

CRITICAL ITEMS LIST

PROJECT: SRMS
 ASS'Y NOMENCLATURE: D&C PANEL

SYSTEM: D&C SUBSYSTEM
 ASS'Y P/N: 51140E301

SHEET: 1

FMEA REF.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HOWR / FUNC. 2/1R CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: A-PASS, B-PASS, C-PASS
1300	4	HARDWARE MOUNTING BOARD. QTY-1 ED 94385.	<p>MODE: LOSS OF RIGID/DERIGIDIZE COMMAND AND/OR PERMANENT HARDWARE SAFING.</p> <p>CAUSE(S): (1) RELAY X1 FAILS OPEN.</p> <p>(2) RIGID/DERIG CONTACT O/C.</p> <p>(3) SAFING CONTACT O/C.</p>	<p>CAUSE (1) EE CANNOT RIGIDIZE DERIGIDIZE AND ARM WILL GO INTO SAFING. ALL COMPUTER SUPPORTED MODES LOST.</p> <p>CAUSE (2) EE CANNOT RIGIDIZE/DERIGIDIZE. ARM WILL LIMP WHEN RIGID COMMANDED BUT EE WILL NOT RESPOND. LIMP CONDITION WILL REMAIN UNTIL RIG SWITCH RELEASED</p> <p>CAUSE (3) PERMANENT HARDWARE SAFING. ALL COMPUTER SUPPORTED MODES LOST.</p> <p>WORST CASE ----- UNEXPECTED PAYLOAD MOTION. INCOMPLETE RIGIDIZATION. LOSS OF COMPUTER SUPPORTED DRIVE MODES. CREW ACTION REQ.</p> <p>REDUNDANT PATHS REMAINING ----- 1) MANUAL EE MODE RELEASE. 2) BACKUP EE RELEASE.</p>	<p>DESIGN FEATURES -----</p> <p>RELAYS ARE ESTABLISHED RELIABILITY TYPES, PROCURED TO MIL-R-39016 AND SCREENED TO NASA ST-R-0001. RELAYS ARE MOUNTED ON A PRINTED CIRCUIT BOARD WHICH HAS A FULL WIDTH MACHINED ALUMINIUM SUPPORT FRAME. THE FRAME ENGAGES IN MACHINED GUIDEWAYS IN THE ELECTRONICS PACKAGE. THIS CONFIGURATION ENSURES GOOD VIBRATION DAMPING AND HEAT TRANSFER.</p> <p>EEE PARTS HAVE BEEN SELECTED AND CONTROLLED IN ACCORDANCE WITH SPAR-RMS-PA.003. THIS DOCUMENT DEFINES THE PROGRAM REQUIREMENTS FOR MONITORING AND CONTROLLING EEE PARTS. THE REQUIREMENTS INCLUDE PARTS SELECTION TO AT LEAST "ESTABLISHED RELIABILITY" LEVELS, AND ADEQUATE DERATING OF PART STRESS LEVELS. PROCEDURES AND ACTIVITIES ARE SPECIFIED TO ENSURE AT LEAST EQUIVALENT QUALITY FOR NONSTANDARD AND IRREGULAR PARTS. RELIABILITY ANALYSIS HAS CONFIRMED NO PARTS WITH GENERICALLY HIGH FAILURE RATES. AEROSPACE DESIGN STANDARDS FOR DETAILING ELECTRONIC PARTS PACKAGING, MOUNTING AND STRUCTURAL/MECHANICAL/INTEGRITY OF ASSEMBLIES ARE APPLIED. SUCH DESIGN HAS BEEN REVIEWED AND FOUND SATISFACTORY THROUGH THE DESIGN AUDIT PROCESS, INCLUDING THE USE OF RELIABILITY, MAINTAINABILITY AND SAFETY CHECKLISTS. MATERIAL SELECTION AND USAGE CONFORMS TO SPAR-SG.368 WHICH IS EQUIVALENT TO THE NASA MATERIALS USAGE REQUIREMENTS. WORST CASE ANALYSIS HAS BEEN CONDUCTED TO ENSURE THAT PERFORMANCE CAN BE MET UNDER WORST CASE TEMPERATURE AND AGING EFFECTS. EEE PARTS STRESS ANALYSIS HAS BEEN COMPLETED AND CONFIRMS THAT THE PARTS MEET THE DERATING REQUIREMENTS.</p> <p>PRINTED CIRCUIT BOARD DESIGNS HAVE BEEN REVIEWED TO ENSURE ADEQUATE CIRCUIT PATH WIDTH AND SEPARATION AND TO CONFIRM APPROPRIATE DIMENSIONS OF CIRCUIT SOLDER PADS AND OF COMPONENT HOLE PROVISIONS.</p> <p>PARTS MOUNTING METHODS ARE CONTROLLED IN ACCORDANCE WITH MSFC-STD-136 AND CAE PD93489. THESE DOCUMENTS REQUIRE APPROVED-MOUNTING METHODS, STRESS RELIEF, AND COMPONENT SECURITY.</p> <p>WHERE APPLICABLE, DESIGN DRAWINGS AND DOCUMENTATION GIVE CLEAR IDENTIFICATION OF HANDLING PRECAUTIONS FOR ESD SENSITIVE PARTS.</p> <p>BOARD ASSEMBLY DRAWINGS INCLUDE THE REQUIREMENT FOR SOLDERING STANDARDS IN ACCORDANCE WITH MHB 5300.4(3A) AND JSC 08800A.</p>	

PREPARED BY:

MHWG

SUPERCEDING DATE: 03 OCT 86

RMS/D&C - 254

DATE: 24 JUL 91

CIL REV: 4

CRITICAL ITEMS LIST

PROJECT: SRMS
ASS'Y NOMENCLATURE: D&C PANEL

SYSTEM: D&C SUBSYSTEM
ASS'Y P/N: 5114DE39Y

SHEET: 2

FMEA REF.	FMEA REV.	NAME, QTY. & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR / FUNC. 2/1R CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: A-PASS, B-PASS, C-PASS
1300	4	HARDWARE SWITCHING BOARD. QTY-1 ED 94385.	<p>MODE: LOSS OF RIGID/ DERIGIDIZE COMMAND AND/OR PERMANENT HARDWARE SAFING.</p> <p>CAUSE(S): (1) RELAY K1 FAILS OPEN.</p> <p>(2) RIGID/DERIG CONTACT O/C.</p> <p>(3) SAFING CONTACT O/C.</p>	<p>CAUSE (1) EE CANNOT RIGIDIZE DERIGIDIZE AND ARM WILL GO INTO SAFING. ALL COMPUTER SUPPORTED MODES LOST.</p> <p>CAUSE (2) EE CANNOT RIGIDIZE/ DERIGIDIZE. ARM WILL LIMP WHEN RIGID COMMANDED BUT EE WILL NOT RESPOND. LIMP CONDITION WILL REMAIN UNTIL RIG SWITCH RELEASED</p> <p>CAUSE (3) PERMANENT HARDWARE SAFING. ALL COMPUTER SUPPORTED MODES LOST.</p> <p>WORST CASE ----- UNEXPECTED PAYLOAD MOTION. INCOMPLETE RIGIDIZATION. LOSS OF COMPUTER SUPPORTED DRIVE MODES. CREW ACTION REQ.</p> <p>REDUNDANT PATHS REMAINING ----- 1) MANUAL EE MODE RELEASE. 2) BACKUP EE RELEASE.</p>	<p>ACCEPTANCE TESTS ----- THE HARDWARE ITEM IS SUBJECTED TO THE FOLLOWING ACCEPTANCE ENVIRONMENTAL TESTING AS PART OF THE D&C PANEL.</p> <p>O VIBRATION: LEVEL AND DURATION - REFERENCE TABLE 1</p> <p>O THERMAL: +100 DEGREES F TO +10 DEGREES F 2 CYCLES (9.5 HRS PER CYCLE)</p> <p>THE D&C PANEL ASSEMBLY IS FURTHER TESTED AS PART OF THE RMS SYSTEM (TP510 RMS STRONGBACK TEST AND TP552 FLAT FLOOR TEST) WHICH VERIFIES THE ABSENCE OF THE FAILURE MODE.</p> <p>QUALIFICATION TESTS ----- THE D&C PANEL HAS BEEN SUBJECTED TO THE FOLLOWING QUALIFICATION TEST ENVIRONMENT:</p> <p>O VIBRATION: LEVEL AND DURATION - REFERENCE TABLE 1</p> <p>O SHOCK: 20G/11MS - 3 AXES (6 DIRECTION)</p> <p>O THERMAL: 130 DEGREES F TO -23 DEGREES F (12 HRS PER CYCLE) (6 CYCLES)</p> <p>O HUMIDITY: 95% (120 DEGREES F TO 82 DEGREES F CYCLE IN 16 HRS) 10 CYCLES TOTAL</p> <p>O EMC: MIL-STD-461 AS MODIFIED BY SL-E-0002 (TEST CE01, CE CE03, CS01(DC/AC), CS02, CS06, RE02 (B/N), RS02, RS03, RS04) RE02 (B/N) RS02, 03, 04)</p> <p>FLIGHT CHECKOUT ----- PDRS OPS CHECKLIST (ALL VEHICLES) JSC 16987</p>	

PREPARED BY:

MFNG

SUPERCEDING DATE: 03 OCT 86

APPROVED BY:

DATE: 24 JUL 91

CIL REV: 4

CRITICAL ITEMS LIST

PROJECT: SRMS
ASS'Y NOMENCLATURE: D&C PANEL

SYSTEM: D&C SUBSYSTEM
ASS'Y P/N: 51140E391

SHEET: 3

FMEA REF.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDMR / FUNC. 2/1R CRITICALITY RATIONALE FOR ACCEPTANCE SCREENS: A-PASS, B-PASS, C-PASS
1300	4	HARDWIRE SWITCHING BOARD. QTY-1 ED 94385.	<p>MODE: LOSS OF RIGID/ DERIGIDIZE COMMAND AND/OR PERMANENT HARDWIRE SAFING.</p> <p>CAUSE(S): (1) RELAY K1 FAILS OPEN.</p> <p>(2) RIGID/DERIG CONTACT O/C.</p> <p>(3) SAFING CONTACT O/C.</p>	<p>CAUSE (1) EE CANNOT RIGIDIZE DERIGIDIZE AND ARM WILL GO INTO SAFING. ALL COMPUTER SUPPORTED MODES LOST.</p> <p>CAUSE (2) EE CANNOT RIGIDIZE/ DERIGIDIZE. ARM WILL LIMP WHEN RIGID COMMANDED BUT EE WILL NOT RESPOND. LIMP CONDITION WILL REMAIN UNTIL RIG SWITCH RELEASED</p> <p>CAUSE (3) PERMANENT HARDWIRE SAFING. ALL COMPUTER SUPPORTED MODES LOST.</p> <p>WORST CASE ----- UNEXPECTED PAYLOAD MOTION. INCOMPLETE RIGIDIZATION. LOSS OF COMPUTER SUPPORTED DRIVE MODES. CREW ACTION REQ.</p> <p>REDUNDANT PATHS REMAINING ----- 1) MANUAL EE MODE RELEASE. 2) BACKUP EE RELEASE.</p>	<p>QA/INSPECTIONS -----</p> <p>EEE PARTS INSPECTION IS PERFORMED AS REQUIRED BY SPAR-RMS-PA.003. EACH EEE PART IS QUALIFIED AT THE PART LEVEL TO THE REQUIREMENTS OF THE APPLICABLE SPECIFICATION. ALL EEE PARTS ARE 100X SCREENED AND BURNED IN, AS A MINIMUM, AS REQUIRED BY SPAR-RMS-PA.003, BY THE SUPPLIER. ADDITIONALLY, EEE PARTS ARE 100X RE-SCREENED IN ACCORDANCE WITH REQUIREMENTS, BY AN INDEPENDENT SPAR APPROVED TESTING FACILITY. DPA IS PERFORMED AS REQUIRED BY PA.003 ON A RANDOMLY SELECTED 5% OF PARTS, MAXIMUM 5 PIECES, MINIMUM 3 PIECES FOR EACH LOT NUMBER/DATE CODE OF PARTS RECEIVED.</p> <p>WIRE IS PROCURED TO SPECIFICATION MIL-W-22759 OR MIL-W-81381 AND INSPECTED AND TESTED TO NASA JSC8080 STANDARD NUMBER 95A.</p> <p>RECEIVING INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS IDENTIFIED IN THE PROCUREMENT DOCUMENTS, THAT NO PHYSICAL DAMAGE HAS OCCURRED TO PARTS DURING SHIPMENT, THAT THE RECEIVING DOCUMENTS PROVIDE ADEQUATE TRACEABILITY INFORMATION AND SCREENING DATA CLEARLY IDENTIFIES ACCEPTABLE PARTS.</p> <p>PARTS ARE INSPECTED THROUGHOUT MANUFACTURE AND ASSEMBLY AS APPROPRIATE TO THE MANUFACTURING STAGE COMPLETED. THESE INSPECTIONS INCLUDE,</p> <p>PRINTED CIRCUIT BOARD INSPECTION FOR TRACK SEPARATION, DAMAGE AND ADEQUACY OF PLATED THROUGH HOLES,</p> <p>COMPONENT MOUNTING INSPECTION FOR CORRECT SOLDERING, WIRE LOOPING, STRAPPING, ETC. OPERATORS AND INSPECTORS ARE TRAINED AND CERTIFIED TO NASA NHB 5300.4(3A) STANDARD, AS MODIFIED BY JSC 08800A.</p> <p>CONFORMAL COATING INSPECTION FOR ADEQUATE PROCESSING IS PERFORMED USING ULTRAVIOLET LIGHT TECHNIQUES.</p> <p>POST P.C. BD. INSTALLATION INSPECTION, CLEANLINESS AND WORKMANSHIP (SPAR/GOVERNMENT REP. MANDATORY INSPECTION POINT)</p> <p>P.C. BD. INSTALLATION INSPECTION, CHECK FOR CORRECT BOARD INSTALLATION, ALIGNMENT OF BOARDS, PROPER CONNECTOR CONTACT MATING, WIRE ROUTING, STRAPPING OF WIRES ETC.,</p> <p>PRE-TEST INSPECTION OF D&C PANEL ASSY INCLUDES AN AUDIT OF LOWER TIER INSPECTION COMPLETION, AS BUILD CONFIGURATION VERIFICATION TO AS DESIGN ETC. (SPAR/GOVERNMENT REP. - MANDATORY INSPECTION POINT)</p> <p>A TEST READINESS REVIEW (TRR) WHICH INCLUDES VERIFICATION OF TEST PERSONNEL, TEST DOCUMENTS, TEST EQUIPMENT CALIBRATION/ VALIDATION STATUS AND HARDWARE CONFIGURATION IS CONVENED BY QUALITY ASSURANCE IN CONJUNCTION WITH ENGINEERING, RELIABILITY CONFIGURATION CONTROL, SUPPLIER AS APPLICABLE, AND THE GOVERNMENT REPRESENTATIVE, PRIOR TO THE START OF ANY FORMAL TESTING (ACCEPTANCE OR QUALIFICATION).</p> <p>ACCEPTANCE TESTING (ATP) INCLUDES AMBIENT PERFORMANCE,</p>

PREPARED BY: MFVG

SUPERCEDING DATE: 03 OCT 86

APPROVED BY:

DATE: 24 JUL 91

CIL REV: 4

CRITICAL ITEMS LIST

PROJECT: SRMS
ASS'Y NOMENCLATURE: D&C PANEL

SYSTEM: D&C SUBSYSTEM
ASS'Y P/N: 51740E391

SHEET: 4

FMEA REF.	FMEA REV.	NAME, QTY & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDMR / FUNC. 2/1R CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: A-PASS, B-PASS, C-PASS
1300	4	HARDWARE SWITCHING BOARD. QTY-1 ED 94385.	<p>MODE: LOSS OF RIGID/DERIGIDIZE COMMAND AND/OR PERMANENT HARDWARE SAFING.</p> <p>CAUSE(S): (1) RELAY K1 FAILS OPEN.</p> <p>(2) RIGID/DERIG CONTACT O/C.</p> <p>(3) SAFING CONTACT O/C.</p>	<p>CAUSE (1) EE CANNOT RIGIDIZE DERIGIDIZE AND ARM WILL GO INTO SAFING. ALL COMPUTER SUPPORTED MODES LOST.</p> <p>CAUSE (2) EE CANNOT RIGIDIZE/DERIGIDIZE. ARM WILL LIMP WHEN RIGID COMMANDED BUT EE WILL NOT RESPOND. LIMP CONDITION WILL REMAIN UNTIL RIG SWITCH RELEASED</p> <p>CAUSE (3) PERMANENT HARDWARE SAFING. ALL COMPUTER SUPPORTED MODES LOST.</p> <p>WORST CASE ----- UNEXPECTED PAYLOAD MOTION. INCOMPLETE RIGIDIZATION. LOSS OF COMPUTER SUPPORTED DRIVE MODES. CREW ACTION REQ.</p> <p>REDUNDANT PATHS REMAINING ----- 1) MANUAL EE MODE RELEASE. 2) BACKUP EE RELEASE.</p>		<p>THERMAL AND VIBRATION TESTING, (SPAR/GOVERNMENT REP. - MANDATORY INSPECTION POINT).</p> <p>INTEGRATION OF D&C PANEL, RMC, THC AND MC1U, INSPECTIONS ARE PERFORMED AT EACH STAGE OF INTEGRATION, WHICH INCLUDES GROUNDING CHECKS, INTER CONNECT CABLE VERIFICATION, CONNECTOR INSPECTION FOR BENT OR PUSHBACK CONTACTS ETC.</p> <p>SUB-SYSTEM PERFORMANCE TESTING (ATP), INCLUDES AN AMBIENT PERFORMANCE TEST. (MANDATORY INSPECTION POINT).</p> <p>SRMS SYSTEMS INTEGRATION, THE INTEGRATION OF MECHANICAL ARM SUBASSEMBLIES AND THE FLIGHT CABIN EQUIPMENT TO FORM THE SRMS. INSPECTIONS ARE PERFORMED AT EACH PHASE OF INTEGRATION WHICH INCLUDES GROUNDING CHECKS, THRU WIRING CHECKS, WIRING ROUTING, INTERFACE CONNECTORS FOR BENT OR PUSH BACK CONTACTS ETC.</p> <p>SRMS SYSTEMS TESTING - STRONGBACK AND FLAT FLOOR AMBIENT PERFORMANCE TEST. (SPAR/GOVERNMENT REP. - MANDATORY INSPECTION POINT)</p>

PREPARED BY:

MFVG

SUPERCEDING DATE: 03 OCT 86

DATE: 24 JUL 91

CIL REV: 4

CRITICAL ITEMS LIST

PROJECT: SRMS
ASS'Y NOMENCLATURE: D&C PANEL

SYSTEM: D&C SUBSYSTEM
ASS'Y P/N: 51140E301

SHEET: 6

FMEA REF.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR / FUNC. Z/IR CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: A-PASS, B-PASS, C-PASS
1300	4	HARDWARE SWITCHING BOARD. QTY-1 ED 94305.	<p>MODE: LOSS OF RIGID/DERIGIDIZE COMMAND AND/OR PERMANENT HARDWARE SAFING.</p> <p>CAUSE(S): (1) RELAY K1 FAILS OPEN.</p> <p>(2) RIGID/DERIG CONTACT O/C.</p> <p>(3) SAFING CONTACT O/C.</p>	<p>CAUSE (1) EE CANNOT RIGIDIZE DERIGIDIZE AND ARM WILL GO INTO SAFING. ALL COMPUTER SUPPORTED MODES LOST.</p> <p>CAUSE (2) EE CANNOT RIGIDIZE/DERIGIDIZE. ARM WILL LIMP WHEN RIGID COMMANDED BUT EE WILL NOT RESPOND. LIMP CONDITION WILL REMAIN UNTIL RIG SWITCH RELEASED</p> <p>CAUSE (3) PERMANENT HARDWARE SAFING. ALL COMPUTER SUPPORTED MODES LOST.</p> <p>WORST CASE ----- UNEXPECTED PAYLOAD MOTION. INCOMPLETE RIGIDIZATION. LOSS OF COMPUTER SUPPORTED DRIVE MODES. CREW ACTION REQ.</p> <p>REDUNDANT PATHS REMAINING ----- 1) MANUAL EE MODE RELEASE. ----- 2) BACKUP EE RELEASE.</p>	<p>OPERATIONAL EFFECTS ----- UNABLE TO RIGIDIZE/DERIGIDIZE. IF FAILURE OCCURS DURING RIGIDIZE SEQUENCE. THE CARRIAGE WILL NOT COMPLETELY RIGIDIZE AND ARM WILL REMAIN LIMP IF IN AUTO MODE. OPERATOR WILL DETECT OFF NOMINAL OPERATION OF THE EE.</p> <p>CREW ACTION ----- THE EE MODE SWITCH SHOULD BE TURNED OFF. CREW SHOULD OBSERVE THE CAPTURE SEQUENCE AND DETERMINE THAT THE GRAPPLE FIXTURE HAS BEEN DRAWN FAR ENOUGH INTO THE EE TO PROHIBIT PAYLOAD ROTATIONS. IF THE INTERFACE DOES NOT APPEAR RIGID, ATTEMPT TO RIGIDIZE IN THE ALTERNATE MODE. IF RIGIDIZE IS UNSUCCESSFUL, ATTEMPT RELEASE USING A PRIMARY EE MODE. IF SHARES OPEN, MANEUVER THE ARM AWAY FROM THE PAYLOAD. IF SHARES DON'T OPEN, ATTEMPT TO RELEASE IN BACKUP MODE. IF SHARES OPEN, MANEUVER ARM AWAY FROM THE PAYLOAD. MANEUVER ORBITER AWAY FROM PAYLOAD. IF SHARES CANNOT BE OPENED IN ANY MODE, THEN THE ARM/PAYLOAD COMBINATION CAN BE JETTISONED. SRMS D&C IFM KIT AVAILABLE.</p> <p>CREW TRAINING ----- CREW TO BE TRAINED TO RECOGNIZE OFF NOMINAL OPERATION OF THE EE AND TO TURN MODE SWITCH TO OFF AFTER SPEC TIME AND MANEUVER THE ORBITER AWAY FROM A FREE FLYING PAYLOAD AT ANY TIME DURING ARM OPERATIONS.</p> <p>MISSION CONSTRAINT ----- WHEN CAPTURING A FREE FLYING PAYLOAD, THE EE MUST BE FAR ENOUGH AWAY FROM STRUCTURE TO PROHIBIT CONTACT REGARDLESS OF PAYLOAD ROTATIONS.</p> <p>OMRSD OFFLINE ----- EXERCISE RIGIDIZE/DERIGIDIZE COMMAND IN EE MANUAL MODE VERIFY VOLTAGES AT D&C PANEL OUTPUT. VERIFY HARDWARE SAFING VOLTAGE AT D&C PANEL OUTPUT.</p> <p>OMRSD ONLINE INSTALLATION ----- EXERCISE RIGIDIZE/DERIGIDIZE COMMAND IN EE MANUAL MODE VERIFY VOLTAGES AT LONGEROM INTERFACE. VERIFY HARDWARE SAFING VOLTAGE AT LONGEROM INTERFACE.</p> <p>OMRSD ONLINE TURNAROUND ----- WITH EE MODE SWITCH IN MANUAL MODE VERIFY RIGIDIZE /DERIGIDIZE FUNCTION VERIFY COMPUTER SUPPORTED MODE CAN BE ENTERED</p>	

PREPARED BY: MFWG

SUPERCEDING DATE: 03 OCT 86

APPROVED BY:

DATE: 26 JUL 91

CIL REV: 4

CRITICAL ITEMS LIST

PROJECT: SRMS

ASS'Y NOMENCLATURE: D&C PANEL

SYSTEM: D&C SUBSYSTEM

ASS'Y P/N: 51140E391

SHEET: 7

FMEA REV.	FMEA REV.	NAME, QTY, & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT OR END ITEM	HDWR / FUNC. 2/1R CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: A-PASS, B-PASS, C-PASS
1300	4	HARDWIRE SWITCHING BOARD. QTY-1 ED 94385.	<p>MODE: LOSS OF RIGID/DERIGIDIZE COMMAND AND/OR PERMANENT HARDWIRE SAFING.</p> <p>CAUSE(S): (1) RELAY K1 FAILS OPEN.</p> <p>(2) RIGID/DERIG CONTACT O/C.</p> <p>(3) SAFING CONTACT O/C.</p>	<p>CAUSE (1) EE CANNOT RIGIDIZE DERIGIDIZE AND ARM WILL GO INTO SAFING. ALL COMPUTER SUPPORTED MODES LOST.</p> <p>CAUSE (2) EE CANNOT RIGIDIZE/DERIGIDIZE. ARM WILL LIMP WHEN RIGID COMMANDED BUT EE WILL NOT RESPOND. LIMP CONDITION WILL REMAIN UNTIL RIG SWITCH RELEASED</p> <p>CAUSE (3) PERMANENT HARDWIRE SAFING. ALL COMPUTER SUPPORTED MODES LOST.</p> <p>WORST CASE ----- UNEXPECTED PAYLOAD MOTION. INCOMPLETE RIGIDIZATION. LOSS OF COMPUTER SUPPORTED DRIVE MODES. CREW ACTION REQ.</p> <p>REDUNDANT PATHS REMAINING ----- 1) MANUAL EE MODE RELEASE. 2) BACKUP EE RELEASE.</p>		

PREPARED BY: MFVG

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CIL REV: 4