2)
- 3) Al2 PANEL
- 4) INDICATER, EVENT (STRUCT RTN)
- 5) 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

	CVTTTC	TTTTEO	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B[] C[

LOCATION: 36V73A12DS4 PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76U4H

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6484 ABORT: 3/3 ITEM: DC VOLTMETER FAILURE MODE: FAILS TO INDICATE PROPER STATUS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) F9A2 PANEL 2) DC VOLTMETER 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC 3/3 PRELAUNCH: RTLS: 3/3 LIFTOFF: 3/3 TAL: 3/3 3/3 3/3 ONORBIT: AOA: DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A9A2M2
PART NUMBER: MC432-0237-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76Bl0H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6485 ABORT: 3/3

ITEM: DC AMMETER FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY:

1) F9A2 PANEL
2) DC AMMETER
3)
4)

5) 6) 7) 8)

9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

34V73A9A2M3

PART NUMBER: MC432-0237-0003

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE: THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76B6H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6486 ABORT: 3/3

ITEM: RESISTOR, 1.2K 2W (TO ESS BUS 1BC)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) RIAL PANEL
- 4) RESISTOR, 1.2K 2W (TO ESS BUS 1BC)
- 5) 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

	O1/2 2 2 O1/		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1A4R1
PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF CURRENT LIMITING PROTECTION TO CIRCUIT. IN THE CASE OF AN OVERLOAD THIS CIRCUIT COULD BE SWITCHED OFF.

REFERENCES: 76AK24H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6487 ABORT: 3/3

ITEM: RESISTOR, 1.2K 2W (TO ESS BUS 1BC)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) RIAI PANEL
- 4) RESISTOR, 1.2K 2W (TO ESS BUS 1BC)

5) 6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1A4R2 PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF CURRENT LIMITING PROTECTION TO CIRCUIT. IN THE CASE OF AN OVERLOAD THIS CIRCUIT COULD BE SWITCHED OFF.

REFERENCES: 76AK21H

HIGHEST CRITICALITY HDW/FUNC 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: MDAC ID: 6488 RESISTOR, 1.2K 2W (TO ESS BUS 2CA) ITEM: FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C MAIN DC DIST ASSY #3 2) 3) RIAI PANEL 4) RESISTOR, 1.2K 2W (TO ESS BUS 2CA) 5) 6) 7) 8) 05-6 9)

CRITI	CALI	TIES
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	O1/1 1 1 O1/		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73AlAlA5Rl PART NUMBER: RWR80Sl2llFR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF CURRENT LIMITING PROTECTION TO CIRCUIT. IN THE CASE OF AN OVERLOAD THIS CIRCUIT COULD BE SWITCHED OFF.

REFERENCES: 76AM24H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6489 ABORT: 3/3

ITEM: RESISTOR, 1.2K 2W (TO ESS BUS 2CA)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) RIAI PANEL
- 4) RESISTOR, 1.2K 2W (TO ESS BUS 2CA)

5) 6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1A5R2 PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF CURRENT LIMITING PROTECTION TO CIRCUIT. IN THE CASE OF AN OVERLOAD THIS CIRCUIT COULD BE SWITCHED OFF.

REFERENCES: 76AM21H

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6490 ITEM: RESISTOR, 1.2K 2W (TO ESS BUS 3AB) FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS A 2) MAIN DC DIST ASSY #1 3) RIA1 PANEL 4) RESISTOR, 1.2K 2W (TO ESS BUS 3AB) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC 3/3 PRELAUNCH: RTLS: 3/3 LIFTOFF: 3/3 TAL: 3/3 3/3 3/3 ONORBIT: AOA:

LOCATION: 32V73A1A1A6R2

PART NUMBER: RWR80S1211FR

LANDING/SAFING: 3/3

DEORBIT:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

ATO:

3/3

3/3

REDUNDANCY SCREENS: A [] B [] C []

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF CURRENT LIMITING PROTECTION TO CIRCUIT. IN THE CASE OF AN OVERLOAD THIS CIRCUIT COULD BE SWITCHED OFF.

REFERENCES: 76AP24H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6491 ABORT: 3/3

ITEM: RESISTOR, 1.2K 2W (TO ESS BUS 3AB)

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) RIAI PANEL
- 4) RESISTOR, 1.2K 2W (TO ESS BUS 3AB)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

32V73A1A1A6R1

PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF CURRENT LIMITING PROTECTION TO CIRCUIT. IN THE CASE OF AN OVERLOAD THIS CIRCUIT COULD BE SWITCHED OFF.

REFERENCES: 76AP21H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 MDAC ID: 6492 ABORT: CURRENT SENSOR, AC 1A ITEM: FAILURE MODE: FAILS TO INDICATE PROPER VALUE. LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS #1 2) INV DIST & CONT ASSY #1 CURRENT SENSOR, AC 1A 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC 3/3 RTLS: PRELAUNCH: 3/3 3/3 LIFTOFF: TAL: 3/3 ONORBIT: 3/3 AOA: 3/3

REDUNDANCY SCREENS: A [] B [] C []

3/3

LOCATION: 81V76A35CS1
PART NUMBER: ME449-0152-0011

LANDING/SAFING: 3/3

DEORBIT:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

ATO:

3/3

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BG12F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6493 ABORT: 3/3

ITEM: CURRENT SENSOR, AC 1B

FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) CURRENT SENSOR, AC 1B

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

81V76A35CS2

PART NUMBER: ME449-0152-0011

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BG12E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6494 ABORT: ITEM: CURRENT SENSOR, AC 1C FAILURE MODE: FAILS TO INDICATE PROPER VALUE. LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS #1 INV DIST & CONT ASSY #1 2) 3) CURRENT SENSOR, AC 1C 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE HDW/

HDW/FUNC	DW/FUNC ABORT	
3/3	RTLS:	3/3
3/3	TAL:	3/3

LIFTOFF: 3/3 TAL: 3/3
ONORBIT: 3/3 AOA: 3/3
DEORBIT: 3/3 ATO: 3/3
LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35CS3
PART NUMBER: ME449-0152-0011

PRELAUNCH:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BG12C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6495 ABORT: 3/3

ITEM: CURRENT SENSOR, AC 2A

FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) CURRENT SENSOR, AC 2A
- 4) 5)
- 6)
- 7)
- 8) 9) 05-6

CRITTCALITTES

		THILL	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V

82V76A36CS1

PART NUMBER: ME449-0152-0011

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BN12F

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: ABORT: 3/3 MDAC ID: 6496 CURRENT SENSOR, AC 2B ITEM: FAILURE MODE: FAILS TO INDICATE PROPER VALUE. LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS #2 INV DIST & CONT ASSY #2 3) CURRENT SENSOR, AC 2B 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC 3/3 3/3 PRELAUNCH: RTLS: 3/3 3/3 LIFTOFF: TAL: ONORBIT: 3/3 AOA: 3/3 DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [] B [] C [] LOCATION: 82V76A36CS2 PART NUMBER: ME449-0152-0011 CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK EFFECTS/RATIONALE: THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON

REFERENCES: 76BN12E

CREW/MISSION/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6497 ABORT: 3/3

ITEM: CURRENT SENSOR, AC 2C

FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) CURRENT SENSOR, AC 2C
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

	~		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 8

82V76A36CS3

PART NUMBER: ME449-0152-0011

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BN12C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6498 ITEM: CURRENT SENSOR, AC 3A FAILURE MODE: FAILS TO INDICATE PROPER VALUE. LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS #3 INV DIST & CONT ASSY #3 3) CURRENT SENSOR, AC 3A 4) 5) 6) 7)

CRITICALITIES

	V-1V-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37CS1
PART NUMBER: ME449-0152-0011

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

8) 9)

05-6

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BV12F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6499 ABORT: 3/3

ITEM: CURRENT SENSOR, AC 3B

FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) CURRENT SENSOR, AC 3B
- 4)
- 5)
- 6)
- 7)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37CS2 PART NUMBER: ME449-0152-0011

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BV12E

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6500 ITEM: CURRENT SENSOR, AC 3C FAILURE MODE: FAILS TO INDICATE PROPER VALUE. LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS #3 INV DIST & CONT ASSY #3 2) 3) CURRENT SENSOR, AC 3C 4) 5) 6) 7) 8) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC
3/3 RTLS: 3/3
3/3 TAL: 3/3 FLIGHT PHASE 3/3 3/3 3/3 PRELAUNCH: LIFTOFF: AOA: 3/3 ONORBIT: 3/3 3/3 ATO: DEORBIT: LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [] B [] C [] LOCATION: 83V76A37CS3 PART NUMBER: ME449-0152-0011 CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON

REFERENCES: 76BV12C

CREW/MISSION/VEHICLE.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6501 ABORT: 3/3 ITEM: CURRENT SENSOR, DC (MDDA-1 TO APCA-4) FAILURE MODE: FAILS TO INDICATE PROPER VALUE. LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS A CURRENT SENSOR, DC (MDDA-1 TO APCA-4) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC PRELAUNCH: 3/3 RTLS: 3/3 LIFTOFF: 3/3

3/3 ONORBIT: 3/3 AOA: DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3

TAL:

3/3

REDUNDANCY SCREENS: A [] B [] C [

LOCATION: 40V76CS4 PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76B20C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: ABORT: 6502 CURRENT SENSOR, DC (MDDA-1 TO FPCA-1) ITEM: FAILURE MODE: FAILS TO INDICATE PROPER VALUE. LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS A 2) CURRENT SENSOR, DC (MDDA-1 TO FPCA-1) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC 3/3 RTLS: PRELAUNCH: 3/3 LIFTOFF: 3/3 TAL: 3/3 ONORBIT: 3/3 AOA: 3/3 ATO: DEORBIT: 3/3 3/3 LANDING/SAFING: 3/3

LOCATION: 40V76CS1 PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

REDUNDANCY SCREENS: A [] B [] C []

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76E23G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6503 3/3 ABORT: ITEM: CURRENT SENSOR, DC (MDDA-1 TO MPCA-1) FAILURE MODE: FAILS TO INDICATE PROPER VALUE. LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS A 2) CURRENT SENSOR, DC (MDDA-1 TO MPCA-1) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC PRELAUNCH: 3/3 RTLS: 3/3 3/3 LIFTOFF: TAL: 3/3 3/3 ONORBIT: AOA: 3/3 3/3 DEORBIT: ATO: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [] B [] C[] LOCATION: 40V76CS7 PART NUMBER: ME449-0152 CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK EFFECTS/RATIONALE: THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON

REFERENCES: 76F23G

CREW/MISSION/VEHICLE.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: SUBSYSTEM: EPD&C 3/3 FLIGHT: 3/3 ABORT: MDAC ID: 6504 ITEM: CURRENT SENSOR, DC (MDDA-2 TO APCA-5) FAILURE MODE: FAILS TO INDICATE PROPER VALUE. LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS B CURRENT SENSOR, DC (MDDA-2 TO APCA-5) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: PRELAUNCH: 3/3 3/3 LIFTOFF: 3/3 TAL: 3/3 ONORBIT: 3/3 AOA: 3/3 ATO: DEORBIT: 3/3 3/3 LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 40V76CS5
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76L20C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6505 ABORT: 3/3

ITEM: CURRENT SENSOR, DC (APCA-2 TO AFT PAYLOAD)

FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) CURRENT SENSOR, DC (APCA-2 TO AFT PAYLOAD)
- 3) 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 50V76CS10 PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76L6G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 MDAC ID: 6506 ABORT: ITEM: CURRENT SENSOR, DC (MDDA-2 TO FPCA-2) FAILURE MODE: FAILS TO INDICATE PROPER VALUE. LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: MAIN DC BUS B 2) CURRENT SENSOR, DC (MDDA-2 TO FPCA-2) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE RTLS: PRELAUNCH: 3/3 3/3 LIFTOFF: 3/3 TAL: 3/3 ONORBIT: 3/3 AOA: 3/3 DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 40V76CS2 PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76P23G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6507 3/3 ABORT: ITEM: CURRENT SENSOR, DC (MDDA-2 TO MPCA-2) FAILURE MODE: FAILS TO INDICATE PROPER VALUE. LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS B CURRENT SENSOR, DC (MDDA-2 TO MPCA-2) 2) 3) 4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 40V76CS8
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76R23C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 MDAC ID: 6508 ABORT: ITEM: CURRENT SENSOR, DC (MDDA-3 TO APCA-6) FAILURE MODE: FAILS TO INDICATE PROPER VALUE. LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: MAIN DC BUS C 1) 2) CURRENT SENSOR, DC (MDDA-3 TO APCA-6) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: PRELAUNCH: 3/3 3/3 3/3 TAL: LIFTOFF: 3/3 3/3 3/3 AOA: ONORBIT: DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3

LOCATION: 40V76CS6
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

REDUNDANCY SCREENS: A [] B [] C []

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76Y20C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6509 ABORT: 3/3 ITEM: CURRENT SENSOR, DC (APCA-3 TO AFT PAYLOAD) FAILURE MODE: FAILS TO INDICATE PROPER VALUE. LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C CURRENT SENSOR, DC (APCA-3 TO AFT PAYLOAD) 3) 4) 5) 6) 7) 8) 05-6 9)

CRITICALITIES

CKITICALLIES		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 50V76CS11 PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76Y6G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6510 CURRENT SENSOR, DC (MDDA-3 TO FPCA-3) ITEM: FAILURE MODE: FAILS TO INDICATE PROPER VALUE. LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C CURRENT SENSOR, DC (MDDA-3 TO FPCA-3) 2) 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: 3/3 3/3 PRELAUNCH: 3/3 TAL: 3/3 LIFTOFF: ONORBIT: 3/3 AOA: 3/3 3/3 ATO: 3/3 DEORBIT: LANDING/SAFING: 3/3 REDUNDANCY SCREENS: A [] B [] C [] LOCATION: 40V76CS3 PART NUMBER: ME449-0152 CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK EFFECTS/RATIONALE: THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76AC23G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6511 ABORT: 3/3

ITEM: CURRENT SENSOR, DC (MDDA-3 TO MPCA-3)

FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) CURRENT SENSOR, DC (MDDA-3 TO MPCA-3)
- 3) 4)
- 5)
- 6) 7)
- 7) 8)
- 9) 05-6

CRITICALITIES

~-·			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 40V76CS9
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76AD23D

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6512 ABORT: CIRCUIT BREAKER, 3A (AC 1A TO FWD RCS VALVES) ITEM: FAILURE MODE: FAILS CLOSED SUBSYS LEAD: K. SCHMECKPEPER LEAD ANALYST: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS #1 2) INV DIST & CONT ASSY #1 3) MA73C PANEL CIRCUIT BREAKER, 3A (AC 1A TO FWD RCS VALVES) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC 3/3 PRELAUNCH: 3/3 RTLS: 3/3 LIFTOFF: TAL: 3/3

REDUNDANCY SCREENS: A [] B [] C []

3/3

3/3

LOCATION: 85V73A129CB29
PART NUMBER: MC454-0026-2030

LANDING/SAFING: 3/3

ONORBIT:

DEORBIT:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

3/3

3/3

AOA:

ATO:

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6513 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 1B TO FWD RCS VALVES)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 1B TO FWD RCS VALVES)
- 5) 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

	CNTITCALLIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB30
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6514 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 1C TO FWD RCS VALVES)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 1C TO FWD RCS VALVES)
- 5) 6)
- 7)
- 8) 9) 05-6

CRITICALITIES

	CKITICALLIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB31
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6515 3/3 ABORT:

ITEM: CIRCUIT BREAKER, 3A (AC 2A TO FWD RCS VALVES)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- AC BUS #2
- INV DIST & CONT ASSY #2 2)
- MA73C PANEL
- CIRCUIT BREAKER, 3A (AC 2A TO FWD RCS VALVES)

5) 6)

7) 8)

9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [

LOCATION:

85V73A129CB32 PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BP13C (42T22H)

HIGHEST CRITICALITY HDW/FUNC 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6516 ABORT: ITEM: CIRCUIT BREAKER, 3A (AC 2B TO FWD RCS VALVES) FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS #2 INV DIST & CONT ASSY #2 2) 3) MA73C PANEL CIRCUIT BREAKER, 3A (AC 2B TO FWD RCS VALVES) 4) 5) 6) 7)

9) 05-6

CRITICALITIES		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
: 3/3		·
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB33
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

8)

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BP12C (42T22H)

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6517 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 2C TO FWD RCS VALVES)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 2C TO FWD RCS VALVES)

5) 6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB34
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BP12C (42T22H)

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6518 ABORT: CIRCUIT BREAKER, 3A (AC 3A TO FWD RCS VALVES) ITEM: FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) AC BUS #3 INV DIST & CONT ASSY #3 2) MA73C PANEL 4) CIRCUIT BREAKER, 3A (AC 3A TO FWD RCS VALVES) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: PRELAUNCH: 3/3 3/3 3/3 TAL: 3/3 LIFTOFF: 3/3 AOA: 3/3 ONORBIT: DEORBIT: 3/3 ATO: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB35
PART NUMBER: MC454-0026-2030

LANDING/SAFING: 3/3

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BW11B (42T22H)

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6519 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 3B TO FWD RCS VALVES)

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 3B TO FWD RCS VALVES)
- 5) 6)
- 7)
- 8) 9) 05-6

#### CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC	
3/3	RTLS:	3/3	
3/3	TAL:	3/3	
3/3	AOA:	3/3	
3/3	ATO:	3/3	
3/3		•	
	HDW/FUNC 3/3 3/3 3/3 3/3	HDW/FUNC ABORT  3/3 RTLS:  3/3 TAL:  3/3 AOA:  3/3 ATO:	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB36
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BW10B (42T22H)

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: SUBSYSTEM: EPD&C 3/3 FLIGHT: ABORT: 3/3 MDAC ID: 6520 ITEM: CIRCUIT BREAKER, 3A (AC 3C TO FWD RCS VALVES) FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: AC BUS #3 INV DIST & CONT ASSY #3 3) MA73C PANEL 4) CIRCUIT BREAKER, 3A (AC 3C TO FWD RCS VALVES) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: 3/3 PRELAUNCH: 3/3 LIFTOFF: 3/3 TAL: 3/3 3/3 ONORBIT: AOA: 3/3 DEORBIT: 3/3 ATO: LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 85V73A129CB37
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BW10B (42T22H)

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/2R MDAC ID: 6521 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 1A TO FWD RCS VALVES)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 1A TO FWD RCS VALVES)

5) 6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	3/3		- / -

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 85V73A129CB29
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: 3/2R FLIGHT: SUBSYSTEM: EPD&C

3/3 ABORT: 6522 MDAC ID:

CIRCUIT BREAKER, 3A (AC 1B TO FWD RCS VALVES) ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- AC BUS #1
- INV DIST & CONT ASSY #1 2)
- MA73C PANEL 3)
- CIRCUIT BREAKER, 3A (AC 1B TO FWD RCS VALVES)

5) 6)

7) 8)

9) 05-6

#### CRITICALITIES

01/11/01/11/1			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION:

85V73A129CB30

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76BH9B (42T12H)

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/2R

MDAC ID:

6523

ABORT:

3/3

ITEM:

CIRCUIT BREAKER, 3A (AC 1C TO FWD RCS VALVES)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- AC BUS #1
- INV DIST & CONT ASSY #1
- MA73C PANEL 3)
- 4) CIRCUIT BREAKER, 3A (AC 1C TO FWD RCS VALVES)

5) 6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION:

85V73A129CB31

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76BH9B (42T12H)

3/11/87 HIGHEST CRITICALITY HDW/FUNC DATE:

SUBSYSTEM: EPD&C FLIGHT: 3/2R ABORT: 3/3 MDAC ID:

CIRCUIT BREAKER, 3A (AC 2A TO FWD RCS VALVES) ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- INV DIST & CONT ASSY #2 2)
- 3) MA73C PANEL
- CIRCUIT BREAKER, 3A (AC 2A TO FWD RCS VALVES) 4)

5) 6)

7) 8)

9) 05-6

#### CRITTCALITTES

	41/11 T 41/11 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/2R	TAL:	3/3	
ONORBIT:	3/2R	AOA:	3/3	
DEORBIT:	3/2R	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 85V73A129CB32

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76BP13C (42T22H)

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/2R

MDAC ID:

6525

ABORT:

3/3

ITEM:

CIRCUIT BREAKER, 3A (AC 2B TO FWD RCS VALVES)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- AC BUS #2
- INV DIST & CONT ASSY #2 2)
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 2B TO FWD RCS VALVES)

5) 6)

7) .

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [ 1 ]

B[P] C[P]

LOCATION:

85V73A129CB33

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76BP12C (42T22H)

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/2R

MDAC ID: 6526

ABORT:

3/3

ITEM:

CIRCUIT BREAKER, 3A (AC 2C TO FWD RCS VALVES)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- AC BUS #2
- INV DIST & CONT ASSY #2 2)
- MA73C PANEL 3)
- CIRCUIT BREAKER, 3A (AC 2C TO FWD RCS VALVES)

5) 6)

7)

8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/2R	TAL:	3/3	
ONORBIT:	3/2R	AOA:	3/3	
DEORBIT:	3/2R	ATO:	3/3	
LANDING/SAFING	3/3		•	

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 85V73A129CB34

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76BP12C (42T22H)

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/2R MDAC ID: 6527 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 3A TO FWD RCS VALVES)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 3A TO FWD RCS VALVES)

5) 6)

7)

8) 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 85V73A129CB35
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76AW11B (42T22H)

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/2R

MDAC ID: 6528

ABORT:

3/3

ITEM:

CIRCUIT BREAKER, 3A (AC 3B TO FWD RCS VALVES)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- AC BUS #3 1)
- INV DIST & CONT ASSY #3 2)
- MA73C PANEL
- CIRCUIT BREAKER, 3A (AC 3B TO FWD RCS VALVES) 4)

5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	: 3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 85V73A129CB36

PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76AW10B (42T22H)

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/2R MDAC ID: 6529 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 3C TO FWD RCS VALVES)

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 3C TO FWD RCS VALVES)

5) 6)

7)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ P ] C [ P ]

LOCATION: 85V73A129CB37
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76AW10B (42T22H)

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

FLIGHT: 3/1R SUBSYSTEM: EPD&C

3/3 MDAC ID: 6530 ABORT:

ITEM: HYBRID DRIVER TYPE I TO APCA-1

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) ALCA-1
- 3) HYBRID DRIVER TYPE I TO APCA-1
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

#### CRITTCALITTES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/1R	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		-	

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 54V76A121AR PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO THE SRB BUS. LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48A21G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6531 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I TO APCA-1

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) ALCA-1
- 3) HYBRID DRIVER TYPE I TO APCA-1

4)

5)

6) 7)

7) 8)

9) 05-6

#### CRITICALITIES

	CTATICATITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 54V76A121AR
PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS CIRCUIT IS NORMALLY ON DURING LAUNCH PHASE.

REFERENCES: 48A21G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

3/1R SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: MDAC ID: 6532

HYBRID DRIVER TYPE I TO APCA-1 ITEM:

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) ALCA-1
- 3) HYBRID DRIVER TYPE I TO APCA-1

4)

5)

6)

7) 8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 54V76A121AR PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO THE SRB BUS. LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48B21G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6533 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I TO APCA-1

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) ALCA-1
- 3) HYBRID DRIVER TYPE I TO APCA-1

4) 5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

54V76A121AR

PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS CIRCUIT IS NORMALLY ON DURING LAUNCH PHASE.

REFERENCES: 48B21G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6534 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE I TO APCA-2

4)

5)

6) 7)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 55V76A122AR
PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO THE SRB BUS. LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48BN21G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6535 ABORT: 3/3

ITEM:

HYBRID DRIVER TYPE I

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE I TO APCA-2

4) 5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

55V76A122AR

PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS CIRCUIT IS NORMALLY ON DURING LAUNCH PHASE.

REFERENCES: 48BN21G

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C MDAC ID: 6536

FLIGHT: 3/1R ABORT: 3/3

ITEM:

HYBRID DRIVER TYPE I

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE I TO APCA-2

4)

5)

6) 7)

8)

05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 55V76A122AR

PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO THE SRB BUS. LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48BP21G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6537 ABORT: 3/3

ITEM:

HYBRID DRIVER TYPE I

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE I TO APCA-2

4) 5)

6) 7)

7) 8)

9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

55V76A122AR

PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS CIRCUIT IS NORMALLY ON DURING LAUNCH PHASE.

REFERENCES: 48BP21G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6538 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II TO APCA-1 & APCA-3

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE II TO APCA-1 & APCA-3

4) 5)

6)

7) 8)

9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANAT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48A21C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6539 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II TO APCA-1 & APCA-3

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE II TO APCA-1 & APCA-3

4) 5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A123AR PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. THIS CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48A21C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6540 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II TO APCA-1 & APCA-3

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE II TO APCA-1 & APCA-3

4) 5)

6) 7)

7) 8)

9) 05-6

CRITICALITIES

V.(1.1.V.)			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANAT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48B21C

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6541 ABORT: 3/3 ITEM: HYBRID DRIVER TYPE II TO APCA-1 & APCA-3 FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: ESS BUS 3AB 2) ALCA-3 3) HYBRID DRIVER TYPE II TO APCA-1 & APCA-3 4) 5) 6) 7) 8) 9) 05-6

CRITICALITYES

CULTICALLIED		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
: 3/3		•
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. THIS CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48B21C

HIGHEST CRITICALITY HDW/FUNC 3/11/87

3/1R SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6542 ABORT:

ITEM: HYBRID DRIVER TYPE II TO APCA-2 & APCA-3

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE II TO APCA-2 & APCA-3

4) 5)

6)

7)

8) 9) 05-6

CRITTCALITTES

	CILLICALLILLO			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/1R	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		-	

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A123AR

PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANAT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48BN21C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6543 ABORT: 3/3 ITEM: HYBRID DRIVER TYPE II TO APCA-2 & APCA-3 FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: ESS BUS 3AB 2) ALCA-3 3) HYBRID DRIVER TYPE II TO APCA-2 & APCA-3 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC PRELAUNCH: 3/3 RTLS: 3/3 LIFTOFF: 3/3 TAL: 3/3 ONORBIT: 3/3

AOA:

ATO:

3/3

3/3

REDUNDANCY SCREENS: A [] B [] C []

3/3

LOCATION: 56V76A123AR PART NUMBER: MC477-0262-0002

LANDING/SAFING: 3/3

DEORBIT:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. THIS CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48BN21C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6544 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II TO APCA-2 & APCA-3

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE II TO APCA-2 & APCA-3

4)

5)

6) 7)

7) 8)

9) 05-6

CRITICALITIES

	40144			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/1R	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION:

56V76A123AR

PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANAT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48BP21C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6545 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II TO APCA-2 & APCA-3

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE II TO APCA-2 & APCA-3

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

### EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. THIS CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48BP21C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6546 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II

4) 5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANAT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48A21B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6547 ABORT: 3/3 ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C 2) ALCA-3 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II 4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES

01/11/01		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		- / -
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 56V76A123AR PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. THIS CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48A21B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6548 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
- 4) 5)
- 6)
- 7)
- 8) 9) 05-6

#### CRITICALITIES

V		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/1R	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		-
	3/3 3/1R 3/3 3/3	3/3 RTLS: 3/1R TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANAT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48B21B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6549 ABORT: 3/3 ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C 2) ALCA-3 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC PRELAUNCH: 3/3 RTLS: 3/3 3/3 LIFTOFF: TAL: 3/3 ONORBIT: 3/3 AOA: 3/3

ATO:

3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

3/3

LOCATION: 56V76A123AR PART NUMBER: MC477-0265-0002

LANDING/SAFING: 3/3

DEORBIT:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. THIS CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48B21B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6550 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
- 4) 5)
- 6)
- 7)
- 8)
- 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/1R	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

#### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANAT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48BN21B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6551 3/3 ABORT: ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C 2) ALCA-3 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II 4) 5) 6) 7) 8) 9) 05-6

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. THIS CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48BN21B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6552 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/1R	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANAT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48BP21B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6553 3/3 ABORT: ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C 2) ALCA-3 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II 4) 5) 6) 7) 8)

CRITICALITIES

	V-100-VI	~-·~ ~-·~-		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

9)

05-6

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48BP21B

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 ABORT: MDAC ID: 6554 ITEM: RESISTOR, 5.1K TO APCA-1 FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C APCA-3 2) RESISTOR, 5.1K TO APCA-1 3) 4) 5) 6) 7) 8) 9) 05-6

CRI	TI	CAI	II	IES
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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 56V76A133A1R19
PART NUMBER: RLR07C5101GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MEASUREMENT ITEM AND HAS NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48A21F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6555 3/3 ABORT:

ITEM:

RESISTOR, 5.1K TO APCA-1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RESISTOR, 5.1K TO APCA-1

4) 5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

	CT/TTTCD		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

56V76A133A1R52 PART NUMBER: RLR07C5101GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MEASUREMENT ITEM AND HAS NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48B21F

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6556 RESISTOR, 5.1K TO APCA-2 ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C 2) APCA-3 3) RESISTOR, 5.1K TO APCA-2 4) 5) 6) 7) 8) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC
3/3 RTLS: 3/3
3/3 TAL: 3/3
3/3 AOA: 3/3 FLIGHT PHASE PRELAUNCH: LIFTOFF: ONORBIT: ATO: DEORBIT: 3/3 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 56V76A133A1R30
PART NUMBER: RLR07C5101GR

LANDING/SAFING: 3/3

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL

SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MEASUREMENT ITEM AND HAS NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BN21F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6557 ABORT: 3/3

ITEM:

RESISTOR, 5.1K TO APCA-2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RESISTOR, 5.1K TO APCA-2

4) 5)

6) 7)

8)

9) 05-6

#### CRITICALITIES

	V-1-1-01		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

56V76A133A1R31 PART NUMBER: RLR07C5101GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

### EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MEASUREMENT ITEM AND HAS NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BP21F

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 FLIGHT: SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6558 RESISTOR, 7.5K TO DC RETURN ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS A 2) APCA-1 3) ALCA-3 RESISTOR, 7.5K TO DC RETURN 4) 5) 6) 7) 8) 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		·

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 56V76A123R
PART NUMBER: RLR07C7501GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL

SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR PREVENTS A FALSE SIGNAL TO THE SRB POWER CONTROL. THIS FAILURE IS NON-CRITICAL TO FLIGHT OPERATIONS.

REFERENCES: 48A21A

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6559 ABORT: 3/3

ITEM: RESISTOR, 7.5K TO DC RETURN

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) APCA-1
- 3) ALCA-3
- 4) RESISTOR, 7.5K TO DC RETURN
- 5)
- 6)
- 7) 8)
- 9) 05-6

### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 56V76A123R PART NUMBER: RLR07C7501GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR PREVENTS A FALSE SIGNAL TO THE SRB POWER CONTROL. THIS FAILURE IS NON-CRITICAL TO FLIGHT OPERATIONS.

REFERENCES: 48B21A

HIGHEST CRITICALITY HDW/FUNC 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6560 ITEM: RESISTOR, 7.5K TO DC RETURN FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS B APCA-2 2) 3) ALCA-3 4) RESISTOR, 7.5K TO DC RETURN 5) 6)

CRITTCALITTES

ABORT	HDW/FUNC
RTLS:	3/3
TAL:	3/3
AOA:	3/3
ATO:	3/3
	-
	RTLS: TAL: AOA:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 56V76A123R
PART NUMBER: RLR07C7501GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL

SHOCK, MECH SHOCK

7) 8)

9) 05-6

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR PREVENTS A FALSE SIGNAL TO THE SRB POWER CONTROL. THIS FAILURE IS NON-CRITICAL TO FLIGHT OPERATIONS.

REFERENCES: 48BN21B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6561 FLIGHT: 3/3

ITEM: RESISTOR, 7.5K TO DC RETURN

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) ALCA-3
- 4) RESISTOR, 7.5K TO DC RETURN

5)

6) 7)

8)

9) 05-6

## CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 56V76A123R PART NUMBER: RLR07C7501GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL

SHOCK, MECH SHOCK

## EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR PREVENTS A FALSE SIGNAL TO THE SRB POWER CONTROL. THIS FAILURE IS NON-CRITICAL TO FLIGHT OPERATIONS.

REFERENCES: 48BP21B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6562 ABORT: 3/3

ITEM: RESISTOR, 15K TO ALCA-3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) APCA-1
- 3) RESISTOR, 15K TO ALCA-3
- 4)
- 5) 6)
- 7)
- 8) 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/1R	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 54V76A131A1R45
PART NUMBER: RBR56L15001BR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL

SHOCK, MECH SHOCK

### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL OF REDUNDANT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48A16G

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6563 ABORT: 3/3

ITEM: RESISTOR, 15K TO ALCA-3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) APCA-1
- 3) RESISTOR, 15K TO ALCA-3

4) 5)

6)

7) 8)

9) 05-6

#### CRITICALITIES

	O1/1 1 1 O2	CT/TTTCTTTTTD	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 54V76A131A1R46 PART NUMBER: RBR56L15001BR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL

SHOCK, MECH SHOCK

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL OF REDUNDANT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48B16G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6564 ABORT: 3/3

ITEM: RESISTOR, 15K TO ALCA-3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RESISTOR, 15K TO ALCA-3

4)

5) 6)

7)

8)

9) 05-6

#### CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 55V76A132A1R44
PART NUMBER: RBR56L15001BR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL

SHOCK, MECH SHOCK

## EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL OF REDUNDANT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48BN16G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6565 ABORT: 3/3

ITEM: RESISTOR, 15K TO ALCA-3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RESISTOR, 15K TO ALCA-3

4) 5)

6)

7) 8)

9) 05-6

#### CRITTCALITTES

CALLICALLITIO			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [ F ] C [ P ]

LOCATION: 55V76A132A1R45
PART NUMBER: RBR56L15001BR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL

SHOCK, MECH SHOCK

#### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL OF REDUNDANT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48BP16G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6566 ABORT: ITEM: RESISTOR, 2.2K FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS B APCA-2 2) 3) RESISTOR, 2.2K 4) 5) 6) 7) 8) 9) 05-6

	CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING	3/3			

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 55V76A132A1R36

PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48G21G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6567 ABORT: 3/3 ITEM: RESISTOR, 2.2K FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C 2) APCA-3 3) RESISTOR, 2.2K 4) 5) 6) 7) 8) 9) 05-6

CRITICALITI	ES	
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V-1 VI		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		,
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

56V76A133A1R24

PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48G21C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6568 ITEM: RESISTOR, 1.8K FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS B APCA-2 2) RESISTOR, 1.8K 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC 3/3 RTLS: PRELAUNCH: 3/3 TAL: 3/3 LIFTOFF: 3/3 3/3 AOA: ONORBIT: 3/3

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

3/3

LOCATION: 55V76A132A1R35

LANDING/SAFING: 3/3

PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

ATO:

3/3

EFFECTS/RATIONALE:

DEORBIT:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48G21G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6569 3/3 ABORT: ITEM: RESISTOR, 1.8K FAILURE MODE: FAILS OPEN, SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C 2) APCA-3 3) RESISTOR, 1.8K 4) 5) 6) 7) 8)

CRITTCALITTES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

9) 05-6

LOCATION: 56V76A133A1R23

PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48G21C

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: 3/3 MDAC ID: 6570 ITEM: RESISTOR, 1.8K FAILURE MODE: FAILS OPEN, SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS B 2) APCA-2 3) RESISTOR, 1.8K 4) 5) 6) 7) 8) 9) 05-6

CRITICA	LLTIES	
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		-
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 55V76A132A1R37

PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48H21G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6571 3/3 ABORT:

ITEM: RESISTOR, 1.8K FAILURE MODE: FAILS OPEN, SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

# BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RESISTOR, 1.8K
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 56V76A133A1R26

PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48H21C

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE: FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6572 ITEM: RESISTOR, 2.2K FAILURE MODE: FAILS OPEN, SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS B 2) APCA-2 RESISTOR, 2.2K 3) 4) 5) 6) 7) 8) 9) 05-6

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
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LIFTOFF: 3/ ONORBIT: 3/3 AOA: 3/3 DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3

CRITICALITIES

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 55V76A132A1R38

PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

FLIGHT PHASE PRELAUNCH:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48H21G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6573 ABORT: 3/3 ITEM: RESISTOR, 2.2K FAILURE MODE: FAILS OPEN, SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C 2) APCA-3 3) RESISTOR, 2.2K 4) 5) 6) 7) 8) 9) 05-6

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION:

56V76A133A1R27

PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48H21C

HIGHEST CRITICALITY HDW/FUNC 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6574 ABORT: ITEM: RESISTOR, 1.2K FAILURE MODE: FAILS OPEN, SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) CONT BUS AB1 2) F6 PANEL 3) RESISTOR, 1.2K 4) 5) 6) 7) 8)

CRITICALITI	

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HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		-
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 34V73A6A11R1 PART NUMBER: RLR42C1201GM

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL

SHOCK, MECH SHOCK

9)

05-6

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48N24E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6575 ABORT: 3/3 ITEM: RESISTOR, 1.2K FAILURE MODE: FAILS OPEN, SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: CONT BUS BC2 2) F6 PANEL RESISTOR, 1.2K 3) 4) 5) 6) 7) 8)

CRITICALITIES	ידאי	TC	AT.	וייד	TR.S
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	CULTICA	TITIES	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 34V73A6A11R2 PART NUMBER: RLR42C1201GM

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

05-6

9)

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48N24D

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C ABORT: 3/3 MDAC ID: 6576 ITEM: RESISTOR, 1.2K FAILURE MODE: FAILS OPEN, SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) CONT BUS AB1 2) F6 PANEL 3) RESISTOR, 1.2K 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE 3/3 3/3 3/3 RTLS: TAL: PRELAUNCH: 3/3 LIFTOFF: 3/3 ONORBIT: AOA: 3/3 DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3

LOCATION: 34V73A6A11R3
PART NUMBER: RLR42C1201GM

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48Q24E

3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6577 ABORT: 3/3 ITEM: RESISTOR, 1.2K FAILURE MODE: FAILS OPEN, SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: CONT BUS BC1 2) F6 PANEL 3) RESISTOR, 1.2K 4) 5) 6) 7)

CRITICALITIES

	01/11/01		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 34V73A6A11R4
PART NUMBER: RLR42C1201GM

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

8) 9)

05-6

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48Q24D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6578 ABORT: 3/3

ITEM: RPC, 20A TO APCA-1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

## BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO APCA-1
- 4) 5)
- 5) 6)
- 7)
- 8) 9) 05-6

### CRITICALITIES

	<b></b>		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ 1 ] B [NA ] C [ P ]

LOCATION: 56V76A133RPC27
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

THERMAL SHOCK

### EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48A21F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6579 3/3 ABORT: ITEM: RPC, 20A TO APCA-1 FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO APCA-1
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

#### CRITICALITIES

	O+/		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 56V76A133RPC27 PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

## EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/EHICLE AS THIS ITEM IS COMMANDED "ON" DURING FLIGHT OPERATIONS.

REFERENCES: 48A21F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6580 ABORT: 3/3

ITEM: RPC, 20A TO RELAY

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

#### BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) APCA-1
- 3) RPC, 20A TO RELAY

4)

5)

7)

8) 9) 05-6

#### CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 54V76A131RPC3
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48A18G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6581 ABORT: 3/3

ITEM: RPC, 20A TO RELAY

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) APCA-1
- 3) RPC, 20A TO RELAY

4) 5)

6)

7)

9) 05-6

CRITICALITIES

	~		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 54V76A131RPC3 PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

THERMAL SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS COMMANDED "ON" DURING FLIGHT OPERATIONS.

REFERENCES: 48A18G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6582 ABORT: 3/3

ITEM: RPC, 20A TO APCA-1

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO APCA-1
- 4)
- 5)
- 6) 7)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 56V76A133RPC25 PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48B21F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6583 ABORT: 3/3 ITEM: RPC, 20A TO APCA-1 FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: MAIN DC BUS C 2) APCA-3 3) RPC, 20A TO APCA-1 4) 5) 6) 7) 8) 9) 05-6

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	CIVITION	TITITIO	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133RPC25 PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/EHICLE AS THIS ITEM IS COMMANDED "ON" DURING FLIGHT OPERATIONS.

REFERENCES: 48B21F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6584 ABORT: 3/3

ITEM: RPC, 20A TO RELAY

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) APCA-1
- 3) RPC, 20A TO RELAY

4)

5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 54V76Al31RPC4
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48B18G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6585 3/3 ABORT: ITEM: RPC, 20A TO RELAY FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS A 2) APCA-1 3) RPC, 20A TO RELAY 4) 5) 6) 7)

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	7-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 54V76Al3lRPC4 PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

THERMAL SHOCK

8) 9)

05-6

EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS COMMANDED "ON" DURING FLIGHT OPERATIONS.

REFERENCES: 48B18G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6586 ABORT: 3/3

ITEM: RPC, 20A TO ORB BUS C

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RPC, 20A TO ORB BUS C
- 4) 5)
- 5) 6)
- 7)
- 8) 9) 05-6

CRITICALITIES

	01/11/10/	ONT I TONILL I TUO		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/1R	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132RPC44
PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48G22G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6587 3/3

ABORT:

ITEM: RPC, 20A TO ORB BUS C

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RPC, 20A TO ORB BUS C

4)

5)

6)

7) 8)

9) 05-6

CRITICALITY TES

	CIVITACU	TITITIO .	
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132RPC44

PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS NORMALLY ON DURING FLIGHT OPERATIONS.

REFERENCES: 48G22G

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

FLIGHT: 3/1R SUBSYSTEM: EPD&C

3/3 ABORT: MDAC ID: 6588

ITEM:

RPC, 20A TO ORB BUS C

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO ORB BUS C
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A133RPC3

PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48G22B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6589 ABORT: 3/3

ITEM:

RPC, 20A TO ORB BUS C

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO ORB BUS C

4) 5) 6) 7)

8) 9) 05-6

CRITICALITIES

	02/22 2 2 02		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133RPC3

PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS NORMALLY ON DURING FLIGHT OPERATIONS.

REFERENCES: 48G22B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUI SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6590 ABORT: 3/3

ITEM: RPC, 20A TO ORB BUS C

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RPC, 20A TO ORB BUS C
- 4) 5)
- 6)
- 7)
- 9) 05-6

CRITICALITIES

CIVITATION		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/1R	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	HDW/FUNC 3/3 3/1R 3/3 3/3	HDW/FUNC ABORT 3/3 RTLS: 3/1R TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76Al32RPC45
PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48H22G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6591 3/3 ABORT: ITEM: RPC, 20A TO ORB BUS C FAILURE MODE: FAILS ON LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS B APCA-2 2) 3) RPC, 20A TO ORB BUS C 4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES

	V-11222222		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132RPC45
PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS NORMALLY ON DURING FLIGHT OPERATIONS.

REFERENCES: 48H22G

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/1R

MDAC ID:

6592

ABORT:

3/3

ITEM:

RPC, 20A TO ORB BUS C

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO ORB BUS C

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A133RPC4

PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48H22B

3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6593 ABORT: 3/3

ITEM:

RPC, 20A TO ORB BUS C

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO ORB BUS C

4) 5) 6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133RPC4 PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS NORMALLY ON DURING FLIGHT OPERATIONS.

REFERENCES: 48H22B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6594 ABORT: 3/3

ITEM: RPC, 20A TO APCA-2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO APCA-2

4) 5)

6)

7)

8) 9) 05-6

CRITICALITIES

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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 56V76A133RPC26
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48BN21F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6595 ABORT: 3/3

ITEM:

RPC, 20A TO APCA-2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO APCA-2

4) 5)

6)

7) 8)

9) 05-6

CRITICALITIES

	~		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133RPC26 PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/EHICLE AS THIS ITEM IS COMMANDED "ON" DURING FLIGHT OPERATIONS.

REFERENCES: 48BN21F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6596 ABORT: 3/3

ITEM: RPC, 20A TO RELAY

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RPC, 20A TO RELAY
- 4) 5)
- 6)
- 7)
- 8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 55V76A132RPC5
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48BN18G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6597 ABORT: 3/3

ITEM:

RPC, 20A TO RELAY

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RPC, 20A TO RELAY

4) 5)

6) 7)

8)

9) 05-6

CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

55V76Al32RPC5 PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

THERMAL SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/EHICLE AS THIS ITEM IS COMMANDED "ON" DURING FLIGHT OPERATIONS.

REFERENCES: 48BN18G

HIGHEST CRITICALITY HDW/FUNC 3/11/87

DATE: FLIGHT: 3/1R SUBSYSTEM: EPD&C

MDAC ID: 6598 ABORT: 3/3

ITEM:

RPC, 20A TO APCA-2

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO APCA-2
- 4)
- 5)
- 6)
- 7) 8)
- 05-6 9)

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 56V76A133RPC24

PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48BP21F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6599 ABORT: 3/3 ITEM: RPC, 20A TO APCA-2 FAILURE MODE: FAILS CLOSED LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C 2) APCA-3 3) RPC, 20A TO APCA-2 4)

7) 8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133RPC24 PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

5)

NO EFFECT ON CREW/MISSION/EHICLE AS THIS ITEM IS COMMANDED "ON" DURING FLIGHT OPERATIONS.

REFERENCES: 48BP21F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6600 ABORT: 3/3

ITEM: RPC, 20A TO RELAY

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RPC, 20A TO RELAY
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 55V76A132RPC4
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48BP18H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6601 ABORT: 3/3

ITEM: RPC, 20A TO RELAY

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- MAIN DC BUS B 1)
- APCA-2 2)
- 3) RPC, 20A TO RELAY
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITTICALITYTES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		, -

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132RPC4 PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,

THERMAL SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/EHICLE AS THIS ITEM IS COMMANDED "ON" DURING FLIGHT OPERATIONS.

REFERENCES: 48BP18H

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/1R

MDAC ID: 6602

ABORT:

ITEM:

3/3

DIODE TO ORB BUS C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) DIODE TO ORB BUS C
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A133A3CR9

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48G21B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6603 ABORT: 3/3 ITEM: DIODE TO ORB BUS C FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C 2) APCA-3 3) DIODE TO ORB BUS C 4) 5) 6) 7) 8) 9) 05-6

CRITI	CAI	TTTES	3
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FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133A3CR9

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48G21B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6604 ABORT: 3/3

ITEM: DIODE TO ORB BUS C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) DIODE TO ORB BUS C
- 4)
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION:

55V76A132A3CR6

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48G22F

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6605 ABORT: 3/3 ITEM: DIODE TO ORB BUS C FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS B 2) APCA-2 3) DIODE TO ORB BUS C 4) 5) 6) 7)

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

8)

9) 05-6

55V76A132A3CR6

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48G22F

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

SUBSYSTEM: EPD&C FLIGHT: 3/1R ABORT: 3/3 MDAC ID: 6606

DIODE TO ORB BUS C ITEM:

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) DIODE TO ORB BUS C
- 4) 5)
- 6)
- 7)
- 8) 9) 05-6

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	C1/T T T C11		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132A3CR7

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48H22F

DATE: HIGHEST CRITICALITY HDW/FUNC 3/11/87 SUBSYSTEM: EPD&C 3/3 FLIGHT: MDAC ID: 6607 ABORT: 3/3 ITEM: DIODE TO ORB BUS C FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS B 2) APCA-2 3) DIODE TO ORB BUS C 4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

55V76A132A3CR7

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48H22F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6608 ABORT: 3/3

ITEM: DIODE TO ORB BUS C

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) DIODE TO ORB BUS C
- 4) 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION:

56V76A133A3CR10

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48H21B

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6609 ABORT: 3/3 ITEM: DIODE TO ORB BUS C FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) MAIN DC BUS C 2) APCA-3 3) DIODE TO ORB BUS C 4) 5) 6) 7) 8)

CRITICALITIES

	A-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		- /

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

9) 05-6

56V76A133A3CR10

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48H21B

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 FLIGHT: SUBSYSTEM: EPD&C 3/3 ABORT: MDAC ID: 6610 ITEM: DIODE FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) RSS BUS F6 PANEL 2) DIODE 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC 3/3 RTLS: 3/3 PRELAUNCH: 3/3 LIFTOFF: 3/3 TAL: ONORBIT: 3/3 AOA: 3/3 3/3 ATO: DEORBIT: 3/3

REDUNDANCY SCREENS: A [] B [] C [] 34V73A6CR

LANDING/SAFING: 3/3

PART NUMBER:

LOCATION:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48N23C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6611 ABORT: 3/3

ITEM: DIODE FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6) 7)
- 8) 9) 05-6

CRITICALITIES

	V-1V-1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

34V73A6CR

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48N23C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6612 ABORT: 3/3

ITEM:

DIODE

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

CVTTTCN		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
: 3/3		•
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

34V73A6CR

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48P23C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6613 ABORT: 3/3

ITEM: DIODE FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
 2) F6 PANEL
 3) DIODE
 4)
 5)
 6)
- 8) 9) 05-6

7)

CRITICALITIES

	CIVITION		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
Landing/safing:	3/3		• •

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

34V73A6CR

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48P23C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: MDAC ID: 6614 DIODE ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) RSS BUS 2) F6 PANEL 3) DIODE 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE RTLS: 3/3 3/3 PRELAUNCH: 3/3 TAL: 3/3 LIFTOFF: ONORBIT: 3/3 AOA: 3/3

REDUNDANCY SCREENS: A [] B [] C []

3/3

LOCATION: 34V73A6CR

LANDING/SAFING: 3/3

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

DEORBIT:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

ATO:

3/3

REFERENCES: 48Q23C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6615 ABORT: 3/3

ITEM: DIODE FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

1) RSS BUS
2) F6 PANEL
3) DIODE
4)
5)
6)
7)

9) 05-6

CRITICALITIES

	CIVITATOR		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6CR

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48Q23C

	E: 3/11/ SYSTEM: EPD&C C ID: 6616	'87	HIGHEST C	RITICALITY FLIGHT: ABORT:	HDW/FUNC 3/3 3/3
ITE FAI		DE LS OPEN			
LEA	D ANALYST: K. SC	HMECKPEPER	SUBSYS LEA	AD: K. SCHM	ECKPEPER
1) 2) 3) 4) 5) 6) 7)	AKDOWN HIERARCHY RSS BUS F6 PANEL DIODE	?:			
9)	05-6				
		CRITICA	LITIES		
	FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUN	c

	CRITICA		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	: 3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

34V73A6CR

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48R23C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6617 ABORT: 3/3

ITEM: DIODE FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6CR

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48R23C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6618 ABORT: ITEM: DIODE FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) RSS BUS 2) F6 PANEL 3) DIODE 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC RTLS: PRELAUNCH: 3/3 3/3 TAL: 3/3 LIFTOFF: 3/3 ONORBIT: 3/3 AOA: 3/3 3/3 ATO: DEORBIT: 3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

34V73A6CR

LANDING/SAFING: 3/3

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BJ2G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: ABORT: 3/3 6619 ITEM: DIODE FAILURE MODE: SHORTS LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) RSS BUS 2) F6 PANEL DIODE 3) 4) 5) 6) 7) 8) 05-6 9) CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

34V73A6CR

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BJ2G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6620 3/3 ABORT: ITEM: DIODE FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) RSS BUS 2) F6 PANEL 3) DIODE 4) 5) 6) 7) 8) 9) 05-6 CDIMICALIMIES

	TITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

34V73A6CR

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BF2G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6621 ABORT: 3/3

ITEM: DIODE FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

34V73A6CR

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BF2G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C 3/1R FLIGHT: MDAC ID: 6622 ABORT: 3/3

ITEM: RELAY TO OIA BUS FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSSES A & C
- 2) APCA-1
- 3) RELAY TO OIA BUS
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

	O1/2 2 2 O1		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 54V76A131K8 PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48A17F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6623 ABORT: 3/3

ITEM: RELAY TO OIA BUS

FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSSES A & C
- 2) APCA-1
- 3) RELAY TO OIA BUS
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 54V76A131K8
PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48A17F

HIGHEST CRITICALITY HDW/FUNC 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R 3/3 MDAC ID: 6624 ABORT:

RELAY TO OIA BUS ITEM: FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSSES A & C
- 2) APCA-1
- 3) RELAY TO OIA BUS

4)

5) 6)

7) 8)

05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 54V76A131K9 PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48B17F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6625 ABORT: 3/3

ITEM: RELAY TO OIA BUS

FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSSES A & C
- 2) APCA-1
- 3) RELAY TO OIA BUS

4)

5)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 54V76A131K9
PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48B17F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6626 ABORT: 3/3

ITEM: RELAY TO OIB BUS FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSSES B & C
- 2) APCA-2
- 3) RELAY TO OIB BUS
- 4) 5)
- 5) 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

CNIIICALLIID		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/1R	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
: 3/3		
	HDW/FUNC 3/3 3/1R 3/3 3/3	HDW/FUNC ABORT 3/3 RTLS: 3/1R TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132K10
PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48BN17F

DATE:

3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT:

3/1R

MDAC ID:

6627

ABORT:

3/3

ITEM:

RELAY TO OIB BUS

FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- MAIN DC BUSSES B & C
- APCA-2 2)
- 3) RELAY TO OIB BUS

4)

5)

6)

7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION:

55V76A132K10

PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48BN17F

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

FLIGHT: 3/1R SUBSYSTEM: EPD&C 3/3 MDAC ID: 6628 ABORT:

RELAY TO OIB BUS ITEM: FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSSES B & C
- 2) APCA-2
- RELAY TO OIB BUS 3)
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/1R	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	3/1R 3/3 3/3	3/3 RTLS: 3/1R TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132K9 PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48BP17F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6629 ABORT: 3/3

ITEM: RELAY TO OIB BUS FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSSES B & C
- 2) APCA-2
- 3) RELAY TO OIB BUS

4) 5)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

~			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION:

55V76A132K9

PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48BP17F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6630 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #3

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONTROL BUSSES AB1 & BC2
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #3

4)

5)

6) 7)

8) 9) 05-6

CRITICALITIES

	CKITICALITIE			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K1A PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48N23C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6631 ABORT: 3/3

ITEM:

RELAY TO ACA #1 & ACA #3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONTROL BUSSES AB1 & BC2
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #3

4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K1A PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48N23C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C MDAC ID: 6632 ABORT: 3/3 RELAY TO ACA #1 & ACA #3 ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) CONTROL BUSSES AB1 & BC2 2) F6 PANEL 3) RELAY TO ACA #1 & ACA #3 4) 5) 6) 7) 8) 05-6 9) CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE RTLS: 3/3 PRELAUNCH: 3/3 3/3 3/3 TAL: 3/3 LIFTOFF: AOA: ONORBIT: 3/3 DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K1B PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48P23C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6633 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONTROL BUSSES AB1 & BC2
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #3

4)

5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6KlB PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48P23C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6634 ABORT: ITEM: RELAY TO ACA #1 & ACA #2 FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) CONT BUS AB1 & BC1 2) F6 PANEL 3) RELAY TO ACA #1 & ACA #2 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT FLIGHT PHASE HDW/FUNC PRELAUNCH: 3/3 3/3 RTLS: LIFTOFF: 3/3 TAL: 3/3 ONORBIT: 3/3 AOA: 3/3 DEORBIT: 3/3 ATO: 3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K3B PART NUMBER: MC455-0129

LANDING/SAFING: 3/3

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48Q23C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6635 3/3 ABORT:

ITEM: RELAY TO ACA #1 & ACA #2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC1
- 2) F6 PANEL
 - 3) RELAY TO ACA #1 & ACA #2

4)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K3B PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48Q23C

HIGHEST CRITICALITY HDW/FUNC 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: MDAC ID: 6636 RELAY TO ACA #1 & ACA #2 ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) CONT BUS AB1 & BC1 2) F6 PANEL RELAY TO ACA #1 & ACA #2 3) 4) 5) 6) 7) 8) 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K3A PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48R23C

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6637 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC1
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #2

4)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

~		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		, -
	HDW/FUNC 3/3 3/3 3/3 3/3	HDW/FUNC ABORT 3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K3A PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48R23C

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6638 ABORT: RELAY TO ACA #1 & ACA #3 ITEM: FAILURE MODE: FAILS OPEN SUBSYS LEAD: K. SCHMECKPEPER LEAD ANALYST: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) CONT BUS AB1 & BC2 F6 PANEL 2) 3) RELAY TO ACA #1 & ACA #3 4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING	3/3		-

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K2A PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BF2G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6639 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #3

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC2
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #3

4) 5)

5) 6)

7)

8) 9) 05-6

CRITTCALITTES

	CITTICALLIED		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		- / -

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K2A PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BF2G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: 3/3 MDAC ID: 6640 RELAY TO ACA #1 & ACA #2 ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) CONT BUS AB1 & BC1 2) F6 PANEL RELAY TO ACA #1 & ACA #2 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE RTLS: 3/3 3/3 PRELAUNCH: LIFTOFF: 3/3 TAL: 3/3 3/3 AOA: ONORBIT: 3/3 DEORBIT: 3/3 ATO: 3/3 LANDING/SAFING: 3/3

LOCATION: 34V73A6K2B PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

REDUNDANCY SCREENS: A [] B [] C []

MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BJ2G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6641 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC1
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #2

4) 5)

2)

6)

7) 8)

9) 05-6

CRITICALITIES

	71:111111111111			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K2B PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BJ2G

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 3/3 SUBSYSTEM: EPD&C FLIGHT: ABORT: 3/3 MDAC ID: 6642 ITEM: ACA #1 - CHANNEL 39 FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: CONT BUS AB1 1) F6 PANEL 2) ACA #1 - CHANNEL 39 3) 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

30V73A16

PART NUMBER:

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48N21E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6643 ABORT: 3/3 ITEM: ACA #3 - CHANNEL 39 FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: 1) CONT BUS BC2 2) F6 PANEL 3) ACA #3 - CHANNEL 39 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		,

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

30V73A18

PART NUMBER:

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48N21D

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 FLIGHT: 3/3 SUBSYSTEM: EPD&C 3/3 6644 ABORT: MDAC ID: RSS LIGHTS - RANGE SAFE ARM ITEM: FAILURE MODE: FAILS OFF LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: CONT BUS AB1 & BC2 1) 2) F6A8 PANEL RSS LIGHTS - RANGE SAFE ARM 3) 4) 5) 6) 7) 8) 05-6 9) CRITICALITIES HDW/FUNC ABORT HDW/FUNC FLIGHT PHASE RTLS: 3/3 PRELAUNCH: 3/3 3/3 3/3 TAL: LIFTOFF: 3/3 AOA: 3/3 ONORBIT: ATO: DEORBIT: 3/3 3/3 LANDING/SAFING: 3/3

LOCATION: 34V73A6A8DS53

REDUNDANCY SCREENS: A []

PART NUMBER:

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

B[] C[]

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48N22E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6645 ABORT: 3/3

ITEM:

ACA #1 - CHANNEL 35

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) F6 PANEL
- 3) ACA #1 CHANNEL 35

4)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

30V73A16

PART NUMBER:

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48Q21E

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3 3/3 MDAC ID: 6646 ABORT: ACA #2 - CHANNEL 39 ITEM: FAILURE MODE: FAILS OPEN LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER BREAKDOWN HIERARCHY: CONT BUS BC1 1) 2) F6 PANEL 3) ACA #2 - CHANNEL 39 4) 5) 6) 7) 8) 9) 05-6 CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

30V73A17

PART NUMBER:

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48Q21D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3 MDAC ID: 6647 ABORT: 3/3

ITEM: RSS LIGHTS - RANGE SAFE ARM

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC1
- 2) F6A8 PANEL
- 3) RSS LIGHTS RANGE SAFE ARM

4)

5)

6)

7)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

34V73A6A8DS3

PART NUMBER:

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48Q22E

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

SUBSYSTEM: EPD&C FLIGHT: 3/1R 3/3 MDAC ID: 6648 ABORT:

SWITCH, PUSHBUTTON (ET SEP) ITEM:

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- C3A7 PANEL
- 2) SWITCH, PUSHBUTTON (ET SEP)
- 3)
- 4)
- 5)
- 6) 7) 8)
- 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S4 PART NUMBER: ME452-0061-4133

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD HAVE NO EFFECT AS THE MODE SWITCH MUST BE PLACED IN "MANUAL" POSITION BEFORE THIS SWITCH CAN BE ENERGIZED. LOSS OF CREW/VEHICLE AFTER MULTIPLE FAILURES IS POSSIBLE DUE TO PREMATURE SEPERATION OF THE ET.

REFERENCES: 48BR14H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 1/1 MDAC ID: 6649 ABORT: 3/3

ITEM: SWITCH, PUSHBUTTON (ET SEP)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, PUSHBUTTON (ET SEP)
- 3)
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	1/1	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		-, -

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S4
PART NUMBER: ME452-0061-4133

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF MANUAL CONTROL OF ET SEPERATION FUNCTION. CREW CAN OVERRIDE WITH GPC COMMAND. ET SEP FAILURE COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 48BR14H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6650 ABORT: 3/3

ITEM: SWITCH, PUSHBUTTON (SRB SEP)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, PUSHBUTTON (SRB SEP)
- 3)
- 4)
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S2
PART NUMBER: ME452-0061-4133

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD HAVE NO EFFECT AS THE MODE SWITCH MUST BE PLACED IN "MANUAL" BEFORE SRB SEP COULD OCCUR. LOSS OF CREW/VEHICLE COULD OCCUR IF SRBS ARE SEPERATED PREMATURELY.

REFERENCES: 48BR10H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 1/1 MDAC ID: 6651 ABORT: 3/3

ITEM: SWITCH, PUSHBUTTON (SRB SEP)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, PUSHBUTTON (SRB SEP)
- 3)
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
1/1	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		, -
	HDW/FUNC 3/3 1/1 3/3 3/3	3/3 RTLS: 1/1 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S2
PART NUMBER: ME452-0061-4133

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF MANUAL CONTROL OF SRB SEP FUNCTION DURING A GPC INHIBIT CONDITION. IF THE CREW COULD NOT REMOVE THE INHIBIT CONDITION, THIS WOULD RESULT IN LOSS OF CREW/VEHICLE.HRO

REFERENCES: 48BR10H

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87 SUBSYSTEM: EPD&C FLIGHT: 1/1

MDAC ID: 3/3 6652 ABORT:

SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) ITEM:

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)

3)

4)

5) 6)

7)

8)

05-6 9)

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
1/1	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
: 3/3		•
	3/3 1/1 3/3 3/3	3/3 RTLS: 1/1 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION:

35V73A3A7S3

PART NUMBER: ME452-0102-7352

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY IN ET SEP FUNCTION. IF MANUAL ET SEP WERE REQUIRED, IT COULD NOT BE PERFORMED RESULTING IN LOSS OF CREW/VEHICLE.

REFERENCES: 48BR17G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6653 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

1) C3A7 PANEL

2) SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)

3) 4)

5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/1R	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		•	

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S3
PART NUMBER: ME452-0102-7352

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD HAVE NO EFFECT AS A PUSHBUTTON MUST BE PUSHED TO INITIATE ET SEP. A SECOND FAILURE COULD INITIATE PREMATURE ET SEP RESULTING IN LOSS OF CREW/VEHICLE.

REFERENCES: 48BR17G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 1/1 MDAC ID: 6654 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)

FAILURE MODE: FAILS OFF - SHORTS POLE TO POLE OR GND

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)
- 3) 4)
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

	01/4140111411110		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	1/1	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S3
PART NUMBER: ME452-0102-7352

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY IN ET SEP FUNCTION. IF MANUAL ET SEP WERE REQUIRED, IT COULD NOT BE PERFORMED RESULTING IN LOSS OF CREW/VEHICLE.

REFERENCES: 48BR17G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 1/1 MDAC ID: 6655 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3P2P (SRB SEP SLCT)

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, TOGGLE 3P2P (SRB SEP SLCT)
- 3)
- 4) 5)
- 6)
- 7)
- 8) 9) 05-6

CRITICALITIES

	O1(11101)		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	1/1	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S1
PART NUMBER: ME452-0102-7301

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF MANUAL SRB SEP FUNCTION DURING A GPC INHIBIT CONDITION. IF THE CREW COULD NOT FLY OUT OF THE INHIBIT REGION, SRB SEP WILL NOT OCCUR LEADING TO LOSS OF CREW/VEHICLE.

REFERENCES: 48BR10G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 2/1R

MDAC ID: 6656 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3P2P (SRB SEP SLCT)

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, TOGGLE 3P2P (SRB SEP SLCT)
- 3) 4)
- 5)
- 6) 7)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	2/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S1
PART NUMBER: ME452-0102-7301

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,

MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD HAVE NO EFFECT AS A PUSHBUTTON WOULD HAVE TO BE PUSHED TO INITIATE MANUAL SRB SEP. A SECOND FAILURE COULD CAUSE PREMATURE SRB SEP RESULTING IN LOSS OF CREW/VEHICLE.

REFERENCES: 48BR10G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 1/1 MDAC ID: 6657 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3P2P (SRB SEP SLCT)

FAILURE MODE: FAILS OFF - SHORTS POLE TO POLE OR GND

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, TOGGLE 3P2P (SRB SEP SLCT)
- 3) 4)
- 5)
- 6) 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	1/1	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3		-, -	

REDUNDANCY SCREENS: A [1] B[NA] C[F]

LOCATION: 35V73A3A7S1 PART NUMBER: ME452-0102-7301

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF MANUAL SRB SEP FUNCTION DURING A GPC INHIBIT CONDITION. IF THE CREW COULD NOT FLY OUT OF THE INHIBIT REGION, SRB SEP WILL NOT OCCUR LEADING TO LOSS OF CREW/VEHICLE.

REFERENCES: 48BR10G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6658 ABORT: 3/3

ITEM: FUSE, 3A TO ET TUMBLE ARM

FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) APCA-5
- 4) ALCA-2
- 5) FUSE, 3A TO ET TUMBLE ARM

6) 7)

8)

9) 05-6

CRITICALITIES

VI			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		·

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:

55V76A122F

PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD ONLY CAUSE LOSS OF THE ET TUMBLING FUNCTION AFTER SEP. NO EFFECT ON CREW/VEHICLE/MISSION

REFERENCES: 48BM19G

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6659 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III TO ET TUMBLE CKT

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY: .

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE III TO ET TUMBLE CKT
- 4)
- 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

	~		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A122AR PART NUMBER: MC477-0263-0002

CAUSES: MECH SHOCK, VIBRATION, THERMAL SHOCK, PIECE-PART

STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ET TUMBLE CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BM20F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/2R MDAC ID: 6660 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III TO ET TUMBLE CKT

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE III TO ET TUMBLE CKT

4)

5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A122AR
PART NUMBER: MC477-0263-0002

CAUSES: MECH SHOCK, VIBRATION, THERMAL SHOCK, PIECE-PART

STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD HAVE NO EFFECT. SECOND FAILURE "ON" WOULD ENERGIZE THE ET TUMBLE VALVE PREMATURELY WHICH COULD CAUSE LOSS OF MISSION DUE TO LOSS OF PROPELLANT.

REFERENCES: 48BM20F

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC SUBSYSTEM: EPD&C FLIGHT: 3/3

MDAC ID: 6661 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III TO ET TUMBLE CKT

FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE III TO ET TUMBLE CKT

4) 5)

6)

7) 8)

9) 05-6

CRITICALITIES

CHITTCHLITTE		
HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/3
3/3	TAL:	3/3
3/3	AOA:	3/3
3/3	ATO:	3/3
3/3		•
	HDW/FUNC 3/3 3/3 3/3 3/3	3/3 RTLS: 3/3 TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A122AR

PART NUMBER: MC477-0263-0002

CAUSES: MECH SHOCK, VIBRATION, THERMAL SHOCK, PIECE-PART

STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ET TUMBLE CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BM20D

HIGHEST CRITICALITY HDW/FUNC 3/11/87 DATE:

3/2R SUBSYSTEM: EPD&C FLIGHT: 3/3 ABORT: MDAC ID: 6662

HYBRID DRIVER TYPE III TO ET TUMBLE CKT ITEM:

FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE III TO ET TUMBLE CKT

4) 5)

6)

7)

8) 05-6

CRITICALITIES

	VIII		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A122AR

PART NUMBER: MC477-0263-0002

CAUSES: MECH SHOCK, VIBRATION, THERMAL SHOCK, PIECE-PART

STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD HAVE NO EFFECT. SECOND FAILURE "ON" WOULD ENERGIZE THE ET TUMBLE VALVE PREMATURELY WHICH COULD CAUSE LOSS OF MISSION DUE TO LOSS OF PROPELLANT.

REFERENCES: 48BM20D

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6663 ABORT: 3/1R

ITEM: MASTER EVENTS CONTROLLER #1 - CRITICAL COMMANDS

FAILURE MODE: LOSS OF OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

1) MASTER EVENTS CONTROLLER #1 - CRITICAL COMMANDS

2) 3)

4) 5)

6) 7)

8) 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/3	AOA:	3/1R
3/3	ATO:	3/1R
3/3		,
	3/3 3/1R 3/3 3/3	3/3 RTLS: 3/1R TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 54V76A13

PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,

PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF FOUR COMMAND CIRCUITS FOR MEC FUNCTIONS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY OF MEC TO INITIATE STAGING AND SEP.

REFERENCES: 76DA19H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 6664 ABORT: 2/1R

ITEM: MASTER EVENTS CONTROLLER #1 - CRITICAL COMMANDS

FAILURE MODE: INADVERTENT OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

1) MASTER EVENTS CONTROLLER #1 - CRITICAL COMMANDS

2)

3)

4) 5)

6)

7) 8)

9) 05-6

CRITICALITIES

			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	2/1R	TAL:	2/1R
ONORBIT:	3/3	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 54V76A13

PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,

PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE DEGRADATION OF PROTECTION AGAINST PREMATURE OPERATION OF CRITICAL FUNCTIONS. A SECOND FAILURE COULD CAUSE A PREMATURE INITIATION OF A CRITICAL OR NON-CRITICAL FUNCTION RESULTING IN LOSS OF CREW/MISSION/VEHICLE.

REFERENCES: 76DA19H

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6665 ABORT: 3/1R

ITEM: MASTER EVENTS CONTROLLER #2 - CRITICAL COMMANDS

FAILURE MODE: LOSS OF OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

1) MASTER EVENTS CONTROLLER #2 - CRITICAL COMMANDS

2) 3)

4)

5)

6)

7) 8)

9) 05-6

CRITTCALITTES

	CNTITCHTITIO		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION:

55V76A14

PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,

PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF FOUR COMMAND CIRCUITS FOR MEC FUNCTIONS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY OF MEC TO INITIATE STAGING AND SEP.

REFERENCES: 76DA7H

INDEPENDENT ORBITER ASSESSMENT ORBITER SUBSYSTEM ANALYSIS WORKSHEET

HIGHEST CRITICALITY HDW/FUNC DATE: 3/11/87

FLIGHT: 2/1R SUBSYSTEM: EPD&C 2/1R 6666 ABORT: MDAC ID:

MASTER EVENTS CONTROLLER #2 - CRITICAL COMMANDS ITEM:

FAILURE MODE: INADVERTENT OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MASTER EVENTS CONTROLLER #2 CRITICAL COMMANDS
- 2)
- 3)
- 4) 5)
- 6)
- 7) 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	2/1R	TAL:	2/1R
ONORBIT:	3/3	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING	: 3/3		

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 55V76A14

PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,

PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE DEGRADATION OF PROTECTION AGAINST PREMATURE OPERATION OF CRITICAL FUNCTIONS. A SECOND FAILURE COULD CAUSE A PREMATURE INITIATION OF A CRITICAL OR NON-CRITICAL FUNCTION RESULTING IN LOSS OF CREW/MISSION/VEHICLE.

REFERENCES: 76DA7H

INDEPENDENT ORBITER ASSESSMENT ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6667 ABORT: 3/1R

ITEM: MASTER EVENTS CONTROLLER #1 - NON-CRITICAL

COMMANDS

FAILURE MODE: LOSS OF OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

1) MASTER EVENTS CONTROLLER #1 - NON-CRITICAL COMMANDS

2)

3)

4) 5)

6)

7) 8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 54V76A13

PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,

PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF FOUR MONITOR CIRCUITS FOR MEC FUNCTIONS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER FOR CREW/VEHICLE SAFETY.

REFERENCES: 76DA19H

INDEPENDENT ORBITER ASSESSMENT ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6668 ABORT: 2/1R

ITEM: MASTER EVENTS CONTROLLER #1 - NON-CRITICAL

COMMANDS

FAILURE MODE: INADVERTENT OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

1) MASTER EVENTS CONTROLLER #1 - NON-CRITICAL COMMANDS

2)

3)

4)

5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	2/1R	TAL:	2/1R
ONORBIT:	3/3	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		•

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 54V76A13

PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,

PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE DEGRADATION OF PROTECTION AGAINST PREMATURE OPERATION OF CRITICAL FUNCTIONS. A SECOND FAILURE COULD CAUSE A PREMATURE INITIATION OF A CRITICAL OR NON-CRITICAL FUNCTION RESULTING IN LOSS OF CREW/MISSION/VEHICLE.

REFERENCES: 76DA19H

INDEPENDENT ORBITER ASSESSMENT ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 3/1R MDAC ID: 6669 ABORT: 3/1R

ITEM: MASTER EVENTS CONTROLLER #2 - NON-CRITICAL

COMMANDS

FAILURE MODE: LOSS OF OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

1) MASTER EVENTS CONTROLLER #2 - NON-CRITICAL COMMANDS

2)

3)

4)

5) 6)

7)

8) 9) 05-6

CRITICALITIES

HDW/FUNC	ABORT	HDW/FUNC
3/3	RTLS:	3/1R
3/1R	TAL:	3/1R
3/3	AOA:	3/1R
3/3	ATO:	3/1R
3/3		7 ===
	HDW/FUNC 3/3 3/1R 3/3 3/3	3/3 RTLS: 3/1R TAL: 3/3 AOA: 3/3 ATO:

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 55V76A14

PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,

PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF FOUR MONITOR CIRCUITS FOR MEC FUNCTIONS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER FOR CREW/VEHICLE SAFETY.

REFERENCES: 76DA7H

INDEPENDENT ORBITER ASSESSMENT ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C FLIGHT: 2/1R MDAC ID: 6670 ABORT: 2/1R

ITEM: MASTER EVENTS CONTROLLER #2 - NON-CRITICAL

COMMANDS

FAILURE MODE: INADVERTENT OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

1) MASTER EVENTS CONTROLLER #2 - NON-CRITICAL COMMANDS

2) 3)

4)

5)

6) 7)

8)

9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	2/1R	TAL:	2/1R
ONORBIT:	3/3	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		-

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 55

55V76A14

PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,

PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE DEGRADATION OF PROTECTION AGAINST PREMATURE OPERATION OF CRITICAL FUNCTIONS. A SECOND FAILURE COULD CAUSE A PREMATURE INITIATION OF A CRITICAL OR NON-CRITICAL FUNCTION RESULTING IN LOSS OF CREW/MISSION/VEHICLE.

REFERENCES: 76DA7H

APPENDIX D

POTENTIAL CRITICAL ITEMS

MDAC-ID	ITEM	FAILURE MODE
5007	FUSE, 200A TO MAIN DC DIST ASSY	FAILS OPEN
5008	1	
5017	FUSE, 200A TO APCA-4	FAILS OPEN
5018	FUSE, 200A TO APCA-4	FAILS OPEN
	FUSE, 200A TO APCA-4 FUSE, 200A TO APCA-4 SWITCH, MOTORIZED (DC TIE BUS MAIN A)	
5022	FUSE, 150A TO DC TIE BUS	FAILS OPEN
5023	FUSE, 150A TO DC TIE BUS	FAILS OPEN
5024	FUSE, 150A TO DC TIE BUS	FAILS OPEN
5025	FUSE, 150A TO DC TIE BUS FUSE, 150A TO DC TIE BUS FUSE, 150A TO DC TIE BUS SWITCH, MOTORIZED (MAIN DC BUS A F/C PWR)	FAILS OPEN
5028	FUSE, 20A TO ESS BUS 1BC	FAILS OPEN
5030	SHUNT, DC AMMETER (TO F/C 1)	FAILS OPEN
	FUSE, 20A TO ESS BUS 1BC SHUNT, DC AMMETER (TO F/C 1) SWITCH, TOGGLE SPDT (MAIN BUS TIE A)	
	SWITCH, TOGGLE SPDT (MAIN BUS TIE A)	
5053	DIODE, ISOLATION 12A DIODE, ISOLATION 12A	FAILS OPEN
5056	DIODE, ISOLATION 12A	FAILS OPEN
5059	FINE 38V	EXII & MOEN
	FUSE, 35A FUSE, 35A	FAILS OPEN
5061	FUSE, 35A	FAILS OPEN
5062	FUSE, 35A	FAILS OPEN
5064	FUSE, 5A TO RESISTORS TO MN A CONT BUS PWR, ESS BUS SOURCE 3AB, ESS	FAILS OPEN
5065	BUS SOURCE 2CA FUSE, 5A TO RMS PWR (FUSE 1),RMS HTRS (RESISTORS) & RJDA MANF DRS (FUSES 9 & 12)	FAILS OPEN
5066	DIODE, ISOLATION 12A (TO CONT BUS BC1)	FAILS OPEN
5068	•	FAILS OPEN
5070	DIODE, ISOLATION 12A (TO CONT BUS BC3)	FAILS OPEN
5082	RESISTOR, 1.2K 2W (TO MPCA-1)	FAILS OPEN
5084	SWITCH, TOGGLE SPST (MCA LOGIC MN A MID 1)	FAILS OPEN
5085	FUSE, 150A TO FPCA-1	FAILS OPEN
5086	FUSE, 150A TO FPCA-1	FAILS OPEN
5087	FUSE, 150A TO FPCA-1	FAILS OPEN
5090	RPC, 5A (FMCA-1 PWR CONT)	FAILS OFF
5091	FUSE, 150A TO MAIN DC DIST ASSY	FAILS OPEN

	ITEM	FAILURE MODE
5092	FUSE, 150A TO MAIN DC DIST ASSY	FAILS OPEN
5093	FUSE, 150A TO MAIN DC DIST ASSY	FAILS OPEN
5096	•	FAILS OPEN
5097	RESISTOR, 1.2K 2W (TO FPCA-1)	FAILS OPEN
	MN A FWD 1)	FAILS OPEN
5103	RPC, 5A (TO MMCA-1)	FAILS OPEN
	RPC, 5A (TO MMCA-1) FUSE, 35A TO H2/O2 HTR CONT ASSY #1	
	ASSY #3	FAILS OPEN
5106	FUSE, 150A TO APCA-1	FAILS OPEN
5107	FUSE, 100A TO ALCA-1	FAILS OPEN
5109	RESISTOR, 1.2K 2W (TO APCA-4)	FAILS OPEN
	FUSE, 150A TO APCA-1 FUSE, 100A TO ALCA-1 RESISTOR, 1.2K 2W (TO APCA-4) SWITCH, TOGGLE SPST (MCA LOGIC MN A AFT 1)	
5112	RPC, 5A (TO AMCA-1) RESISTOR, 1.2K 2W (TO MPCA-1) SWITCH, TOGGLE SPST (MCA LOGIC	FAILS OPEN
5114	RESISTOR, 1.2K 2W (TO MPCA-1)	FAILS OPEN
00		
5118	RPC, 5A (TO MMCA-3)	FAILS OFF
	2	
	FUSE, 200A TO MAIN DC DIST ASSY 2	
5136	SHUNT, DC AMMETER (TO F/C 2) FUSE, 20A TO ESS BUS 2CA FUSE, 200A TO DC TIE BUS FUSE, 200A TO DC TIE BUS FUSE, 150A TO DC TIE BUS FUSE, 200A TO APCA-5 FUSE, 200A TO APCA-5	FAILS OPEN
5139	FUSE, 20A TO ESS BUS 2CA	FAILS OPEN
5140	FUSE, 200A TO DC TIE BUS	FAILS OPEN
5141	FUSE, 200A TO DC TIE BUS	FAILS OPEN
5142	FUSE, 150A TO DC TIE BUS	FAILS OPEN
5143	FUSE, 150A TO DC TIE BUS	FAILS OPEN
5144	FUSE, 150A TO DC TIE BUS	FAILS OPEN
5146	FUSE, 200A TO APCA-5	FAILS OPEN
5147	FUSE, 200A TO APCA-5	FAILS OPEN
5148	SWITCH, MOTORIZED (DC TIE BUS MAIN B)	FAILS OPEN
5151	SWITCH, MOTORIZED (MAIN DC BUS B F/C PWR)	FAILS OPEN
5152	SWITCH, MOTORIZED (MAIN DC BUS C F/C PWR)	FAILS OPEN
5155	SWITCH, MOTORIZED (DC TIE BUS MAIN C)	FAILS OPEN
5176	DIODE, ISOLATION 12A	FAILS OPEN
5178	DIODE, ISOLATION 12A	FAILS OPEN
5180	SWITCH, TOGGLE SPDT (MAIN BUS	FAILS TO TRANSFER

MDAC-ID	ITEM SWITCH, TOGGLE SPDT (MAIN BUS	FAILURE MODE
5181	SWITCH, TOGGLE SPDT (MAIN BUS	INADVERTENT TRANSFER
5188	FUSE 804	FAILS OPEN
5190	FUSE 35A	FALLS OPEN
5191	FUSE. 35A	FAILS OPEN
5192	FUSE. 10A TO RMS PWR & RJDA	FAILS OPEN
5193	FUSE, 80A FUSE, 35A FUSE, 35A FUSE, 10A TO RMS PWR & RJDA FUSE, 5A TO RESISTORS TO CONT	FAILS OPEN
	3AB	
5195	FUSE, 35A	FAILS OPEN
5196	FUSE, 35A	FAILS OPEN
5205	RESISTOR, 1.2K 2W (TO FPCA-2)	FAILS OPEN
5206	FUSE, 35A FUSE, 35A RESISTOR, 1.2K 2W (TO FPCA-2) SWITCH, TOGGLE SPST (MCA LOGIC MN B FWD 2)	FAILS OPEN
5208	FUSE, 150A TO FPCA-2	FAILS OPEN
5209	FUSE, 150A TO FPCA-2	FAILS OPEN
5210	FUSE, 150A TO FPCA-2	FAILS OPEN
5213	RPC, 5A (FMCA-2 PWR CONT)	FAILS OFF
	FUSE, 150A TO FPCA-2 FUSE, 150A TO FPCA-2 FUSE, 150A TO FPCA-2 RPC, 5A (FMCA-2 PWR CONT) FUSE, 150A TO MAIN DC DIST ASSY 2	
5215	2	
	FUSE, 150A TO MAIN DC DIST ASSY 2	
5217	FUSE, 35A TO FLCA-2 RESISTOR, 1.2K 2W (TO MPCA-2)	FAILS OPEN
5220	RESISTOR, 1.2K 2W (TO MPCA-2)	FAILS OPEN
5221	SWITCH, TOGGLE SPST (MCA LOGIC MN B MID 1)	FAILS OPEN
5223	RESISTOR, 1.2K 2W (TO MPCA-2)	FAILS OPEN
	RESISTOR, 1.2K 2W (TO MPCA-2) SWITCH, TOGGLE SPST (MCA LOGIC MN B MID 2)	
5226	RESISTOR, 1.2K 2W (TO MPCA-2) SWITCH, TOGGLE SPST (MCA LOGIC	FAILS OPEN
	MN B MID 3)	
5229	RESISTOR, 1.2K 2W (TO MPCA-2) SWITCH, TOGGLE SPST (MCA LOGIC	FAILS OPEN
5231	MN B MID 4)	FAILS OPEN
5235	RPC, 5A (TO MMCA-1)	FAILS OFF
5237	RPC, 5A (TO MMCA-2)	FAILS OFF
5238	RPC, 5A (TO MMCA-3)	FAILS OFF
5241	RPC, 5A (TO MMCA-4)	FAILS OFF
5242	FUSE, 35A TO H2/O2 HTR CONT ASSY #2	FAILS OPEN
5243	FUSE, 50A TO H2/O2 HTR CONT ASSY #3	FAILS OPEN
5244	FUSE, 50A TO H2/O2 HTR CONT ASSY #4	FAILS OPEN
5245	FUSE, 150A TO APCA-2	FAILS OPEN
5246	FUSE, 100A TO ALCA-2	FAILS OPEN

MDAC-ID		•	FAILURE MODE
5248	PESISTOR 1 2K 2W (TO APCA-5)		FAILS OPEN
	RESISTOR, 1.2K 2W (TO APCA-5) SWITCH, TOGGLE SPST (MCA LOGIC MN B AFT 2)		
5251	RPC. 5A (TO AMCA-2)		FAILS OPEN
	RPC, 5A (TO AMCA-2) RESISTOR, 1.2K 2W (TO P/L AUX BUS - MPCA-1)		
	RESISTOR, 1.2K 2W (TO P/L AUX BUS - MPCA-2)		
	RESISTOR, 1.2K 2W (TO P/L CABIN BUS - MPCA-2)		
5256	RESISTOR, 1.2K 2W (TO P/L CABIN BUS - MPCA-1)		
	- · · · · · · · · · · · · · · · · · · ·		
	PAYLOAD CABIN) DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		SHORTS
	PAYLOAD CABIN) DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		
	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		
5278	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		
5279	PAYLOAD CABIN)		
5280	PAYLOAD CABIN)		
5281	PAYLOAD CARIN)		
5282	PAYLOAD CABIN)		
	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		
	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		
5285	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		FAILS OPEN
5302	DIODE, ISOLATION 35A (TO P/L PWR KILL - FC#3)		FAILS OPEN
5316	FUSE, 150A TO MAIN DC DIST ASSY 3 (PAYLOAD)		FAILS OPEN
5317	FUSE, 150A TO MAIN DC DIST ASSY 3 (PAYLOAD)		FAILS OPEN
5320	FUSE, 150A TO PAYLOAD		FAILS OPEN
5321	FUSE, 150A TO PAYLOAD		FAILS OPEN
5322	FUSE, 200A TO PAYLOAD		FAILS OPEN
5323	FUSE, 200A TO PAYLOAD		FAILS OPEN
	FUSE, 200A TO PAYLOAD		FAILS OPEN
5325	FUSE, 200A TO PAYLOAD		FAILS OPEN

MDAC-ID	DIODE, ISOLATION 35A (TO DC	FAILURE MODE
5330	DIODE, ISOLATION 35A (TO DC RETURN FROM P/L BAY)	FAILS OPEN
5333	DIODE, ISOLATION 35A (TO DC	FAILS OPEN
5336	SWITCH, MOTORIZED (F/C 3	FAILS TO TRANSFER
	STRUCTURE RETURN)	INADVERTENT TRANSFER
	FUSE, 200A TO MAIN DC DIST ASSY 3	
5347	FUSE, 200A TO MAIN DC DIST ASSY 3	
5357	SHUNT, DC AMMETER (TO F/C 3)	FAILS OPEN
5358	FUSE, 200A TO APCA-6	FAILS OPEN
5359	FUSE, 200A TO APCA-6	FAILS OPEN
5361	FUSE, 200A TO DC TIE BUS	FAILS OPEN
5362	FUSE, 200A TO DC TIE BUS	FAILS OPEN
5364	FUSE. 20A TO ESS BUS 3AB	FAILS OPEN
	FUSE, 200A TO APCA-6 FUSE, 200A TO APCA-6 FUSE, 200A TO DC TIE BUS FUSE, 200A TO DC TIE BUS FUSE, 200A TO ESS BUS 3AB SWITCH, TOGGLE SPDT (MAIN BUS TIE C)	FAILS TO TRANSFER
	TIE C)	INADVERTENT TRANSFER
5377	FUSE, 80A TO AFT P/L MN C	FAILS OPEN
5395	FUSE, 80A TO AFT P/L MN C FUSE, 35A FUSE, 35A	FAILS OPEN
5396	FUSE. 35A	FAILS OPEN
5399	FUSE, 35A FUSE, 5A TO RESISTORS TO CONT BUS MAIN C, ESS BUSSES 1BC & 2CA FUSE, 35A FUSE, 35A FUSE, 35A	FAILS OPEN
5400	FUSE, 35A	EALLS OREN
	FUSE, 35A	FALLS OPEN
	FUSE, 35A	FALLS OPEN
5407	DIODE, ISOLATION 12A (TO CONT	FAILS OPEN
5407		FAILS OPEN
5410	BUS AB1) DIODE, ISOLATION 12A (TO CONT	FAILS OPEN
5411	BUS AB2) DIODE, ISOLATION 12A (TO CONT	FAILS OPEN
5410	BUS AB3)	5411 0 OB541
5419	RESISTOR, 1.2K 2W (TO FPCA-3)	FAILS OPEN
5421	SWITCH, TOGGLE SPST (MCA LOGIC MN C FWD 3)	FAILS OPEN
5422	FUSE, 150A TO FPCA-3	FAILS OPEN
5423	FUSE, 150A TO FPCA-3	FAILS OPEN
5426	RPC, 5A (FMCA-3 PWR CONT)	FAILS OFF
5427	FUSE, 35A TO FLCA-3	FAILS OPEN
5430	RESISTOR, 1.2K 2W (TO MPCA-3)	FAILS OPEN
5431	RESISTOR, 1.2K 2W (TO MPCA-3)	FAILS OPEN
5432	SWITCH, TOGGLE SPST (MCA LOGIC MN C MID 2)	FAILS OPEN

POTENTIAL CRITICAL ITEMS (CONT'D)

MDAC-ID		FAILURE MODE
5434	SWITCH, TOGGLE SPST (MCA LOGIC MN C MID 4)	FAILS OPEN
5438	FUSE, 35A TO H2/O2 HTR CONT ASSY #1	FAILS OPEN
5439	FUSE, 35A TO H2/O2 HTR CONT	FAILS OPEN
5440	FUSE, 50A TO H2/O2 HTR CONT	FAILS OPEN
5442	RPC, 5A (TO MMCA-2)	FAILS OFF
5444	RPC, 5A (TO MMCA-4)	FAILS OFF
5445	FUSE, 150A TO APCA-3	FAILS OPEN
5446	FUSE, 100A TO ALCA-3	FAILS OPEN
5448	RESISTOR, 1.2K 2W (TO APCA-6)	FAILS OPEN
	RPC, 5A (TO MMCA-2) RPC, 5A (TO MMCA-4) FUSE, 150A TO APCA-3 FUSE, 100A TO ALCA-3 RESISTOR, 1.2K 2W (TO APCA-6) SWITCH, TOGGLE SPST (MCA LOGIC MN C AFT 3)	
5451	RPC. 5A (TO AMCA-3)	FAILS OPEN
5453	RPC, 5A (TO AMCA-3) RESISTOR, 1.2K 2W (TO ESS BUS 1BC)	FAILS OPEN
5455	SWITCH, TOGGLE 3PDT (ESS BUS	FAILS OPEN
5456	RESISTOR, 1.2K 2W (TO ESS BUS	
5477	DIODE, ISOLATION 35A (ESS BUS	
	DIODE, ISOLATION 35A (ESS BUS	
5481	DIODE, ISOLATION 35A (ESS BUS	
5484	DIODE, ISOLATION 35A (TO R1A1	
5486	FUSE, 10A TO ESS BUS 1BC FUSE, 10A TO ESS BUS 1BC FUSE, 15A TO APCA-4 FUSE, 15A TO MPCA-1 FUSE, 10A TO FPCA-1 & FLCA1	FAILS OPEN
5487	FUSE, 10A TO ESS BUS 1BC	FAILS OPEN
5489	FUSE, 15A TO APCA-4	FAILS OPEN
5492	FUSE, 15A TO MPCA-1	FAILS OPEN
5494	FUSE, 10A TO FPCA-1 & FLCA1	FAILS OPEN
5495	FUSE, 10A TO R15 PANEL	FAILS OPEN
5501		FAILS OPEN
	RESISTOR, 1.2K 2W (TO APCA-5)	FAILS OPEN
5510	SWITCH, TOGGLE SPST (AFT POD VLV LOGIC GRP 1/2)	FAILS OPEN
5512	RPC, 5A (TO RCS/OMS BC BUS)	FAILS OPEN
5514	DIODE, 12A (TO RCS/OMS BC BUS)	FAILS OPEN
5515	DIODE, 12A (TO RCS/OMS BC BUS)	SHORTS
5516	DIODE, 12A (TO RCS/OMS BC BUS)	SHORTS
5517	DIODE, 12A (TO RCS/OMS BC BUS)	FAILS OPEN
5518	SWITCH, TOGGLE 3PDT (ESS BUS	FAILS OPEN
5520	SOURCE MAIN C/A) RESISTOR, 1.2K 2W (TO ESS BUS	FAILS OPEN
3020	2CA)	$\sim 10^{-1}$

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MDAC-ID	ITEM RESISTOR, 1.2K 2W (TO ESS BUS	FAILURE MODE
	2CA \	
5542	DIODE, ISOLATION 35A (TO R1A1	FAILS OPEN
	PANEL - ESS BUS 2CA) DIODE, ISOLATION 35A (ESS BUS 2CA)	
	DIODE, ISOLATION 35A (ESS BUS 2CA)	
	DIODE, ISOLATION 35A (ESS BUS 2CA)	
5550	FUSE, 10A TO ESS BUS 2CA	FAILS OPEN
5551	FUSE, 10A TO ESS BUS 2CA	FAILS OPEN
5554	FUSE, 15A TO APCA-5	FAILS OPEN
5557	FUSE, 15A TO MPCA-2	FAILS OPEN
5558	FUSE. 10A TO FPCA-2 & FLCA-2	FAILS OPEN
5559	FUSE. 10A TO 013 & R15 PANELS	FAILS OPEN
5572	FUSE. 7.5A TO ALCA-2 (MPS)	FAILS OPEN
5573	RESISTOR, 1.2K 2W (TO APCA-6)	FAILS OPEN
5574	FUSE, 10A TO ESS BUS 2CA FUSE, 10A TO ESS BUS 2CA FUSE, 15A TO APCA-5 FUSE, 15A TO MPCA-2 FUSE, 10A TO FPCA-2 & FLCA-2 FUSE, 10A TO 013 & R15 PANELS FUSE, 7.5A TO ALCA-2 (MPS) RESISTOR, 1.2K 2W (TO APCA-6) SWITCH, TOGGLE SPST (AFT POD	FAILS OPEN
	VLV LOGIC GRP 2/3)	
5576	RPC. 5A (TO RCS/OMS CA BUS)	FAILS OPEN
5578	DIODE, 12A (TO RCS/OMS CA BUS)	FAILS OPEN
5579	DIODE, 12A (TO RCS/OMS CA BUS)	SHORTS
5580	DIODE, 12A (TO RCS/OMS CA BUS)	SHORTS
5581	DIODE, 12A (TO RCS/OMS CA BUS)	FAILS OPEN
5582	DIODE, 12A (TO RCS/OMS AB BUS)	FAILS OPEN
5583	DIODE, 12A (TO RCS/OMS AB BUS)	
5584	DIODE, 12A (TO RCS/OMS AB BUS)	
5585	DIODE, 12A (TO RCS/OMS AB BUS)	FAILS OPEN
5586	RPC, 5A (TO RCS/OMS AB BUS)	FAILS OPEN
5588	DIODE, 12A (TO RCS/OMS AB BUS) RPC, 5A (TO RCS/OMS AB BUS) SWITCH, TOGGLE SPST (AFT POD VLV LOGIC GRP 1/3)	
5590	RESISTOR, 1.2K 2W (TO APCA-4)	FAILS OPEN
5593	RESISTOR, 1.2K 2W (TO APCA-4) DIODE, ISOLATION 35A (ESS BUS 3AB)	FAILS OPEN
5596	DIODE, ISOLATION 35A (ESS BUS 3AB)	FAILS OPEN
5597	DIODE, ISOLATION 35A (ESS BUS 3AB)	FAILS OPEN
5600	DIODE, ISOLATION 35A (TO R1A1 PANEL - ESS BUS 3AB)	FAILS OPEN
5601	FUSE, 10A TO ESS BUS 3AB	FAILS OPEN
5602	FUSE, 10A TO ESS BUS 3AB	FAILS OPEN
5603	FUSE, 7.5A	FAILS OPEN
5605	FUSE, 15A TO APCA-6	FAILS OPEN
5608	FUSE, 15A TO MPCA-3	FAILS OPEN
5609	FUSE, 10A TO FPCA-3 & FLCA-3	FAILS OPEN
5610	FUSE, 10A TO 013 PANEL	FAILS OPEN
5611	FUSE, 7.5A	FAILS OPEN
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MDAC-ID	ITEM	FAILURE MODE
5621	FUSE, 7.5A TO ALCA-3 (MPS) RESISTOR, 1.2K 2W (TO ESS BUS 3AB)	FAILS OPEN
5626	RESISTOR, 1.2K 2W (TO ESS BUS 3AB)	FAILS OPEN
5627	RESISTOR, 1.2K 2W (TO ESS BUS	FAILS OPEN
	SWITCH, TOGGLE 3PDT (ESS BUS SOURCE MAIN A/B)	
	RESISTOR, 1.2K 2W (TO CONT BUSSES AB & CA RESET)	
5684	BUSSES AB & CA RESET) RESISTOR, 1.2K 2W (TO CONT BUSSES AB & BC RESET)	FAILS OPEN
5685	BUSSES AB & BC RESET) RESISTOR, 1.2K 2W (TO CONT BUSSES CA & BC RESET)	FAILS OPEN
5693	DIODE, ISOLATION 12A (TO CONT	FAILS OPEN
	BUS AB1) DIODE, ISOLATION 12A (TO CONT BUS AB1)	SHORTS
5695	DIODE, ISOLATION 12A (TO CONT BUS CA1)	SHORTS
5696	DIODE, ISOLATION 12A (TO CONT BUS CA1)	FAILS OPEN
5697	DIODE, ISOLATION 12A (TO CONT BUS AB2)	FAILS OPEN
5698	DIODE, ISOLATION 12A (TO CONT	SHORTS
5699	DIODE, ISOLATION 12A (TO CONT BUS CA2)	SHORTS
5700	DIODE, ISOLATION 12A (TO CONT BUS CA2)	FAILS OPEN
5701	DIODE, ISOLATION 12A (TO CONT BUS AB3)	FAILS OPEN
5702	DIODE, ISOLATION 12A (TO CONT BUS AB3)	SHORTS
	DIODE, ISOLATION 12A (TO CONT BUS CA3)	SHORTS
5704	DIODE, ISOLATION 12A (TO CONT BUS CA3)	FAILS OPEN
5715	HYBRID DRIVER TYPE I (CONT BUS	FAILS OFF
5717	HYBRID DRIVER TYPE I (CONT BUS CA2 & AB2)	FAILS OFF
5719	HYBRID DRIVER TYPE I (CONT BUS CA3 & AB3)	FAILS OFF
5721	HYBRID DRIVER TYPE I (CONT BUS BC1 & AB1)	FAILS OFF
5723	HYBRID DRIVER TYPE I (CONT BUS BC2 & AB2)	FAILS OFF
5725	HYBRID DRIVER TYPE I (CONT BUS BC3 & AB3)	FAILS OFF

MDAC-ID	ITEM	FAILURE MODE
5727	HYBRID DRIVER TYPE I (CONT BUS BC1 & CA1)	FAILS OFF
5729	· ·	FAILS OFF
5731		FAILS OFF
5739	DIODE, ISOLATION 12A (TO CONT BUS AB1)	FAILS OPEN
5740	DIODE, ISOLATION 12A (TO CONT BUS AB1)	SHORTS
5741	DIODE, ISOLATION 12A (TO CONT	
	DIODE, ISOLATION 12A (TO CONT BUS BC1)	
5743	DIODE, ISOLATION 12A (TO CONT BUS BC2)	FAILS OPEN
5744	DIODE, ISOLATION 12A (TO CONT BUS BC2)	SHORTS
5745	DIODE, ISOLATION 12A (TO CONT BUS AB2)	SHORTS
5746	DIODE, ISOLATION 12A (TO CONT BUS AB2)	FAILS OPEN
5747	DIODE, ISOLATION 12A (TO CONT BUS BC3)	FAILS OPEN
5748	DIODE, ISOLATION 12A (TO CONT BUS BC3)	SHORTS
5749	DIODE, ISOLATION 12A (TO CONT BUS AB3)	SHORTS
5750	DIODE, ISOLATION 12A (TO CONT BUS AB3)	FAILS OPEN
5769	DIODE, ISOLATION 12A (TO CONT BUS CA1)	FAILS OPEN
5770	DIODE, ISOLATION 12A (TO CONT BUS CA1)	SHORTS
5771	DIODE, ISOLATION 12A (TO CONT BUS BC1)	SHORTS
5772	DIODE, ISOLATION 12A (TO CONT BUS BC1)	FAILS OPEN
5773	DIODE, ISOLATION 12A (TO CONT BUS CA2)	FAILS OPEN
5774	DIODE, ISOLATION 12A (TO CONT BUS CA2)	SHORTS
5775	DIODE, ISOLATION 12A (TO CONT BUS BC2)	SHORTS
5776	DIODE, ISOLATION 12A (TO CONT BUS BC2)	FAILS OPEN
5777	DIODE, ISOLATION 12A (TO CONT BUS CA3)	FAILS OPEN

MDAC-ID	ITEM	FAILURE MODE
5778	DIODE, ISOLATION 12A (TO CONT BUS CA3)	SHORTS
5779	DIODE, ISOLATION 12A (TO CONT BUS BC3)	SHORTS
5780	DIODE, ISOLATION 12A (TO CONT BUS BC3)	FAILS OPEN
5788	DIODE, ISOLATION 12A (TO CONT BUS BC3) FUSE, 1A TO P/L RETENTION LATCHES SYS 1 FUSE, 1A TO P/L RETENTION LATCHES SYS 2 FUSE, 5A TO CONT BUS AB1 FUSE, 5A TO CONT BUS AB2 FUSE, 5A TO CONT BUS BC1 FUSE, 5A TO CONT BUS BC1 FUSE, 5A TO CONT BUS BC3 FUSE, 5A TO CONT BUS BC3 FUSE, 5A TO CONT BUS CA1 FUSE, 5A TO CONT BUS CA2 FUSE, 5A TO CONT BUS CA2 FUSE, 5A TO CONT BUS CA3 FUSE, 5A TO CONT BUS CA2 FUSE, 1A TO MMCA-1 & 2 FUSE, 1A TO MMCA-1 & 2 FUSE, 1A TO MMCA-2 FUSE, 1A TO MMCA-2 FUSE, 1A TO MMCA-2 & 1 FUSE, 1A TO MMCA-4 & 3 FUSE, 1A TO MACA-4 & 3 FUSE	FAILS OPEN
5789	FUSE, 1A TO P/L RETENTION LATCHES SYS 2	FAILS OPEN
5790	FUSE, 5A TO CONT BUS AB1	FAILS OPEN
5791	FUSE, 5A TO CONT BUS AB2	FAILS OPEN
5792	FUSE, 5A TO CONT BUS AB3	FAILS OPEN
5793	FUSE, 5A TO CONT BUS BC1	FAILS OPEN
5794	FUSE, 5A TO CONT BUS BC2	FAILS OPEN
5795	FUSE, 5A TO CONT BUS BC3	FAILS OPEN FAILS OPEN
5796	FUSE, 5A TO CONT BUS CA1	FAILS OPEN
5797	FUSE, 5A TO CONT BUS CA2	FAILS OPEN
5798	FUSE, 5A TO CONT BUS CA3	FAILS OPEN
5799	FUSE, 1A TO MMCA-1 & 2	FAILS OPEN
5800	FUSE, 1A TO MMCA-1 & 2	FAILS OPEN
5801	FUSE, 1A TO MMCA-2	FAILS OPEN
5802	FUSE, 1A TO MMCA-2	FAILS OPEN
5803	FUSE, 1A TO MMCA-2 & 1	FAILS OPEN FAILS OPEN
5804	FUSE, 1A TO MMCA-2 & 1	FAILS OPEN
5805	FUSE, 1A TO MMCA-4 & 3	FAILS OPEN
5805	FUSE, IA TO MINICATA & 3	FAILS OPEN FAILS OPEN
5807	FUSE, IA TO MMCA-4 & 3	FAILS OPEN
58U8 -5808	FUSE, IA TO MINICATA & 3	FAILS OPEN
5809	FUSE, IA TO MMCA-4 & 3	FAILS OPEN
5010	DIODE ISOLATION 3A	FAILS OPEN
5912	DIODE ISOLATION 3A	SHORTS
5813	DIODE ISOLATION 3A	SHORTS
5814	DIODE, ISOLATION 3A	FAILS OPEN
5815	DIODE. ISOLATION 3A	FAILS OPEN
5816	DIODE, ISOLATION 3A	SHORTS
5817	DIODE, ISOLATION 3A	SHORTS
5818	DIODE, ISOLATION 3A	FAILS OPEN
5819	DIODE, ISOLATION 3A	FAILS OPEN
5820	DIODE, ISOLATION 3A	SHORTS
5821	DIODE, ISOLATION 3A	SHORTS
5822	DIODE, ISOLATION 3A	FAILS OPEN
5823	DIODE, ISOLATION 3A	FAILS OPEN
5824	DIODE, ISOLATION 3A	SHORTS
5825	DIODE, ISOLATION 3A	SHORTS
5826	DIODE, ISOLATION 3A	FAILS OPEN
5827	SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 1)	FAILS OPEN OR SHORTS TO CASE

MDAC-ID	SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 2) FUSE, 80A TO INV 1 A FUSE, 80A TO INV 1 B FUSE, 80A TO INV 1 C DIODE, BLOCKING 1A (TO 1 A RESET)	FAILURE MODE
5830	SWITCH TOGGLE APRI (P/I RAY	FALLS OPEN OR
0000	MECH PWR SYS 2)	SHORTS TO CASE
5867	FUSE. 80A TO INV 1 A	FAILS OPEN
5868	FUSE. 80A TO INV 1 B	FAILS OPEN
5869	FUSE. 80A TO INV 1 C	FAILS OPEN
5913	DIODE, BLOCKING 1A (TO 1 A	SHORTS
	RESET)	
5916	DIODE, BLOCKING 1A (TO 1 B	SHORTS
	RESET)	
5017	DIODE BLOCKING 14 (TO 1 C	SHORTS
	RESET) FUSE, 3A TO AC BUS 1 A FUSE, 3A TO AC BUS 1 B FUSE, 3A TO AC BUS 1 C CIRCUIT BREAKER TO FMCA-1 CIRCUIT BREAKER TO MMCA-1 CIRCUIT BREAKER TO MMCA-3 CIRCUIT BREAKER TO AMCA-1 RELAY TO PLBD AC1 RELAY TO PLBD AC1 RELAY TO PLBD AC1 RELAY TO PLBD AC1 RELAY, 4P TO PLBM-AC1 FUSE, 80A TO INV 2 A FUSE, 80A TO INV 2 B FUSE, 80A TO INV 2 C DIODE, BLOCKING 1A (TO 2 A RESET)	
5941	FUSE, 3A TO AC BUS 1 A	FAILS OPEN
5942	FUSE, 3A TO AC BUS 1 B	FAILS OPEN
5943	FUSE, 3A TO AC BUS 1 C	FAILS OPEN
5966	CIRCUIT BREAKER TO FMCA-1	FAILS OPEN
5968	CIRCUIT BREAKER TO MMCA-1	FAILS OPEN
5970	CIRCUIT BREAKER TO MMCA-3	FAILS OPEN
5972	CIRCUIT BREAKER TO AMCA-1	FAILS OPEN
5980	RELAY TO PLBD AC1	FAILS OPEN
5982	RELAY TO PLBD AC1	FAILS OPEN
5984	RELAY TO PLBD AC1	FAILS OPEN
5986	RELAY TO PLBD AC1	FAILS OPEN
5988	RELAY, 4P TO PLBM-AC1	FAILS OPEN
5989	RELAY, 4P TO PLBM-AC1	FAILS CLOSED
5990	RELAY, 4P TO PLBM-AC1	FAILS OPEN
5991	RELAY. 4P TO PLBM-AC1	FAILS CLOSED
5992	RELAY, 4P TO PLBM-AC1	FAILS OPEN
5993	RELAY, 4P TO PLBM-AC1	FAILS CLOSED
5994	RELAY, 4P TO PLBM-AC1	FAILS OPEN
599 5	RELAY, 4P TO PLBM-AC1	FAILS CLOSED
6032	FUSE, 80A TO INV 2 A	FAILS OPEN
6033	FUSE, 80A TO INV 2 B	FAILS OPEN
6034	FUSE, 80A TO INV 2 C	FAILS OPEN
6092	DIODE, BLOCKING 1A (TO 2 A	SHORTS
	RESET)	
6095	DIODE, BLOCKING 1A (TO 2 B	SHORTS
	RESET)	
6096	DIODE, BLOCKING 1A (TO 2 C	SHORTS
	RESET)	
6104	FUSE, 3A TO AC BUS 2 A	FAILS OPEN
6105	FUSE, 3A TO AC BUS 2 B	FAILS OPEN
6106	FUSE, 3A TO AC BUS 2 C	FAILS OPEN
6144	CIRCUIT BREAKER TO FMCA-2	FAILS OPEN
6147	CIRCUIT BREAKER TO MMCA-1	FAILS OPEN
6148	CIRCUIT BREAKER TO MMCA-2	FAILS OPEN
6151	CIRCUIT BREAKER TO MMCA-3	FAILS OPEN
6152	CIRCUIT BREAKER TO MMCA-4	FAILS OPEN
6155	CIRCUIT BREAKER TO AMCA-2	FAILS OPEN
6156	RELAY, 4P TO PLBM-AC2	FAILS OPEN

MDAC-1D	ITEM	FAILURE MODE
6157 6158 6159 6160 6163 6164 6165 6166 6167 6168 6171 6172 6173 6174	RELAY, 4P TO PLBM-AC2 RELAY, 4P TO PLBM-AC2 RELAY, 4P TO PLBM-AC2 RELAY TO PLBD AC2 RELAY TO PLBD AC2 RELAY, 4P TO PLBM-AC2 RELAY TO PLBD AC2 RELAY TO PLBD AC2 RELAY TO PLBD AC2 RELAY, 4P TO PLBM-AC2 FUSE, 80A TO INV 3 A FUSE, 80A TO INV 3 B FUSE, 80A TO INV 3 C DIODE, BLOCKING 1A (TO 3 B	FAILS CLOSED FAILS OPEN FAILS OPEN FAILS OPEN FAILS OPEN FAILS CLOSED FAILS CLOSED FAILS OPEN FAILS OPEN FAILS OPEN FAILS OPEN FAILS OPEN FAILS OPEN FAILS CLOSED FAILS CLOSED FAILS CLOSED
6175	RELAY, 4P TO PLBM-AC2	FAILS OPEN
6212	FUSE, 80A TO INV 3 A	FAILS OPEN
6213 6214	FUSE, SOA TO INV 3 C	FAILS OPEN
6273	DIODE, BLOCKING 1A (TO 3 A	SHORTS
	RESET)	
0270	RESET)	
6277	DIODE, BLOCKING 1A (TO 3 C RESET)	SHORTS
6302	RESET) FUSE, 3A TO AC BUS 3 A FUSE, 3A TO AC BUS 3 B FUSE, 3A TO AC BUS 3 C CIRCUIT BREAKER TO FMCA-3 CIRCUIT BREAKER TO MMCA-2 CIRCUIT BREAKER TO MMCA-4 CIRCUIT BREAKER TO AMCA-3 RELAY TO PLBD AC3 RELAY TO PLBM-AC3 RELAY 4P TO PLBM-AC3	FAILS OPEN
6303	FUSE, 3A TO AC BUS 3 B	FAILS OPEN
6304	FUSE, 3A TO AC BUS 3 C	FAILS OPEN
6328	CIRCUIT BREAKER TO FMCA-3	FAILS OPEN
6330	CIRCUIT BREAKER TO MMCA-2	FAILS OPEN
6332	CIRCUIT BREAKER TO MMCA-4	FAILS OPEN
6334	CIRCUIT BREAKER TO AMCA-3	FAILS OPEN
6336	RELAY TO PLBD AC3	FAILS OPEN
6338	RELAY TO PLBD AC3	FAILS OPEN
6340	RELAY TO PLBD AC3	FAILS OPEN
6342	RELAY TO PLBD AC3	FAILS OPEN
6344	RELAY, 4P TO PLBM-AC3	FAILS CLOSED
00.0		FAILS CLOSED
6346	RELAY, 4P TO PLBM-AC3	FAILS CLOSED
6347	RELAY, 4P TO PLBM-AC3	FAILS OPEN
6348	RELAY, 4P TO PLBM-AC3	FAILS CLOSED
6349	RELAY, 4P TO PLBM-AC3	FAILS OPEN
6350	RELAY, 4P TO PLBM-AC3	FAILS CLOSED
6351	RELAY, 4P TO PLBM-AC3	FAILS CLOSED
6352	RESISTOR, 1.2K 2W (TO MEC #1)	FAILS OPEN
6353	RESISTOR, 1.2K 2W (TO MEC #1)	FAILS OPEN
6354	RESISTOR, 1.2K 2W (TO MEC #2) RESISTOR, 1.2K 2W (TO MEC #2)	FAILS OPEN
6355		FAILS OPEN
6362	RPC, 10A TO MEC #2 RPC, 10A TO MEC #2	FAILS OPEN
6364	AFC, ICA IC MEC WE	· · · · · · · · · · · · · · · · · · ·

MDAC-ID	RPC, 10A TO MEC #1 RPC, 10A TO MEC #1 DIODE, ISOLATION 12A (TO CONT	FAILURE MODE
6366	RPC 10A TO MEC #1	FAILS OPEN
6368	RPC. 10A TO MEC #1	FAILS OPEN
	RIS CATA	
6373	DIODE, ISOLATION 12A (TO CONT	
6374	DIODE, ISOLATION 12A (TO CONT	FAILS OPEN
6377	BUS CA3) DIODE, ISOLATION 12A DIODE, ISOLATION 12A HYBRID DRIVER TYPE I TO APCA-1 HYBRID DRIVER TYPE I TO APCA-1 HYBRID DRIVER TYPE I HYBRID DRIVER TYPE I HYBRID DRIVER TYPE I HYBRID DRIVER TYPE II APCA-3	FAILS OPEN
6378	DIODE, ISOLATION 12A	FAILS OPEN
6530	HYBRID DRIVER TYPE I TO APCA-1	FAILS OFF
6532	HYBRID DRIVER TYPE I TO APCA-1	FAILS OFF
6534	HYBRID DRIVER TYPE I	FAILS OFF
6536	HYBRID DRIVER TYPE I	FAILS OFF
6538	HYBRID DRIVER TYPE II TO APCA-1	FAILS OFF
	G ALCA-3	
	HYBRID DRIVER TYPE II TO APCA-1 & APCA-3	
6542	HYBRID DRIVER TYPE II TO APCA-2 & APCA-3	FAILS OFF
6544	HYBRID DRIVER TYPE II TO APCA-2 & APCA-3	FAILS OFF
6546	HYBRID DRIVER TYPE V TO HYBRID	FAILS OFF
6548	DRIVER TYPE II HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II	FAILS OFF
6550	HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II	FAILS OFF
6552	HYBRID DRIVER TYPE V TO HYBRID	
6562	RESISTOR, 15K TO ALCA-3	FAILS OPEN
6563	RESISTOR, 15K TO ALCA-3	FAILS OPEN
6564	RESISTOR, 15K TO ALCA-3	FAILS OPEN
6565	RESISTOR, 15K TO ALCA-3	FAILS OPEN
6586	RPC, 20A TO ORB BUS C	FAILS OFF
6588	RESISTOR, 15K TO ALCA-3 RPC, 20A TO ORB BUS C RPC, 20A TO ORB BUS C	FAILS OFF
6590	RPC, 20A TO ORB BUS C	FAILS OFF
6592	RPC, 20A TO ORB BUS C	FAILS OFF
6602	DIODE TO ORB BUS C	FAILS OPEN
6604	DIODE TO ORB BUS C	FAILS OPEN
6606	DIODE TO ORB BUS C	FAILS OPEN
6608	DIODE TO ORB BUS C	FAILS OPEN
6622	RELAY TO DIA BUS	FAILS TO TRANSFER
6623	RELAY TO DIA BUS	INADVERTENT TRANSFER
6624	RELAY TO DIA BUS	FAILS TO TRANSFER
6625	RELAY TO DIA BUS	INADVERTENT TRANSFER
6626	RELAY TO OIB BUS	FAILS TO TRANSFER
6627	RELAY TO OIB BUS	INADVERTENT TRANSFER
6628	RELAY TO OIB BUS	FAILS TO TRANSFER

MDAC-ID ITEM G629 RELAY TO OIB BUS G648 SWITCH, PUSHBUTTON (ET SEP) G650 SWITCH, PUSHBUTTON (ET SEP) G651 SWITCH, PUSHBUTTON (SRB SEP) G651 SWITCH, PUSHBUTTON (SRB SEP) G652 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) G653 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) G654 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) G655 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) G656 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) G656 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) G657 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) G660 HYBRID DRIVER TYPE III TO ET TUMBLE CKT G661 MASTER EVENTS CONTROLLER *1 - CRITICAL COMMANDS G662 MASTER EVENTS CONTROLLER *2 - CRITICAL COMMANDS G663 MASTER EVENTS CONTROLLER *1 - NON-CRITICAL COMMANDS G664 MASTER EVENTS CONTROLLER *1 - NON-CRITICAL COMMANDS G667 MASTER EVENTS CONTROLLER *2 - NON-CRITICAL COMMANDS G670 MASTER EVENTS CONTROLLER *2 - NON-CRITICAL COMMANDS	MDA	AC-ID ITEM	FAILURE MODE
SWITCH, PUSHBUTTON (SRB SEP) 6650 SWITCH, PUSHBUTTON (SRB SEP) 6651 SWITCH, PUSHBUTTON (SRB SEP) 6652 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6653 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6654 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6655 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6656 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6657 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6657 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6660 HYBRID DRIVER TYPE III TO ET TUMBLE CKT 6661 HYBRID DRIVER TYPE III TO ET TUMBLE CKT 6662 HYBRID DRIVER TYPE III TO ET FAILS ON TUMBLE CKT 6664 MASTER EVENTS CONTROLLER #1 - CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER #2 - CRITICAL COMMANDS 6660 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER 6670 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER	662	P9 RELAY TO OIB BUS	INADVERTENT TRANSFER
SWITCH, PUSHBUTTON (SRB SEP) 6650 SWITCH, PUSHBUTTON (SRB SEP) 6651 SWITCH, PUSHBUTTON (SRB SEP) 6652 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6653 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6654 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6655 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6656 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6657 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6657 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6660 HYBRID DRIVER TYPE III TO ET TUMBLE CKT 6661 HYBRID DRIVER TYPE III TO ET TUMBLE CKT 6662 HYBRID DRIVER TYPE III TO ET FAILS ON TUMBLE CKT 6664 MASTER EVENTS CONTROLLER #1 - CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER #2 - CRITICAL COMMANDS 6660 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER 6670 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER	664	8 SWITCH, PUSHBUTTON (ET SEP)	FAILS ON
6651 SWITCH, PUSHBUTTON (SRB SEP) 6652 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6653 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6654 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6655 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6656 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6656 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6657 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6650 HYBRID DRIVER TYPE III TO ET TUMBLE CKT 6662 HYBRID DRIVER TYPE III TO ET TUMBLE CKT 6664 MASTER EVENTS CONTROLLER *1 - CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER *2 - CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER *1 - INADVERTENT TRANSFER 6670 MASTER EVENTS CONTROLLER *1 - INADVERTENT TRANSFER	664	switch, Pushbutton (ET SEP)	FAILS OFF
6651 SWITCH, PUSHBUTTON (SRB SEP) 6652 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6653 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6654 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6655 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6656 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6656 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6657 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6650 HYBRID DRIVER TYPE III TO ET TUMBLE CKT 6662 HYBRID DRIVER TYPE III TO ET TUMBLE CKT 6664 MASTER EVENTS CONTROLLER *1 - CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER *2 - CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER *1 - INADVERTENT TRANSFER 6670 MASTER EVENTS CONTROLLER *1 - INADVERTENT TRANSFER	665	SO SWITCH, PUSHBUTTON (SRB SEP)	FAILS ON
(ET SEP SLCT) 6653 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6654 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6655 SWITCH, TOGGLE 3P2P (SRB SEP 6656 SWITCH, TOGGLE 3P2P (SRB SEP 6656 SWITCH, TOGGLE 3P2P (SRB SEP 6657 SWITCH, TOGGLE 3P2P (SRB SEP 6657 SWITCH, TOGGLE 3P2P (SRB SEP 6660 HYBRID DRIVER TYPE III TO ET 6660 HYBRID DRIVER TYPE III TO ET 6662 HYBRID DRIVER TYPE III TO ET 6664 MASTER EVENTS CONTROLLER *1 - 6665 CRITICAL COMMANDS 6666 MASTER EVENTS CONTROLLER *2 - 6668 MASTER EVENTS CONTROLLER *1 - 6668 MASTER EVENTS CONTROLLER *1 - 6668 MASTER EVENTS CONTROLLER *2 - 6668 MASTER EVENTS CONTROLLER *2 - 6670 INADVERTENT TRANSFER	665	SI SWITCH, PUSHBUTTON (SRB SEP)	FAILS OFF
6653 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6654 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6655 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6656 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6656 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6657 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6660 HYBRID DRIVER TYPE III TO ET TUMBLE CKT 6662 HYBRID DRIVER TYPE III TO ET FAILS ON TUMBLE CKT 6664 MASTER EVENTS CONTROLLER #1 - CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER #2 - CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER 6670 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER		(ET SEP SLCT)	
6654 SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT) 6655 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6656 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6657 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6657 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6660 HYBRID DRIVER TYPE III TO ET TUMBLE CKT 6662 HYBRID DRIVER TYPE III TO ET TUMBLE CKT 6664 MASTER EVENTS CONTROLLER #1 - CRITICAL COMMANDS 6666 MASTER EVENTS CONTROLLER #2 - CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER #1 - NON-CRITICAL COMMANDS 6670 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER NON-CRITICAL COMMANDS INADVERTENT TRANSFER		SWITCH, TOGGLE 3P2P LEVER LOCK	
6655 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6656 SWITCH, TOGGLE 3P2P (SRB SEP FAILS ON SLCT) 6657 SWITCH, TOGGLE 3P2P (SRB SEP FAILS OFF - SHORTS POL SLCT) 6657 SWITCH, TOGGLE 3P2P (SRB SEP FAILS OFF - SHORTS POL SLCT) 6660 HYBRID DRIVER TYPE III TO ET FAILS ON TUMBLE CKT 6662 HYBRID DRIVER TYPE III TO ET FAILS ON TUMBLE CKT 6664 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER 6666 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER 6668 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER 6670 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER	665	SWITCH, TOGGLE 3P2P LEVER LOCK	FAILS OFF - SHORTS POL TO POLE OR GND
6656 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6657 SWITCH, TOGGLE 3P2P (SRB SEP FAILS OFF - SHORTS POL SLCT) 6660 HYBRID DRIVER TYPE III TO ET FAILS ON TUMBLE CKT 6662 HYBRID DRIVER TYPE III TO ET FAILS ON TUMBLE CKT 6664 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER CRITICAL COMMANDS 6666 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER NON-CRITICAL COMMANDS 6670 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER	665	SS SWITCH, TOGGLE 3P2P (SRB SEP	
6657 SWITCH, TOGGLE 3P2P (SRB SEP SLCT) 6660 HYBRID DRIVER TYPE III TO ET FAILS ON TUMBLE CKT 6662 HYBRID DRIVER TYPE III TO ET FAILS ON TUMBLE CKT 6664 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER CRITICAL COMMANDS 6666 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER NON-CRITICAL COMMANDS 6670 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER	665	S6 SWITCH, TOGGLE 3P2P (SRB SEP	FAILS ON
6660 HYBRID DRIVER TYPE III TO ET TUMBLE CKT 6662 HYBRID DRIVER TYPE III TO ET FAILS ON TUMBLE CKT 6664 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER CRITICAL COMMANDS 6666 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER NON-CRITICAL COMMANDS 6670 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER	665	ST SWITCH, TOGGLE 3P2P (SRB SEP	TO POLE OR GND
HYBRID DRIVER TYPE III TO ET TUMBLE CKT 6664 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER CRITICAL COMMANDS 6666 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER NON-CRITICAL COMMANDS 6670 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER	666	O HYBRID DRIVER TYPE III TO ET	
6664 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER CRITICAL COMMANDS 6666 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER NON-CRITICAL COMMANDS 6670 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER	666	2 HYBRID DRIVER TYPE III TO ET	FAILS ON
6666 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER CRITICAL COMMANDS 6668 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER NON-CRITICAL COMMANDS 6670 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER	666	MASTER EVENTS CONTROLLER #1 -	INADVERTENT TRANSFER
6668 MASTER EVENTS CONTROLLER #1 - INADVERTENT TRANSFER NON-CRITICAL COMMANDS 6670 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER	666	66 MASTER EVENTS CONTROLLER #2 -	INADVERTENT TRANSFER
6670 MASTER EVENTS CONTROLLER #2 - INADVERTENT TRANSFER	666	MASTER EVENTS CONTROLLER #1 -	INADVERTENT TRANSFER
HOH-CHI I ICAL COMMANDO	667		INADVERTENT TRANSFER

1.0 EXECUTIVE SUMMARY

The McDonnell Douglas Astronautics Company (MDAC) was selected in June 1986 to perform an Independent Orbiter Assessment (IOA) of the Failure Modes and Effects Analysis (FMEA) and Critical Items List (CIL). Direction was given by the STS Orbiter and GFE Projects Office to perform the hardware analysis using the instructions and ground rules defined in NSTS 22206, Instructions for Preparation of FMEA and CIL, 10 October 1986. The IOA approach features a top-down analysis of the hardware to determine failure modes, criticality, and potential critical items. To preserve independence, this analysis was accomplished without reliance upon the results contained within the NASA FMEA/CIL documentation. This report documents (Appendix C) the independent analysis results corresponding to the Orbiter Electrical Power Distribution and Control (EPD&C) hardware.

The EPD&C hardware performs the functions of distributing, sensing, and controlling 28 volt DC power and of inverting, distributing, sensing, and controlling 117 volt 400 Hz AC power to all Orbiter subsystems from the three fuel cells in the Electrical Power Generation (EPG) subsystem. The EPD&C subsystem hardware components were grouped and analyzed according to their physical location in their hardware assemblies, as follows:

o Main DC Distribution Assemblies (MDDA) 1, 2, and 3 o Mid Power Control Assemblies (MPCA) 1, 2, and 3 o Mid Motor Control Assemblies (MMCA) 1, 2, and 4 o Aft Power Control Assemblies (APCA) 4, 5, and 6 o Aft Power Control Assemblies (APCA) 1, 2, and 3 o Aft Load Control Assemblies (ALCA) 1, 2, and 3 o Aft Motor Control Assemblies (AMCA) 1, 2, and 3 o Forward Power Control Assemblies (FPCA) 1, 2, and 3 o Forward Load Control Assemblies (FPCA) 1, 2, and 3 o Forward Motor Control Assemblies (FMCA) 1, 2, and 3 o Forward Motor Control Assemblies (FMCA) 1, 2, and 3 o AC Generation & Distribution Assemblies (AGDA) 1, 2, and 3 o Flight Deck Panel Controls & Displays (FDPC&D) o Mid Deck Panel Controls & Displays (MDPC&D)

o Mid Deck Panel Controls & Displays (MDPC&D)

Master Event Controllers, Annunciator Control
Assemblies, and Current Sensors (MISC)

The IOA analysis process utilized available EPD&C hardware drawings and schematics for defining hardware assemblies, components, and hardware items. Each level of hardware was evaluated and analyzed for possible failure modes and effects. Criticality was assigned based upon the severity of the effect for each failure mode.

Volume 2 continues the presentation of IOA analysis worksheets and contains the potential critical items list.

Figure 1 presents a summary of the failure criticalities for each of the fourteen subdivisions of the EPD&C. A summary of the number of failure modes, by criticality, is also presented below with Hardware (HW) criticality first and Functional (F) criticality second.

Summary	of	IOA	Fai	ilure	Modes	Ву	Cri	ticali	ty (H	W/F)
Criticality	:	1/3	L	2/1R	2/2	3,	/1R	3/2R	3/3	TOTAL
Number	:	12	2	136	 -	4	78	69	976	1671

For each failure mode identified, the criticality and redundancy screens were examined to identify critical items. A summary of Potential Critical Items (PCIs) is presented as follows:

Summary or	f IOA	Poter	ntial	Critic	al Ite	ms (H	W/F)
Criticality	:	1/1	2/1R	2/2	3/1R	3/2R	TOTAL
Number	:	12	136	-	292	28	468

Of the one thousand six hundred seventy-one (1671) failure modes analyzed, nine (9) single failures were determined to result in loss of crew or vehicle. Three (3) single failures unique to intact abort were determined to result in possible loss of the crew or vehicle. A possible loss of mission could result if any of one hundred thirty-six (136) single failures occurred. Six (6) of the criticality 1/1 failures are in two rotary and two pushbutton switches that control External Tank and Solid Rocket Booster separation. The other six (6) criticality 1/1 failures are fuses, one each per Aft Power Control Assembly (APCA) 4, 5, and 6 and one each per Forward Power Control Assembly (FPCA) 1, 2, and 3, that supply power to certain Main Propulsion System (MPS) valves and Forward Reaction Control System (RCS) circuits.