

NI-CAD BATTERY - CLEANING/PAINTING

1. General

- A. The battery should be removed from the airplane and cleaned in an authorized service area. If a white deposit has formed on top of the cells, it is potassium carbonate which is harmless and can be removed by brushing with a nonmetallic, acid-resistant brush, or with a clean cloth.

2. Tools, Equipment and Materials

- A. Refer to Electrical Power - General for a list of required tools, equipment and materials.

3. Cleaning/Painting Battery

WARNING: The electrolyte used in nickel-cadmium batteries is a caustic solution of potassium hydroxide. Serious burns will result if it comes in contact with any part of the body. Use rubber gloves, rubber apron and protective goggles when handling this solution. If electrolyte gets on the skin, wash the affected areas with large quantities of water, neutralize with three percent acetic acid, vinegar or lemon juice. If electrolyte gets into the eyes, flush with water and get immediate medical attention.

CAUTION: Do not use solvents to clean battery. Damage to battery case liner and cover gasket may result.

A. Cleaning Battery.

- (1) Wipe off battery case and cover with cleaning cloth.
- (2) Remove cover.

CAUTION: Do not use wire brush as shorting will occur. Damage to cell cases, filler cap vent plugs and battery terminal links may also result.

- (3) Using filtered compressed air with a nonmetallic nozzle, blow around the tops of the cell to remove any dust and/or salt crystals that may have been deposited on the battery case.
- (4) If intercell connectors and cell tops are excessively corroded, brush top of cell cases, filler cap vent plugs and battery terminal links with a nonmetallic brush to loosen all white deposits.
- (5) Wipe top of cell cases, filler cap vent plugs and battery terminal links with a cleaning cloth to remove all foreign material.
- (6) When the top of the battery case and cell tops are wet from minor spewage, proceed as follows:
 - (a) Check tightness of vent plugs. Tip battery at about a 45 degree angle with its receptacle facing upward in a downward direction to prevent any water from entering the battery case.
 - (b) Disperse excess water with shop air.
 - (c) Using a multimeter, measure the current between each battery terminal and the battery case. If current flow is measurable, the battery should be cleaned.

NOTE: Take reading from battery terminals of the receptacle to the snaps that restrain the cover.

- (7) When excessive electrolyte spewage has occurred to the extent that it has run down between the cells, the following procedure shall be performed.
 - (a) Perform the same cleaning procedure described in step (6) minor spewage.
 - (b) The battery shall be completely discharged and disassembled.

CAUTION: Do not remove cells from the case unless reinstallation can be accomplished immediately.

 - (c) Inspect each cell for cracks, holes, or other defective conditions. Defective cells shall be replaced with new or rebuilt cells.
 - (d) The cells shall be washed under running water. Do not allow the water to enter the cells interior.
 - (e) The cells shall be dried with clean, absorbent toweling or with compressed dry air.
 - (f) Remove accumulated dirt, carbonate deposits, and corrosion prevention silicone from connectors, screws, nuts and washers (after they are removed from the cells) by wiping with a dry cloth. Heavy deposits shall be removed by scrubbing with a stiff bristle, nonmetallic, acid-resistant brush.
 - (g) Ensure all parts are thoroughly dry before reassembling.
 - (h) Inspect all parts. Damaged or heavily corroded parts shall be replaced. Connecting straps that are burned, bent, or have defective nickel plating shall be repaired or replaced. Tarnished connecting straps shall be polished with a fine emery cloth, being careful not to remove plating.

- (i) Inspect the battery power receptacle for burns, cracks, and bent or pitted terminals. Defective receptacles shall be replaced. (Defective receptacles can overheat, arc, depress battery voltage, and cause premature battery failure.)
- (j) Bent battery cases and covers and loose or damaged battery cover gaskets shall be repaired or replaced. Broken or cracked intercell connectors shall be replaced.
- (k) Reassemble the battery components in the battery case. Refer to Ni-Cad Battery - Removal/Installation.

NOTE: If a cell is difficult to insert, apply a light coat of petroleum jelly or silicone grease to the sides of the cell case before reassembly.

- (l) Capacity check the battery.

B. Cleaning Battery Filler Cap Vent Plug.

WARNING: Electrolyte will cause serious burns if allowed to contact the skin.

- (1) Remove filler cap vent plug using nylon wrench.
- (2) Inspect cell vent caps, O-rings and vent sleeve for obstructions, cracks, or damaged seals. Damaged parts shall be replaced.
- (3) Wash cap under running water.
- (4) Remove white deposits from filler cap vent plug using nonmetallic, acid-resistant brush.
- (5) Dry filler cap vent plug with clean cloth or dry compressed air.
- (6) Install filler cap vent plug.

C. Painting.

- (1) The battery case and cells are covered with an epoxy coating. This epoxy coating is designed to improve the insulation between the cells and the battery container.
- (2) If the epoxy coating is damaged, contact Marathon Battery Company, Customer Service Department.