

# Marathon Power Technologies

## Service Bulletin No. 101996-019

### Description:

This Bulletin concerns Battery Types CA-27-20, CA-727-20, KCA-727-20 24Ah batteries in 727, 737-100, and 737-200 Service. These batteries have been reported to have had several thermal problems in the past 5 years.

### Effectivity:

Immediate.

### Immediate Action:

Increased surveillance of the 24M220 and 24ME220 cellophane cells used in these batteries for cellophane damage.

- A. Reduce maintenance intervals to 1/2 of current interval, but not to exceed more than 300 hours.
- B. Perform cellophane damage test as described below under Test Procedures at every maintenance interval. Effective January 1, 1997, Marathon Power Technologies will no longer manufacture cellophane 24M220 or 24ME220 cells.

### Ultimate Action:

- Replace cellophane cells 24M220 with Celgard cells 24M220CR assembly P/N 26381-08C with a red cell support visible through the cell jar. Marathon will provide labels for the battery can, to provide the proper P/N marking information. Return to the normal maintenance intervals.
- Replace 24ME220 cellophane cells with 24ME220C Celgard cells with a black cell support visible through the cell jar. These are assembly P/N 28033-01C. Marathon will provide labels for the battery can, to provide proper P/N information. Return to normal maintenance intervals.
- Some Celgard cells 24M220C O/L 26381-08C NOT marked 24M220CR and with black cell supports are in the field. Contact Marathon to exchange these for 24M220CR cells with red cell supports.

### Reason:

For the past eight to ten years, there has been an industry wide steady decline in cellophane quality. First perceived as a manageable cell life decline, cellophane degradation rates have increased to where normal maintenance intervals may be too long to detect incipient failures.

### Test Procedures (For Cellophane Damage):

1. Starting with a previously leveled (electrolyte) and rundown and shorted out battery:
  - A. Charge constant current at 12A for 2 1/2 hrs.
  - B. Then, decrease the charge rate to 4.8A for 3 hrs.  
Monitor and record cell voltages every half hour throughout the last 2 hrs. of the 4.8A charge.

NOTE: DO NOT use Reflex mode of Christie Chargers, but set in the constant current mode.

2. Decision Criteria
  - A. Reject any cell below 1.50V during or at the end of the monitored 2 hour charge at 4.8A
  - B. Replacement of Cells:  
If one or two cell are bad, replace the bad cells.  
If 3 or more cells are bad, replace all cells. Do not mix cellophane and Celgard cells in the same battery.

3. Keep Good Records by S/N.  
If a total of three or more cells have failed in a battery over a series of maintenance intervals, replace all cells as soon as the third cell is found.

**Warranty/ Cost Information:**

Extension of warranty will be provided for 24M220 and 24ME220 cells upon exchange for 24M220CR and 24ME220C cells. The extended warranty is defined as follows:

- 24M220 and 24ME220 cells found to be defective during the original one year warranty period will be replaced on a one for one basis with 24M220CR and 24ME220C cells.
- For each 24M220 and 24ME220 cell found to be defective during year two of operation, MPTC will provide a 50% credit towards the purchase of new 24M220CR and 24ME220C cells.
- During year three of operation a 25% credit will be provided towards the purchase of new 24M220CR and 24ME220C cells.
- During year four, a 12% credit will be provided towards the purchase of new 24M220CR and 24ME220C cells.
- Warranty credit will be in the form of product exchange. The attached test data sheet must be completed and returned with each claim.

**Approvals:**

- FAA/PMA (South West Region) for CA 727-20C O/L #25582-005. (Copy Attached)
- The 24M220CR cell has been tested by Boeing and administrative documentation is in process for formal certification of batteries.
- The 24ME220C cell will also be certified

**NOTE:** Upon certification by Boeing the battery P/N (Assy Dwg) will roll one "Dash Number", and the battery type designation will become CA 727-20CR. Upon receiving PMA approval of the certified battery bearing both a Boeing P/N and Marathon P/N, the presently PMA'd battery will become obsolete. At the same time the CA-27-20C battery P/N will also roll 1 dash # to O/L 28211-004.

At this time batteries containing the 24M220CR cell or 24ME220C cell may be re-labeled with the new Boeing and Marathon Power Technologies part numbers. Marathon Power Technologies will provide labels for this change.

**Attachments:**

Facts about Thermal Problems in Nickel-Cadmium Batteries Doc. # BA-244 693.



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WARRANTY CLAIM

TEST DATA SHEET

CUSTOMER: \_\_\_\_\_

MRR#: \_\_\_\_\_

PART #: \_\_\_\_\_

SERIAL #: \_\_\_\_\_

CYCLE #: \_\_\_\_\_

CHARGE										REMARKS
CELL #										
1										
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SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_