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## Macintosh II and Iix: Unusually Short Battery Life (11/94)

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TOPIC -----

I have a common problem with both a Macintosh II and a Macintosh IIX discharging lithium batteries over a period of 2-6 weeks.

My macintosh computers have had two logic boards replaced; the first had a failed SCSI port, the second battery discharge problems. My replacement batteries have come from Apple. All interface, hard disk, floppy drive, peripherals, keyboard and mice tested fine. That leaves the logic board, power supply, or memory as the main suspects.

I have heard that the zener diode (D1) on the main board may be the culprit.

DISCUSSION -----

We have checked several production versions of the Macintosh II and Macintosh IIX and have been unable to locate any boards that contain zener diode (D1). Is it possible that you are referring to a prototype version of the Macintosh II logic board? We seem to remember hearing that a few of the first 100 or so very early prototype machines were draining the lithium batteries very quickly. Naturally, Apple fixed this problem long before the Macintosh II went into production for delivery to customers.

Several circumstances can cause the lithium batteries to discharge quickly. The most common problem occurs when the power-on switch on the back of the machine is pressed up against a wall. Even an unplugged Macintosh II's batteries will drain completely in 1-4 weeks. The same thing can happen if a book or other heavy object is resting on the keyboard's power-on switch. Similarly, a faulty keyboard or ADB cable can drain the batteries.

Normally, when the power-on switch is on, the lithium batteries supply a startup voltage to the power supply through pins 14 and 15 of the power supply connector (usually colored yellow and white). With the machine turned off, monitor these pins to see if you get a DC voltage reading. If you do, disconnect your peripherals (the keyboard, keyboard cable, mouse, etc.) until you no longer get a voltage reading. If there are no more peripherals and you still receive a

voltage reading, then the logic board is probably faulty and needs to be replaced.

We also recommend installing the Macintosh II and IIX battery holder board (600-0530) to simplify the testing, removal, and replacement of batteries. Before replacing your batteries, note the battery voltage and the date last installed. In addition, carefully inspect the area around the batteries for signs of solder shorts and/or poor connections. If necessary, connect a multimeter to the batteries to test for a load condition.

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