TEST PROJECT – AIRCRAFT MAINTENANCE

WSC2017_TP14_M1_electrical_actual

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Member country or region: FINLAND

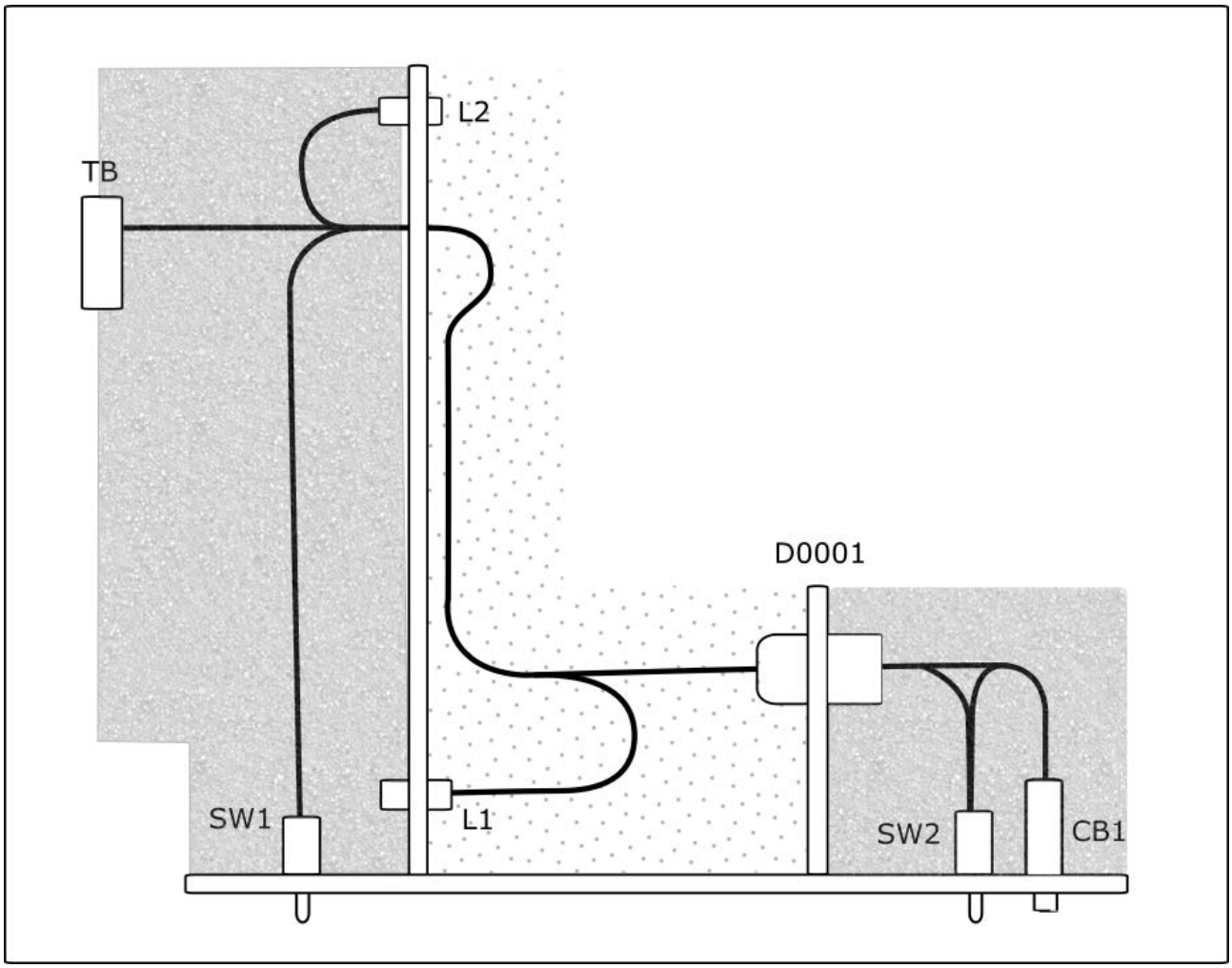
COMPETITOR'S WORKING DOCUMENT

Objective	To test the Competitor's ability to utilize the appropriate instructions and manuals to fabricate, install and terminate wire loom as per wiring diagram
Time allotted	Total of 3 hours: 2.5 hours for completing the test board + 0.5 for troubleshooting a given test board
Process:	
1	Install hardware, lamp assemblies and Wall Mounting Receptacle. Prepare wire circuit board per attached Figure #1(board drawing) and Boeing Standard Wiring Practices Manual 20-10-11 Para5B AC 21-99 Sect 2 Chap 4 (Cable Clamps)
2	Prepare wiring for installation per Boeing SWPM 20-10-11 Para 11 and SPWM 20-10-11 Para 3 and 4.
3	Install Straight Plug Connector and terminate per Figure two wiring diagram, Amphenol MIL-DTL-38999 manual and DMC286-2 Repair Kit instructions (Assy of MIL-DTL-38999 Series III)
4	Install and terminate wires to terminal block (TB), switches and circuit breaker per Figure two wiring diagram and Boeing SWPM 20-15-04 Para 2 (Insulation Removal) Boeing SWPM 20-15-21 Para A (Assembly of Terminal Lugs) If required, install grommet to the lightening hole per AC 21-99 Sect 2 Chap 4 (Protection; Installing Grommets)
5	Install and terminate wires to lamp assemblies per Figure two wiring diagram. Note: L1 = RED L2= AMBER, Boeing SWPM 20-10-14 Para 2 (Installation of heat shrinkable Sleeves)
6	Do the continuity test for circuit
7	Check the operation of lighting circuit
8	Do the troubleshooting (separate board), Complete the defect report.

DATA/MATERIAL PROVIDED

- Electrical Board Diagram (Figure #1)
- Wiring Diagram (Figure #2)
- Boeing SPWM(Extract)
- AC 21-99 (Extract)
- Amphenol MIL-DTL-38999 manual (Extract)
- Daniels DMC286-02 Maintenance/Repair Kit
- Soldering Iron
- Power Supply
- Multimeter
- Compressed air gun
- Hardware and tools for installing the connectors and clamps
- Tefzel- insulated Wire AWG22, Qty: 7m
- Tefzel- insulated Wire AWG18, Qty: 1,5m
- Connector Qty: 1, P/N JD38999/26WD97PN
- Connector Qty: 1, P/N JD38999/26WD97SN
- Connector Qty: 1, P/N JD38999/20WD97PN
- Connector Qty: 1, P/N JD38999/20WD97SN
- Backshell Qty: 2, P/N 620HS003NF15
- Connector Pin Qty: 5, P/N M39029/58-363
- Connector Socket Qty: 5, P/N M39029/56-351
- Connector Pin Qty: 3, P/N M39029/56-352
- Connector Socket Qty: 3, P/N M39029/58-364
- Light assembly QTY: 1, Press to test indicator (RED) - MS25041-2
- Light assembly QTY: 1, Press to test indicator (AMBER) MS25041-4
- Light bulbs GE330
- Toggle switch Qty:2, 1NT1-3
- Toggle switch Qty:2, 1NT1-8
- Circuit Breaker Qty: 1, P/N W23-X1A1G-2
- Terminal Lugs Qty 10: P/N AMP 31890
- Terminal Lugs Qty 10: P/N AMP 36154
- P-Clamps Qty 3, P/N MS21919-WDG3
- Conduit Qty: 2ft (61cm), P/N: HCTE-0500-0
- Grommet AMB-1, AMB-1.6
- Shrink sleeve
- Flux
- Soldering tin
- Soldering remover
- Isoprophanol alcohol
- Lacing tape
- Cotton cloth
- Tiewraps
- Tiewrap gun
- Steel ruler

FIGURE ONE – ELECTRICAL BOARD DIAGRAM

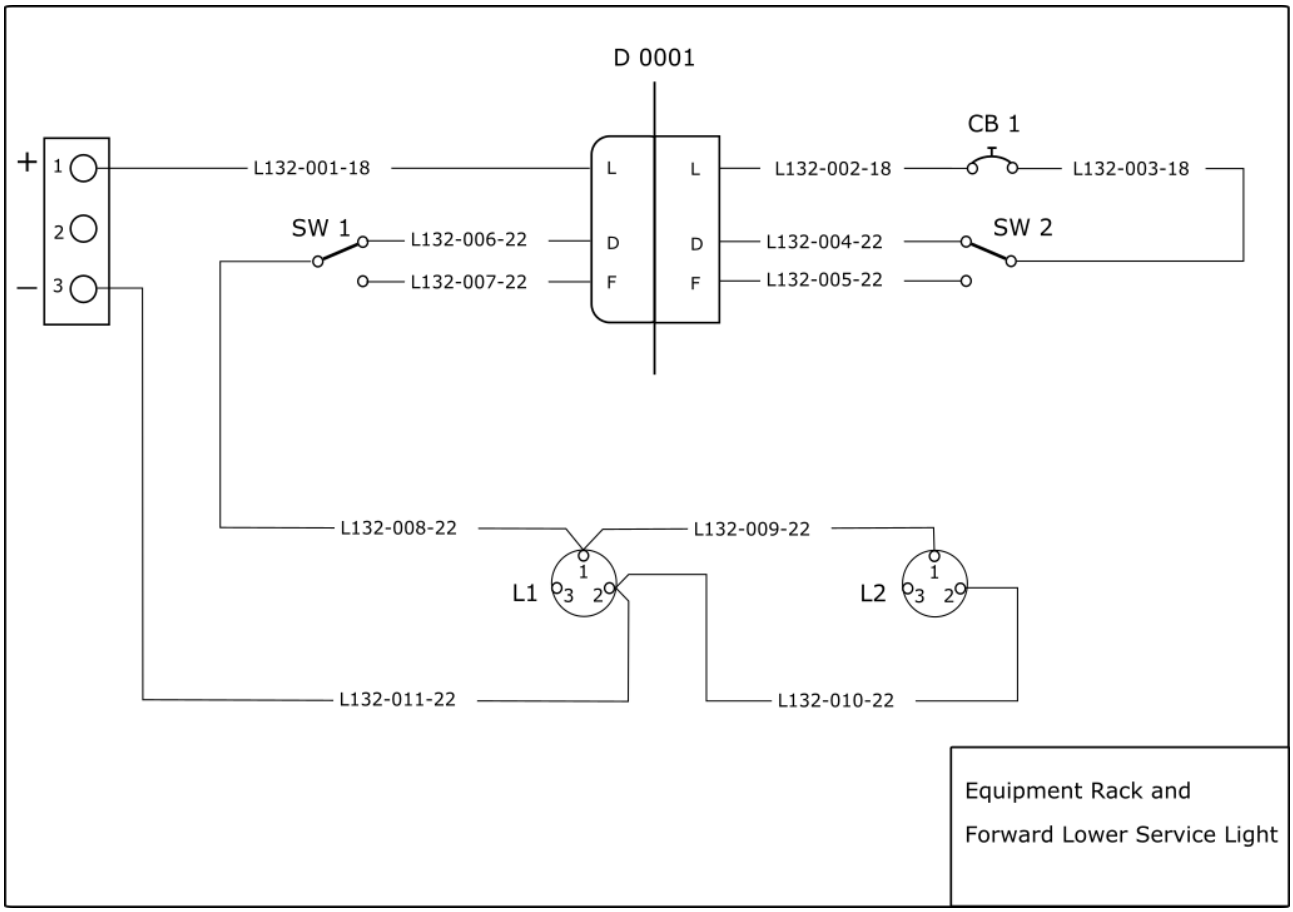


Legend:

Pressurized, low vibration area

Unpressurized, high vibration area

FIGURE TWO – ELECTRICAL BOARD DIAGRAM



Legend:

L1:	MS25041-2 (Red)
L2:	MS25041-4 (Amber)
D1:	JD38999/26WD97xx (as per the schematic) JD38999/20WD97xx (as per the schematic)
CB1:	W23-X1A1G-2
SW1, SW2	1NT1-3