Tech Info Library

PowerBook Computers: How Cold Temperatures Affect Them (3/97)

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TOPIC --

How can a cold environment affect a PowerBook computer's Power Manager?

DISCUSSION ---

Issue

When a PowerBook computer's Lithium backup battery is exposed to cold
temperatures it may cause the PowerBook computer to not keep time or not power
on.

Description

A PowerBook computer's Power Manager and Parameter RAM (PRAM) are maintained by
the backup battery when the PowerBook computer is either Shut Down or in Sleep
mode.

The backup battery used in PowerBook computers is a Lithium battery which
behaves differently compared to other battery types in both low-voltage and cold
temperature situations.

Lithium batteries when exposed to a cold environment (less than 45 degrees
Fahrenheit or 7 degrees Celsius) may either stop sending voltage completely or
they may "pulse" full voltage. This inadequacy or inconsistency of voltage sent
from the backup battery can corrupt the PRAM and/or Power Manager of a PowerBook
computer.

Solution

A PowerBook computer which has recently been exposed to a cold environment (such
as the trunk of a car, in a classroom at a school which may not be heated
overnight, and so on) should be placed in a warm environment where it can be
warmed to room temperature (more than 50 degrees Fahrenheit or 10 degrees
Celsius) before you attempt to power it on.

If the PowerBook computer still does not power on after being allowed to warm
up, you should reset the ***Power Manager***. Each model of PowerBook computer
has different methods for doing this. For more information on resetting the

Power Manager for your PowerBook computer model see the Tech Info Library
article 0014449, titled "PowerBook: Resetting Power Manager".

*** WARNING ***** WARNING ***** WARNING ***** WARNING ***** WARNING ***

Power Manager Reset procedures for all of the Macintosh PowerBook computers will
permanently remove a RAM disk, if present, and all of its contents.

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