



Service Bulletin

SB# SB040907-001

DATE: 04/09/07

SUBJECT: Christie RF80-K Lead Acid Discharge Values

Summary:

Since the introduction of the RF80-K was 1992, the standard charge and discharge cutoff voltages for nickel cadmium and lead acid batteries have experienced periodic changes in accepted standards. MarathonNorco Aerospace's policy is to always follow the charge and discharge recommendations of the battery manufacturer (if available). Most recently, MarathonNorco has adopted the IEC values for lead acid discharge cutoff voltages. This service bulletin notifies customers of this change and provides instructions for calibrating lead acid discharge values.

Note: Discharge values were also modified on a service bulleting issued March 6, 2000. This current service bulletin does not modify Ni-Cad discharge values, but changes the discharge value of Lead Acid batteries from 1.8 V/Cell to 1.66 V/Cell. Standard Lead Acid discharge values given in this service bulletin supercede those in the March 6, 2000 service bulletin.

Adjusting to a Non-Standard Value:

Paragraph 2.4.3 of the RF80-K Technical Manual (TD-668, Rev A through D) infers that any switch position may be calibrated to a non-standard value, provided that it is clearly labeled with its new purpose. TD-668 also has a procedure to calibrate the RF80-K in the field. All that is needed is to substitute the standard values with the desired non-standard values.

There are some concerns about voiding the current calibration and any warranties. The end user may recalibrate the RF80-K using a calibrated digital voltmeter (DVM) without voiding any warranties *as long as the affected adjustments are clearly labeled*. For a fee, the user also has the option of sending the RF80-K, along with the required specifications, to an approved calibration lab, an authorized service center, or to the factory for recalibration.

RF80-K Discharge Cutoff Recalibration Procedure

The primary concerns seem to be with the discharge cutoff voltage, the following procedure may be used to quickly recalibrate discharge settings to the standard IEC values or to a lower, nonstandard, value using an appropriate battery.

NOTE: This procedure is for both Lead Acid and NiCad discharge values. Lead Acid discharge values are the only ones being changed.

1. Remove the top cover from the RF80-K.
2. Identify and locate the control PCA (p/n 121622-001). It is the Large PCA in the center of the RF80-K.

3. Identify and locate the following pots on the control PCA: R56 through R59, R96 through R98 and R117. **NOTE:** When viewed from the front of the RF80-K, these pots are along the left side of the rear edge of the Control PCA.
4. Using the following table, determine which pot will be used to recalibrate the discharge cutoff setting for lead acid batteries. The table also includes the standard voltage cutoffs that were set by the factory for Ni-Cad batteries.

Battery	Cells	Pot	Standard Voltage
Ni-Cad	11	R56	10.5
Ni-Cad	19	R57	18.1
Ni-Cad	20	R58	19.0
Ni-Cad	22	R59	20.9
Lead Acid	3	R117	5.0*
Lead Acid	6	R98	10.0*
Lead Acid	12	R97	20.0*
Lead Acid	14	R96	23.4*

*These are the IEC standard values for lead acid discharge.

5. Obtain a known good battery of the desired chemistry and with the correct number of cells for the pot that is to be recalibrated.
6. Scrape off the insulating paint on the adjustment screw of the pot being recalibrated. Be sure to clean out the slot.
7. To reset the discharge cut-off point:
 - A) Connect the battery to the RF80-K.
 - B) Turn ON the RF80-K's AC Power and, if necessary, charge the battery to a voltage level above the desired discharge cut-off voltage.
 - C) Turn the pot one full turn counterclockwise. This will reduce the cut-off voltage by approximately 2 to 3 volts.
 - D) Initiate a discharge function with enough time to discharge the battery to the desired cut-off voltage. **Note:** The "Discharge Cycle Switch" must be set to "Short."
 - E) Attach a calibrated DVM to the battery to monitor its actual voltage
 - F) When the DVM indicates that the desired cut-off voltage has been reached, slowly turn the pot clockwise until discharging terminates.
8. Turn OFF the RF80-K's AC Power. Disconnect the battery and install the RF80-K's top cover.
9. Mark the RF80-K, indicating the new discharge cut-off point for the given cell setting.