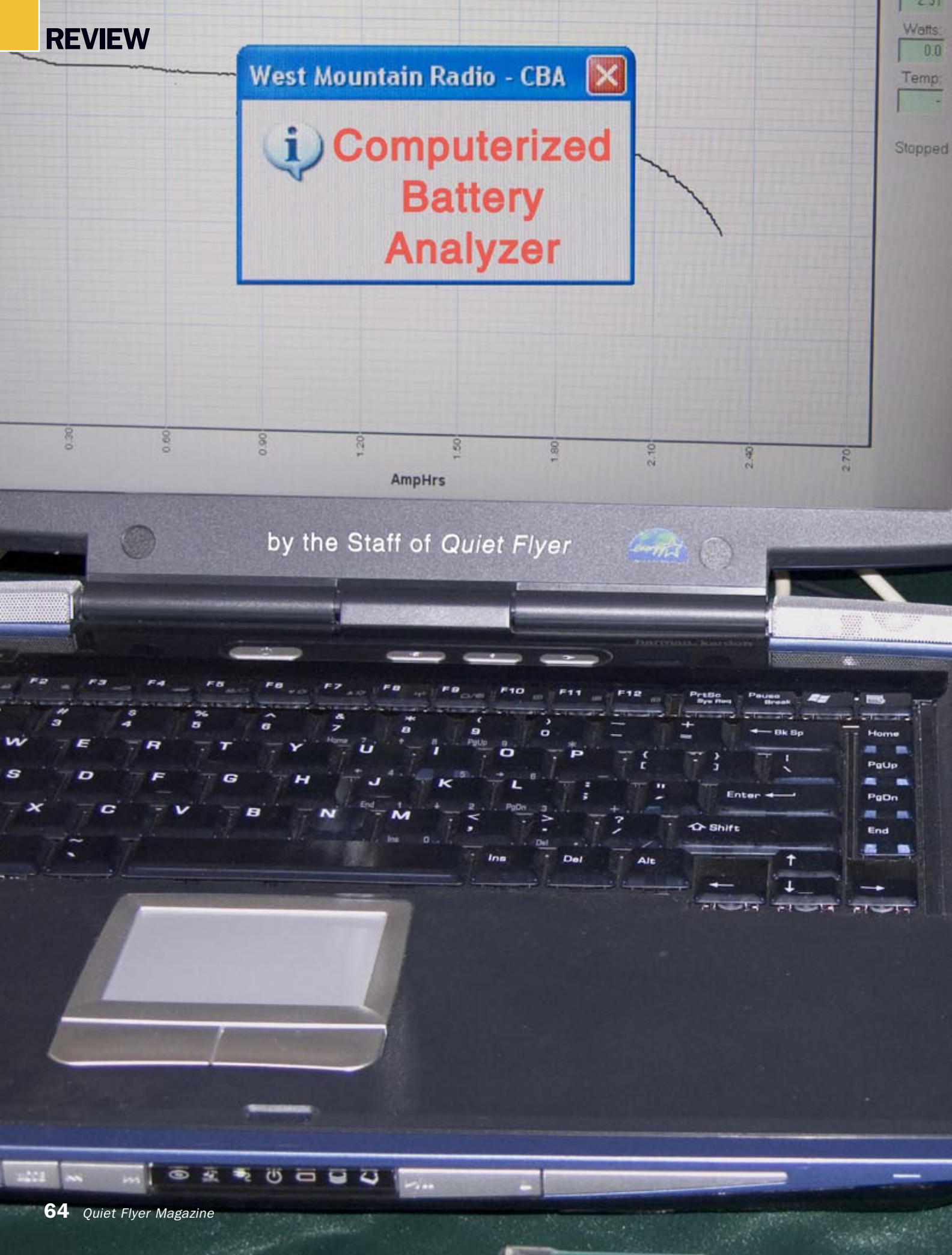

West Mountain Radio - CBA
Computerized Battery Analyzer
by the Staff of Quiet Flyer
AmpHrs
Watts:
Temp:
Stopped

West Mountain Radio Company recently introduced an exciting new product for electric flight enthusiasts: the Computer Battery Analyzer (CBA). This new unit takes the guesswork out of battery analysis. The CBA is easy to operate, and it comes with user-friendly personal computer (PC) software that provides a powerful interface and data collection system. All measurement parameters are fully adjustable. Furthermore, the data gathered can be printed in a hard copy. The CBA is a very capable and valuable tool that possesses the ability to test battery packs, reference a pack's test results against another, and match individual cells.

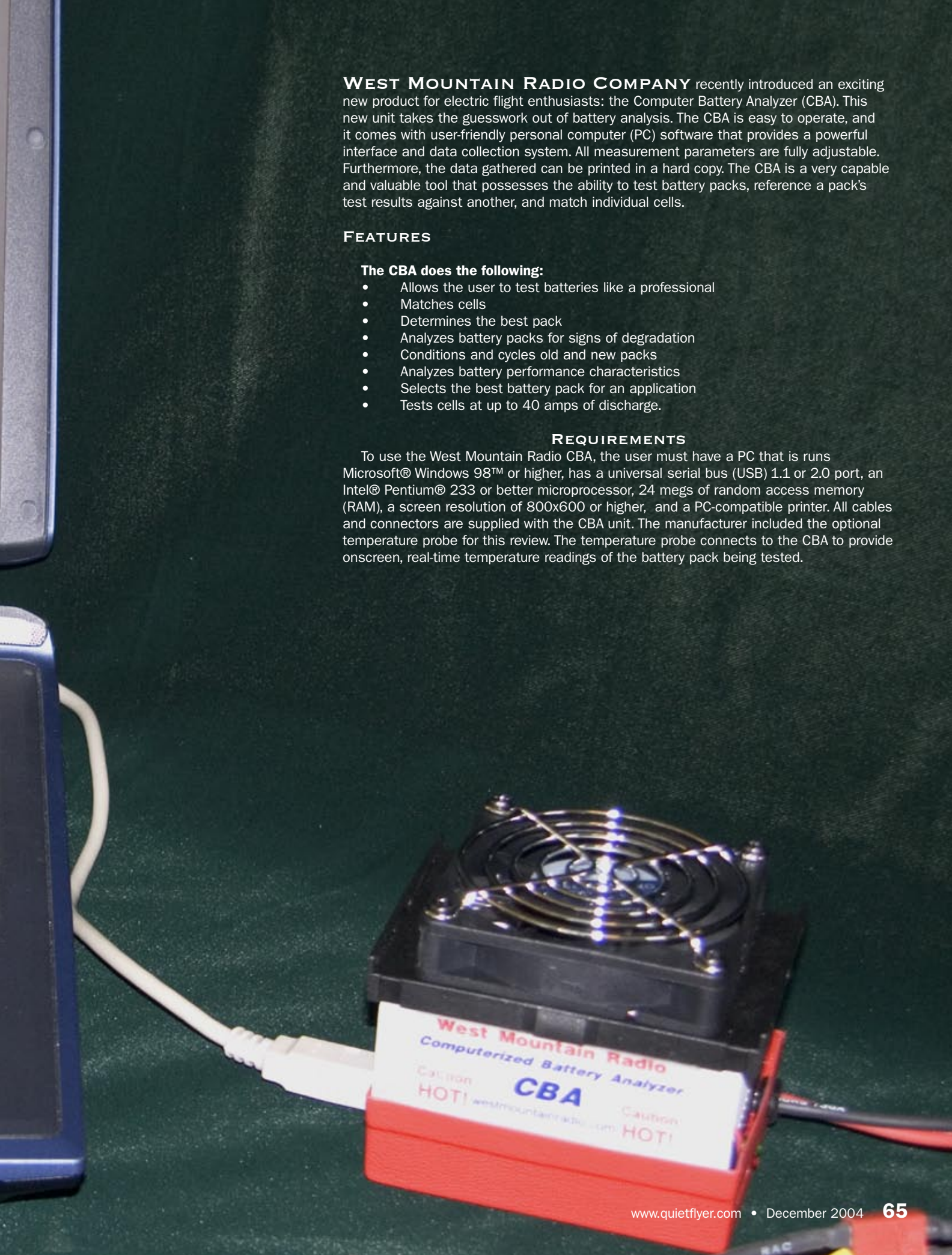
Features

The CBA does the following:

- Allows the user to test batteries like a professional
- Matches cells
- Determines the best pack
- Analyzes battery packs for signs of degradation
- Conditions and cycles old and new packs
- Analyzes battery performance characteristics
- Selects the best battery pack for an application
- Tests cells at up to 40 amps of discharge.

Requirements

To use the West Mountain Radio CBA, the user must have a PC that is runs Microsoft® Windows 98™ or higher, has a universal serial bus (USB) 1.1 or 2.0 port, an Intel® Pentium® 233 or better microprocessor, 24 megs of random access memory (RAM), a screen resolution of 800x600 or higher, and a PC-compatible printer. All cables and connectors are supplied with the CBA unit. The manufacturer included the optional temperature probe for this review. The temperature probe connects to the CBA to provide onscreen, real-time temperature readings of the battery pack being tested.



Unit Features

The CBA is a compact unit that measures 3.5 by 2.8 by 3.6 in. and weighs just 1 lb. A built-in cooling fan, which sits on top of a large heat sink, helps to keep the CBA unit cool during a test cycle. Anderson power pole connecters are standard equipment on the CBA for the battery connection. For this review, the supplied connector was removed and Dean's Ultra plugs were soldered in place. On one side of the unit's base is a USB port, while on the other side a port to plug in the optional temperature probe.

All of the CBA software and hardware drivers, as well as the instruction manual, are available on the included compact disc (CD). A USB cable is also provided.

How to Use

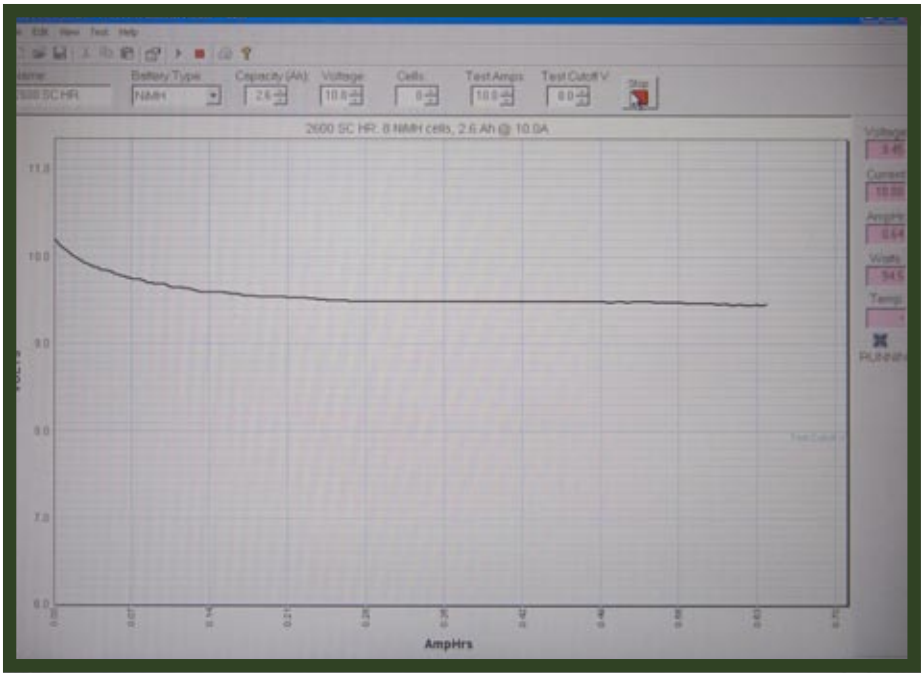
Before you use the CBA, you must install the software and hardware drivers on your PC. Windows XP detected the new software on my computer, and the drivers from the CD were installed. The user interface that is a part of the CD software was very easy to use and understand. Once the hardware drivers had been loaded, the CBA software was installed. Next, the CBA was connected to the USB cable, and the cable was then plugged into the computer's USB port. The CBA program was then launched and the unit was ready to test batteries. This process of installation and setup took less than 15 minutes.

A well-used 8-cell battery pack was picked for testing. The last time this battery had been used to power an electric model, its performance had appeared good. However, its condition was in question.

The user interface of the CBA software couldn't make using the system easier. Every test parameter is adjustable, although some parameters can simply be left in automatic mode. To change a parameter, one simply uses the up or down arrows located by each value. Each test needs to be named. Also, numbering the battery packs under test is helpful in later identifying each pack's results. Next, the battery type—NiCd, NiMH, lithium, etc.—must be selected to match the battery being tested. The battery's capacity must also be entered. The battery voltage is then selected, along with the number of cells. There is a user-selectable cutoff voltage, which ends the test when the value is reached, but you can choose to let the program automatically set this parameter. Finally, the test current must be set. The CBA can place a load of either 40 amps on the battery pack or 150 watts, whichever is greater. In the case of our 8-cell, 2600-mAh NiMH pack, we only discharged the pack at a maximum of 10 amps because the pack could generate more then 150 watts of power.

Real-time parameters—such as actual battery voltage, current, amp hours, watts, and temperature (available only with the optional temperature probe attachment)—are displayed on the right side of the computer screen. A graph of volts verses amp hours is displayed in the center of the screen, which draws a trace in real time.

In preparation for the test, we charged the battery pack to its full capacity using a Schulze isl-8 charger. The charged 8-cell battery pack was then connected to the CBA unit. Clicking the green arrow, which is located in the upper right-hand window of the software's screen, started the test. All of the results were then graphed in real time! The CBA unit got quite hot during the test phase, but the fan and heat sink combination kept the unit's temperature within limit. Once the cutoff voltage was reached, the test was automatically terminated. The results of the test were displayed immediately. We did not print the results, but a color or black-and-white printer can print hard copies of the graphs. If individual cells are being tested, the results can be printed on labels and then attached to each cell. Another great feature of the CBA software is that multiple battery packs can be tested, and the results can be compared to one another on screen. This would really be a plus for any electric enthusiast who is into competition and needs to know which battery pack is the best performer.



SPECIFICATIONS

Product: Computerized Battery Analyzer

Manufacturer: West Mountain Radio

Suggested Retail Price: $89.95

Dimensions: 3.5 in. high, 2.8 in. wide, and 3.6 in. deep

Features: Built-in heat sink, cooling fan, and wire leads with battery connecter

Function: Tests built battery packs or individual battery cells under a variable load

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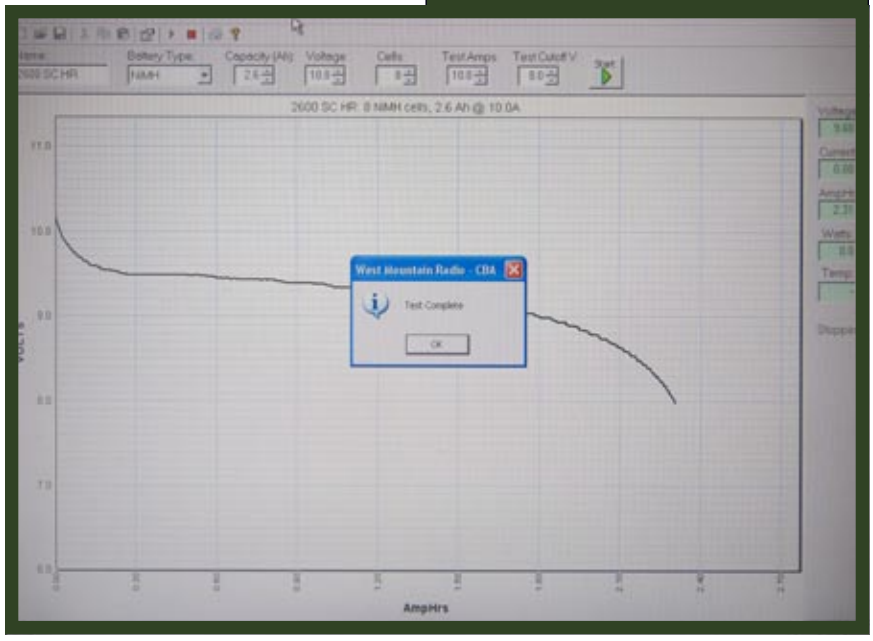
Other features of the CBA are as follows:
• Packs with outputs of up to 48 volts may be tested (1 to 38 NiCd or NiMH cells)
• Battery types that may be tested include NiCd, NiMH, Lead Acid, Lithium Ion (Li-Ion), Lithium Polymer (Li-Poly), alkaline, carbon zinc, and mercury
• Accurate digital measurements
• An onboard C8051-based USB micro controller with 10-bit resolution
• Constant current testing using via a solid-state field effect transistor (FET)
• Fail safe against temperature, current, power, and reverse polarity.



Final Thoughts

We found the West Mountain Radio Company's CBA to be extremely easy to use. It is feature and performance rich. With a software interface that is easy to understand and use, plus simple hardware, any electric flight enthusiast can learn to use this product. We recommend this unit as another tool to getting the most from electric-motor-powered modeling! ■