INDEPENDENT ORBITER ASSESSMENT

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

3 APRIL 1987
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 2/1R
MDAC ID: 5803  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 CA2
2) R13A2 Panel
3) Fuse, 1A to MMCA-2 & 1
4) Fuse, 1A to MMCA-2 & 1
5) Fuse, 1A to MMCA-2 & 1
6) Fuse, 1A to MMCA-2 & 1
7) Fuse, 1A to MMCA-2 & 1
8) Fuse, 1A to MMCA-2 & 1
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BC14F

REPORT DATE 03/31/87  C-805
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
ABORT: 2/1R

SUBSYSTEM: EPD&C
MDAC ID: 5804

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
LIFTOFF: 2/1R AOA: 2/1R
DEORBIT: 3/3 ATO: 2/1R
LANDING/SAFING: 3/3


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.

REFERENCES: 76BC14F

REPORT DATE 03/31/87 C-806
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5805

ITEM: FUSE, 1A TO MMCA-4 & 3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: 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

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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.

REFERENCES: 76BC14E

REPORT DATE 03/31/87   C-807
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5806

HIGHEST CRITICALITY FLIGHT: 2/1R
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 AB1
2) R13A2 PANEL
3) FUSE, 1A TO MMCA-4 & 3
4)
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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.

REFERENCES: 76BC14E

REPORT DATE 03/31/87 C-808
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C
MDAC ID: 5807

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 2/IR
ABORT: 2/IR

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

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


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.

REFERENCES: 76BC14D

REPORT DATE 03/31/87 C-809
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5808

ITEM: FUSE, 1A TO MMCA-4 & 3
FAILURE MODE: FAILS OPEN

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

BREAKDOWN HIERARCHY:
1) CONT BUS BCl
2) R13A2 PANEL
3) FUSE, 1A TO MMCA-4 & 3
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6) ...
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8) ...
9) 05-6

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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.

REFERENCES: 76BC14C

REPORT DATE 03/31/87 C-810
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5809

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 2/1R
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
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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.

REFERENCES: 76BC14B

REPORT DATE 03/31/87 C-811
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5810

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
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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.

REFERENCES: 76BC14B
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

CRITICALITIES

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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.

REFERENCES: 76BC14H

REPORT DATE 03/31/87 C-813
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC FLIGHT: 3/1R
ABORT: 3/3

SUBSYSTEM: EPD&C

MDAC ID: 5812

ITEM: DIODE, ISOLATION 3A

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

ABORT HDW/FUNC

3/IR 3/3

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) CONT BUS AB1
2) R13A2 PANEL
3) DIODE, ISOLATION 3A
4)
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9) 05-6

CRITICALITIES

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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: 76BC14H

REPORT DATE 03/31/87 C-814
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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.

REFERENCES: 76BC14H

REPORT DATE 03/31/87 C-815
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5814

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/1R
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

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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.

REFERENCES: 76BC14H

REPORT DATE 03/31/87 C-816
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5815

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BC14F

REPORT DATE 3/31/87 C-817
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/1R
MDAC ID: 5816  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)
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   8)
   9) 05-6

CRITICALITIES

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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: 76BC14F

REPORT DATE 03/31/87  C-818
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5817

HIGHEST CRITICALITY HDW/FUNC
ABORT: 3/3
FLIGHT: 3/1R

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

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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.

REFERENCES: 76BC14F

REPORT DATE 03/31/87
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) 
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8) 
9) 05-6

IDENTIFIED CRITICALITIES

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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.

REFERENCES: 76BC14F
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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.

REFERENCES: 76BC14B

REPORT DATE 03/31/87  C-821
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5820

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
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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.

REFERENCES: 76BC14B

REPORT DATE 03/31/87 C-822
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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LOCATION: 32V73A113A2A5CR3
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: 76BC14B

REPORT DATE 03/31/87 C-823
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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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.

REFERENCES: 76BC14B

REPORT DATE 03/31/87 C-824
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  
SUBSYSTEM: EPD&C  
MDAC ID: 5823  

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
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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. 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.

REFERENCES: 76BC14E

REPORT DATE 03/31/87  C-825
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

CRITICALITIES

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LOCATION: 32V73A13A2A5CR2
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
FIRST FAILURE WOULD TIE TWO CONTROL BUSSES TOGETHER WHICH MAY
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VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

REFERENCES: 76BC14E

REPORT DATE 03/31/87  C-826
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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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.

REFERENCES: 76BC14E

REPORT DATE 03/31/87  C-827
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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 ABI
2) R13A2 PANEL
3) DIODE, ISOLATION 3A
4) 
5) 
6) 
7) 
8) 05-6
9) 

CRITICALITIES

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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.

REFERENCES: 76BC14E

REPORT DATE 03/31/87  C-828
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5827

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
ABORT: 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

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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.

REFERENCES: 76BC13
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5828

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 1)
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 1)
4)
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6)
7)
8)
9) 05-6

CRITICALITIES

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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: 76BC13

REPORT DATE 03/31/87 C-830
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  
SUBSYSTEM: EPD&C  
MDAC ID: 5829  

HIGHEST CRITICALITY  HDW/FUNC  
FLIGHT: 3/3  
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:  
i) CONT BUSSES AB1, AB2, CA1, CA2, BC1, & BC2  
2) R13A2 PANEL  
3) SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 2)  
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6)  
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8)  
9) 05-6  

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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".  

REFERENCES: 76BC13  

REPORT DATE 03/31/87 C-831
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
ABORT: 2/1R

SUBSYSTEM: EPD&C
MDAC ID: 5830

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) RI3A2 PANEL
3) SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 2)
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9) 05-6

CRITICALITIES

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REDUNDANCY SCREENS: 

LOCATION: 32V73A13A2S2
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.

REFERENCES: 76BC13

REPORT DATE 03/31/87 C-832
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/1R
MDAC ID: 5831  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) RIAL PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 1 A)
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8)
9) 05-6

CRITICALITIES

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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 OCCURRED 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

REPORT DATE 03/31/87  C-833
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY: HDW/FUNC

SUBSYSTEM: EPD&C

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) R1A1 PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 1 A)
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8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-834
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5833

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) RIAI PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 1 B)
4) 
5) 
6) 
7) 
8) 
9) 05-6

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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 OCCURRED 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

REPORT DATE 03/31/87 C-835
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5834

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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
2) R1A1 PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 1 B)
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8) 
9) 05-6

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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

REPORT DATE 03/31/87 C-836
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5835

HIGHEST CRITICALITY HDW/FUNC

FLIGHT: 3/1R
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) RIA1 PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 1 C)
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8) 
9) 05-6

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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 OCCURRED 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

REPORT DATE 03/31/87 C-837
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5836

HIGHEST CRITICALITY
 HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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

FAILURE MODE:
FAILS CLOSED

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

BREAKDOWN HIERARCHY:
1) ESS BUS 1BC
2) R1A1 PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 1 C)

CRITICALITIES

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

LOCATION:
32V73A1A1CB3

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: 76BF24C

REPORT DATE: 03/31/87 C-838
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) MAIN DC DIST ASSY #1
4) SWITCH, TOGGLE 3PDT (INVERTER PWR #1)
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-839
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) MAIN DC DIST ASSY #1
4) SWITCH, TOGGLE 3PDT (INVERTER PWR #1)
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8)
9) 05-6

CRITICALITIES

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LOCATION: 32V73A1AL516
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

REPORT DATE 03/31/87 C-840
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
MDAC ID: 5839

ABORT:

FLIGHT: 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-I
4) HYBRID DRIVER TYPE I (MN A TO INV 1 ON)
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-841
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

SUBSYSTEM: EPD&C
MDAC ID: 5840

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 IBC
3) FLCA-1
4) HYBRID DRIVER TYPE I (MN A TO INV 1 ON)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-842
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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

REPORT DATE 03/31/87
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 5842  ABORT: 3/3

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

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

BREAKDOWN HIERARCHY:
1) GSE PWR
2) PRE-FLIGHT TEST BUS #1
3) FLCA-I
4) HYBRID DRIVER TYPE I (MN A TO INV 1 OFF)
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CRITICALITIES

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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

REPORT DATE 03/31/87  C-844
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5843

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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

CRITICALITIES
FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC
PRELAUNCH: 3/3 RTLS: 3/3
LIFTOFF: 3/3 TAL: 3/3
ONORB: 3/3 AOA: 3/3
DEORB: 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

REPORT DATE 03/31/87 C-845
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5844

HIGHEST CRITICALITY
FLIGHT: 3/3
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 IBC
2) FLCA-1
3) HYBRID DRIVER TYPE II (INV 1 A ON)
4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-846
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5845

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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)
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CRITICALITIES

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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 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

REPORT DATE 03/31/87 C-847
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5846

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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
3) HYBRID DRIVER TYPE II (INV 1 B ON)
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CRITICALITIES

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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 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: 76BF17D

REPORT DATE 03/31/87 C-848
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5847

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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

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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

REPORT DATE 03/31/87  C-849
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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

REPORT DATE 03/31/87 C-850
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 5849

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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-851
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

CRITICALITIES

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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

REPORT DATE 03/31/87  C-852
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
MDAC ID: 5851  FLIGHT: 3/3
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)

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

LOCATION: 8IV76A16AR15
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

REPORT DATE 03/31/87  C-853
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5852

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (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
3) HYBRID DRIVER TYPE III (INV 1 B ON)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-854
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5853

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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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

REPORT DATE 03/31/87 C-855
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5854

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (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 III (INV 1 C ON)
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9) 05-6

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

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

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

REPORT DATE 03/31/87 C-856
# Independent Orbiter Assessment

## Orbiter Subsystem Analysis Worksheet

**Date:** 3/11/87  
**Highest Criticality HDW/Func:**  
**Flight:** 3/1R  
**Abort:** 3/1R

**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.  
9. 05-6

### Criticalities

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<th>HDW/Func</th>
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**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

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**Report Date 03/31/87** C-857
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5856

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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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

REPORT DATE 03/31/87 C-858
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5857

HIGHEST CRITICALITY HDW/FUNC FLIGHT: 3/1R
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)
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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

REPORT DATE 03/31/87 C-859
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5858

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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 IBC
2) FLCA-1
3) HYBRID DRIVER TYPE III (INV 1 B OFF)
4)
5)
6)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-860
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
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
3) HYBRID DRIVER TYPE III (INV 1 C OFF)
4) 
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-861
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 5860  ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 C 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 C OFF)
4)  
5)  
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8)  
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-862
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  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) R1A1 PANEL
3) FLCA-1
4) FPCA-1
5) RELAY, LATCHING TO INVERTER 1A

CRITICALITIES

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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

REPORT DATE 03/31/87  C-863
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5862 ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 1A
FAILURE MODE: FAILS CLOSED

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

BREAKDOWN HIERARCHY:
1) ESS BUS 1BC
2) R1A1 PANEL
3) FLCA-I
4) FPCA-I
5) RELAY, LATCHING TO INVERTER 1A
6) 7) 8) 9) 05-6

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) FLCA-1
4) FPCA-1
5) RELAY, LATCHING TO INVERTER 1B
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-865
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 5864  ABORT: 3/3

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) R1A1 PANEL
3) FLCA-1
4) FPCE-1
5) RELAY, LATCHING TO INVERTER 1B

GOVERNED CRITICALITIES

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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

REPORT DATE 03/31/87  C-866
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC

SUBSYSTEM: EPD&C

MDAC ID: 5865

FLIGHT: 3/1R

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) R1A1 PANEL
3) FLCA-1
4) FPCA-1
5) RELAY, LATCHING TO INVERTER 1C
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8)
9) 05-6

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5866

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 1C
FAILURE MODE: FAILS CLOSED

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

BREAKDOWN HIERARCHY:
1) ESS BUS 1BC
2) R1A1 PANEL
3) FLCA-1
4) FPCA-1
5) RELAY, LATCHING TO INVERTER 1C
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-868
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5867

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)
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9) 05-6

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5868

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 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
2) MAIN DC DIST ASSY #1
3) FPCA-1
4) FUSE, 80A TO INV 1 B
5) 6)
7) 8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-870
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5869

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

CRITICALITIES

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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

REPORT DATE 03/31/87 C-871
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 5870  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) 8) 9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-872
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5871

HIGHEST CRITICALITY
FLIGHT: 3/3
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) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-873
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
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
3) FPCA-1
4) RESISTOR, 5.1K 1/4W (TO MDM OF1)
5)
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9) 05-6

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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

REPORT DATE 03/31/87 C-874
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C

MDAC ID: 5873

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) FPCA-1
4) DIODE, ISOLATION
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-875
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5874

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

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

BREAKDOWN HIERARCHY:
1) ESS BUS 1BC
2) R1A1 PANEL
3) FPCA-1
4) DIODE, ISOLATION
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-876
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5875

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

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

BREAKDOWN HIERARCHY:
1) ESS BUS 1BC
2) RIA1 PANEL
3) FPCA-1
4) DIODE, ISOLATION
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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

REPORT DATE 03/31/87 C-877
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5876

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) FPCA-1
4) DIODE, ISOLATION
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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

REPORT DATE 03/31/87 C-878
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5877

HIGHEST CRITICALITY
FLIGHT: 3/3
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) R1A1 PANEL
3) FPCA-1
4) DIODE, ISOLATION
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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

REPORT DATE 03/31/87 C-879
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5878

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) ESS BUS 1BC
2) R1A1 PANEL
3) FPCA-1
4) DIODE, ISOLATION

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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

REPORT DATE 03/31/87 C-880
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5879

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) 
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8)
9) 05-6

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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

REPORT DATE 03/31/87 C-881
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5880

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)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-882
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5881

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)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-883
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5882 ABORT: 3/3

ITEM: RPC, 7.5A 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) RPC, 7.5A TO INV 1 B
5)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-884
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5883

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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8)
9) 05–6

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5884

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-886
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) FLCA-1
4) FPCA-1
5) INVERTER 1 A
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8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BF10H

REPORT DATE 03/31/87 C-887
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5886

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) FLCA-1
4) FPCA-1
5) INVERTER 1 A
6) 
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BF10H

REPORT DATE 03/31/87 C-888
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5887

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) R1A1 PANEL
3) FLCA-1
4) FPCA-1
5) INVERTER 1 A
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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.

REFERENCES: 76BF10H

REPORT DATE 03/31/87 C-889
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

| 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. |

REFERENCES: 76BF10H

REPORT DATE 03/31/87 C-890
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

SUBSYSTEM: EPD&C
MDAC ID: 5889

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) R1A1 PANEL
3) FLCA-1
4) FPCA-1
5) INVERTER 1 B
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9) 05-6

CRITICALITIES

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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 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.

REFERENCES: 76BF10E

REPORT DATE 03/31/87 C-891
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5890

ITEM: INVERTER 1 B
FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

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

CRITICALITIES
FLIGHT PHASE HDW/FUNC
PRELAUNCH: 3/3
LIFTOFF: 3/3
ONORBIT: 3/3
DEORBIT: 3/3
LANDING/SAFING: 3/3

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

REFERENCES: 76BF10E

REPORT DATE 03/31/87 C-892
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5891

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) RIA1 PANEL
3) FLCA-1
4) FPCA-1
5) INVERTER 1 B
6)
7)
8)
9) 05-6

CRITICALITIES

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LOCATION: 81V76A2
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECb 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.

REFERENCES: 76BF10E

REPORT DATE 03/31/87 C-893
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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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
6)
7)
8)
9) 05-6

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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.

REFERENCES: 76BF10E

REPORT DATE 03/31/87 C-894
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5893

HIGHEST CRITICALITY
FLIGHT: 3/1R
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) R1A1 PANEL
3) FLCA-1
4) FPCA-1
5) INVERTER 1 C
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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 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.

REFERENCES: 76BF10C

REPORT DATE 03/31/87 C-895
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5894

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) FLCA-1
4) FPCA-1
5) INVERTER 1 C

CRITICALITIES

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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.

REFERENCES: 76BF10C

REPORT DATE 03/31/87 C-896
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5895

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) RiA1 PANEL
3) FLCA-1
4) FPCA-1
5) INVERTER 1 C
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BF10C

REPORT DATE 03/31/87 C-897
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
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) RA1A PANEL
3) FLCA-1
4) FPAC-1
5) INVERTER 1 C
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BF10C

REPORT DATE 03/31/87 C-898
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) RIA1 PANEL
3) MAIN DC DIST ASSY #1
4) SWITCH, TOGGLE 3PDT (INV/AC BUS 1)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-899
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) RIA1 PANEL
3) MAIN DC DIST ASSY #1
4) SWITCH, TOGGLE 3PDT (INV/AC BUS 1)
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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

REPORT DATE 03/31/87 C-900
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5899

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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-I
4) HYBRID DRIVER TYPE III (AC BUS 1 ON)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-901
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 5900
ABORT: 3/3

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

REPORT DATE 03/31/87 C-902
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5901 ABORT: 3/3

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)
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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

REPORT DATE 03/31/87 C-903
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C
MDAC ID: 5902

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 1 OFF)
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)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-904
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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9) 05-6

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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

REPORT DATE 03/31/87  C-905
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5904

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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9) 05-6

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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

REPORT DATE 03/31/87 C-906
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5905

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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)
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9) 05-6

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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

REPORT DATE 03/31/87 C-907
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5906

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
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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

REPORT DATE 03/31/87 C-908
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5907

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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

REPORT DATE 03/31/87  C-909
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
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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

REPORT DATE 03/31/87 C-910
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5909

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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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

REPORT DATE 03/31/87 C-911
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5910

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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9) 05-6

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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

REPORT DATE 03/31/87  C-912
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
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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.

REFERENCES: 76BG21G

REPORT DATE 03/31/87 C-913
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
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BREAKDOWN CRITICALITIES

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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.

REFERENCES: 76BG21G

REPORT DATE 03/31/87 C-914
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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.

REFERENCES: 76BG21H

REPORT DATE 03/31/87  C-915
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EP&D&C FLIGHT: 3/3
MDAC ID: 5914 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) 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

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

LOCATION: 81V76A35A1CR4
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: 76BG21H

REPORT DATE 03/31/87 C-916
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5915

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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-I
4) INV DIST & CONT ASSY #1
5) DIODE, BLOCKING 1A (TO 1 B 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: 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.

REFERENCES: 76BG21H

REPORT DATE 03/31/87 C-917
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5916

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 1B 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 1B RESET)
6)
7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BG21H

REPORT DATE 03/31/87 C-918
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5917

HIGHEST CRITICALITY
FLIGHT: 3/1R
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-I
4) INV DIST & CONT ASSY #1
5) DIODE, BLOCKING 1A (TO 1 C RESET)
6)
7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BG21H

REPORT DATE 03/31/87 C-919
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5918

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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) 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) 
8) 
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BG21H

REPORT DATE 03/31/87 C-920
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)

CRITICALITIES

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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.

REFERENCES: 76BG15F

REPORT DATE 03/31/87 C-921
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5920

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) 
8) 
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BG15F

REPORT DATE 03/31/87 C-922
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C

MDAC ID: 5921

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

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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.

REFERENCES: 76BG15F

REPORT DATE 03/31/87 C-923
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/3
ABORT: 3/3
MDAC ID: 5922

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

CRITICALITIES

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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.

REFERENCES: 76BG15F

REPORT DATE 03/31/87 C-924
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5923

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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.

REFERENCES: 76BG15F

REPORT DATE 03/31/87 C-925
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/.func
SUBSYSTEM: EP&D&C
FLIGHT: 3/3
MDAC ID: 5924
ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 A 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 A RESET)
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BG15F

REPORT DATE 03/31/87 C-926
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5925

HIGHEST CRITICALITY
FLIGHT: 3/3
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) AC BUS OVER/UNDER VOLTAGE SNSR
4) RESISTOR, 5.1K 1/4W (TO MDM OF1)
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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

LOCATION: 81V76A35A1R2
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
THIS MEASUREMENT IS NOT CRITICAL TO FLIGHT OPERATION.

REFERENCES: 76BG19C

REPORT DATE 03/31/87 C-927
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC FLIGHT: 3/3  ABORT: 3/3
SUBSYSTEM: EPD&C  
MDAC ID: 5926  

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)  
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CRITICALITIES

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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.  

REFERENCES: 76BG19C  

REPORT DATE 03/31/87  
C-928
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
4) INV DIST & CONT ASSY #1
5) RESISTOR, 2.2K 1/4W TO MDM OF1
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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.

REFERENCES: 76BG19C

REPORT DATE 03/31/87 C-929
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
4) INV DIST & CONT ASSY #1
5) RESISTOR, 2.2K 1/4W TO MDM OF1
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CRITICALITIES

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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.

REFERENCES:  76BG19C

REPORT DATE 03/31/87  C-930
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

SUBSYSTEM: EPD&C
MDAC ID: 5929

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
4) RESISTOR, 1.8K 1/4W (TO MDM OF1)
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CRITICALITIES

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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.

REFERENCES: 76BG20C

REPORT DATE 03/31/87 C-931
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:  3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM:  EPD&C  FLIGHT:  3/3
MDAC ID:  5930  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
4) RESISTOR, 1.8K 1/4W (TO MDM OF1)
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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.

REFERENCES:  76BG20C

REPORT DATE 03/31/87  C-932
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET  

DATE: 3/11/87  
SUBSYSTEM: EPD&C  
MDAC ID: 5931  

HIGHEST CRITICALITY HDW/FUNC  
FLIGHT: 3/1R  
ABORT: 3/1R  

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) R1A1 PANEL  
4) SWITCH, TOGGLE SPDT (AC 1 BUS SNSR)  
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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.  

REFERENCES: 76BG22B  

REPORT DATE 03/31/87 C-933
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
4) SWITCH, TOGGLE SPDT (AC 1 BUS SNSR)
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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.

REFERENCES: 76BG22B

REPORT DATE 03/31/87 C-934
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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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

REPORT DATE 03/31/87  C-935
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5934

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A TO AC1 BUS SENSOR
FAILURE MODE: FAILS OPEN

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
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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

REPORT DATE 03/31/87 C-936
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:  3/11/87  
SUBSYSTEM:  EPD&C  
MDAC ID:  5935  
HIGHEST CRITICALITY  
HDW/FUNC:  FLIGHT:  3/1R  
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

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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.

REFERENCES:  76BG11

REPORT DATE 03/31/87  
C-937
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5936

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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) 
9) 05-6

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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.

REFERENCES: 76BG11

REPORT DATE 03/31/87 C-938
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY: HDW/FUNC

SUBSYSTEM: EPD&C

MDAC ID: 5937

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

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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.

REFERENCES: 76BG11

REPORT DATE 03/31/87 C-939
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BG11

REPORT DATE 03/31/87  C-940
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
MDAC ID: 5939
SUBSYSTEM: EPD&C
HIGHEST CRITICALITY HDW/FUNC
MDAC ID:
FLIGHT: 3/1R
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
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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.

REFERENCES: 76BG11

REPORT DATE 03/31/87 C-941
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5940

HIGHEST CRITICALITY  HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 1C
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 1C
4)
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7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BG11

REPORT DATE 03/31/87 C-942
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C

MDAC ID: 5941

HIGHEST CRITICALITY

HDW/FUNC

FLIGHT: 3/1R

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

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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.

REFERENCES: 76BG9E

REPORT DATE 03/31/87 C-943
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5942

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
2) INV DIST CONT ASSY #1
3) AC O/V VOLT SNSR 1
4) FUSE, 3A TO AC BUS 1 B
5)
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8)
9) 05-6

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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.

REFERENCES: 76BG9D

REPORT DATE 03/31/87 C-944
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5943

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/1R
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 VOLTS SNSR 1
4) FUSE, 3A TO AC BUS 1 C
5)
6)
7)
8)
9) 05-6

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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.

REFERENCES: 76BG9B

REPORT DATE 03/31/87 C-945
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5944

ITEM: FUSE, 3A TO AC VOLTOMETER
FAILURE MODE: FAILS OPEN

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

BREAKDOWN HIERARCHY:
1) AC BUS 1
2) INV DIST CONT ASSY #1
3) FUSE, 3A TO AC VOLTOMETER

CRITICALITIES

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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.

REFERENCES: 76BG9E

REPORT DATE 03/31/87 C-946
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
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) 
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8) 
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BG9C

REPORT DATE 03/31/87  C-947
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87                        HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C                      FLIGHT: 3/3
MDAC ID: 5946                          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

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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

REPORT DATE 03/31/87 C-948
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5947

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-949
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 5948
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: 81V76A35A1R4
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BG12G

REPORT DATE 03/31/87 C-950
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5949

HIGHEST CRITICALITY
FLIGHT: 3/3
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
On-orbit: 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

REPORT DATE 03/31/87 C-951
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5950

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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

CRITICALITIES

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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

REPORT DATE 03/31/87 C-952
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 5951  ABORT: 3/3

ITEM: RESISTOR, 4.3K 1/8W (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, 4.3K 1/8W (AC BUS 1 B VOLTAGE)
4) 
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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

LOCATION: 81V76A35A1R17
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

REPORT DATE 03/31/87 C-953
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY: HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 5952
ABORT: 3/3

ITEM: RESISTOR, 4.3K 1/8W (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, 4.3K 1/8W (AC BUS 1 C VOLTAGE)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-954
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-955
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5954

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-956
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C
MDAC ID: 5955

FAILURE MODE: FAILS OPEN

ITEM: RESISTOR, 150K 1/2W (AC BUS 1 C VOLTAGE)

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

CRITICALITIES

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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

REPORT DATE 03/31/87 C-957
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY: HDW/Func
SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 5956
ABORT: 3/3

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
2) INV DIST & CONT ASSY #1
3) RESISTOR, 100K (AC BUS 1 A CURRENT)
4)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-958
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT: 3/3

MDAC ID: 5957

ABORT: 3/3

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
2) INV DIST & CONT ASSY #1
3) RESISTOR, 100K (AC BUS 1 B CURRENT)
4) 
5) 
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7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-959
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5958

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: RESISTOR, 100K (AC BUS 1 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 #1
3) RESISTOR, 100K (AC BUS 1 C CURRENT)
4) 
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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

LOCATION: 81V76A35A1R12
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: 76BG13B

REPORT DATE 03/31/87 C-960
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

CRITICALITIES

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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 VISIBILITY IS AVAILABLE.

REFERENCES: 76BG7H

REPORT DATE 03/31/87  C-961
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 5960

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) F1 PANEL
5) M052J PANEL
6) SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)
7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-962
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5961

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) M052J PANEL
6) SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-963
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5962

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) P1 PANEL
5) SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-964
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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

LOCATION: 34V73A152
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

REPORT DATE 03/31/87 C-965
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC

FLIGHT: 3/3

ABORT: 3/3

SUBSYSTEM: EPD&C

MDAC ID: 5964

ITEM: CIRCUIT BREAKER, 3A 3-P

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) CIRCUIT BREAKER, 3P 3A TO AC UTIL POWER
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-966
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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5966

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
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
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6)
7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-968
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5967
HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-969
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-970
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
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:
1) AC BUS 1
2) INV DIST & CONT ASSY #1
3) MA73C PANEL
4) CIRCUIT BREAKER TO MMCA-1
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-971
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5970
HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 2/1R
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

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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

REPORT DATE 03/31/87 C-972
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC FLIGHT: 3/3 ABORT: 3/3
SUBSYSTEM: EPD&C
MDAC ID: 5971

ITEM: CIRCUIT BREAKER TO MMCA-3
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 MMCA-3
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-973
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5972

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 2/1R
ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO AMCA-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 AMCA-1
5)
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9) 05-6

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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

REPORT DATE 03/31/87 C-974
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5973

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-975
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC FLIGHT: 3/1R ABORT: 3/1R
SUBSYSTEM: EPD&C MDAC ID: 5974

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
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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.

REFERENCES: 76BJ23C

REPORT DATE 03/31/87 C-976
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

REFERENCES: 76BJ23C

REPORT DATE 03/31/87 C-977
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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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.

REFERENCES: 76BJ23B

REPORT DATE 03/31/87  C-978
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY
SUBSYSTEM: EPD&C
MDAC ID: 5977

FLIGHT: 3/3
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) 8) 9) 05-6

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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.

REFERENCES: 76BJ23B

REPORT DATE 03/31/87 C-979
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  
SUBSYSTEM: EPD&C  
MDAC ID: 5978  
HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/1R
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
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7) 
8) 
9) 05-6

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LOCATION: 85V73A129CB40
PART NUMBER: MG454-0026-2030

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.

REFERENCES: 76BJ23B

REPORT DATE 03/31/87  C-980
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5979

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
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
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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.

REFERENCES: 76BJ23B

REPORT DATE 03/31/87  C-981
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5980

HIGHEST CRITICALITY HDW/FUNC
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:
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

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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

REPORT DATE 03/31/87 C-982
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5981

HIGHEST CRITICALITY
FLIGHT: 3/1R
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

CRITICALITIES

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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

REPORT DATE 03/31/87 C-983
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5982

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 2/1R
ABORT: 2/1R

ITEM: RELAY TO PLBD ACI
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 ACI
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-984
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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ITEM: RELAY TO PLBD AC
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 AC
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9) 05-6

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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

REPORT DATE 03/31/87 C-985
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 2/1R
MDAC ID: 5984  ABORT: 2/1R

ITEM: RELAY TO PLBD ACI
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
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9) 05-6

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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.

REFERENCES: 76BJ7D

REPORT DATE 03/31/87  C-986
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

SUBSYSTEM: EPD&C
MDAC ID: 5985

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 AC1
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CRITICALITIES

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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.

REFERENCES: 76BJ7D

REPORT DATE 03/31/87 C-987
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5986

ITEM: RELAY TO PLBD AC1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: 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

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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.

REFERENCES: 76BJ7D

REPORT DATE 03/31/87 C-988
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5987

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 AC1

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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.

REFERENCES: 76BJ7D

REPORT DATE 03/31/87 C-989
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5988

HIGHEST CRITICALITY
FLIGHT: 2/1R
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
5) RELAY, 4P TO PLBM-AC1
6) 7) 8) 9) 05-6

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LOCATION: 40V76A117K80
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: 76BJ6D

REPORT DATE 03/31/87 C-990
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C

MDAC ID: 5989

HIGHEST CRITICALITY HDW/FUNC

FLIGHT: 3/1R

ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-ACI

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-ACI
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9) 05-6

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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.

REFERENCES: 76BJ6D

REPORT DATE 03/31/87 C-991
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
5) RELAY, 4P TO PLBM-AC1
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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.

REFERENCES: 76BJ6D

REPORT DATE 03/31/87  C-992
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5991

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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

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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.

REFERENCES: 76BJ6D

REPORT DATE 03/31/87 C-993
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5992

HIGHEST CRITICALITY HDW/FUNC
FAILURE MODE: FAILS OPEN

ITEM: RELAY, 4P TO PLBM-AC1
LEAD ANALYST: K. SCHMECKPEPER

FAILURE MODE: FAILS OPEN
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

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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

REPORT DATE 03/31/87 C-994
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
MDAC ID: 5993 FLIGHT: 3/1R

ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-ACI
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-ACI
6)
7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-995
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5994

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

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


LOCATION: 40V76A119K9
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

REPORT DATE 03/31/87  C-996
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5995

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

CRITICALITIES

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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

REPORT DATE 03/31/87 C-997
INDEPENDENT ORBITER ASSESSMENT 
ORBITER SUBSYSTEM ANALYSIS WORKSHEET 

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) R1A1 PANEL 
3) CIRCUIT BREAKER, 3A (AC CONT 2 A) 
4) 
5) 
6) 
7) 
8) 
9) 05-6 

CRITICALITIES 

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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 OCCURRED 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 

REPORT DATE 03/31/87  C-998
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5997
HIGHEST CRITICALITY
HDW/FUNC FLIGHT: 3/3
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) R1A1 PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 2 A)
4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5998

HIGHEST CRITICALITY:
ABORT:

ITEM: CIRCUIT BREAKER, 3A (AC CONT 2 B)
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 B)
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9) 05-6

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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 OCCURRED 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

REPORT DATE 03/31/87 C-1000
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) RIAI PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 2 B)

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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

REPORT DATE 03/31/87  C-1001
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6000

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) R1A1 PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 2 C)
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5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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 OCCURRED 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

REPORT DATE 03/31/87 C-1002
INDEPENDENT ORBITER ASSESSMENT ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6001

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 2 C)
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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

REPORT DATE 03/31/87
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6002

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (INVERTER PWR #2)
FAILURE MODE: FAILS TO TRANSFER

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

BREAKDOWN HIERARCHY:
1) ESS BUS 2CA
2) R1A1 PANEL
3) MAIN DC DIST ASSY #2
4) SWITCH, TOGGLE 3PDT (INVERTER PWR #2)

CRITICALITIES

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

LOCATION: 32V73A1A1S17
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

REPORT DATE 03/31/87 C-1004
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) MAIN DC DIST ASSY #2
4) SWITCH, TOGGLE 3PDT (INVERTER PWR #2)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1005
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6004

HIGHEST CRITICALITY
HDW/FUNC:
FLIGHT: 3/3
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)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1006
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) 
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1007
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET  

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC  
SUBSYSTEM: EPD&C  FLIGHT: 3/3  
MDAC ID: 6006  ABORT: 3/3  

ITEM: HYBRID DRIVER TYPE I (MN B TO INV 2 OFF)  
FAILURE MODE: FAILS ON  

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)  
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9) 05-6  

CRITICALITIES  

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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  

REPORT DATE 03/31/87  C-1008
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6007

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)

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1009
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6008

HIGHEST CRITICALITY
FLIGHT: 3/3
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)
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CRITICALITIES

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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

REPORT DATE 03/31/87 C-1010
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6009

HIGHEST CRITICALITY
FLIGHT: 3/3
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)
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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

REPORT DATE 03/31/87 C-1011
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C       FLIGHT: 3/3
MDAC ID: 6010         ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 2 B 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 B ON)
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CRITICALITIES

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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.

REFERENCES: 76BM17D

REPORT DATE 03/31/87 C-1012
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6011

HIGHEST CRITICALITY
FLIGHT: 3/3
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)
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CRITICALITIES

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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.

REFERENCES: 76BM17D

REPORT DATE 03/31/87  C-1013
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EP&D&C
MDAC ID: 6012

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
ABORT: 3/3

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)
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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

REPORT DATE 03/31/87 C-1014
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6013

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1015
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6014

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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
2) FLCA-2
3) HYBRID DRIVER TYPE III (INV 2 A ON)
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7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1016
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6015

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) 
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7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1017
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 6016
ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 B 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 III (INV 2 B ON)
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9) 05-6

CRITICALITIES

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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 INPUT POWER CONTROL TO THE INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16D

REPORT DATE 03/31/87 C-1018
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6017

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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)

CRITICALITIES

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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.

REFERENCES: 76BM16D

REPORT DATE 03/31/87 C-1019
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

SUBSYSTEM: EPD&C
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
3) HYBRID DRIVER TYPE III (INV 2 C ON)
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7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1020
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6019

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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) 
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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

REPORT DATE 03/31/87 C-1021
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6020

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/IR
ABORT: 3/IR

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)

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1022
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6021

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)

CRITICALITIES

FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC
PRELAUNCH: 3/3 RTLS: 3/3
LIFTOFF: 3/3 TAL: 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

REPORT DATE 03/31/87 C-1023
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6022

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM:
FAILURE MODE:
LEAD ANALYST: K. SCHMECKPEPER
LEAD: K. SCHMECKPEPER
SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) ESS BUS 2CA
2) FLCA-2
3) HYBRID DRIVER TYPE III (INV 2 B OFF)

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1024
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6023

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)

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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

REPORT DATE 03/31/87 C-1025
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

SUBSYSTEM: EPD&C
MDAC ID: 6024

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)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1026
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  
SUBSYSTEM: EPD&C  
MDAC ID: 6025  

HIGHEST CRITICALITY HDW/FUNC  
FLIGHT: 3/3  
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)  

CRITICALITIES

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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  

REPORT DATE 03/31/87  
C-1027
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6026

HIGHEST CRITICALITY
FLIGHT: 3/3
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

CRITICALITIES

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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: 76BN23H
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6027

HIGHEST CRITICALITY
FLIGHT: 3/3
ABORT: 3/3

MDAC ID: 6027
ABORT:

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

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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

REPORT DATE 03/31/87  C-1029
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY
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

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6029

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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

REPORT DATE 03/31/87 C-1032
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6031

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1033
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

SUBSYSTEM: EPD&C
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
4) FUSE, 80A TO INV 2 A
5) 6) 7) 8) 9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1034
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY: HDW/FUNC
SUBSYSTEM: EPD&C
ABORT: 3/1R
MDAC ID: 6033
FLIGHT: 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

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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

REPORT DATE 03/31/87 C-1035
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6034

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: FUSE, 80A TO INV 2 C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER
SUBLAYS 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

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

REPORT DATE 03/31/87 C-1036
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6035

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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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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

REPORT DATE 03/31/87 C-1037
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6036

HIGHEST CRITICALITY

HDW/FUNC

FLIGHT: 3/3
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)
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7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1038
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)  
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1039
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6038

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
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)
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8)
9) 05-6

CRITICALITIES

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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/MISISON/VEHICLE.

REFERENCES: 76BM13G

REPORT DATE 03/31/87 C-1040
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6039

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

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

BREAKDOWN HIERARCHY:
1) ESS BUS 2CA
2) RIA1 PANEL
3) FPCA-2
4) DIODE, ISOLATION
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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

REPORT DATE 03/31/87 C-1041
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6040

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

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

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1042
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) FPCA-2
4) DIODE, ISOLATION

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1043
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6042

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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
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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

REPORT DATE 03/31/87  C-1044
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6043

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

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

BREAKDOWN HIERARCHY:
1) ESS BUS 2CA
2) R1A1 PANEL
3) FPCA-2
4) DIODE, ISOLATION
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8)
9) 05-6

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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

REPORT DATE 03/31/87 C-1045
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6044

ITEM: DIODE TO INV 2 A
FAILURE MODE: FAILS OPEN

DEPARTMENT 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

Criticalities

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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

REPORT DATE 03/31/87 C-1046
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6045

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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)
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7)
8)
9) 05-6

CRITICALITIES

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

LOCATION: 82V76A23CR22
PART NUMBER: 82V76A23CR22

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

REPORT DATE 03/31/87 C-1047
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6046

HIGHEST CRITICALITY
FLIGHT: 3/3
ABORT: 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) 
7) 
8) 
9) 05-6

CRITICALITIES

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<td>LANDING/SAFING:</td>
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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

REPORT DATE 03/31/87 C-1048
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6047

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

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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

REPORT DATE 03/31/87 C-1049
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6048

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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

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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

REPORT DATE 03/31/87 C-1050
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6049

HIGHEST CRITICALITY
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE TO INV 2 C
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER
LEAD SUBSYS: 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) SHORTS
6) SHORTS
7) SHORTS
8) 05-6
9) OS-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1051
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6050

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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

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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

REPORT DATE 03/31/87 C-1052
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6051

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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)
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7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1053
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6052 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 2 B
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 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 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

REPORT DATE 03/31/87 C-1054
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6053

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) 05-6

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

REPORT DATE 03/31/87 C-1055
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6054

ITEM: RPC, 7.5A TO INV 2 C
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
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9) 05-6

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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

REPORT DATE 03/31/87  C-1056
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6055

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-1057
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6056

HIGHEST CRITICALITY    HDW/FUNC
FLIGHT: 3/1R
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) R1A1 PANEL
3) FLCA-2
4) FPCA-2
5) RELAY, LATCHING TO INVERTER 2A
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BM13H

REPORT DATE 03/31/87  C-1058
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6057

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 2A
FAILURE MODE: FAILS CLOSED

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

BREAKDOWN HIERARCHY:
1) ESS BUS 2CA
2) R1A1 PANEL
3) FLCA-2
4) FPCA-2
5) RELAY, LATCHING TO INVERTER 2A
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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

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.

REFERENCES: 76BM13H

REPORT DATE 03/31/87 C-1059
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6058

HIGHEST CRITICALITY HDW/FUNC
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) R1A1 PANEL
3) FLCA-2
4) FPCA-2
5) RELAY, LATCHING TO INVERTER 2B
6)
7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BM13E

REPORT DATE 03/31/87 C-1060
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET  

DATE: 3/11/87  
SUBSYSTEM: EPD&C  
MDAC ID: 6059  

HIGHEST CRITICALITY  
HDW/FUNC  
FLIGHT: 3/3  
ABORT: 3/3  

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  
3) FPCA-2  
4) FPCA-2  
5) RELAY, LATCHING TO INVERTER 2B  
6)  
7)  
8)  
9) 05-6  

CRITICALITIES  

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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.  

REFERENCES: 76BM13E  

REPORT DATE 03/31/87 C-1061
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

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) R1A1 PANEL
3) FLCA-2
4) FPCA-2
5) RELAY, LATCHING TO INVERTER 2C
6)
7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BM13C

REPORT DATE 03/31/87   C-1062
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6061

HIGHEST CRITICALITY
FLIGHT: 3/3
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) R1A1 PANEL
3) FLCA-2
4) FPCA-2
5) RELAY, LATCHING TO INVERTER 2C
6)
7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BM13C

REPORT DATE 03/31/87  C-1063
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6062

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: INVERTER 2 A
FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

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 A
6)
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8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BM10H

REPORT DATE 03/31/87  C-1064
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) FLCA-2
4) FPCA-2
5) INVERTER 2 A
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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.

REFERENCES: 76BM10H

REPORT DATE 03/31/87  C-1065
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6064

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/IR
ABORT: 3/1R

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) R1A1 PANEL
3) FLCA-2
4) FPCA-2
5) INVERTER 2 A
6) 
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8) 
9) 05-6

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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.

REFERENCES: 76BM10H

REPORT DATE 03/31/87 C-1066
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) FLCA-2
4) FPCA-2
5) INVERTER 2 A
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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.

REFERENCES: 76BM10H

REPORT DATE 03/31/87 C-1067
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C

MDAC ID: 6066

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

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
2) R1A1 PANEL
3) FLCA-2
4) FPCA-2
5) INVERTER 2 B

CRITICALITIES

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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.

REFERENCES: 76BM10E

REPORT DATE 03/31/87 C-1068
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) RIA1 PANEL
3) FLCA-2
4) FPCA-2
5) INVERTER 2 B
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8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BM10E

REPORT DATE 03/31/87  C-1069
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6068

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: INVERTER 2 B
FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

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
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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.

REFERENCES: 76BM10E

REPORT DATE 03/31/87 C-1070
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
MDAC ID: 6069
FLIGHT: 3/1R
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) R1A1 PANEL
3) FLCA-2
4) FPCA-2
5) INVERTER 2 B

CRITICALITIES

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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.

REFERENCES: 76BM10E

REPORT DATE 03/31/87 C-1071
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6070

HIGHEST CRITICALITY HDW/FUNC
ABORT: 3/1R
FLIGHT: 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) R1A1 PANEL
3) FLCA-2
4) FPCA-2
5) INVERTER 2 C
6)
7)
8)
9) 05-6

CRITICALITIES

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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 BUSSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BMI10C

REPORT DATE 03/31/87 C-1072
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6071

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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8)
9) 05-6

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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.

REFERENCES: 76BM10C
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6072

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) R1A1 PANEL
3) FLCA-2
4) FPCA-2
5) INVERTER 2 C

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LOCATION: 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.

REFERENCES: 76BM10C

REPORT DATE 03/31/87 C-1074
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6073

HIGHEST CRITI CALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: INVERTER 2 C
FAILURE MODE: PHASE REF CHANGE

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 C
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9) 05-6

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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.

REFERENCES: 76BM10C

REPORT DATE 03/31/87 C-1075
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C
MDAC ID: 6074

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 2 ON)
FAILURE MODE: FAILS ON

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

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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.

REFERENCES: 76BN23G

REPORT DATE 03/31/87 C-1076
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY
SUBSYSTEM: EPD&C  HDW/FUNC
MDAC ID: 6075  FLIGHT: 3/3
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)
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9) 05-6

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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.

REFERENCES: 76BN23G

REPORT DATE 03/31/87  C-1077
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6076

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 2 OFF)
FAILURE MODE: FAILS ON

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)
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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

REPORT DATE 03/31/87 C-1078
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
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9) 05-6

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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

REPORT DATE 03/31/87  C-1079
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  
SUBSYSTEM: EPD&C  
MDAC ID: 6078  

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  
2) FLCA-2  
3) FUSE, 3A TO AC BUS 2B ON  
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9) 05-6  

CRITICALITIES  

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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  

REPORT DATE 03/31/87 C-1080
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6079

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

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1081
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) MAIN DC DIST ASSY #2
4) SWITCH, TOGGLE 3PDT (INV/AC BUS 2)
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6)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1082
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) MAIN DC DIST ASSY #2
4) SWITCH, TOGGLE 3PDT (INV/AC BUS 2)
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9) 05-6

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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

REPORT DATE 03/31/87  C-1083
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6082

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1084
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

REPORT DATE 03/31/87  C-1085
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6084

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) R1A1 PANEL
4) SWITCH, TOGGLE SPDT (AC 2 BUS SNSR)

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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

REPORT DATE 03/31/87  C-1086
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6085

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/IR
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) R1A1 PANEL
4) SWITCH, TOGGLE SPDT (AC 2 BUS SNSR)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1087
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6086

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 A 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 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: 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.

REFERENCES: 76BN21G

REPORT DATE 03/31/87 C-1088
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6087

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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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.

REFERENCES: 76BN21G

REPORT DATE 03/31/87 C-1089
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6088

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 B 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 B SET)
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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.

REFERENCES: 76BN21G

REPORT DATE 03/31/87 C-1090
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6089

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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9) 05-6

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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.

REFERENCES: 76BN21G

REPORT DATE 03/31/87 C-1091
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6090  ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 C SET)
FAILURE MODE: SELLS 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 SET)
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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.

REFERENCES: 76BN21G

REPORT DATE 03/31/87  C-1092
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)

CRITICALITIES

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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.

REFERENCES: 76BN21G

REPORT DATE 03/31/87  C-1093
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6092

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 2 A 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 A RESET)
6)
7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BN21H

REPORT DATE 03/31/87 C-1094

C - 4
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6093

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BN21H

REPORT DATE 03/31/87  C-1095
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6094

ITEM: DIODE, BLOCKING 1A (TO 2 B 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 B RESET)
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BN21H

REPORT DATE 03/31/87 C-1096
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
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9) 05-6

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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.

REFERENCES: 76BN21H

REPORT DATE 03/31/87  C-1097
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
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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.

REFERENCES: 76BN21H

REPORT DATE 03/31/87 C-1098
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6097

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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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.

REFERENCES: 76BN21H

REPORT DATE 03/31/87 C-1099
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6098  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) AC BUS 2
2) INV DIST & CONT ASSY #2
3) AC OVER/UNDER VOLT SNSR #2
4) DIODE, BLOCKING 1A (TO 2 C RESET)
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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.

REFERENCES: 76BN15F

REPORT DATE 03/31/87  C-1100
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6099  ABORT: 3/3

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)
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CRITICALITIES

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

LOCATION: 82V76A36A1CR7
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.

REFERENCES: 76BN15F

REPORT DATE 03/31/87  C-1101
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6100

ITEM: DIODE, BLOCKING 1A (TO 2 B 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 B RESET)
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REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 82V76A36A1CR8
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.

REFERENCES: 76BN15F

REPORT DATE 03/31/87 C-1102
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6101

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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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.

REFERENCES: 76BN15F

REPORT DATE 03/31/87 C-1103
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C
MDAC ID: 6102

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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)

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

REduDANCY 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.

REFERENCES: 76BN15F

REPORT DATE 03/31/87 C-1104
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C

MDAC ID: 6103

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

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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.

REFERENCES: 76BN15F

REPORT DATE 03/31/87 C-1105
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6104

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 2A
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 2A
5)
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7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BN9E

REPORT DATE 03/31/87 C-1106
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BN9D

REPORT DATE 03/31/87  C-1107
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6106

HIGHEST CRITICALITY | HDW/FUNC
---------------------|---------------------
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 2 C
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 C
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BN9B
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY
SUBSYSTEM: EPD&C
MDAC ID: 6107
ABORT: 3/3

ITEM: FUSE, 3A TO AC VOLTMEETER
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 VOLTMEETER
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8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BN9E

REPORT DATE 03/31/87  C-1109
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6108

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) INVID
5) DEVID
6) INORBIT
7) ADORBIT
8) LANDING/SAVING
9) 05-6

CRITICALITIES

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

LOCATION: 82V76A36F5
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: 76BN9C

REPORT DATE 03/31/87 C-1110
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6109

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
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BN9B

REPORT DATE 03/31/87 C-1111
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6110

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 2A
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 2A
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BN11

REPORT DATE 03/31/87 C-1112
**INDEPENDENT ORBITER ASSESSMENT**

**ORBITER SUBSYSTEM ANALYSIS WORKSHEET**

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**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

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**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.

**REFERENCES:** 76BN11

**REPORT DATE 03/31/87**  
**C-1113**
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/1R
MDAC ID: 6112  ABORT: 3/1R

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
2) INV DIST CONT ASSY #2
3) RELAY, LATCHING TO AC BUS 2B
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BN11

REPORT DATE 03/31/87  C-1114
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT: 3/3

ABORT: 3/3

MDAC ID: 6113

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

CRITICALITIES

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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.

REFERENCES: 76BN11

REPORT DATE 03/31/87 C-1115
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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.

REFERENCES: 76BN11

REPORT DATE 03/31/87 C-1116
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
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7)
8)
9) 05-6

CRITICALITIES

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

LOCATION: 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.

REFERENCES: 76BN11

REPORT DATE 03/31/87  C-1117
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C
MDAC ID: 6116

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

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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.

REFERENCES: 76BN19C

REPORT DATE 03/31/87 C-1118
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6117

FLIGHT:
MDAC ID: 6117
ABORT:
3/3
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

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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.

REFERENCES: 76BN19C

REPORT DATE 03/31/87 C-1119
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC

ORBITER SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 6118
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

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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.

REFERENCES: 76BN12H

REPORT DATE 03/31/87 C-1120
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  
SUBSYSTEM: EPD&C  
MDAC ID: 6119

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3  
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)
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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.

REFERENCES: 76BN12G

REPORT DATE 03/31/87  C-1121
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6120  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)
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BN12G

REPORT DATE 03/31/87  C-1122
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
4) INV DIST & CONT ASSY #2
5) RESISTOR, 2.2K 1/4W (TO MDM OF2)

CRITICALITIES

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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.

REFERENCES: 76BN19C

REPORT DATE 03/31/87  C-1123
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6122

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)
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BN20C

REPORT DATE 03/31/87  C-1124
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

SUBSYSTEM: EPD&C
MDAC ID: 6123

ITEM: RESISTOR, 1.8K 1/4W (TO MDM OF2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: 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) 
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BN20C

REPORT DATE 03/31/87  C-1125
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
MDAC ID: 6124
FLIGHT: 3/3
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) RIA1 PANEL
4) INV DIST & CONT ASSY #2
5) RESISTOR, 2.2K 1/4W (TO MDM OF2)
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BN19C

REPORT DATE 03/31/87 C-1126
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6125

ITEM: RESISTOR, 100K (AC BUS 2 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 #2
3) RESISTOR, 100K (AC BUS 2 A CURRENT)
4) 
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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

LOCATION: 82V76A36A1R10
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: 76BN13E

REPORT DATE 03/31/87 C-1127
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6126

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: RESISTOR, 100K (AC BUS 2 B 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 B CURRENT)
4) 
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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

LOCATION: 82V76A36A1R11
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: 76BN13D

REPORT DATE 03/31/87 C-1128
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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**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

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**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

REPORT DATE 03/31/87  
C-1129
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 6128
ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (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, 150K 1/2W (AC BUS 2 A VOLTAGE)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1130
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6129

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1131
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6130

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1132
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
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9) 05-6

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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

REPORT DATE 03/31/87  C-1133
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6132

HIGHEST CRITICALITY
FLIGHT: 3/3
ABORT: 3/3

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:
1) GSE PWR MONITOR
2) INV DIST & CONT ASSY #2
3) RESISTOR, 4.3K 1/8W (AC BUS 2 B VOLTAGE)
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5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1134
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C

MDAC ID: 6133

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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
2) INV DIST & CONT ASSY #2
3) RESISTOR, 4.3K 1/8W (AC BUS 2 C VOLTAGE)
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9) 05-6

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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

REPORT DATE 03/31/87 C-1135
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6134

HIGHEST CRITICALITY
HDW/FUNC:
FLIGHT: 3/1R
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) 
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9) 05-6

CRITICALITIES

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LOCATION: 82V76A36V81
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

REPORT DATE 03/31/87 C-1136
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6135

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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)
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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

REPORT DATE 03/31/87 C-1137
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6136

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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 #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

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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

REPORT DATE 03/31/87 C-1138
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 6137
ABORT: 3/3

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

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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

REPORT DATE 03/31/87 C-1139
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET  

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC  
SUBSYSTEM: EPD&C  FLIGHT: 3/3  
MDAC ID: 6138  ABORT: 3/3  

ITEM: CIRCUIT BREAKER AC 2A TO RCS/OMS-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 AC 2A TO RCS/OMS-2  
5)  
6)  
7)  
8)  
9) 05-6  

CRITICALITIES  
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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.  
REFERENCES: 76BR23C  

REPORT DATE 03/31/87  C-1140
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/1R
MDAC ID: 6139  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
2) INV DIST & CONT ASSY #2
3) MA73C PANEL
4) CIRCUIT BREAKER AC 2A TO RCS/OMS-2
5) INV DIST & CONT ASSY #2
6) PANEL
7) CIRCUIT BREAKER AC 2A
8) AC BUS 2
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BR23C

REPORT DATE 03/31/87  C-1141
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C

MDAC ID: 6140

HIGHEST CRITICALITY

FLIGHT: 3/3

ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 2B TO RCS/OMS-2

FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER

LEAD: 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) 
7) 
8) 
9) 05-6

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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.

REFERENCES: 76BR23C

REPORT DATE 03/31/87 C-1142
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6141

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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)
7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BR23C

REPORT DATE 03/31/87 C-1143
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EP&D&C
FLIGHT: 3/3
MDAC ID: 6142
ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 2C TO RCS/OMS-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 AC 2C TO RCS/OMS-2
5) 6) 7) 8) 9) 05-6

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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.

REFERENCES: 76BR24C

REPORT DATE 03/31/87 C-1144
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6143

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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
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9) 05-6

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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.

REFERENCES: 76BR24C

REPORT DATE 03/31/87 C-1145
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6144

HIGHEST CRITICALITY
FLIGHT: 2/1R
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
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8)
9) 05-6

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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.

REFERENCES: 76BR22H

REPORT DATE 03/31/87 C-1146
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY: HDW/FUNC

SUBSYSTEM: EPD&C
MDAC ID: 6145

FLIGHT: 3/3
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

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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.

REFERENCES: 76BR22H

REPORT DATE 03/31/87

C-1147
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6146

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: CIRCUIT BREAKER TO MMCA-1
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-1
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BR22D

REPORT DATE 03/31/87 C-1148
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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.

REFERENCES: 76BR22D

REPORT DATE 03/31/87  C-1149
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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.

REFERENCES: 76BR22D

REPORT DATE 03/31/87   C-1150
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6149

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

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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.

REFERENCES: 76BR22D

REPORT DATE 03/31/87 C-1151
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6150

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: CIRCUIT BREAKER TO MMCA-3
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-3
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BR22G

REPORT DATE 03/31/87 C-1152
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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.

REFERENCES: 76BR22G

REPORT DATE 03/31/87 C-1153
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6152

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
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
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8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BR22G

REPORT DATE 03/31/87 C-1154
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6153

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: CIRCUIT BREAKER TO MMCA-4
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-4
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BR22G

REPORT DATE 03/31/87 C-1155
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  
SUBSYSTEM: EPD&C  
MDAC ID: 6154  

HIGHEST CRITICALITY: HDW/FUNC  
FLIGHT: 3/3  
ABORT: 3/3  

ITEM: CIRCUIT BREAKER TO AMCA-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 AMCA-2  
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6)  
7)  
8)  
9) 05-6  

CRITICALITIES  

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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.  

REFERENCES: 76BR22H  

REPORT DATE 03/31/87  
C-1156
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6155

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 2/1R
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
P Relaunch: 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


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.

REFERENCES: 76BR22H

REPORT DATE 03/31/87 C-1157
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6156

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
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-3
5) RELAY, 4P TO PLBM-AC2
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7) 
8) 
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BR17F

REPORT DATE 03/31/87 C-1158
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6157

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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
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


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.

REFERENCES: 76BR17F

REPORT DATE 03/31/87 C-1159
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6158

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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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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.

REFERENCES: 76BR17F

REPORT DATE 03/31/87 C-1160
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6159

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
ABORT: 2/1R

ITEM:
FAILURE MODE:
RELAY, 4P TO PLBM-AC2
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-3
5) RELAY, 4P TO PLBM-AC2
6)
7)
8)
9) 05-6

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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.

REFERENCES: 76BR17F

REPORT DATE 03/31/87 C-1161
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6160

HIGHEST CRITICALITY
HDW/FUNC:

FLIGHT: 2/1R
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

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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.

REFERENCES: 76BR17D

REPORT DATE 03/31/87 C-1162
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
MDAC ID: 6161
FLIGHT: 3/1R
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
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7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BR17D

REPORT DATE 03/31/87 C-1163
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6162

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)
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BR17C

REPORT DATE 03/31/87 C-1164
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 2/1R
ABORT: 2/1R

SUBSYSTEM: EPD&C
MDAC ID: 6163

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

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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.

REFERENCES: 76BR17C

REPORT DATE 03/31/87  C-1165
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6164

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
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) 05-6

CRITICALITIES

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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.

REFERENCES: 76BR16C

REPORT DATE 03/31/87 C-1166
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C
MDAC ID: 6165

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) INV DIST & CONT ASSY #2
7) MA73C PANEL
8) MMCA-2
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BR16C

REPORT DATE 03/31/87 C-1167
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

SUBSYSTEM: EPD&C
MDAC ID: 6166

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
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9) 05-6

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1169
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6168

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
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
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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


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.

REFERENCES: 76BR9C

REPORT DATE 03/31/87 C-1170
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6169

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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

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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.

REFERENCES: 76BR9C

REPORT DATE 03/31/87 C-1171
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6170

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

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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.

REFERENCES: 76BR9C

REPORT DATE 03/31/87 C-1172
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87                   HIGHEST CRITICALITY
SUBSYSTEM: EPD&C                HDW/FUNC
MDAC ID: 6171                   FLIGHT: 2/1R
                           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

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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.

REFERENCES: 76BR9C

REPORT DATE 03/31/87 C-1173
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
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
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9) 05-6

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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

REPORT DATE 03/31/87  C-1174
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6173
HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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-4
5) RELAY, 4P TO PLBM-AC2
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1175
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6174

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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-4
5) RELAY, 4P TO PLBM-AC2

CRITICALITIES

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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.

REFERENCES: 76BR8C

REPORT DATE 03/31/87 C-1176
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6175

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/IR
ABORT: 2/IR

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
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7) 
8) 
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BR8C

REPORT DATE 03/31/87 C-1177
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6176

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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:
1) ESS BUS 3AB
2) R1A1 PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 3 A)
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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 OCCURRED 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

REPORT DATE 03/31/87 C-1178
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6177

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 3 A)
FAILURE MODE: FAILS CLOSED

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

BREAKDOWN HIERARCHY:
1) ESS BUS 3AB
2) R1A1 PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 3 A)
4) 
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8) 
9) 05-6

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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

REPORT DATE 03/31/87  C-1179
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY: HDW/FUNC

FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6178

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) R1A1 PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 3 B)
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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

REPORT DATE 03/31/87 C-1180
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6179

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) RIA1 PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 3 B)
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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

REPORT DATE 03/31/87 C-1181
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6180

HIGHEST CRITICALITY
HDW/FUNC: FLIGHT: 3/1R
ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 3 C)
FAIL MODE: FAILS OPEN

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

BREAKDOWN HIERARCHY:
1) ESS BUS 3AB
2) R1A1 PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 3 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


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 OCCURRED 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

REPORT DATE 03/31/87 C-1182
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6181

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) CIRCUIT BREAKER, 3A (AC CONT 3 C)
4) 
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1183
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6182

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

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
2) R1A1 PANEL
3) MAIN DC DIST ASSY #3
4) SWITCH, TOGGLe 3PDT (INVERTER PWR #3)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1184
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6183

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) MAIN DC DIST ASSY #3
4) SWITCH, TOGGLE 3PDT (INVERTER PWR #3)
5)
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7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1185
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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

REPORT DATE 03/31/87  C-1186
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6185

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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:
1) GSE POWER
2) ESS BUS 3AB
3) FLCA-3
4) HYBRID DRIVER TYPE I (MN C TO INV 3 ON)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1187
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6186  ABORT: 3/3

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
2) PRE-FLIGHT TEST BUS #2
3) FLCA-3
4) HYBRID DRIVER TYPE I (MN C TO INV 3 OFF)
5)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1188
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6187

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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:
1) GSE POWER
2) PRE-FLIGHT TEST BUS #2
3) FLCA-3
4) HYBRID DRIVER TYPE I (MN C TO INV 3 OFF)
5)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1189
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EP&D&C
MDAC ID: 6188
HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (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 II (INV 3 A ON)
4) 
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1190
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
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)
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9) 05-6

CRITICALITIES

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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 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: 76BU17G

REPORT DATE 03/31/87  C-1191  C - S
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
MDAC ID: 6190
ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 3 B ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPPEPER
SUBSYS LEAD: K. SCHMECKPPEPER

BREAKDOWN HIERARCHY:
1) ESS BUS 3AB
2) FLCA-3
3) HYBRID DRIVER TYPE II (INV 3 B ON)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1192
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6191

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87  C-1193
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6192

HIGHEST CRITICALITY
FLIGHT: 3/3
ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (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 II (INV 3 C ON)
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8)
9) 05-6

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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

REPORT DATE 03/31/87 C-1194
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6193

HIGHEST CRITICALITY
FLIGHT: 3/3
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)

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1195
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6194
HIGHEST CRITICALITY
FLIGHT: 3/3
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)
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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: 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

REPORT DATE 03/31/87 C-1196
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6195  ABORT: 3/3

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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1197
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6196

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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
3) HYBRID DRIVER TYPE III (INV 3 B ON)
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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

REPORT DATE 03/31/87 C-1198
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6197

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/3
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)
8) 05-6

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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

REPORT DATE 03/31/87 C-1199
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6198

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (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 III (INV 3 C ON)
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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

REPORT DATE 03/31/87 C-1200
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

REPORT DATE 03/31/87 C-1201
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6200

HIGHEST CRITICALITY
HDW/FUNC

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

ITEM: HYBRID DRIVER TYPE III (INV 3 A 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 A OFF)
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9) 05-6

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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

REPORT DATE 03/31/87 C-1202
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6201 ABORT: 3/3

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

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6202

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1204
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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

REPORT DATE 03/31/87 C-1205
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1206
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6205

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)

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1207
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6206
HIGHEST CRITICALITY: FLIGHT: 3/3
ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3C 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 3C OFF
4) 
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1208
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EP&D&C
MDAC ID: 6207

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
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

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6208

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

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

REPORT DATE 03/31/87 C-1210
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6209

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
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)
6)
7)
8)
9) 05-6

CRITICALITIES

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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/MISION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BU16B

REPORT DATE 03/31/87 C-1211
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6210

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)
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6)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1212
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6211

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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CRITICALITIES

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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

REPORT DATE 03/31/87 C-1213
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
8)
9) 05-6

CRITICALITIES

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LOCATION: 83V76A24FI
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: 76BU13H

REPORT DATE 03/31/87  C-1214
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY
SUBSYSTEM: EPD&C
MDAC ID: 6213
FLIGHT: 3/1R
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
2) MAIN DC DIST ASSY #3
3) FPCA-3
4) FUSE, 80A TO INV 3 B
5)
6)
7)
8)
9) 05-6

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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

REPORT DATE 03/31/87 C-1215
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6214

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: FUSE, 80A 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) FUSE, 80A TO INV 3 C
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1216
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6215 ABOFT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: FAILS OPEN

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

BREAKDOWN HIERARCHY:
1) ESS BUS 3AB
2) R1A1 PANEL
3) FPCA-3
4) DIODE, ISOLATION
5) 6) 7) 8) 9) 05-6

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6216

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

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

BREAKDOWN HIERARCHY:
1) ESS BUS 3AB
2) R1A1 PANEL
3) FPCA-3
4) DIODE, ISOLATION
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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

REPORT DATE 03/31/87 C-1218
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6217

HIGHEST CRITICALITY HDW/FUNC
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

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

BREAKDOWN HIERARCHY:
1) ESS BUS 3AB
2) R1A1 PANEL
3) FPCA-3
4) DIODE, ISOLATION
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6) ........................................
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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: 76BU13D

REPORT DATE 03/31/87 C-1219
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6218  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) R1A1 PANEL
3) FPCA-3
4) DIODE, ISOLATION
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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: 76BU13D

REPORT DATE 03/31/87  C-1220
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6219

HIGHEST CRITICALITY
FLIGHT: 3/3
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) RIA1 PANEL
3) FPCA-3
4) DIODE, ISOLATION
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6) 
7) 
8) 
9) 05-6

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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

REPORT DATE 03/31/87  C-1221
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6220

HIGHEST CRITICALITY
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

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

BREAKDOWN HIERARCHY:
1) ESS BUS 3AB
2) R1A1 PANEL
3) FPCA-3
4) DIODE, ISOLATION
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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

REPORT DATE 03/31/87 C-1222
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 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) 9) 05-6

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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

REPORT DATE 03/31/87 C-1223
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 6222
ABORT: 3/3

ITEM: DIODE TO INV 3 A
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

CRITICALITIES
FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC
PRELAUNCH: 3/3 RTL: 3/3
LIFTOFF: 3/3 TAL: 3/3
ONORB: 3/3 AOA: 3/3
DEORBIT: 3/3 ATO: 3/3
LANDING/SAFING: 3/3

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

LOCATION: 83V76A24CR13

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

REPORT DATE 03/31/87 C-1224
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
MDAC ID: 6223
FLIGHT: 3/3
ABORT: 3/3

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
2) MAIN DC DIST ASSY #3
3) FPCA-3
4) DIODE TO INV 3 B
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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

REPORT DATE 03/31/87 C-1225
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6224

HIGHEST CRITICALITY
FLIGHT: 3/3
ABORT: 3/3

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)
9) 05-6

CRITICALITIES

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

LOCATION: 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

REPORT DATE 03/31/87 C-1226
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6225

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
2) MAIN DC DIST ASSY #3
3) FPCA-3
4) DIODE TO INV 3 C
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1227
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6226

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE TO INV 3 C
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 C
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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

LOCATION: 83V76A24CR15
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: 76BU12B

REPORT DATE 03/31/87 C-1228
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6227

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-1229
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
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9) 05-6

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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

REPORT DATE 03/31/87 C-1230
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6229

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)
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7) 
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1231
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6230

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: RPC, 7.5A TO INV 3 A
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

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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

REPORT DATE 03/31/87  C-1232
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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9) 05-6

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6232

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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
4) RPC, 7.5A TO INV 3 B

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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

REPORT DATE 03/31/87  C-1234
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6233

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) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1235
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6234

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
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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

REPORT DATE 03/31/87  C-1236
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

SUBSYSTEM: EP&D&C
MDAC ID: 6235

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

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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

REPORT DATE 03/31/87 C-1237
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6236

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: RELAY, LATCHING TO INVERTER 3A
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) FPCA-3
5) RELAY, LATCHING TO INVERTER 3A

CRITICALITIES

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LOCATION: 83V76A24KI
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: 76BU13H

REPORT DATE 03/31/87 C-1238
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6237

HIGHEST CRITICALITY
FLIGHT: 3/3
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) R1A1 PANEL
3) FLCA-3
4) FPCA-3
5) RELAY, LATCHING TO INVERTER 3A

CRITICALITIES

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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.

REFERENCES: 76BU13H

REPORT DATE 03/31/87 C-1239
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6238

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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) R1A1 PANEL
3) FLCA-3
4) FPCA-3
5) RELAY, LATCHING TO INVERTER 3B
6)
7)
8)
9) 05-6

CRITICALITIES

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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: 76BU13E

REPORT DATE 03/31/87 C-1240
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/1R
MDAC ID: 6239  ABORT: 3/1R

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) R1A1 PANEL
3) FLCA-3
4) FPCA-3
5) RELAY, LATCHING TO INVERTER 3B
6)  
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9) 05-6

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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

REPORT DATE 03/31/87  C-1241
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6240

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: RELAY, LATCHING TO INVERTER 3C
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) FPCA-3
5) RELAY, LATCHING TO INVERTER 3C
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BU13C

REPORT DATE 03/31/87 C-1242
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6241

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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) RLAI PANEL
3) FLCA-3
4) FPCA-3
5) RELAY, LATCHING TO INVERTER 3C
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BU13C

REPORT DATE 03/31/87 C-1243
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6242 ABORT: 3/1R

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) R1A1 PANEL
3) FLCA-3
4) FPCA-3
5) INVERTER 3 A
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9) 05-6

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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.

REFERENCES: 76BU10H

REPORT DATE 03/31/87 C-1244
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6243

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) RIAI PANEL
3) FLCA-3
4) FPCA-3
5) INVERTER 3 A

8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BU10H

REPORT DATE 03/31/87 C-1245
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EP&D&C  FLIGHT: 3/1R
MDAC ID: 6244  ABOERT: 3/1R

ITEM: INVERTER 3A
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 3A
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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.

REFERENCES: 76BU10H

REPORT DATE 03/31/87  C-1246
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6245

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) R1A1 PANEL
3) FLCA-3
4) FPCA-3
5) INVERTER 3 A
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8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BU10H

REPORT DATE 03/31/87 C-1247
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/1R
MDAC ID: 6246  ABORT: 3/1R

ITEM: INVERTER 3 B
FAILURE MODE: FAIWS OFF, OUTPUT UNDER/OVER VOLTAGE

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

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

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LOCATION: 83V76A8
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 BUSSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU10E

REPORT DATE 03/31/87  C-1248
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6247

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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) R1A1 PANEL
3) FLCA-3
4) FPCA-3
5) INVERTER 3 B
6)
7)
8)
9) 05-6

CRITICALITIES

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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: 76BU10E

REPORT DATE 03/31/87 C-1249
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6248

HIGHEST CRITICALITY  HDW/FUNC
FLIGHT: 3/1R
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) R1A1 PANEL
3) FLCA-3
4) FPCA-3
5) INVERTER 3 B

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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.

REFERENCES: 76BU10E

REPORT DATE 03/31/87  C-1250
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6249

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) R1A1 PANEL
3) FLCA-3
4) FPCA-3
5) INVERTER 3 B

CRITICALITIES

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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.

REFERENCES: 76BU10E

REPORT DATE 03/31/87  C-1251
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6250

HIGHEST CRITICALITY
FLIGHT: 3/1R
ABORT: 3/1R

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) R1A1 PANEL
3) FLCA-3
4) FPCA-3
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


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.

REFERENCES: 76BU10C

REPORT DATE 03/31/87 C-1252
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6251

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) FLCA-3
4) FPCA-3
5) INVERTER 3 C
6)
7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BU10C

REPORT DATE 03/31/87 C-1253
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6252

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: INVERTER 3 C
FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

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

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


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.

REFERENCES: 76BU10C

REPORT DATE 03/31/87 C-1254
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) RIA1 PANEL
3) FLCA-3
4) FPCA-3
5) INVERTER 3 C
6) 7) 8) 9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BU10C

REPORT DATE 03/31/87  C-1255
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY: HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6254  ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 3 ON)
FAILURE MODE: FAILS ON

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) 
7) 
8) 
9) 05-6

CRITICALITIES

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

LOCATION: 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.

REFERENCES: 76BV22G

REPORT DATE 03/31/87  C-1256
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6255

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
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) 
7) 
8) 
9) 05-6

CRITICALITIES

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

LOCATION: 83V76AI8AR9
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: 76BV22G

REPORT DATE 03/31/87 C-1257
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6256  ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 3 OFF)
FAILURE MODE: FAILS ON

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 OFF)
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9) 05-6

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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

REPORT DATE 03/31/87  C-1258
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 6257
ABORT: 3/3
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) FLCA-3
4) HYBRID DRIVER TYPE III (AC BUS 3 OFF)
5)
6)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1259
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6258

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) RIA1 PANEL
3) MAIN DC DIST ASSY #3
4) SWITCH, TOGGLE 3PDT (INV/AC BUS 3)
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1260
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6259

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1261
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6260

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/1R
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) R1A1 PANEL
4) SWITCH, TOGGLE SPDT (AC 3 BUS SNSR)
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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

REPORT DATE 03/31/87 C-1262
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6261

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) R1A1 PANEL
4) SWITCH, TOGGLE SPDT (AC 3 BUS SNSR)
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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

REPORT DATE 03/31/87 C-1263
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/1R
MDAC ID: 6262  ABORT: 3/1R

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
3) CIRCUIT BREAKER, 3A TO AC3 BUS SENSOR
4) 
5) 
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7) 
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1264
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC

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

SUBSYSTEM: EPD&C

MDAC ID: 6263

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
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9) 05-6

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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

REPORT DATE 03/31/87 C-1265
# Independent Orbiter Assessment
## Orbiter Subsystem Analysis Worksheet

**DATE:** 3/11/87  
**SUBSYSTEM:** EPD&C  
**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

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**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.

**References:** 76BV

**Report Date** 03/31/87  
**C-1266**
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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9) 05-6

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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.

REFERENCES: 76BV

REPORT DATE 03/31/87 C-1267
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6266

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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

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.

REFERENCES: 76BV21G

REPORT DATE 03/31/87 C-1268
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6267

ITEM: DIODE, BLOCKING IA (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)
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9) 05-6

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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.

REFERENCES: 76BV21G

REPORT DATE 03/31/87 C-1269
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6268

HIGHEST CRITICALITY
FLIGHT: 3/3
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)...
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9) 05-6

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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.

REFERENCES: 76BV21G

REPORT DATE 03/31/87 C-1270
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6269

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
8)
9) 05-6

CRITICALITIES
FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC
PRELAUNCH: 3/3 RTLIS: 3/3
LIFTOFF: 3/3 TAL: 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.

REFERENCES: 76BV21G
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6270

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

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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.

REFERENCES: 76BV21G

REPORT DATE 03/31/87 C-1272
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6271

HIGHEST CRITICALITY
FLIGHT: 3/3
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)

CRITICALITIES

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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.

REFERENCES: 76BV21G

REPORT DATE 03/31/87  C-1273
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6272

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) 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

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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.

REFERENCES: 76BV21H

REPORT DATE 03/31/87 C-1274
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/1R
MDAC ID: 6273
ABORT: 3/1R

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

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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.

REFERENCES: 76BV21H

REPORT DATE 03/31/87 C-1275
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C

MDAC ID: 6274

DATE: 3/11/87

HIGHEST CRITICALITY

HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 B RESET)
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 RESET)
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8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BV21H

REPORT DATE 03/31/87 C-1276
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BV21H

REPORT DATE 03/31/87  C-1277
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6276  ABORT: 3/3

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)
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

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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.

REFERENCES: 76BV21H

REPORT DATE 03/31/87  C-1278
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

SUBSYSTEM: EPD&C
MDAC ID: 6277

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)
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7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BV21H

REPORT DATE 03/31/87 C-1279
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6278 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 C 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 C RESET)
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9) 05-6

CRITICALITIES

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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/MISSTION/VEHICLE.

REFERENCES: 76BV15F

REPORT DATE 03/31/87 C-1280
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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.

REFERENCES: 76BV15F

REPORT DATE 03/31/87 C-1281
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6280

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<td>SUBSYS LEAD: K. SCHMECKPEPER</td>
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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

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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.

REFERENCES: 76BV15F

REPORT DATE 03/31/87 C-1282
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6281

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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

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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.

REFERENCES: 76BV15F

REPORT DATE 03/31/87 C-1283
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6282

HIGHEST CRITICALITY
FLIGHT: 3/3
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

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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.

REFERENCES: 76BV15F

REPORT DATE 03/31/87 C-1284
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

SUBSYSTEM: EPD&C  
MDAC ID: 6283  

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

CRITICALITIES  

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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.  

REFERENCES: 76BV15F

REPORT DATE 03/31/87 C-1285
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

SUBSYSTEM: EPD&C
MDAC ID: 6284

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

CRITICALITIES

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

LOCATION: 83V76A37A1R1
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BV19C

REPORT DATE 03/31/87 C-1286
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

HDW/FUNC FLIGHT: 3/3

MDAC ID: 6286

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

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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.

REFERENCES: 76BV12H

REPORT DATE 03/31/87  C-1288
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6287

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1289
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87      HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C    FLIGHT: 3/3
MDAC ID: 6288      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)
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6)
7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87   C-1290
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6289

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) R1A1 PANEL
4) INV DIST & CONT ASSY #3
5) RESISTOR, 2.2K 1/4W TO MDM OF3
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1291
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6290  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)
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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

REPORT DATE 03/31/87  C-1292
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6291

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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

REPORT DATE 03/31/87 C-1293
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6292

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
4) INV DIST & CONT ASSY #3
5) RESISTOR, 2.2K 1/4W TO MDM OF3
6)
7)
8)
9) 05-6

CRITICALITIES

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

LOCATION: 83V76A37A1R9
PART NUMBER: RLR20C222GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
THIS IS A NON-CRITICAL MONITORING CIRCUIT.

REFERENCES: 76BV19C

REPORT DATE 03/31/87 C-1294
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6293

HIGHEST CRITICALITY
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-1295
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6294

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: RESISTOR, 100K (AC BUS 3 B 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 B CURRENT)
4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1296
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6295

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1297
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6296

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (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, 150K 1/2W (AC BUS 3 A VOLTAGE)
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8) 
9) 05-6

CRITICALITIES

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

LOCATION: 83V76A37A1R13
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

REPORT DATE 03/31/87 C-1298
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C

MDAC ID: 6297

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)

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1299
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3

ABORT: 3/3

SUBSYSTEM: EP&D&C

MDAC ID: 6298

ITEM: RESISTOR, 150K 1/2W (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, 150K 1/2W (AC BUS 3 C VOLTAGE)
4) 
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1300
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6299

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-1301
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6300

HIGHEST CRITICALITY HDW/FUNC FLIGHT: 3/3
ABORT: 3/3

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
3) RESISTOR, 4.3K 1/8W (AC BUS 3 B VOLTAGE)
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8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1302
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6301

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1303
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6302

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

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
2) INV DIST CONT ASSY #3
3) AC O/V VOLT SNSR 3
4) FUSE, 3A TO AC BUS 3 A
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1304
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  
SUBSYSTEM: EPD&C  
MDAC ID: 6303  

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R  
ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 3 B  
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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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6304 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
2) INV DIST CONT ASSY #3
3) AC O/V VOLT SNSR 3
4) FUSE, 3A TO AC BUS 3 C
5)
6)
7)
8)
9) 05-6

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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

REPORT DATE 03/31/87 C-1306
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1307
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6306

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
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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REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 83V76A37F5
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: 76BV9C

REPORT DATE 03/31/87 C-1308
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6307

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)
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7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BV9B

REPORT DATE 03/31/87 C-1309
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6308

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 3A
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) RELAY, LATCHING TO AC BUS 3A
4) 
5) 
6) 
7) 
8) 
9) 05-6


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.

REFERENCES: 76BV11

REPORT DATE 03/31/87 C-1310
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6309

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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
2) INV DIST CONT ASSY #3
3) RELAY, LATCHING TO AC BUS 3A
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CRITICALITIES

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

LOCATION: 83V76A37KI
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.

REFERENCES: 76BV11

REPORT DATE 03/31/87 C-1311
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
MDAC ID: 6310
ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 3B
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) RELAY, LATCHING TO AC BUS 3B
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9) 05-6

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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.

REFERENCES: 76BV11

REPORT DATE 03/31/87 C-1312
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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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.

REFERENCES: 76BV11

REPORT DATE 03/31/87 C-1313
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6312

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

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
3) RELAY, LATCHING TO AC BUS 3C
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BV11

REPORT DATE 03/31/87 C-1314
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6313 ABORT: 3/3

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
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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.

REFERENCES: 76BV11

REPORT DATE 03/31/87 C-1315
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
ABORT: 3/3
MDAC ID: 6314
FLIGHT: 3/3

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

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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

REPORT DATE 03/31/87 C-1316
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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

REPORT DATE 03/31/87  C-1317
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C
MDAC ID: 6316

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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) MA73C PANEL
4) CIRCUIT BREAKER, 3P 3A TO PAYLOAD

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1318
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6317

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-1319
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6318  ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)
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) A15 PANEL
5) SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)
6)
7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1320
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6319  ABOIT: 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) A15 PANEL
5) SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1321
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6320

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)
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) A15 PANEL
5) M013Q PANEL
6) SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1322
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C

MDAC ID: 6321

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) A15 PANEL
5) M013Q PANEL
6) SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)
7) 
8) 
9) 05-6

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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

REPORT DATE 03/31/87 C-1323
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/1R
MDAC ID: 6322  ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 3A 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 3A TO RCS/OMS-3
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8)
9) 05-6

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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.

REFERENCES: 76BY23C

REPORT DATE 03/31/87  C-1324
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)  
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8)  
9) 05-6

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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.

REFERENCES: 76BY23C

REPORT DATE 03/31/87  C-1325
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6324

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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)
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8)
9) 05-6

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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.

REFERENCES: 76BY23B

REPORT DATE 03/31/87 C-1326
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6325
HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

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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.

REFERENCES: 76BY23B

REPORT DATE 03/31/87 C-1327
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 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:
1) AC BUS 3
2) 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: 3/1R
LIFTOFF: 3/1R TAL: 3/1R
ONORBIT: 3/1R AOA: 3/1R
DEORBIT: 3/1R ATO: 3/1R
LANDING/SAFING: 3/3


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.

REFERENCES: 76BY23B

REPORT DATE 03/31/87 C-1328
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6327

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
2) INV DIST & CONT ASSY #3
3) MA73C PANEL
4) CIRCUIT BREAKER AC 3C TO RCS/OMS-3

CRITICALITIES

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

REFERENCES: 76BY23B

REPORT DATE 03/31/87 C-1329
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6328

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
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
4) CIRCUIT BREAKER TO FMCA-3
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BY22G

REPORT DATE 03/31/87 C-1330
INDEPENDENT ORBITER ASSESSMENT
ORBTER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C

MDAC ID: 6329

HIGHEST CRITICALITY HDW/FUNC

FLIGHT: 3/3

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

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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.

REFERENCES: 76BY22G

REPORT DATE 03/31/87 C-1331
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6330

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
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 3
2) INV DIST & CONT ASSY #3
3) MA73C PANEL
4) CIRCUIT BREAKER TO MMCA-2
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

CRITICALITIES

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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.

REFERENCES: 76BY22G

REPORT DATE 03/31/87 C-1332
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6331

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BY22G

REPORT DATE 03/31/87 C-1333
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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9) 05-6

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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.

REFERENCES: 76BY22D

REPORT DATE 03/31/87 C-1334
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6333  ABORT: 3/3

ITEM: 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
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9) 05-6

CRITICALITIES

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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.

REFERENCES:  76BY22D

REPORT DATE 03/31/87  C-1335
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6334

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 2/1R
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
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BY22H

REPORT DATE 03/31/87 C-1336
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6335

HIGHEST CRITICALITY: 3/3
FLIGHT: 3/3
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
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8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BY22H

REPORT DATE 03/31/87 C-1337
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  
SUBSYSTEM: EPD&C  
MDAC ID: 6336

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

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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.

REFERENCES: 76BY14F

REPORT DATE 03/31/87  
C-1338
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6337

HIGHEST CRITICALITY HDW/FUNC FLIGHT: 3/1R
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

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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.

REFERENCES: 76BY14F

REPORT DATE 03/31/87  C-1339
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6338

ITEM: RELAY TO PLBD AC3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: 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

CRITICALITIES

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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.

REFERENCES: 76BY14F

REPORT DATE 03/31/87 C-1340
INDEPENDENT ORBITER ASSESSMENT 
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/1R
MDAC ID: 6339  ABOt: 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

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LOCATION: 40V76A118K54
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: 76BY14F

REPORT DATE 03/31/87  C-1341
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET  

DATE: 3/11/87  
SUBSYSTEM: EPD&C  
MDAC ID: 6340  

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  

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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  

REPORT DATE 03/31/87  
C-1342
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6341

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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

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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

REPORT DATE 03/31/87 C-1343
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6342

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
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

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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.

REFERENCES: 76BY16C

REPORT DATE 03/31/87 C-1344
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/1R
MDAC ID: 6343  ABRORT: 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
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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.

REFERENCES: 76BY16C

REPORT DATE 03/31/87  C-1345
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY: HDW/FUNC
SUBSYSTEM: EP&D&C
FLIGHT: 2/1R
MDAC ID: 6344
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
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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.

REFERENCES: 76BY15C

REPORT DATE 03/31/87 C-1346
**INDEPENDENT ORBITER ASSESSMENT**
**ORBITER SUBSYSTEM ANALYSIS WORKSHEET**

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**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  

**CRITICALITIES**

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**RETRANSMIT 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:** 76BY15C

**REPORT DATE 03/31/87**

C-1347
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6346

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
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7) 
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9) 05-6

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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.

REFERENCES: 76BY15C

REPORT DATE 03/31/87 C-1348
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

CRITICALITIES

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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.

REFERENCES: 76BY15C

REPORT DATE 03/31/87 C-1349
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6348

HIGHEST CRITICALITY HDW/FUNC
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-2
5) RELAY, 4P TO PLBM-AC3
6)
7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1350
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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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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

REPORT DATE 03/31/87 C-1351
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6350

HIGHEST CRITICALITY
HDW/FUNC
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-2
5) RELAY, 4P TO PLBM-AC3
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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: 76BZ22E

REPORT DATE 03/31/87 C-1352
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6351

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/1R
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
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1353
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6352
HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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

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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.

REFERENCES: 76DA24G

REPORT DATE 03/31/87 C-1354
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6353

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/1R
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)
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76DA24C

REPORT DATE 03/31/87 C-1355
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6354

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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 BCI
2) 017 PANEL
3) RESISTOR, 1.2K 2W (TO MEC #2)
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9) 05-6

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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.

REFERENCES: 76DA13G

REPORT DATE 03/31/87 C-1356
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)

CRITICALITIES

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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.

REFERENCES: 76DA13C

REPORT DATE 03/31/87  C-1357
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6356

HIGHEST CRITICALITY
HDW/FUNC ABORT: 3/3
FLIGHT: 3/3

ITEM: SWITCH, TOGGLE DPDT (MEC 1)
FAILURE MODE: FAILS CLOSED

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

BREAKDOWN HIERARCHY:
1) CONTROL BUSSES AB1 & AB2
2) 017 PANEL
3) SWITCH, TOGGLE DPDT (MEC 1)
4)
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76DA24

REPORT DATE 03/31/87  C-1358
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
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:
1) CONTROL BUSSSES AB1 & AB2
2) 017 PANEL
3) SWITCH, TOGGLE DPDT (MEC 1)
4) 
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9) 05-6

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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.

REFERENCES: 76DA24

REPORT DATE 03/31/87 C-1359
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6358

ITEM: SWITCH, TOGGLE DPDT (MEC 2)
FAILURE MODE: FAILS CLOSED

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

BREAKDOWN HIERARCHY:
1) CONTROL BUSSES BC1 & BC2
2) 017 PANEL
3) SWITCH, TOGGLE DPDT (MEC 2)
4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES

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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.

REFERENCES: 76DA12

REPORT DATE 03/31/87 C-1360
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6359

HIGHEST CRITICALITY
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: SWITCH, TOGGLE DPDT (MEC 2)
FAILURE MODE: FAILS OPEN

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

BREAKDOWN HIERARCHY:
1) CONTROL BUSSES BC1 & BC2
2) 017 PANEL
3) SWITCH, TOGGLE DPDT (MEC 2)
4)
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76DA12

REPORT DATE 03/31/87 C-1361
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 6360
ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W TO MDM OAI
FAILURE MODE: FAILS OPEN

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

BREAKDOWN HIERARCHY:
1) CONT BUS ABL
2) 017 PANEL
3) APCA-1
4) RESISTOR, 5.1K 1/4W TO MDM OAI
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76DA21G

REPORT DATE 03/31/87 C-1362
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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.

REFERENCES: 76DA9G

REPORT DATE 03/31/87  C-1363
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6362

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

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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.

REFERENCES: 76DA9H

REPORT DATE 03/31/87  C-1364
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6363

HIGHEST CRITICALITY
HDW/func
FLIGHT: 3/3
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

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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.

REFERENCES: 76DA9H

REPORT DATE 03/31/87 C-1365
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C
MDAC ID: 6364

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) 
8) 
9) 05-6

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.

REFERENCES: 76DA9D

REPORT DATE 03/31/87 C-1366
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

CRITICALITIES

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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.

REFERENCES: 76DA9D

REPORT DATE 03/31/87  C-1367
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6366

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: RPC, 10A TO MEC #1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: 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) 05-6

CRITICALITIES

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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.

REFERENCES: 76DA20D

REPORT DATE 03/31/87 C-1368
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) 
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8) 
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76DA20D

REPORT DATE 03/31/87  C-1369
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6368

HIGHEST CRITICALITY
FLIGHT: 3/1R
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
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76DA20H

REPORT DATE 03/31/87 C-1370
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6369

HIGHEST CRITICALITY
HDW/FUNC
Flight: 3/3
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) 05-6

CRITICALITIES

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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.

REFERENCES: 76DA20H

REPORT DATE 03/31/87 C-1371
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6370

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/1R
ABORT: 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
2) MAIN DC DIST ASSY #2
3) R15 PANEL
4) R2 PANEL
5) DIODE, ISOLATION 12A (TO CONT BUS CA1)

CRITICALITIES

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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.

REFERENCES: 76MI2E

REPORT DATE 03/31/87 C-1372
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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. SCHMECKPENER  
SUBSYS LEAD: K. SCHMECKPENER

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

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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 BUSES. CONTROL BUS CIRCUIT IS FURTHER PROTECTED BY 10 A CIRCUIT BREAKER. THE NET RESULT IS NO EFFECT.

REFERENCES: 76M12E

REPORT DATE 03/31/87 C-1373
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6372

ITEM: DIODE, ISOLATION 12A (TO CONT BUS CA2)
FAILURE MODE: SHORTS

LEAD ANALYST: 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

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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 BUSES. CONTROL BUS CIRCUIT IS FURTHER PROTECTED BY 10 A CIRCUIT BREAKER. THE NET RESULT IS NO EFFECT.

REFERENCES: 76M12E

REPORT DATE 03/31/87 C-1374
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6373

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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

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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.

REFERENCES: 76M12E

REPORT DATE 03/31/87  C-1375
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6374

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: DIODE, ISOLATION 12A (TO CONT BUS CA3)
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 CA3)
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76M12E

REPORT DATE 03/31/87 C-1376
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6375

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

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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.

REFERENCES: 76M12E

REPORT DATE 03/31/87 C-1377
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6376

ITEM: DIODE, ISOLATION 12A
FAILURE MODE: SHORTS

LEAD ANALYST: 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

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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

REPORT DATE 03/31/87 C-1378
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
5) DIODE, ISOLATION 12A
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1379
**INDEPENDENT ORBITER ASSESSMENT**  
**ORBITER SUBSYSTEM ANALYSIS WORKSHEET**

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**Breakdown Hierarchy:**
1) Main DC Bus C  
2) O13 Panel  
3) ESS Bus 3AB  
4) Main C Contr  
5) Diode, Isolation 12A  
6)  
7)  
8)  
9) 05-6

**Criticalities**

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**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 Busess tied. Possible loss of Crew/Vehicle could result in this case.

**References:**  
Shown as CR16 on 76Y19H

**Report Date:**  
03/31/87
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6379  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

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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

REPORT DATE 03/31/87  C-1381
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6380

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)
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7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1382
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6381

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-1383
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6382

HIGHEST CRITICALITY
FLIGHT: 3/3
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)
8)
9) 05-6

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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

REPORT DATE 03/31/87   C-1384
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6383

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
3) FPCA-1
4) DIODE TO INV 1 B
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1385
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6384

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
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-I
4) DIODE TO INV 1 C
5) 6) 7) 8) 9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1386
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6385

ITEM: DIODE TO INV 1 C
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 C
5)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1387
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY
SUBSYSTEM: EPD&C
HDW/FUNC FLIGHT: 3/3
MDAC ID: 6386 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) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1388
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C
MDAC ID: 6387

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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-I
3) FUSE, 3A TO AC BUS 1B OFF
4) 
5) 
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8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1389
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6388  ABORT: 3/3

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
3) FUSE, 3A TO AC BUS 1A OFF
4)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1390
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6389

HIGHEST CRITICALITY
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-1391
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6390

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)
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8)
9) 05-6

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

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REFERENCES: 76BF16D
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6391

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

<table>
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<tr>
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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

REPORT DATE 03/31/87 C-1393
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6392  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

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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

REPORT DATE 03/31/87  C-1394
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6393

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1395
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6394  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) ESS BUS 1BC
2) R1A1 PANEL
3) FLCA-1
4) DIODE, ISOLATION TO INV 1A OFF
5)
6)
7)
8)
9) 05-6

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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

REPORT DATE 03/31/87  C-1396
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6395

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) FLCA-1
4) DIODE, ISOLATION TO INV 1B OFF
5)
6)
7)
8)
9) 05-6

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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

REPORT DATE 03/31/87 C-1397
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6396  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) ESS BUS 1BC
2) R1A1 PANEL
3) FLCA-1
4) DIODE, ISOLATION TO INV 1C OFF

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1398
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6397

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) FLCA-2
4) DIODE, ISOLATION TO INV 2A OFF
5) 
6) 
7) 
8) 
9) 05-6

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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

REPORT DATE 03/31/87 C-1399
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
MDAC ID: 6398
FLIGHT: 3/3
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) ESS BUS 2CA
2) R1A1 PANEL
3) FLCA-2
4) DIODE, ISOLATION TO INV 2B OFF
5) 6) 7) 8) 9) 05-6

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6399

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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) 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

REPORT DATE 03/31/87 C-1401
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC

FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6400

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) R1A1 PANEL
3) FLCA-3
4) DIODE, ISOLATION TO INV 3A OFF
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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

REPORT DATE 03/31/87 C-1402
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) FLCA-3
4) DIODE, ISOLATION TO INV 3B OFF
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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

REPORT DATE 03/31/87  C-1403
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6402

ITEM: DIODE, ISOLATION TO INV 3C OFF
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
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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

REPORT DATE 03/31/87
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6403

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) FLCA-1
4) DIODE, ISOLATION TO INV 1A OFF
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY: HDW/FUNC

SUBSYSTEM: EPD&C

MDAC ID: 6404

FLIGHT: 3/3

ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B OFF

FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) ESS BUS 1BC
2) R1A1 PANEL
3) FLCA-1
4) DIODE, ISOLATION TO INV 1B OFF
5)
6)
7)
8)
9) 05-6

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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

REPORT DATE 03/31/87 C-1406
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) FLCA-1
4) DIODE, ISOLATION TO INV 1C OFF
5) 
6) 
7) 
8) 
9) 05-6

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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

REPORT DATE 03/31/87  C-1407
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6406

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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) R1A1 PANEL
3) FLCA-2
4) DIODE, ISOLATION TO INV 2A OFF
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9) 05-6

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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

REPORT DATE 03/31/87 C-1408
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6407

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) FLCA-2
4) DIODE, ISOLATION TO INV 2B OFF
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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

REPORT DATE 03/31/87  C-1409
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C
MDAC ID: 6408

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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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

REPORT DATE 03/31/87 C-1410
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6409

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) R1A1 PANEL
3) FLCA-3
4) DIODE, ISOLATION TO INV 3A OFF
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9) 05-6

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) FLCA-3
4) DIODE, ISOLATION TO INV 3B OFF
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8) 05-6

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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

REPORT DATE 03/31/87  C-1412
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) FLCA-3
4) DIODE, ISOLATION TO INV 3C OFF
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9) 05-6

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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

REPORT DATE 03/31/87 C-1413
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6412

ITEM: DIODE, ISOLATION TO INV 3C ON
FAILURE MODE: SHORTS

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 ON
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9) 05-6

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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

REPORT DATE 03/31/87 C-1414
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6413

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) FLCA-3
4) DIODE, ISOLATION TO INV 3B ON
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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

REPORT DATE 03/31/87 C-1415
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6414

ITEM: DIODE, ISOLATION TO INV 3A ON SHORTS
FAILURE MODE: HDW/FUNC

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

BREAKDOWN HIERARCHY:
1) ESS BUS 3AB
2) RlA1 PANEL
3) FLCA-3
4) DIODE, ISOLATION TO INV 3A ON
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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

REPORT DATE 03/31/87 C-1416
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
3) FLCA-2
4) DIODE, ISOLATION TO INV 2C ON
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1417
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6416

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2B ON
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 2B ON
5)
6)
7)
8)
9) 05-6

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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

REPORT DATE 03/31/87 C-1418
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6417

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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) RIA1 PANEL
3) FLCA-2
4) DIODE, ISOLATION TO INV 2A ON

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1419
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6418 ABORT: 3/3

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) R1A1 PANEL
3) FLCA-1
4) DIODE, ISOLATION TO INV 1C ON
5)
6)
7)
8)
9) 05-6

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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

REPORT DATE 03/31/87 C-1420
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) RIAL PANEL
3) FLCA-1
4) DIODE, ISOLATION TO INV 1B ON
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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

REPORT DATE 03/31/87  C-1421
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
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
2) R1A1 PANEL
3) FLCA-1
4) DIODE, ISOLATION TO INV 1A
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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

REPORT DATE 03/31/87 C-1422
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6421

ITEM: DIODE, ISOLATION TO INV 3C ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) ESS BUS 3AB
2) R1A1 PANEL
3) FLCA-3
4) DIODE, ISOLATION TO INV 3C ON
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9) 05-6

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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

REPORT DATE 03/31/87 C-1423
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6422

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) R1A1 PANEL
3) FLCA-3
4) DIODE, ISOLATION TO INV 3B ON
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9) 05-6

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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

REPORT DATE 03/31/87 C-1424
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6423

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) R1A1 PANEL
3) FLCA-3
4) DIODE, ISOLATION TO INV 3A ON
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7)
8)
9) 05-6

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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

REPORT DATE 03/31/87 C-1425
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6424

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
4) DIODE, ISOLATION TO INV 2C ON
5)
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7)
8)
9) 05-6

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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

REPORT DATE 03/31/87 C-1426
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6425

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) RL11 PANEL
3) FLCA-2
4) DIODE, ISOLATION TO INV 2B ON
5) 
6) 
7) 
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1427
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6426

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) FLCA-2
4) DIODE, ISOLATION TO INV 2A ON
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1428
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6427

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
3) FLCA-1
4) DIODE, ISOLATION TO INV 1C ON
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1429
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6428

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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8)
9) 05-6

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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

REPORT DATE 03/31/87 C-1430
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6429

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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 IBC
2) R1A1 PANEL
3) FLCA-I
4) DIODE, ISOLATION TO INV 1A ON
5) 
6) 
7) 
8) 
9) 05-6

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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

REPORT DATE 03/31/87 C-1431
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6430

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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
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9) 05-6

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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

REPORT DATE 03/31/87 C-1432
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6431

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-1433
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6432

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
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-I
4) DIODE, ISOLATION TO INV 1C OFF
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9) 05-6

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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

REPORT DATE 03/31/87 C-1434
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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8)
9) 05-6

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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

REPORT DATE 03/31/87 C-1435
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY

HDW/FUNC

FLIGHT: 3/3

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) 
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9) 05-6

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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

REPORT DATE 03/31/87  C-1436
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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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) 
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9) 05-6

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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

REPORT DATE 03/31/87 C-1437
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
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
2) PRE-FLIGHT TEST BUS #2
3) FLCA-3
4) DIODE, ISOLATION TO INV 3A OFF
5) 6) 7) 8) 9) 05-6

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

LOCATION: 83V76AI8CR
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

REPORT DATE 03/31/87 C-1438
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C

MDAC ID: 6437

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)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1439
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6438

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

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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

REPORT DATE 03/31/87 C-1440
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6439

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-1441
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6440

HIGHEST CRITICALITY
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER
LEAD 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)
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8)
9) 05-6

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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

REPORT DATE 03/31/87  C-1442
## INDEPENDENT ORBITER ASSESSMENT

### ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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**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) ...
6) ...
7) ...
8) ...
9) 05-6

### CRITICALITIES

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**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

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**REPORT DATE 03/31/87**

**C-1443**
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6442

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87  C-1444
**INDEPENDENT ORBITER ASSESSMENT**
**ORBITER SUBSYSTEM ANALYSIS WORKSHEET**

**DATE:** 3/11/87  
**HIGHEST CRITICALITY HDW/FUNC**  
**SUBSYSTEM:** EPD&C  
**MDAC ID:** 6443  
**FLIGHT:** 3/3  
**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)  
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8)  
9) 05-6

**CRITICALITIES**

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**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

REPORT DATE 03/31/87  
C-1445
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6444  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
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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

REPORT DATE 03/31/87  C-1446
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6445

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
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9) 05-6

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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

REPORT DATE 03/31/87 C-1447
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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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

REPORT DATE 03/31/87  C-1448
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6447

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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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

REPORT DATE 03/31/87 C-1449
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6448

HIGHEST CRITICALITY
FLIGHT: 3/3
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) GSE POWER
2) ESS BUS 1BC
3) FLCA-I
4) DIODE, ISOLATION TO INV 1A ON
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1450
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C

MDAC ID: 6449

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

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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

REPORT DATE 03/31/87 C-1451
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C
MDAC ID: 6450

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV IC ON
FAILURE MODE: FAILS OPEN

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

BREAKDOWN HIERARCHY:
1) GSE POWER
2) ESS BUS IBC
3) FLCA-1
4) DIODE, ISOLATION TO INV IC ON
5)
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8)
9) 05-6

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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

REPORT DATE 03/31/87 C-1452
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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  HIGHEST CRITICALITY  HDW/FUNC
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)
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7)
8)
9) 05-6

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6452

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) GSE POWER
2) ESS BUS 2CA
3) F LCA-2
4) DIODE, ISOLATION TO INV 2B ON
5) 
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9) 05-6

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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

REPORT DATE 03/31/87 C-1454
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6453

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) GSE POWER
2) ESS BUS 2CA
3) FLCA-2
4) DIODE, ISOLATION TO INV 2C ON
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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

REPORT DATE 03/31/87 C-1455
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6454

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) GSE POWER
2) ESS BUS 3AB
3) FLCA-3
4) DIODE, ISOLATION TO INV 3A ON
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7) 
8) 
9) 05-6

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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

REPORT DATE 03/31/87 C-1456
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  
SUBSYSTEM: EPD&C  
MDAC ID: 6455

HIGHEST CRITICALITY  
FLIGHT: 3/3  
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

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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

REPORT DATE 03/31/87  
C-1457
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY: HDW/FUNC
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
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9) 05-6

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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

REPORT DATE 03/31/87 C-1458
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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9) 05-6

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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

REPORT DATE 03/31/87  C-1459
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6458  ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B 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 1B ON
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9) 05-6

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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

REPORT DATE 03/31/87  C-1460
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6459

HIGHEST CRITICALITY
FLIGHT: 3/3
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
3) FLCA-1
4) DIODE, ISOLATION TO INV 1C ON
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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

REPORT DATE 03/31/87 C-1461
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6460

ITEM: DIODE, ISOLATION TO INV 2A 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 2A ON
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1462
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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

REPORT DATE 03/31/87  C-1463
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C

MDAC ID: 6462

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2C 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 2C ON
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1464
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
HIGHEST CRITICALITY:  EPD&C  FLIGHT: 3/3
MDAC ID: 6463  ABORT: 3/3

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
3) FLCA-3
4) DIODE, ISOLATION TO INV 3A ON
5) 6) 7) 8) 9) 05-6

CRITICALITIES
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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

REPORT DATE 03/31/87  C-1465
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6464  ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3B 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 3B ON
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9) 05-6

CRITICALITIES

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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: 76BUL7D

REPORT DATE 03/31/87  C-1466
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6465

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1467
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6466

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: SWITCH, ROTARY 4P9P, DC INDICATOR SELECT
FAILURE MODE: FAILS OPEN OR SHORTS

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

BREAKDOWN HIERARCHY:
1) F9A2 PANEL
2) SWITCH, ROTARY 4P9P, DC INDICATOR SELECT
3) 4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES

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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 MONITOR DC VOLTAGES, AMPERAGES, AND SIGNAL STRENGTHS. THESE ARE NON-CRITICAL MEASUREMENTS BECAUSE ALTERNATE METHODS OF MEASUREMENT ARE AVAILABLE.

REFERENCES: 76B-G

REPORT DATE 03/31/87 C-1468
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6467

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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8)
9) 05-6

CRITICALITIES

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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 MONITOR AC VOLTAGES. THESE ARE NON-CRITICAL MEASUREMENTS BECAUSE ALTERNATE METHODS OF MEASUREMENT ARE AVAILABLE.

REFERENCES: 76BG-G

REPORT DATE 03/31/87  C-1469
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 6468
ABORT: 3/3

ITEM: INDICATOR, EVENT (FC/MAIN 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) R1A1 PANEL
4) INDICATOR, EVENT (FC/MAIN BUS A)
5)
6)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1470
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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BREAKDOWN HIERARCHY:
1) ESS BUS 2CA
2) MAIN DC DIST ASSY #2
3) R1A1 PANEL
4) INDICATOR, EVENT (FC/MAIN BUS B)
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CRITICALITIES

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

LOCATION: 32V73A1A1DS3
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: 76L13H

REPORT DATE 03/31/87 C-1471
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC

SUBSYSTEM: EPD&C

FLIGHT: 3/3

MDAC ID: 6470

ABORT: 3/3

ITEM: INDICATOR, EVENT (FC/MAIN 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) R1A1 PANEL
4) INDICATOR, EVENT (FC/MAIN BUS C)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1472
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) R1A1 PANEL
4) INDICATOR, EVENT (MAIN TIE BUS A)
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6472

ITEM: INDICATOR, EVENT (MAIN TIE BUS B)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER
LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) ESS BUS 2CA
2) MAIN DC DIST ASSY #2
3) R1A1 PANEL
4) INDICATOR, EVENT (MAIN TIE BUS B)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1474
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
MDAC ID: 6473
FLIGHT: 3/3
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) R1A1 PANEL
4) INDICATOR, EVENT (MAIN TIE BUS C)
5) 6) 7) 8) 9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1475
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C

MDAC ID: 6474

HIGHEST CRITICALITY HDW/FUNC

FLIGHT: 3/3

ABORT: 3/3

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) R1A1 PANEL
4) INDICATOR, EVENT (INV/AC BUS #1)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1476
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6475

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
2) INV DIST & CONT ASSY #2
3) R1A1 PANEL
4) INDICATOR, EVENT (INV/AC BUS #2)
5) 
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8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87

C-1477
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6476

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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
2) INV DIST & CONT ASSY #3
3) R1A1 PANEL
4) INDICATOR, EVENT (INV/AC BUS #3)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1478
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6477

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: INDICATOR, 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) R1A1 PANEL
4) INDICATOR, EVENT (INVERTER PWR 1)
5) 
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7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1479
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87   HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C   FLIGHT: 3/3
MDAC ID: 6478   ABORT: 3/3

ITEM: INDICATOR, 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) R1A1 PANEL
4) INDICATOR, EVENT (INVERTER PWR #2)
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9) 05-6

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

LOCATION: 32V73A1A1DS9
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: 76BM24A

REPORT DATE 03/31/87   C-1480
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY: HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6479  ABORT: 3/3

ITEM: INDICATOR, 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) R1A1 PANEL
4) INDICATOR, EVENT (INVERTER PWR #3)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1481
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6480

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: INDICATOR, EVENT (PAYLOAD PRI MN 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) R1A1 PANEL
4) INDICATOR, EVENT (PAYLOAD PRI MN B)
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CRITICALITIES

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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

REPORT DATE 03/31/87 C-1482
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6481

FILE: 3/3
ABORT: 3/3

ITEM: INDICATOR, 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) RIAL PANEL
4) INDICATOR, EVENT (PAYLOAD PRI MN 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: 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

REPORT DATE 03/31/87  C-1483
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  
SUBSYSTEM: EPD&C  
MDAC ID: 6482  
HIGHEST CRITICALITY HDW/FUNC  
FLIGHT: 3/3  
ABORT: 3/3

ITEM: INDICATOR, EVENT (PAYLOAD PRI FC3)
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) RIA1 PANEL
4) INDICATOR, EVENT (PAYLOAD PRI FC3)
5)
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8)
9) 05-6

CRITICALITIES

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

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/MISISON/VEHICLE.

REFERENCES: 76U13C

REPORT DATE 03/31/87 C-1484
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6483

ITEM: INDICATOR, EVENT (STRUCT RTN)
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) AI2 PANEL
4) INDICATOR, EVENT (STRUCT RTN)

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1485
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
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)
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8)
9) 05-6

CRITICALITIES

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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: 76B10H

REPORT DATE 03/31/87  C-1486
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6485

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1487
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6486

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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) RIA1 PANEL
4) RESISTOR, 1.2K 2W (TO ESS BUS 1BC)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1488
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6487
HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) R1A1 PANEL
4) RESISTOR, 1.2K 2W (TO ESS BUS 1BC)
5) 6) 7) 8) 9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1489
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6488  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 C
2) MAIN DC DIST ASSY #3
3) RIA1 PANEL
4) RESISTOR, 1.2K 2W (TO ESS BUS 2CA)
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9) 05-6

CRITICALITIES

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

LOCATION: 32V73A1A1A5R1
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: 76AM24H

REPORT DATE 03/31/87  C-1490
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6489

HIGHEST CRITICALITY
FLIGHT: 3/3
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) R1A1 PANEL
4) RESISTOR, 1.2K 2W (TO ESS BUS 2CA)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1491
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6490

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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 A
2) MAIN DC DIST ASSY #1
3) R1A1 PANEL
4) RESISTOR, 1.2K 2W (TO ESS BUS 3AB)
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9) 05-6

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

LOCATION: 32V73A1A1A6R2
PART NUMBER: RWR80812111FR

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: 76AP24H

REPORT DATE 03/31/87  C-1492
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6491

HIGHEST CRITICALITY
FLIGHT: 3/3
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) R1A1 PANEL
4) RESISTOR, 1.2K 2W (TO ESS BUS 3AB)
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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

REPORT DATE 03/31/87 C-1493
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6492  ABORT: 3/3

ITEM: CURRENT SENSOR, AC 1A
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 1A
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9) 05-6

CRITICALITIES

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

LOCATION: 81V76A35CS1
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: 76BG12F

REPORT DATE 03/31/87  C-1494
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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/MISSON/VEHICLE.

REFERENCES: 76BG12E

REPORT DATE 03/31/87  C-1495
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6494

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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
2) INV DIST & CONT ASSY #1
3) CURRENT SENSOR, AC 1C
4)
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8)
9) 05-6

CRITICALITIES

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

LOCATION: 81V76A35CS3
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: 76BG12C

REPORT DATE 03/31/87 C-1496
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6495

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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9) 05-6

CRITICALITIES

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

LOCATION: 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

REPORT DATE 03/31/87 C-1497
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 6496
ABORT: 3/3

ITEM: CURRENT SENSOR, AC 2B
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 2B
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9) 05-6

CRITICALITIES

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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 CREW/MISSION/VEHICLE.

REFERENCES: 76BN12E

REPORT DATE 03/31/87 C-1498
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6497

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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CRITICALITIES

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

LOCATION: 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

REPORT DATE 03/31/87 C-1499
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6498

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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
2) INV DIST & CONT ASSY #3
3) CURRENT SENSOR, AC 3A
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CRITICALITIES

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

LOCATION: 83V76A37CS1
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: 76BV12F

REPORT DATE 03/31/87 C-1500
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6499

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
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
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CRITICALITIES

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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

REPORT DATE 03/31/87 C-1501
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6500 ABORT: 3/3

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
2) INV DIST & CONT ASSY #3
3) CURRENT SENSOR, AC 3C

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8) 
9) 05-6

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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 CREW/MISSION/VEHICLE.

REFERENCES: 76BV12C

REPORT DATE 03/31/87 C-1502
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
2) CURRENT SENSOR, DC (MDDA-1 TO APCA-4)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1503
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
MDAC ID: 6502
FLIGHT: 3/3
ABORT: 3/3

ITEM: CURRENT SENSOR, DC (MDDA-1 TO FPCA-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 FPCA-1)
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CRITICALITIES

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

LOCATION: 40V76CS1
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: 76E23G

REPORT DATE 03/31/87 C-1504
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6503  ABORT: 3/3

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)
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CRITICALITIES

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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 CREW/MISSION/VEHICLE.

REFERENCES: 76F23G

REPORT DATE 03/31/87  C-1505
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EP&D&C
MDAC ID: 6504

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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
2) CURRENT SENSOR, DC (MDDA-2 TO APCA-5)
3) 4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1506
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6505

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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9) 05-6

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

SUBSYSTEM: EPD&C
MDAC ID: 6506

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:
1) MAIN DC BUS B
2) CURRENT SENSOR, DC (MDDA-2 TO FPCA-2)
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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

REPORT DATE 03/31/87
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6507

HIGHEST CRITICALITY: FLIGHT: 3/3
ABORT: 3/3

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
2) CURRENT SENSOR, DC (MDDA-2 TO MPCA-2)
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7) 
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1509
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 6508
ABORT: 3/3

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:
1) MAIN DC BUS C
2) CURRENT SENSOR, DC (MDDA-3 TO APCA-6)

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

LOCATION: 40V76CS6
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: 76Y20C

REPORT DATE 03/31/87 C-1510
**INDEPENDENT ORBITER ASSESSMENT**

**ORBITER SUBSYSTEM ANALYSIS WORKSHEET**

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**BREAKDOWN HIERARCHY:**

1. MAIN DC BUS C
2. CURRENT SENSOR, DC (APCA-3 TO AFT PAYLOAD)

**CRITICALITIES**

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**REDUNDANCY SCREENS:**

A [ ]  B [ ]  C [ ]

**LOCATION:**

50V76CSII

**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

**REPORT DATE:**

03/31/87  C-1511
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6510

ITEM: CURRENT SENSOR, DC (MDDA-3 TO FPCA-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 FPCA-3)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1512
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6511
HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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9) 05-6

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

REPORT DATE 03/31/87 C-1513
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6512

ITEM: CIRCUIT BREAKER, 3A (AC IA 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 IA TO FWD RCS VALVES)
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9) 05-6

CRITICALITIES

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

LOCATION: 85V73A129CB29
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: 76BH9B (42T12H)

REPORT DATE 03/31/87 C-1514
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BH9B (42T12H)

REPORT DATE 03/31/87  C-1515
INDEPENDENT ORBITER ASSESSMENT
ORBiter SUBSYSTEM ANALYSIS WORKSHEET

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)
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9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BH9B (42T12H)

REPORT DATE 03/31/87  C-1516
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC

SUBSYSTEM: EPD&C

MDAC ID: 6515

ABORT: 3/3

FLIGHT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 2A 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 2A TO FWD RCS VALVES)
5) MA73C PANEL
6) INV DIST & CONT ASSY #2
7) AC BUS #2
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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)

REPORT DATE 03/31/87 C-1517
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
MDAC ID: 6516
FLIGHT: 3/3
ABORT: 3/3

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
2) INV DIST & CONT ASSY #2
3) MA73C PANEL
4) CIRCUIT BREAKER, 3A (AC 2B TO FWD RCS VALVES)
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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

LOCATION: 85V73A129CB33
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)

REPORT DATE 03/31/87  C-1518
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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)

REPORT DATE 03/31/87  C-1519
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6518

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 3A 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 3A TO FWD RCS VALVES)
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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

LOCATION: 85V73A129CB35
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: 76BW11B (42T22H)

REPORT DATE 03/31/87 C-1520
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

SUBSYSTEM: EPD&C
MDAC ID: 6519

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

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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)

REPORT DATE 03/31/87  C-1521
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY
SUBSYSTEM: EPD&C
HDW/FUNC
MDAC ID: 6520
FLIGHT: 3/3
ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 3C 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 3C TO FWD RCS VALVES)

CRITICALITIES

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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)

REPORT DATE 03/31/87 C-1522
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) 
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7) 
8) 
9) 05-6

CRITICALITIES

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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.

REFERENCES: 76BH9B (42T12H)

REPORT DATE 03/31/87  C-1523
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C   FLIGHT: 3/2R
MDAC ID: 6522  ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 1B 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 1B TO FWD RCS VALVES)
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9) 05-6

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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)

REPORT DATE 03/31/87  C-1524
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6523

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/2R
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:
1) AC BUS #1
2) INV DIST & CONT ASSY #1
3) MA73C PANEL
4) CIRCUIT BREAKER, 3A (AC 1C TO FWD RCS VALVES)
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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


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)

REPORT DATE 03/31/87 C-1525
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/2R
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6524

ITEM: CIRCUIT BREAKER, 3A (AC 2A TO FWD RCS VALVES)
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, 3A (AC 2A 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


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)

REPORT DATE 03/31/87 C-1526
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6525

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/2R
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:
1) AC BUS #2
2) INV DIST & CONT ASSY #2
3) MA73C PANEL
4) CIRCUIT BREAKER, 3A (AC 2B TO FWD RCS VALVES)
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9) 05-6

CRITICALITIES

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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)

REPORT DATE 03/31/87 C-1527
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 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:
1) AC BUS #2
2) INV DIST & CONT ASSY #2
3) MA73C PANEL
4) CIRCUIT BREAKER, 3A (AC 2C TO FWD RCS VALVES)
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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)

REPORT DATE 03/31/87  C-1528
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6527

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/2R
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)

CRITICALITIES

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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)
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/2R

ABORT: 3/3

SUBSYSTEM: EPD&C

MDAC ID: 6528

ITEM: CIRCUIT BREAKER, 3A (AC 3B 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 3B TO FWD RCS VALVES)
5)
6)
7)
8)
9) 05-6

CRITICALITIES

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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)

REPORT DATE 03/31/87  C-1530
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6529

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/2R
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)
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7)
8)
9) 05-6

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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)

REPORT DATE 03/31/87 C-1531
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6530

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/3

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)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87
C-1532
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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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

REPORT DATE 03/31/87  C-1533
## INDEPENDENT ORBITER ASSESSMENT
### ORBITER SUBSYSTEM ANALYSIS WORKSHEET

**DATE:** 3/11/87  
**SUBSYSTEM:** EPD&C  
**MDAC ID:** 6532

**HIGHEST CRITICALITY**  
**FLIGHT:** 3/1R  
**ABORT:** 3/3

**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

### CRITICALITIES

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**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

**REPORT DATE** 03/31/87  
**C-1534**
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6533

HIGHEST CRITICALITY
FLIGHT: 3/3
ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I TO APCA-I
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-I

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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

REPORT DATE 03/31/87  C-1535
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6534

HIGHEST CRITICALITY  HDW/FUNC
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

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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

REPORT DATE 03/31/87  C-1536
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6535

ITEM: HYBRID DRIVER TYPE I
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) MAIN DC BUS B
2) ALCA-2
3) HYBRID DRIVER TYPE I TO APCA-2
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9) 05-6

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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

REPORT DATE 03/31/87 C-1537
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6536

HIGHEST CRITICALITY
HDW/FUNC
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
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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

REPORT DATE 03/31/87  C-1538
### INDEPENDENT ORBITER ASSESSMENT
### ORBITER SUBSYSTEM ANALYSIS WORKSHEET

**DATE:** 3/11/87  
**SUBSYSTEM:** EPD&C  
**MDAC ID:** 6537  

**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  
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9) 05-6

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**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

**REPORT DATE 03/31/87**  
**C-1539**
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6538

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/1R
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)
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LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48A21C

REPORT DATE 03/31/87 C-1540
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6539

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1541
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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


LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48B21C

REPORT DATE 03/31/87 C-1542
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C
MDAC ID: 6541

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-1543
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6542

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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
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LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48BN21C

REPORT DATE 03/31/87 C-1544
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C
MDAC ID: 6543

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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9) 05-6

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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: 48BN21C

REPORT DATE 03/31/87
C-1545
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6544

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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) 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


LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48BP21C

REPORT DATE 03/31/87 C-1546
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6545

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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
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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

REPORT DATE 03/31/87 C-1547
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6546

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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
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9) 05-6

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LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48A21B

REPORT DATE 03/31/87 C-1548
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

REPORT DATE 03/31/87  C-1549
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6548

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
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9) 05-6

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LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48B21B

REPORT DATE 03/31/87 C-1550
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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:  48B21B

REPORT DATE 03/31/87  C-1551
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6550

HIGHEST CRITICALITY

HDW/FUNC FLIGHT: 3/1R
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
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LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48BN21B

REPORT DATE 03/31/87 C-1552
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6551

HIGHEST CRITICALITY
HDW/FUNC: 3/3
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-1553
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6552
HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/1R
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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LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48BP21B

REPORT DATE 03/31/87 C-1554
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6553

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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)
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9) 05-6

CRITICALITIES

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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.
CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48BP21B

REPORT DATE 03/31/87 C-1555
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
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
2) APCA-3
3) RESISTOR, 5.1K TO APCA-1

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1556
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6555

HIGHEST CRITICALITY

FLIGHT: 3/3
ABORT: 3/3

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

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1557
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6556

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/3
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

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

LOCATION: 56V76A133A1R30
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: 48BN21F

REPORT DATE 03/31/87  C-1558
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1559
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6558

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-1560
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) 
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8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1561
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6560  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 B
2) APCA-2
3) ALCA-3
4) RESISTOR, 7.5K TO DC RETURN
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9) 05-6

CRITICALITIES

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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: 48BN21B

REPORT DATE 03/31/87  C-1562
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6561

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)  
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1563
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6562

HIGHEST CRITICALITY
FLIGHT: 3/1R
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

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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

REPORT DATE 03/31/87 C-1564
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6563

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/1R
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

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LOCATION: 54V76A131A11R46
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

REPORT DATE 03/31/87 C-1565
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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

REPORT DATE 03/31/87  C-1566
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6565

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

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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

REPORT DATE 03/31/87 C-1567
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6566  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 B
2) APCA-2
3) RESISTOR, 2.2K
4) 
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7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1568
### INDEPENDENT ORBITER ASSESSMENT
### ORBITER SUBSYSTEM ANALYSIS WORKSHEET

**DATE:** 3/11/87  
**SUBSYSTEM:** EPD&C  
**MDAC ID:** 6567  
**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

#### CRITICALITIES

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**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

**REPORT DATE 03/31/87**  
**C-1569**
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
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
2) APCA-2
3) RESISTOR, 1.8K
4) 
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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

LOCATION: 55V76A132A1R35
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

REPORT DATE 03/31/87 C-1570
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6569

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

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REduNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 56V76A133A1R23

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

REPORT DATE 03/31/87 C-1571
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT:  3/3
MDAC ID: 6570  ABORT:  3/3

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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1572
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6571

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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1573
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6572

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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 B
2) APCA-2
3) RESISTOR, 2.2K
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CRITICALITIES

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

LOCATION: 55V76A132A1R38

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

REPORT DATE 03/31/87 C-1574
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6573

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
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9) 05-6

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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

REPORT DATE 03/31/87 C-1575
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6574

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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

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

LOCATION: 34V73A6A11R1
PART NUMBER: RLR42C1201GM

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:
THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48N24E

REPORT DATE 03/31/87 C-1576
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6575

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: RESISTOR, 1.2K
FAILURE MODE: FAILS OPEN, SHORTS

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

BREAKDOWN HIERARCHY:
1) CONT BUS BC2
2) F6 PANEL
3) RESISTOR, 1.2K
4) 
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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

LOCATION: 34V73A6A11R2
PART NUMBER: RLR42C1201GM

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:
THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISISON/VEHICLE.

REFERENCES: 48N24D

REPORT DATE 03/31/87 C-1577
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6576

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: RESISTOR, 1.2K
FAILURE MODE: FAILS OPEN, SHORTS

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

BREAKDOWN HIERARCHY:
1) CONT BUS ABl
2) P6 PANEL
3) RESISTOR, 1.2K
4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES

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

LOCATION: 34V73A6A11R3
PART NUMBER: RLR42C1201GM

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:
THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48Q24E

REPORT DATE 03/31/87 C-1578
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6577

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6577

ITEM: RESISTOR, 1.2K
FAILURE MODE: FAILS OPEN, SHORTS

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

BREAKDOWN HIERARCHY:
1) CONT BUS BC1
2) F6 PANEL
3) RESISTOR, 1.2K
4) RESISTOR, 1.2K
5) RESISTOR, 1.2K
6) RESISTOR, 1.2K
7) RESISTOR, 1.2K
8) RESISTOR, 1.2K
9) 05-6

CRITICALITIES

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

LOCATION: 34V73A6A11R4
PART NUMBER: RLR42C1201GM

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:
THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48Q24D

REPORT DATE 03/31/87 C-1579
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6578

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/3

ITEM: RPC, 20A TO APCA-I
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-I
4) 
5) 
6) 
7) 
8) 
9) 05-6

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6579

ITEM: RPC, 20A TO APCA-I
FAILURE MODE: FAILS CLOSED

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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

BREAKDOWN HIERARCHY:
1) MAIN DC BUS C
2) APCA-3
3) RPC, 20A TO APCA-I
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: 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

REPORT DATE 03/31/87 C-1581
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6580

HIGHEST CRITICALITY
FLIGHT: 3/1R
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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1582
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6581

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) 
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8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1583
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1584
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6583

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)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1585
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6584

ITEM: RPC, 20A TO RELAY
FAILURE MODE: FAILS OPEN

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

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/3

BREAKDOWN HIERARCHY:
1) MAIN DC BUS A
2) APCA-1
3) RPC, 20A TO RELAY

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


LOCATION: 54V76A131RPC4
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

REPORT DATE 03/31/87 C-1586
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6585

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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8)
9) 05-6

CRITICALITIES

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

LOCATION: 54V76A131RPC4
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: 48B18G

REPORT DATE 03/31/87 C-1587
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1588
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6587  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 B
2) APCA-2
3) RPC, 20A TO ORB BUS C
4)  
5)  
6)  
7)  
8)  
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1589
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6588

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/3

ITEM: RPC, 20A TO ORB BUS C
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER
LEAD: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) MAIN DC BUS C
2) APCA-3
3) RPC, 20A TO ORB BUS C

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1590
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1591
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6590

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
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LOCATION: 55V76A132RPC45
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

REPORT DATE 03/31/87 C-1592
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EP&D&C
MDAC ID: 6591

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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 B
2) APCA-2
3) RPC, 20A TO ORB BUS C
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CRITICALITIES

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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

REPORT DATE 03/31/87 C-1593
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6592

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

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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

REPORT DATE 03/31/87 C-1594
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6593

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87  C-1595
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6594

HIGHEST CRITICALITY
FLIGHT: 3/1R
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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1596
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

SUBSYSTEM: EPD&C
MDAC ID: 6595

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) 
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8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1597
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6596

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)
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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/SAFINING: 3/3


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

REPORT DATE 03/31/87 C-1598
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
      FLIGHT:  3/3
SUBSYSTEM: EPD&C  ABORT:  3/3
MDAC ID: 6597

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

LOCATION: 55V76A132RPC5
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

REPORT DATE 03/31/87  C-1599
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6598

HIGHEST CRITICALITY
HDW/FUNC

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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REDUNDANCY SCREENS:

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

REPORT DATE 03/31/87 C-1600
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

CRITICALITIES

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

LOCATION: 56V76A133RPC24
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: 48BP21F

REPORT DATE 03/31/87  C-1601
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6600

HIGHEST CRITICALITY
HDW/FUNC

FLIGHT: 3/1R
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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1602
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6601

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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: 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

REPORT DATE 03/31/87 C-1603
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6602

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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
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REDUNDANCY SCREENS:

LOCATION: 56V76A133A3CR9

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

REPORT DATE 03/31/87 C-1604
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6603

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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) APFA-3
3) DIODE TO ORB BUS C
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1605
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6604

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1606
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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

LOCATION: 55V76A132A3CR6
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48G22F

REPORT DATE 03/31/87  C-1607
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6606

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/1R
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

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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

REPORT DATE 03/31/87  C-1608
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1609
### INDEPENDENT ORBITER ASSESSMENT
### ORBITER SUBSYSTEM ANALYSIS WORKSHEET

**DATE:** 3/11/87  |  **HIGHEST CRITICALITY**  |  **HDW/FUNC FLIGHT:** 3/1R  |  **ABORT:** 3/3
---|---|---|---
**SUBSYSTEM:** EPD&C  |  **MDAC ID:** 6608  |  **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
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9) 05-6

**CRITICALITIES**

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**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

**REPORT DATE 03/31/87 C-1610**
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C

MDAC ID: 6609

HIGHEST CRITICALITY HDW/FUNC

FLIGHT: 3/3

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

CRITICALITIES

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

LOCATION: 56V76A133A3CR10

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48H21B

REPORT DATE 03/31/87 C-1611
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6610 ABDOT: 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

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1612
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
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7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1613
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6612

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87  C-1614
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6613

ITEM: DIODE
FAILURE MODE: SHORTS

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

BREAKDOWN HIERARCHY:
1) RSS BUS
2) F6 PANEL
3) DIODE
4)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1615
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6614 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) 
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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

REPORT DATE 03/31/87 C-1616
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6615

ITEM: DIODE
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) RSS BUS
2) F6 PANEL
3) DIODE
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1617
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6616

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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) 
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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

REPORT DATE 03/31/87 C-1618
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6617

HIGHEST CRITICALITY
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) RSS BUS
2) F6 PANEL
3) DIODE
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1619
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 6618
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
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CRITICALITIES

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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/MISISON/VEHICLE.

REFERENCES: 48BJ2G
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6619

HIGHEST CRITICALITY
HDW/FUNC: 3/3
FLIGHT: 3/3
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
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CRITICALITIES

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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

REPORT DATE 03/31/87 C-1621
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6620

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1622
INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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<td>FAILURE MODE: SHORTS</td>
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LEAD ANALYST: K. SCHMECKPEPER  
SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) RSS BUS
2) F6 PANEL
3) DIODE
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REDUNDANCY SCREENS: A [ ] B [ ] C [ ]

LOCATION: 34V73A6CR
PART NUMBER: 34V73A6CR

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

REPORT DATE 03/31/87 C-1623
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6622

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) 05-6
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1624
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EP&D&C
MDAC ID: 6623

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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)
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7)
8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1625
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/1R
MDAC ID: 6624  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-I
3) RELAY TO OIA BUS
4) 
5) 
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7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1626
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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
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9) 05-6

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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

REPORT DATE 03/31/87  C-1627
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6626

HIGHEST CRITICALITY HDW/FUNC:
FLIGHT: 3/1R
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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1628
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C
MDAC ID: 6627

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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

REFERENCES: 48BN17F

CRITICALITIES

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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.
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/1R
MDAC ID: 6628
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)
6) 7) 8)
9) 05-6

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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

REPORT DATE 03/31/87 C-1630
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6629

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
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9) 05-6

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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

REPORT DATE 03/31/87   C-1631
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6630

HIGHEST CRITICALITY
FLIGHT: 3/3
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

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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

REPORT DATE 03/31/87 C-1632
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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

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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

REPORT DATE 03/31/87  C-1633
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 3/3
MDAC ID: 6632  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) 
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1634
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6633

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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 ABL & BC2
2) F6 PANEL
3) RELAY TO ACA #1 & ACA #3
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8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1635
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6634

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #2
FAILURE MODE: FAILS OPEN

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

BREAKDOWN HIERARCHY:
1) CONT BUS ABI & BC1
2) F6 PANEL
3) RELAY TO ACA #1 & ACA #2

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1636
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6635 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 & BCI
2) F6 PANEL
3) RELAY TO ACA #1 & ACA #2
4) 
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7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1637
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY
SUBSYSTEM: EPD&C
MDAC ID: 6636
FLIGHT: 3/3
ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #2
FAILURE MODE: FAILS OPEN

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

BREAKDOWN HIERARCHY:
1) CONT BUS ABI & BCI
2) P6 PANEL
3) RELAY TO ACA #1 & ACA #2
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1638
## INDEPENDENT ORBITER ASSESSMENT
### ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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**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

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**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

**Report Date:** 03/31/87  
**C-1639**
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6638

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/3
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) CONT BUS AB1 & BC2
2) F6 PANEL
3) RELAY TO ACA #1 & ACA #3

CRITICALITIES

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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/MISSON/VEHICLE.

REFERENCES: 48BF2G

REPORT DATE 03/31/87 C-1640
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6639

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1641
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6640

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

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
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CRITICALITIES

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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

REPORT DATE 03/31/87 C-1642
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

SUBSYSTEM: EPD&C

MDAC ID: 6641

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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CRITICALITIES

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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

REPORT DATE 03/31/87 C-1643
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87                      HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C                     FLIGHT: 3/3
MDAC ID: 6642                       ABORT: 3/3

ITEM: ACA #1 - CHANNEL 39             SUBSYS LEAD: K. SCHMECKPEPER
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) CONT BUS AB1
2) F6 PANEL
3) ACA #1 - CHANNEL 39

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1644
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6643

HIGHEST CRITICALITY
FLIGHT: 3/3
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

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1645
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6644

ITEM: RSS LIGHTS - RANGE SAFE ARM
FAILURE MODE: FAILS OFF
LEAD ANALYST: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) CONT BUS AB1 & BC2
2) F6A8 PANEL
3) RSS LIGHTS - RANGE SAFE ARM
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9) 05-6

CRITICALITIES

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REDUNDANCY SCREENS: A [ ] B [ ] C [ ]
LOCATION: 34V73A6A8DS53
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: 48N22E

REPORT DATE 03/31/87 C-1646
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6645

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1647
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C
FLIGHT: 3/3
MDAC ID: 6646
ABORT: 3/3

ITEM: ACA #2 - CHANNEL 39
FAILURE MODE: FAILS OPEN

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

BREAKDOWN HIERARCHY:
1) CONT BUS BC1
2) F6 PANEL
3) ACA #2 - CHANNEL 39
4) 5) 6) 7) 8) 9) 05-6

CRITICALITIES
FLIGHT PHASE HDW/FUNC ABORT HDW/FUNC
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LIFTOFF: 3/3 TAL: 3/3
ONORBIT: 3/3 AOA: 3/3
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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

REPORT DATE 03/31/87 C-1648
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6647

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: RSS LIGHTS - RANGE SAFE ARM
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) CONT BUS AB1 & BC1
2) F6A8 PANEL
3) RSS LIGHTS - RANGE SAFE ARM
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1649
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6648

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/3

ITEM: SWITCH, PUSHBUTTON (ET SEP)
FAILURE MODE: Fails on

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

BREAKDOWN HIERARCHY:
1) C3A7 PANEL
2) SWITCH, PUSHBUTTON (ET SEP)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1650
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6649

HIGHEST CRITICALITY:
FLIGHT: 1/1
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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1651
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6650

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1652
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6651

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 1/1
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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1653
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6652

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 1/1
ABORT: 3/3

ITEM: SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)
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)
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1654
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6653

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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)
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9) 05-6

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LOCATION: 35V73A3A7S3
PART NUMBER: ME452-0102-7352

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION, 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

REPORT DATE 03/31/87 C-1655
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6654

HIGHEST CRITICALITY
FLIGHT: 1/1
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
LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:
1) C3A7 PANEL
2) SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)
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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

REPORT DATE 03/31/87  C-1656
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6655

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 1/1
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)

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1657
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6656

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
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) 
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7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1658
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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)
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8)
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1659
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

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) 
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9) 05-6

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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

REPORT DATE 03/31/87  C-1660
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY: HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

SUBSYSTEM: EPD&C
MDAC ID: 6659

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
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9) 05-6

CRITICALITIES

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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
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6660

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/2R
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
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6) 7)
8) 9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1662
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6661

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
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
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CRITICALITIES

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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

REPORT DATE 03/31/87 C-1663
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6662

HIGHEST CRITICALITY
HDW/FUNC
FLIGHT: 3/2R
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

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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

REPORT DATE 03/31/87 C-1664
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6663

HIGHEST CRITICALITY HDW/FUNC: FLIGHT: 3/1R
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
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CRITICALITIES

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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

REPORT DATE 03/31/87 C-1665
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6664

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
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
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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

REPORT DATE 03/31/87 C-1666
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6665

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
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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

REPORT DATE 03/31/87 C-1667
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87  HIGHEST CRITICALITY  HDW/FUNC
SUBSYSTEM: EPD&C  FLIGHT: 2/1R
MDAC ID: 6666  ABORT: 2/1R

ITEM: MASTER EVENTS CONTROLLER #2 - CRITICAL COMMANDS
FAILURE MODE: INADVERTENT OUTPUT

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

BREAKDOWN HIERARCHY:
1) MASTER EVENTS CONTROLLER #2 - CRITICAL COMMANDS
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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

REPORT DATE 03/31/87 C-1668
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87

HIGHEST CRITICALITY HDW/FUNC

FLIGHT: 3/1R

ABORT: 3/1R

SUBSYSTEM: EPD&C

MDAC ID: 6667

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

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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

REPORT DATE 03/31/87 C-1669
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
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) 
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7) 
8) 
9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87  C-1670
INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6669

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
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
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9) 05-6

CRITICALITIES

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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

REPORT DATE 03/31/87 C-1671
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
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8)
9) 05-6

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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

REPORT DATE 03/31/87  C-1672
### APPENDIX D

#### POTENTIAL CRITICAL ITEMS

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<td>5017</td>
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<td>SWITCH, MOTORIZED (DC TIE BUS MAIN A)</td>
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<td>FUSE, 20A TO ESS BUS 1BC</td>
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### APPENDIX D (CONT'D)

#### POTENTIAL CRITICAL ITEMS (CONT'D)

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# Appendix D (Cont'd)

## Potential Critical Items (Cont'd)

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## APPENDIX D (CONT’D)

### POTENTIAL CRITICAL ITEMS (CONT’D)

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## APPENDIX D (CONT'D)
### POTENTIAL CRITICAL ITEMS (CONT'D)

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### Potential Critical Items (Cont'd)

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### APPENDIX D (CONT'D)

#### POTENTIAL CRITICAL ITEMS (CONT'D)

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#### Potential Critical Items (Cont'd)

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## APPENDIX D (CONT'D)

**POTENTIAL CRITICAL ITEMS (CONT'D)**

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## APPENDIX D (CONT’D)

### POTENTIAL CRITICAL ITEMS (CONT’D)

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Independent Orbiter Assessment
Analysis of the EPD&C Subsystem

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 MSTC 22296, 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 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:

- Main DC Distribution Assemblies (MDDA) 1, 2, and 3
- Mid Power Control Assemblies (MPCA) 1, 2, and 3
- Mid Motor Control Assemblies (MMCA) 1, 2, 3, and 4
- Aft Power Control Assemblies (APCA) 4, 5, and 6
- Aft Power Control Assemblies (APCA) 1, 2, and 3
- Aft Load Control Assemblies (ALCA) 1, 2, and 3
- Aft Motor Control Assemblies (AMCA) 1, 2, and 3
- Forward Power Control Assemblies (FPCA) 1, 2, and 3
- Forward Load Control Assemblies (FPCA) 1, 2, and 3
- Forward Motor Control Assemblies (FMCA) 1, 2, and 3
- AC Generation & Distribution Assemblies (AGDA) 1, 2, and 3
- Flight Deck Panel Controls & Displays (FDPC&D)
- 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 contains 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.

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<th>1/1</th>
<th>2/1R</th>
<th>2/2</th>
<th>3/1R</th>
<th>3/2R</th>
<th>3/3</th>
<th>TOTAL</th>
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<tr>
<td>Number</td>
<td>12</td>
<td>136</td>
<td>-</td>
<td>478</td>
<td>69</td>
<td>976</td>
<td>1671</td>
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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:

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<th>2/2</th>
<th>3/1R</th>
<th>3/2R</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>12</td>
<td>136</td>
<td>-</td>
<td>292</td>
<td>28</td>
<td>468</td>
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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.