

CIL
CRITICAL ITEMS LIST
FILE: CIL7/1

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
ELECTRICAL BRNMLS ITEM 152 SV789152-5 (1)	A/R	IS77MS1 ELECTRICAL OPEN IN PROGRAM LINE. CAUSE: CABLE CRAMPING AGAINST CONNECTOR SHELL OR SHIELD. IMPROPER CONNECTOR STRAIN RELIEF. FAULTY CONNECTION BETWEEN THE CONNECTOR AND THE LEAD WIRES.	END ITEM: LOSS OF CONTINUITY IN PROGRAM LINE. OFF INTERFACE: LOSS OF CREW INPUT AND CONTROL OF CMS. LOSS OF ABILITY TO ACKNOWLEDGE FAILURE MESSAGES. RECALL STORED MESSAGES AND PERFORM SUBT LEAK CHECK. MISSION: LOSS OF USE OF DUE ENV. CREW/VEHICLE: NONE.	A. DESIGN - OPEN CIRCUITS IN ANY OF THE CIRCUITS IN THE ITEM 152 HARNESS IS MINIMIZED BY THE FOLLOWING: CONDUCTORS ARE HARD PUTTED IN STYCAST 2681 IN THE AREA THAT THEY INTERFACE THE HEAL BACKSHELLS TO MINIMIZE TUBERN MOVEMENT AND CHANCE OF SHORTING TO THE BACKSHELL. THE CONNECTORS ARE STRAIN RELIEVED AT THE CONNECTOR/HARNESS INTERFACE WITH A MOLDED RUBBER BACKSHELL. THIS MINIMIZES THE EFFECTS OF CABLE TENSION ON THE INDIVIDUAL CONDUCTORS. CONDITIONS ARE SWEATED WITHIN A MOVING MOUNT LAYER. THIS HOLDS THE CABLES TOGETHER TO SHARE ANY LOADING. 822 AND 824 AND TEFZON JACKETED WIRES PROVIDE ELECTRICAL AND MECHANICAL PROPERTIES WHICH HELP PREVENT BREAKAGE. EACH CONNECTOR/ADAPTER BOND INTERFACE IS LOCKED IN PLACE TO PREVENT ROTATION BY A COMBINED MECHANICAL AND ADHESIVE LOCK. WIRE CRAMPING PER SUBS4991 (BASED ON NSFC SPEC-Q-1A).
B149-1 1				B. TEST - COMPONENT ACCEPTANCE TEST - THE HARNESS IS ACCEPTANCE TESTED PER THE FOLLOWING TESTS OF AT-STD-182 TO INSURE THERE ARE NO WORKMANSHIP PROBLEMS WHICH WOULD CAUSE ACTUAL OR POTENTIAL OPEN CIRCUITS. PULL TEST - THIS TEST SUBJECTS EACH CONNECTOR/HARNESS INTERFACE TO A SPECIFIC PULL TEST (LD POINT) DESIGNED TO EXCEED ANY STRESS ENCOUNTERED IN ACTUAL USE. THE INSULATION RESISTANCE BETWEEN EACH CONNECTOR AND THE GROUND CIRCUIT IS MEASURED DURING THE TEST TO INSURE THERE IS NO SHORTING. THE TEST IS FOLLOWED BY A CONTINUITY CHECK OF EACH CONNECTOR PATH TO INSURE THERE ARE NO OPEN CIRCUITS. CONTINUITY TEST - THE RESISTANCE OF EACH CIRCUIT IS MEASURED TO INSURE THERE ARE NO OPEN CIRCUITS OR HIGH RESISTANCE PATHS. PDA TEST - THE PROGRAM LINES ARE CHECKED DURING THE PLSA PDA TESTING PER PAR. 5.0 OF 8217-40-01. CERTIFICATION TEST - THIS ITEM HAS COMPLETED THE 15 YEAR STRUCTURAL VIBRATION AND SHOCK CERTIFICATION REQUIREMENTS DURING 18/05. ENGINEERING CHANGES 42804-627-1 (SIMULATION RESISTANCE CHECK DURING PULL TEST) AND 42804-606 (REMOVE CRIMP SPLICES) HAVE BEEN INCORPORATED AND CERTIFIED BY TEST SINCE THIS CONFIGURATION HAS CERTIFIED.

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 CRITERIA ITEMS LIST
 FILE: CHL7/1

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
ELECTRICAL SIGNALS ITEM 852 54789152-3 131	2/2	152FH15; ELECTRICAL OPEN ON PROGRAM LINE.		<p>C. INSPECTION - DURING HARNESS MANUFACTURING, THE FOLLOWING INSPECTIONS ARE PERFORMED TO INSURE THERE ARE NO OPEN CIRCUITS. VISUAL INSPECTION OF CONDUCTORS PRIOR TO POTTING OPERATIONS TO INSURE THERE ARE NO DAMAGED CONDUCTORS AND THAT THE CONDUCTORS ARE RATED PROPERLY. VISUAL INSPECTION OF THE HARNESS PRIOR TO AND AFTER RIDDER BOOM HOLDING PROCESS TO INSURE THERE ARE NO DAMAGED CONDUCTORS WHICH COULD CAUSE AN OPEN CIRCUIT. IN-PROCESS ELECTRICAL CHECKOUT OF THE HARNESS BEFORE AND AFTER POTTING AND HOLDING TO INSURE THERE ARE NO OPEN CIRCUITS. VISUAL INSPECTION OF THE CONDUCTORS PRIOR TO APPLICATION OF THE OUTER SHEATH TO INSURE THERE ARE NO DAMAGED CONDUCTORS THAT COULD CAUSE AN OPEN CIRCUIT. CONNECTOR CONTACT CRIMP SAMPLES ARE MADE PRIOR TO AND AFTER CRIMPING AND SUBJECTED TO PULL TESTING TO INSURE THE CRIMPING TOOLS ARE OPERATING PROPERLY. THIS INSURES THERE WILL NOT BE ANY HIGH RESISTANCE PROBLEMS AT THE CONTACTS.</p> <p>D. FAILURE HISTORY - NONE FOR THIS FAILURE MODE.</p> <p>E. ORGANO TUNNING - TESTED PER FEJL-R-001, EMU PERFORMANCE CHAMBER RUN, DCN DISPLAY VERIFICATION.</p> <p>F. OPERATIONAL USE - CREW RESPONSE - PRE-EVA: TROUBLE SHOOT PROBLEM, CONSIDER THEIR EMU IF AVAILABLE. OTHERWISE CONTINUE EVA PREP BY PERFORMING EEM CHECK MANUALLY. EVA: WHEN DETECTED DURING PERIODIC STATUS CHECK, TROUBLESHOOT USING HIDS. IF STATUS LIST DATA VALID CONTINUE EVA. TRAINING - STANDARD TRAINING COVERS THIS FAILURE MODE. OPERATIONAL CONSIDERATIONS - EVA CHECKLIST PROCEDURES VERIFY HARDWARE INTEGRITY AND SYSTEMS OPERATIONAL STATUS PRIOR TO EVA. REAL TIME DATA SYSTEM ALONG GROUND MONITORING OF EID SYSTEMS. FLIGHT RULES DEFINE GO/NO GO CRITERIA RELATED TO EID CHG.</p>

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