

Service Information Letter

SL 1-31433-1011 Rev. A

SIL# SL 1-31433-1011 Rev. A
December 6, 2011

SUBJECT: MARATHONNORCO AEROSPACE BATTERY

MODEL: TCA-52

APPLICABILITY: 11-52H120C, MNAI P/N: 31433-001.

SUMMARY:

This Service Information Letter informs operators of a design improvement in the TCA-52 battery that is OEM and FAA approved on DC-10, MD-10, and MD-11 aircraft.

BACKGROUND:

Due to the location of the battery in the aircraft and problems with condensate drainage in this location, the battery can be in continuous contact with water and ice. This can cause corrosion of the epoxy coated cold-rolled steel can if the epoxy coating becomes damaged. This corrosion can result with the necessity to replace the battery can.

DISCUSSION:

MarathonNorco Aerospace, Inc (MNAI) has designed a new non-painted corrosion resistant battery container that will not corrode in this environment.

MODIFICATION OF TCA-52:

The following procedure should be performed to change the original painted TCA-52 battery container to the new corrosion resistant container. The following are required to perform this conversion:

- MNAI OMM 24-34-00
- TCA-52 Battery Conversion Kit – MNAI P/N 33311-001 which includes the following:
 - (1) Marked Can Assembly, P/N 40406-001
 - (1) Marked Cover Assembly, P/N 40408-001
 - (1) Bottom Liner, P/N 33278-001
 - (1) Center Left Liner, P/N 9988-315
 - (1) Center Right Liner, P/N 9988-316
 - (1) Right Side Liner, P/N 33281-001
 - (1) Left Side Liner, P/N 33282-001
 - (1) Service Information Letter, P/N SIL-1-31433-1011
- Battery Maintenance Kit, P/N 32480-001

1.0 INSTRUCTIONS – Refer to IPL-1056 located at the end of the document.

- 1.1 Discharge battery per sections 7.0 and 8.0 of the OMM.
- 1.2 Let battery stand for a minimum of 4 hours.
- 1.3 Remove short-out clips from the cells.
- 1.4 Remove socket head screws (Item 91) and washers (Item 81 & 82) from all cells and the main receptacle (Item 110).
- 1.5 Remove all inter-cell connectors and keep separated by size (Items 71 – 73).
- 1.6 Thread the Universal Cell Puller into one of the terminals of one cell close to the center of one of the rows of cells and pull up to remove the cell. Repeat for one cell in the other row.
- 1.7 Remove all cells.

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- 1.8 Remove Hex head screw, lock washer, and flat washer (Items 122, 123, & 124) from the positive elcon block.
- 1.9 Remove main receptacle (Item 110) and rectangular sealing ring (Item 111) by removing the four screws (Item 112).
- 1.10 Remove the battery fillers in this order: number 65, 63, and then 61.
- 1.11 Next remove battery filler number 62 by pushing the bottom part of the filler to the left or the right into the large cavity in the battery container that was occupied by the cells and then pulling out from the bottom.
- 1.12 Remove large nut on the temp sensor (Item 120) connector from the outside of the battery can and remove the temperature sensor from inside the battery can. Take note how the sensor is placed within battery and filler material. Test sensor in accordance with OMM. Clean sensor assembly and O-ring and reattach O-ring to temp sensor.
- 1.13 Remove the battery filler number 66.
- 1.14 Remove the remaining two battery fillers, Items 64 by pushing out towards the front and back of the battery can.
- 1.15 Remove all shims (Items 51 - 53) taking note of number and type of shim at each location.
- 1.16 Clean all components, except the original battery can and cover with distilled or deionized water and dry thoroughly. **DO NOT WASH THE BATTERY FILLERS!** The fillers absorb water.
- 1.17 Discard the old painted battery can and cover.
- 1.18 Place bottom liner (Item 41) into the battery can.
- 1.19 Insert the battery fillers number 64 and filler number 66.
- 1.20 Attach temperature sensor assembly through the hole in the battery can. Attach nut to temperature sensor assembly and torque nut to 57 - 63 inch-pounds.
- 1.21 Place sensor back into battery container in the same manner as noted in step 1.11.
- 1.22 Replace filler number 62 in the same manner it was removed in step 1.10.
- 1.23 Place rectangular ring (Item 111) onto receptacle assembly (Item 110).
- 1.24 Attach Hex head screw, lock washer, and flat washer (Items 122, 123, & 124) to the positive elcon block.
- 1.25 Secure receptacle assembly (Item 110) and rectangular ring (Item 111) to battery can with 4 screws (Item 112). Torque screws to 15-20 inch-pounds.
- 1.26 Replace the remaining fillers in this order: 61, 63, and then 65.
- 1.27 Place side liners (item 44 & 45) into proper location and center liners (Items 42 & 43).
- 1.28 Replace all shims (Items 51) in the locations noted in step 1.14. Use these shims to ensure that the cells fit into the battery can tightly.

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- 1.29 and secure with four screws (Item 112). Torque screws to 15 – 20 inch-pounds.
- 1.30 Place all cells (Item 30) into the battery can. Make certain to arrange cells in the correct orientation with respect to the positive and negative terminals of the cells.
- 1.31 Place all inter-cell connectors (Items 71 – 73) in the correct place. Verify that all connectors attach the negative terminal of one cell to the positive terminal of the next cell (Except for cell #1 and cell #11 that connect to the receptacle assembly).
- 1.32 Place washers (Item 81 & 82) and socket head screws (Item 91) onto all cell terminals. Hand tighten only.
- 1.33 Place washers (Items 81 & 82) and socket head screws (Item 91) through inter-cell connector and into threaded holes on the receptacle assembly. Hand tighten only.
- 1.34 Torque all socket head screws (Item 91) to 100 – 125 inch-pounds.
- 1.35 Transfer battery S/N and date of manufacture from the original can onto name-plate label on the new can with an indelible marker.
- 1.36 Charge battery per OMM. Reference flow chart, new battery, page 1201 of OMM.
- 1.37 Battery is now ready for return to service.

INTERCHANGEABILITY INFORMATION:

The original battery and the battery modified by this SIL are completely interchangeable and intermixable.

MARATHONNORCO AEROSPACE CONTACT INFORMATION:

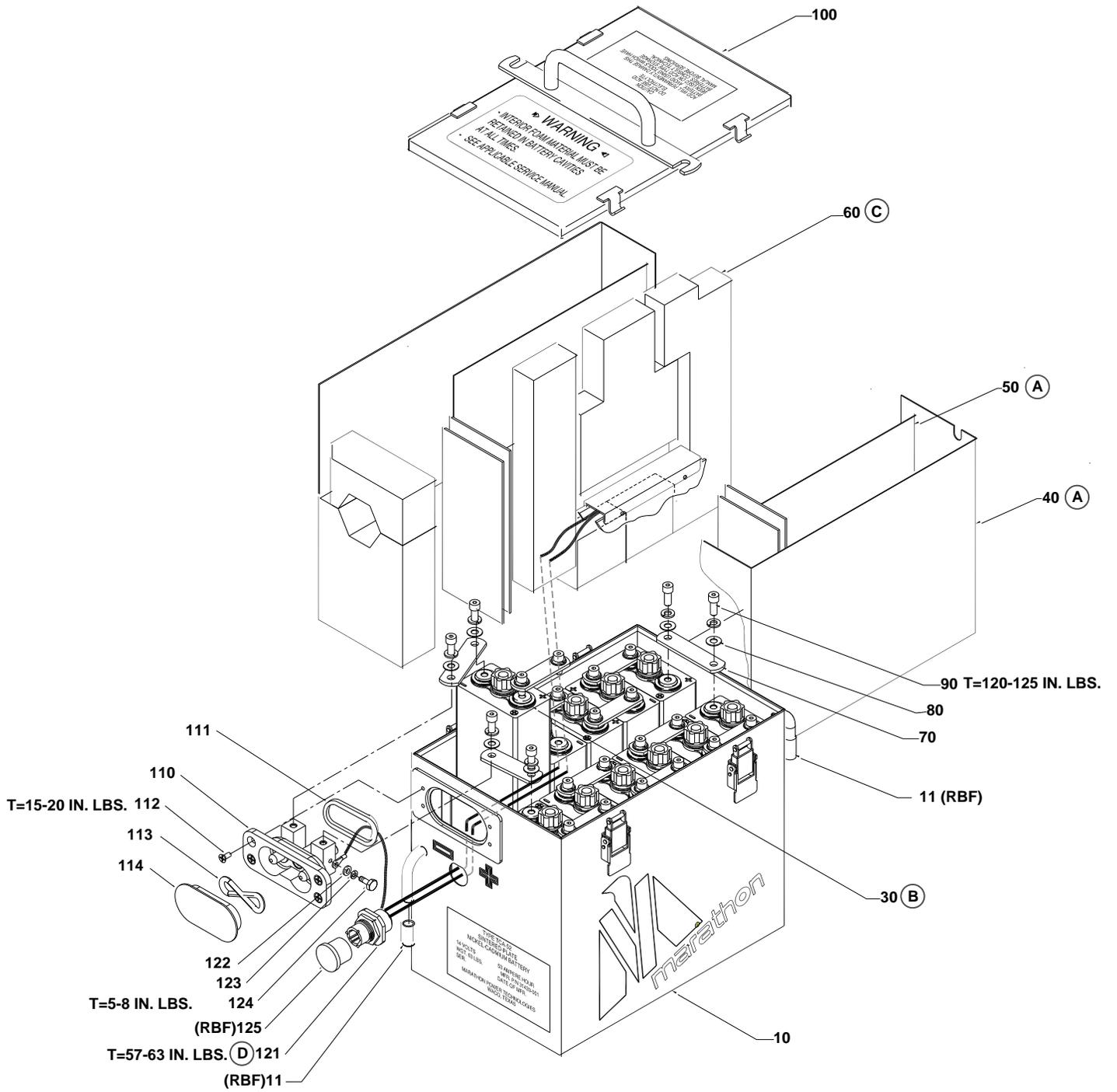
Any inquiries or comments should be addressed to:

Attn: Mr. Tom Elkjer – Sales Engineer

MarathonNorco Aerospace, Inc.
8301 Imperial Drive
P.O. Box 8233
Waco, Texas 76714-8233
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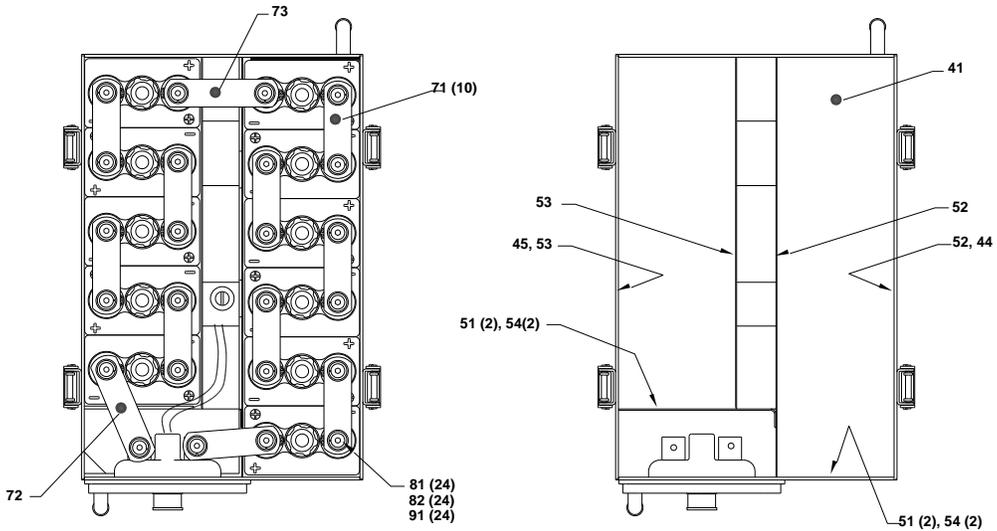
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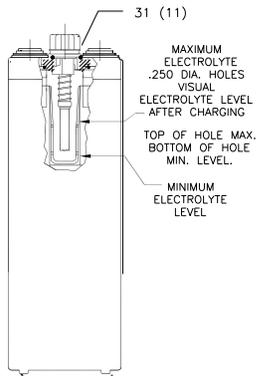
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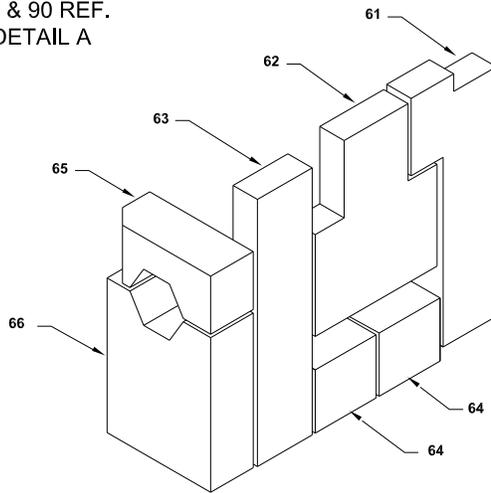
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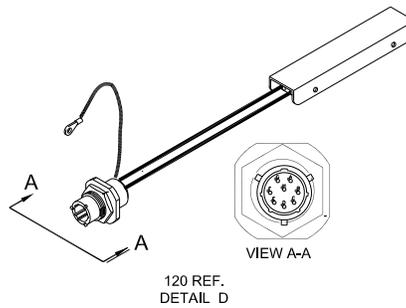
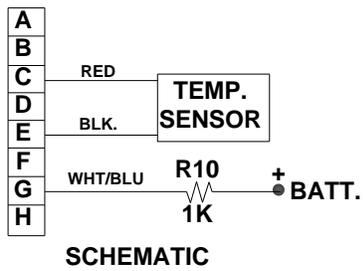
40 & 90 REF.
DETAIL A



30 REF.
11 PLACES
DETAIL B



60 REF.
DETAIL C



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ILLUSTRATED PARTS LIST FOR EPOXY COATED CONTAINER

Figure Item	Part Number	Nomenclature	Units Per Assy
1	31433-001	BATTERY, TCA 52H120C NI-CD	RF
-10	40406-001	CAN ASSEMBLY, MARKED	1
11	15766-002	DUST CAP, VENT TUBE (RBF)	2
-30	32486-002	CELL ASSEMBLY, 52H120C	11
31	29078-001	ASSY, FILLER CAP W/OPTICAL INDICATOR	11
-40		LINERS	
-50		SHIMS	
51	9988-101	SHIM	4
52	9988-316	SHIM	2
53	9988-315	SHIM	2
54	9988-174	SHIM	4
-60		SPACERS	
61	31846-001	FILLER	1
62	31845-001	FILLER	1
63	31844-001	FILLER	1
64	31842-001	FILLER	2
65	31847-001	FILLER	1
66	31843-001	FILLER	1
-70		CONNECTORS	
71	16102-205	CONNECTOR	10
72	16102-207	CONNECTOR	1
73	16102-208	CONNECTOR	1
-80		WASHERS	
81	18100-022	WASHER, FLAT	24
82	6560-017	WASHER, LOCK	24
-90		INTERCONNECTING FASTNERS	
91	10488-011	SCREW, SOCKET HD. CAP	24
-100	40408-001	ASSEMBLY, COVER MARKED	1
-110	32574-002	RECEPTACLE ASSEMBLY	1
111	24583-001	RING, RECTANGULAR	1
112	23084-001	SCREW, FL.HD. SEMS	4
113	25908-001	SPRING SHORTOUT	1
114	26916-001	DUST COVER, RECEPTACLE (RBF)	1
-120		TEMPERATURE SENSOR	
121	31851-001	SENSOR ASSEMBLY, TEMPERATURE	1
122	18100-057	WASHER , FLAT	1
123	6560-002	WASHER, LOCK	1
124	10246-044	SCREW, HEX HD.	1
125	16065-013	DUST CAP, TEPERATURE SENSOR (RBF)	1

RBF - REMOVE BEFORE FLIGHT

ILLUSTRATED PARTS LIST FOR THE CONVERSION TO STAINLESS STEEL CONTAINER

Figure Item	Part Number	Nomenclature	Units Per Assy
1	31433-001	BATTERY, TCA 52H120C NI-CD	RF
-10	40406-001	CAN ASSEMBLY, MARKED	1
-40		LINERS	
41	33278-001	LINER, BOTTOM	1
44	33281-001	LINER RIGHT SIDE TCA-52	1
45	33282-001	LINER LEFT SIDE TCA-52	1
-50		SHIMS	
52	9988-316	SHIM	1
53	9988-315	SHIM	1
-100	40408-001	ASSEMBLY, COVER MARKED	1

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