PowerBook: Power and Battery Saving Tips (2/97)

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TOPIC ---

This article provides suggestions for reducing power consumption, thus extending
the life of your PowerBook computer's battery.

DISCUSSION --

General Information

Battery voltage varies by PowerBook model, individual battery type, ambient
temperature, and other factors. To check battery voltage, use a voltmeter to
determine the actual charge. Battery verification can be found within the
PowerBook additional procedures of the Service Source. This is the true
hardware check and it is the most accurate and helpful troubleshooting tool.

Another tool, Norton Essentials, is a software utility that can handle some of
the following battery conservation tips.

Some load items that affect battery discharge:
• Amount of RAM installed
• Screen brightness
• On time for disk drives
• The PowerBook's operating mode
• Peripherals (including internal modem)

The Tech Info Library contains several other articles with further details on
batteries, utility software, and other related topics.

Before Using Your PowerBook

• Shut down your PowerBook and charge its battery overnight. This ensures that
the battery becomes fully charged.

• Reduce the number of extensions and control panels that load by using an
extension manager program.

Settings and Controls

• Turn down the brightness.

• Turn Backlighting down to minimum. Set the shortest delay before dimming (move the slider in the PowerBook Display control panel to the left). Use this dimming feature instead of a screen saver program. Screen savers access the hard drive and keep backlighting turned on (which uses battery power) but dimming does not.

• In bright light, you can even turn backlighting off, greatly increasing battery life. Some people use a booklight with no backlighting, but this is an extra gadget to carry. Also, the PowerBook File Assistant software offers the PowerBook Display control panel that provides controls over automatic screen dimming.

• Avoid desktop patterns with many black pixels or solid dark areas. (These don't consume more power, but they tend to make you turn up the backlighting, which does consume more power. For Color displays it is good to use darker colors, like black, that reduce the use of Red, Green, or Blue pixels. All pixels On make white.

• Use Chooser to turn off AppleTalk. This saves power and lets the PowerBook wake up faster. You may wish to have AppleTalk turned on when you restart and then turn it off. That way you can turn AppleTalk on and off without restarting. If AppleTalk is turned off when you start up a computer, certain system code doesn't get loaded, and a restart is necessary to get it loaded again. If you have the PowerBook File Assistant Toolkit extension installed, AppleTalk is always available, thus avoiding the need to restart the system to load the AppleTalk drivers.

• Turn the sleep wait period down to a minimum using the PowerBook control panel, or set the Battery Conservation slide control to Maximum Conservation in the PowerBook control panel.

• Set system and hard disk sleep to their minimum settings.

• Select Reduced Speed in the Battery Conservation Options section of the PowerBook control panel.

• Use Sleep in the Special menu, or the Battery desk accessory, as often as practical. If the PowerBook File Assistant is installed, you can also use the Sleep Fkey sequence, Shift-Command-0.

• Unless you have a RAM disk you want to preserve, select Shut Down rather than Sleep when you won't be using the computer for more than 30 minutes. Note: This does not apply to the PowerBook 100, whose RAM disk is preserved after shut-down.

• Enable "Allow Processor Cycling" to reduce the power draw of the microprocessor.

Using Memory

• Use the Memory control panel to set up a RAM disk. Use the Installer to

create a minimal System Folder on the RAM disk, and then use it as the startup disk.

WARNING: Except in the PowerBook 100, the contents of a RAM disk are lost when you shut down a PowerBook. In other models, use Sleep to preserve RAM disk contents, or use the Persistent RAM disk feature of the PowerBook File Assistant software.

The Tech Info Library article "PowerBook: Setting Up to Run from a RAM Disk (6/93)" documents how to set up a RAM disk for your PowerBook.

• Use the Memory control panel to turn off Virtual Memory.

• Use third-party RAM cards that contain low-power RAM chips.

Application Software

• Under battery power, don't use applications or features (such as spell checking or QuickTime) that require lots of hard drive access.

• Instead of a full-featured word processor, use TeachText, AppleLink, or a program designed specifically for PowerBooks. Many word processors constantly access the hard drive, which uses battery power.

• When you're near an AC outlet, and you're planning to use battery power later, launch your applications and open data files with AC power, then put the PowerBook to sleep. Your work will be in RAM when you come out of sleep.

Using Peripherals

• Quit any program that uses a modem as soon as you're finished with it.

• Turn off features such as "wake on ring" and "fax receive" for modems.

• Don't use external devices when operating the PowerBook from battery power.

• If any SCSI devices are connected to the computer, make sure they're turned on, even when you're using the AC adapter. Power can drain from your battery through attached power supplies.

• Use the disk drive as little as possible and eject any floppy disks you're not using.

• Use only low-power ADB devices that are designed for PowerBooks.

• Remove any PC (PCMCIA) cards from the PC card expansion slot(s). Some cards draw power even when they are not in use. (NOTE: Not all PowerBook computers have PC slots. If you're not sure if your's does, you should check the manual.)

Other Tips

• If you're near an electrical outlet, use the AC adapter.

• Travel with a spare battery.

• Regularly "Exercise" the Battery. Warning: this tip does not apply to the PowerBook 100, whose lead-acid battery should not be fully discharged.

To maximize battery life, discharge them completely once every 90 days. Just use the computer as you normally would, but ignore the low-power messages that appear on the screen (make sure to save your work). When the computer goes to sleep automatically, recharge the battery completely before using that battery again.

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28 Feb 1997 - Added info about PC cards.
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