



Sad Macs, Bombs and Other Disasters
Second Edition

by Ted Landau

Addison-Wesley Publishing, 1995

Update 1.0a

December 12, 1995

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A Blatant Advertisement for *Sad Macs*

The second edition of *Sad Macs, Bombs, and Other Disasters* (a troubleshooting guide for the Macintosh) was published in June of 1995. Since then, Apple has released PCI-based Power Macs, PowerPC PowerBooks, new monitors (particularly the 1710AV with its new AppleVision software), System 7.5.2 (which includes Open Transport) and more. While these advances are all welcome, they also bring with them a host of new things that can (and do) go wrong, requiring a wealth of new fixes to learn about. This Update gives you the lowdown on all of this new troubleshooting information. It is gleaned from several dozen sources (including my own experience!).

This update also adds new material about topics already covered in *Sad Macs*, as well as correcting several omissions and minor errors that I discovered while going over the text.

Much of the information here will be instantly useful, whether or not you have a copy of *Sad Macs* handy. However, in most cases, each item is listed with the page number(s) in *Sad Macs* that are most relevant to the item. This makes it easy for you to check here for supplementary or revised information, whenever you do use *Sad Macs*. By using this update, your copy of *Sad Macs* indeed remains up to date.

This is the first in a series of update documents that I intend to write over the coming months, with the information eventually incorporated into the third edition of the book.

Chapter 4: System Errors

Page 95: Type 11 and “No FPU Installed” system errors have become surprisingly common for Power Mac users (especially after upgrading to System 7.5.1), making it one of the most asked-about problems today. The ultimate cause of these errors is almost always bugs in application software. So you cannot really “fix” these errors yourself. Still, there are a number of quasi-fixes that can help eliminate or reduce the chances of getting these errors. In particular, here’s a complete list of things to try:

- Restart. The error may not occur again any time soon.
- If the error occurs only or mainly with one application, and especially if you can reproduce it consistently, a bug in that program is the likely cause. Contact the vendor for compatibility information.

One special note: Power Mac versions of Microsoft Office applications (Word 6 and Excel 5) can lead to Type 11 errors, most often when also using virtual memory and/or QuickDraw GX. To fix this, you should install the Office4.2x Update for Power Mac extension (MC1164.HQX at Microsoft’s Web site; it is now up to version 1.0.1). If you use System 7.5.2, also get Microsoft’s Office Manager Patch for 7.5.2 (MC1265.HQX at Microsoft’s Web site). However, Microsoft Office 4.2.1b reportedly incorporates these fixes already.

- Zap the PRAM. Some Type 11 errors may be caused by corrupted PRAM.
- Update the disk driver to the latest available version (especially because some older drivers are incompatible with SCSI Manager 4.3, which is used by System 7.5)
- Turn off Modern Memory Manager. It may trigger Type 11 errors in situations that would be ignored by the “old” Memory Manager.
- Check for extension conflicts (see Fix-It #4). Turn off conflicting extensions (or get an upgrade that fixes the problem, if such an upgrade exists). Some known possibilities include: QuickDraw GX, ATM, SuperATM.
- Too many fonts in the Fonts folder can cause Type 11 errors. To check for this, remove the Fonts folder from the System Folder temporarily and see if the error disappears.
- A bit paradoxically, if you are using an older version of the system software, upgrading to the latest version (even System 7.5.1!) may eliminate the error.
- Do a clean install of your system software (see Fix-It #5). The software may have gotten corrupted.
- Consider increasing the size of your system heap, via options available in utilities such as Now Startup Manager or Conflict Catcher 3 (see Fix-It #6). For example, if you don’t have enough heap space to load a shared library, a Type 11 error may occur.
- If you are still desperate for a cure, disconnect any external SCSI devices to see if that helps. If so, there may be a problem or incompatibility with the external hardware (see Fix-It #16).
- Defective memory (SIMMs/DIMMs) can cause seemingly random Type 11 errors (see Fix-It #17).
- Defective RAM cache cards are a known source of Type 11 errors in Power Macs. This was especially a problem for RAM caches cards shipped with early Power Mac 8100/80s.
- If the errors continue after all of this, particularly if they occur while in the Finder, there may be a hardware problem with the logic board itself. Take it in for service.

Finally, here’s a bit of technical background on why these errors have become so common: On Power Macs, it turns out that Type 11 errors can occur after almost any type of system error (bus error, address error, etc.), as long as the error occurs while the Mac is running native code. On the other hand, No FPU Installed errors (which are really the same as Type 10 errors) occur mostly when a Power Mac is running in emulation mode. Essentially, since the Power Mac’s emulator does not have a FPU (floating point unit), an error occurs if any 680x0 program includes instructions to call the FPU. This can also happen if a program somehow

mistakenly executes data and interprets it as a call for the FPU. Overall, errors that would have resulted in an address error (Type 1 error) or even no error at all on a 680x0 Mac, will more likely cause Type 11 or “No FPU Installed” errors on Power Macs.

By the way, *Sad Macs* stated that Type 11 errors may be indirectly due to corruption of the 680x0 emulator as it loads in to RAM. I had originally gotten this tidbit from an Apple Tech Note, but Apple doesn’t seem to emphasize this anymore.

This also updates: Chapter 12, pp. 533 & 538 and Fix-It #1, pp. 595-596

Page 98: If you startup after a system crash in System 7.5, you get a special “warning message” informing you of this fact. Here’s how the Mac knows that you crashed: There is an invisible file of size 0 bytes called “Shutdown Check” at the root level of the startup volume. The presence or absence of this file determines whether the warning message appears on your next startup. The file normally gets deleted at shutdown. In such cases, the warning message does not appear. However, if you restart after a system crash, the file is *not* deleted and so the warning message *does* appear.

Note that this also means that the warning message will appear the first time you startup with a disk after it has crashed, even if you have started up successfully with other disks in the meantime.

Page 102: There are now at least four different energy-related control panels in System 7.5: Auto Power On/Off or CPU Energy Saver (which turn the computer itself on and off) and Energy Saver or Screen (which just put the monitor into an energy-saving mode). Each control panel works only with certain models. To play it safe, stick with the control panels that came with your hardware. Otherwise, Apple maintains a tech info file, titled “Energy Saving Control Panels: Description & Compatibility” (available at Apple’s online locations; Web users can go to <http://til.info.apple.com/til/til.html>), that describes what control panel goes with what hardware.

By the way, the Energy Saver 2.0.x “control panel” that ships with System 7.5.2 is actually an ordinary application, not a true control panel (cdev). It works in conjunction with a separate Energy Saver extension.

Pages 111 and 117: If you have an unexpected quit, or if you try a force quit to get out of a freeze, while you are connected online: be especially sure to restart before trying to reconnect. Otherwise, the system error is likely to recur. There is also a higher than normal risk that these errors will lead to directory damage. To be safe, check for this with Disk First Aid and/or other repair utility.

Pages 122-126: Add zapping the PRAM (see Fix-It #11) to the arsenal of things to do when trying to solve recurring system errors.

Chapter 5: Startup and Disk Problems

Page 153-157: Though not actually a system error, you may have the following problem at startup: An extension may refuse to load because your Mac is connected to a network and it detects another copy of the program with the same serial number installed on another machine. This can occur even if AppleTalk is “not active.” It only requires that the LocalTalk cable be plugged into your Mac. Now Utilities’ Now Toolbox, for example, does this, giving you an alert message at startup if it refuses to load. Some applications will also do this at the time you attempt to first launch the application. You can prevent these problems by restarting with the LocalTalk cable pulled out. For extensions, you can safely reconnect the cable after the Mac has loaded the extension.

Page 158: Extensions appear to load at startup okay, but a window comes up with the following message: *“There is not enough memory to load all of your extensions...To make more memory available, remove one or more extensions from the Extensions folder or reduce the size of the RAM disk and/or Disk Cache in the Memory Control panel then restart your Macintosh.”* Why? This message may appear when Apple Menu Options 1.0.2 has problems with its preferences file. Delete the preferences file (it’s located in the Preferences folder) and restart. Otherwise, especially if some of your extensions actually did not load, the message is probably telling you the truth. Do what it says.

This also updates: Chapter 12 (p. 550) and Fix-It #2 (p. 600)

Page 158: After doing a clean re-install of System 7.5, you may get a message at startup, after the desktop appears, that says: *“The system extension ‘Finder Update’ cannot be used, because it is too new.”* If so, it means you also need to reinstall System 7.5 Update 1.0.

Page 158: Here are a few other error messages that may appear at startup. What to do about them is usually fairly obvious:

“This disk must be unlocked in order to perform one-time housekeeping.” Unlock the disk!

“The ‘System’ file on the startup disk may be damaged. The Installer can be used to repair this disk.” Replace the System file from your backups or do a clean reinstall of the system software (as described in Fix-It #5).

“System 7.5 needs more memory to start up.” If you have less than 8Mb of RAM, you should probably get a RAM upgrade (or install RAM

Doubler or turn on virtual memory). For 8Mb or more of memory, the same solutions apply. However, you can also consider reducing the number of extensions you use. (see Fix-It #6 for more on memory)

“The System file on this startup device does not contain the resources necessary to boot this Macintosh. Please use the Installer to update the System file.” Somehow, the System file in use was not created for use on your current hardware. You should do a clean reinstall; an ordinary install may not fix this problem.

Page 161: The desktop cannot be rebuilt on a locked floppy disk. Occasionally, this may prevent a locked disk from even mounting. The solution is to unlock it.

Page 162: Some less common causes of startup crashes:

- *A corrupted preferences file.* I personally had a problem where startup halted prior to the appearance of the Finder’s menus and icons. Only a blank menubar and the desktop pattern appeared. A Force Quit succeeded in getting the Finder to load (restarting with extensions off also would have worked). But the problem kept recurring when I restarted with extensions on. Ultimately, I discovered that the problem was due to a corrupted Now Toolbox Prefs file (needed for Now Utilities). Deleting the Prefs file (after starting up with extensions off) fixed the problem. Now Utilities is especially notorious for these sort of problems.

More generally, if you check for extension conflicts (using procedures as described in Fix-It #4) and isolate the conflicting extension, you may find that deleting the file’s preferences file (rather than replacing or disabling the file itself) solves the problem.

- *A buggy control strip module.* In another case, a third-party control strip module, called Control PPP, caused a system freeze at startup. This was a somewhat hard to identify cause. My startup manager initially identified the problem as a triple conflict involving ATM, MacTCP and Control Strip. However, listing Control Strip as a conflict suggested to me that a Control Strip module may actually be the cause. As I had recently added the Control PPP module, this seemed like a likely candidate to try. Deleting it eliminated the problem.

Page 163: Contrary to the advice given on this page, Apple advises *not* updating the disk driver to solve the problem of a forgotten password in At Ease for Workgroups when you have selected the “Lock startup volume” option. Instead, a special program called Unlock is included for this purpose. Also, the “Lock startup volume” option works with drivers beyond just Apple’s driver and Drive7 (again contrary to what I said in *Sad Macs*).

More generally, many problems with At Ease can be solved by throwing away the At Ease Preferences, At Ease Setups and/or At Ease Users files. However, deleting all of these will require that you recreate your custom settings.

This also updates: Fix-It #12, p. 735

Pages 174-177: If you can't get a floppy disk to eject on a PowerBook 500, the drive may not be properly aligned. If you can see the metal frame sticking up more than a couple of centimeters behind the floppy drive door, you'll need to get the drive repaired. Take the PowerBook to a local Apple-authorized service provider or call 800-SOS-APPL.

Page 178: You may get the message that says a disk *"could not be put away, because it contains items that are in use,"* even though all applications except the Finder are closed and nothing else appears to be in use. In this case, if you try to run Disk First Aid to see if a Directory problem is the root cause, Disk First Aid may fail, stopping with a message that says *"test was interrupted because another program was using the disk."* A Force Quit from the Finder or a Restart should eliminate the problem. If you then recheck the floppy disk with Disk First Aid, it should report it as okay.

Once, when this happened to me, I also got a -192 error when trying to copy a file from the problem floppy disk. I am not exactly sure what was going on here. This issue may be specific to System 7.5.2.

Page 178: The caption to Figure 5-17 should read: "A disk cannot be *unmounted* when applications or documents on the disk are currently open (also see Figure 5-21)." It can still be ejected via the Finder's Eject command (Command-E).

Page 182: If you get the disk is *"unreadable"* message when trying to mount a CD-ROM and the needed CD-ROM extensions are properly installed, the files may be damaged. Reinstall them. Typically, the files are included as part of the System Software disks. However, make sure you are using the latest version (the current version of CD-ROM Setup is available online). If this has no effect, you may have an extension conflict.

Page 182: If a freeze occurs when trying to mount a CD-ROM disc, there may be dirt on the disc. Try cleaning it. To do so, wipe the shiny side of the disc gently with a soft cloth or tissue. Look especially for sticky "goop" on the disc. Wipe from the center to the edge of the disc; do not wipe not in circles.

Page 184: The NoEject extension exists exclusively in the System Folder on startup CD-ROM discs. It prevents a CD-ROM that is used as the startup disk from being ejected when you restart your Power Macintosh computer. The NoEject

extension should not be moved into the System Folder on your hard disk. Even with this extension present, you can still eject a CD-ROM disc by any of the standard methods (such as dragging the disk to the Trash).

Note that, trying to open the tray by pressing the button on the CD-ROM drive itself will only work if there is no disc presently in the drive.

Page 194: If your Mac suddenly starts taking an unusually long time to startup (with lots of disk activity taking place), it may be that the AppleShare PDS file can become corrupted. To fix this, delete the file and recreate your access privileges as needed. Since AppleShare PDS is an invisible file, you will need to use a utility, such as DiskTop, that lets you view invisible files (as described more in Chapter 8).

This also updates: Chapter 11, p. 509

Page 194: In addition to the reasons already cited in *Sad Macs* as to why your Mac may be running slower than expected, consider the following:

- Keeping key caps open in background slows down text processing in foreground.
- The size of the disk cache affects speed. See Fix-It #6 for a discussion of recommended settings. If the cache has somehow been reset to a lower amount, reset it to your previous setting. By the way, if you start up with Extensions Off (by holding down the Shift key at startup) the cache will revert to its default size for that session.
- Also note that Connectix's Speed Doubler can substantially increase the speed of your Mac, especially a Power Mac. Its Speed Access extension works as a replacement for Apple's Disk Cache. Speed Emulator is an improved faster version of the 680x0 emulator for Power Macs.
- Increasing the Preferred Memory size of an application may increase its speed by allowing more of program to load into RAM, reducing need for frequent swaps to disk (which slow program down).
- Apple Menu Options can cause an overall slowdown in system operations when an alias to a hard drive is placed in the Apple Menu Items folder. Other similar extensions, such as Now Utilities' Now Menus do not cause the same performance penalty because they accomplish the same goal by a different method. However, the downside of Now Menus' method is that it will take longer than Apple Menu Options to display its hierarchical menu.

Chapter 6: When You Can't Find, Open Or Otherwise Use A File

Page 208: System 7.5's Find File can search for text within a file via its Contents option (similar to how programs such as Gofer work). You need to hold down the Option key to get this choice.

Pages 217-218: There is a bug in Microsoft Word 5.x that causes the application to fail to open occasionally. Instead, an error message appears that says that Word would not open because “System memory is too low.” It advises you to reduce Word’s memory size. Typically, you can ignore this advice. This is just a bug and has little or nothing to do with how much memory you actually have. This most often happens when Word is the first application you try to launch after startup. If you launch another application and go back to Word, or if you simply retry launching Word a few times, the problem is usually resolved.

Pages 224-226: The External CD Sound extension is needed to hear audio CDs through the internal speakers of Power Macintosh/ Performa 5200s.

Pages 224-226: SimpleSound (included with recent Power Mac models) can create two types of sound files:

1. It can create SimpleSound documents. These are standard AIFF files that can be used by most applications that can edit sounds (such as Avid VideoShop or SoundEdit 16). To do this, select New from SimpleSound’s File menu.
2. It can create “system” sounds. These are files that play directly when you double-click them from the Finder. To do this, click the Add button from SimpleSound’s Alert Sounds window. The newly recorded sound file will be stored in System file initially (where it can be used as an alert sound), but you can drag it out from there.

Page 229-231: For obscure reasons not worth delving into here, Macintosh Easy Open will not list Microsoft Word as a potential application for documents of unknown type, even if Word could open the document.

Page 229-231: When using Macintosh Easy Open, if you select an unintended application to link with a document, you may have trouble figuring out how to undo the link. To do so, go to the Easy Open control panel and click the Delete Preferences button. You should then rebuild the desktop (see Fix-It #9) with all extensions (except Easy Open!) turned off.

Page 230: Utilities such as DeBabelizer, and similar shareware alternatives, can open graphics files of almost any format. These can also be used to convert files from one format to another. You can also try to open “unopenable” graphics files with Can Opener.

This also updates: Chapter 10, p. 431 and 439

Page 236: If you are having problems opening PC files from a CD-ROM disk, check that you have the Foreign File Access extension installed. If not, install it (either from your System Software disks, or from the CD-ROM Setup disks).

Page 244: As a good bit of general advice, do not use the General Controls control panel's Folder Protection features. They cause more problems than they solve. Using these settings can lead to startup crashes and freezes. As of this writing, they are incompatible with Apple's File Sharing, with SpaceSaver and with several other utilities. In any case, they only prevent removal of files from the main folder; you can still remove files from subfolders of protected folders. There are also known conflicts with General Control's Documents Folder feature. Thus, it may ultimately be wise to disable the entire control panel. You can still use some of its features (such as the blinking rate settings) even with the control panel disabled.

Especially problematic is the version that comes with System 7.5.1 (System 7.5 Update 1.0). A fixed version will probably come out eventually.

Page 252: If you are using a utility such as Copy Doubler or Speed Copy and you get a "disk error" message when trying to copy files from a floppy disk, the disk may not really be damaged. The problem may instead be with the utility. To find out, disable the utility extension and try the copy again.

Page 252: You can't do direct disk-to-disk copying of files from one SyQuest cartridge to another. If you try, you will get repeated requests to swap cartridges, persisting until the millennium. Instead, you'll have to copy the files from one cartridge to your fixed hard drive and then copy them to the second cartridge.

Chapter 7: When You Can't Print

Page 267: LaserWriter 8.3, a new version of the LaserWriter 8 driver, includes Desktop Printer software as its major new feature (see "Special Section: Troubleshooting Desktop Printers," later in this document, for more details). The driver also adds ColorSync 2.0 support. Also included with this software is Apple Printer Utility, a replacement for the LaserWriter Utility.

QuickDraw GX users: Note that the new driver now checks in the •Archived Type 1 Fonts• folder for PostScript fonts (see Chapter 12, pp. 573-574).

Page 282: A native code version of LaserWriter 8 should be available soon. This version will most likely implement single-pass foreground printing (for both Power Mac and 680x0 users). Current versions of LaserWriter 8.x (unlike LaserWriter 7) actually spool an entire print job to disk regardless of whether or not background printing is enabled. It does this in two separate passes through the file: the first pass analyzes the file; the second pass converts the QuickDraw code to

PostScript. This incurs a performance penalty for printing large documents and may require significant disk space to store the temporary spooled file (even when printing in the foreground). The new driver should alleviate both of these problems.

Page 298: With certain applications, you cannot print if you use the Flip Horizontal, Flip Vertical, landscape page orientation, and/or Layout option in the Page Setup dialog box in combination.

Page 302: For text documents: some PostScript printing errors can be solved just by changing the portion of text that uses a suspected problem font to another font and then changing it back again to the original font. Try this before you try more extreme measures.

Pages 307-309: PostScript error -8993 most likely means that you have insufficient memory to handle your print request (which is probably a request for multiple copies of a large and/or complex document) in the background. To solve this, print the document as separate single copies or disable background printing.

Pages 307-309: “Set limitcheck,” “VM Storage,” “Offending command...,” or “Range Check” PostScript errors are typically due to corruption in the PostScript output generated when you try to print a file to a PostScript printer. Insufficient memory (as described in *Sad Macs*) is just one reason this might happen. Sometimes simply restarting the printer helps solve this problem. Otherwise, for graphics files, try the following (in addition to the suggestions already cited in the text):

1. Select just the graphic object (do not Select All) and save it to a new file. Try to print the new file.
2. If the object has a lot of separate elements (e.g., a complex object-oriented graphic), see if you can simplify it by reducing the number of elements. Try to print again.
3. Check the Split Long Paths option in Illustrator or Freehand. Long paths can cause a system crash if the Postscript interpreter runs out of storage space. Try to print again.

Page 307-309: When using StyleWriters, system software memory allocation will likely increase by several megabytes when printing. This is normal. If you do not have sufficient free memory, you will get a message that says you are unable to print until more memory is made available. If this happens, quit any open applications and try again.

Also, remember that StyleWriters use the Mac’s processor to do all their image processing (unlike PostScript LaserWriters, which have their own processor). This means that if you continue to use the Mac while the StyleWriter tries to print in the

background, the StyleWriter's printing can slow to an incredible crawl. If this happens, just stop using your Mac until the print job is done.

Page 309: Putting a PowerBook to Sleep while PrintMonitor is active will halt printing. When you wake up the PowerBook, printing may not resume. In this case, you may need to cancel the print job and reselect it.

See also: "Special Section: Troubleshooting Desktop Printers" and "Special Section: Troubleshooting System 7.5.2," later in this document, for solving other printing-related problems.

Chapter 8: Getting Under the Hood

Page 329-330: Changing a document's creator, as described in *Sad Macs*, is not the only way to get a text document to open in SimpleText by default. You could also, of course, open the text document from within SimpleText and then use the Save As command to create a new document. This new document will now open in SimpleText by default. However, especially with a utility like Get More Info, changing the creator is simpler and faster.

Pages 333-334: Two more Finder Flags/Attributes you may occasionally have reason to modify (via Get More Info or other utility):

- *The Inited Bit:* This indicates whether or not the Finder has seen the file. If you disable it, you can force the Finder to relook at the file. This can be useful, or even necessary, to get Finder to recognize changes you have made to other attributes for the file. It may also help to get a custom icon to display for a particular file. Uncheck it and restart.
- *The Has Custom Icon Bit:* If a custom icon is not displayed (and other suggested solutions have failed to work), also look to see if this attribute is checked. If not, check it and restart.

This also updates: Chapter 6 (p. 234) and Fix-It #9 (p. 705)

Chapter 9: Fonts and Text

Page 357: "Style variants" of TrueType fonts are not exactly "directly comparable" to that of PostScript fonts (as is stated in *Sad Macs*). In particular, with TrueType:

- Style variants typically do not contribute to Font menu clutter.
- Removing style variants affects both screen display and printing. It is generally advised, though not required, to use the TrueType screen variants (if you have them for a particular font) in order to get better display and printed output quality. [For PostScript fonts, removing

screen font variants has little effect on printed output while removing printer font variants eliminates the fonts ability to print in that style at all!]

- Note that screen font variants may come in forms that are not a direct match for the Italics and Bold styles in the Style menu (e.g., Demi, Light etc. refer to different degrees of “boldness”). This is another reason why selecting the screen font variant may lead to different output than selecting the comparable style from the Style menu.

Page 361: Current versions of ATM are no longer a control panel and extension. It is now just a control panel.

Page 365: For Type 1 PostScript fonts converted to QuickDraw GX format: To use the Apple Printer Utility to manually download the fonts to a PostScript printer, you need to select the printer fonts, as stored in the •Archived Type 1 Fonts• folder, not the converted GX fonts.

This also updates: Chapter 12, p. 574

Page 376-377: To permanently prevent inadvertent switching of keyboard layouts (by accidentally pressing the “shortcut” keys as described in the text), you can simply disable the Keyboard extension (rather than delete all but one layout from the System file). Even better, System 7.5 Update 1.0 adds a check box to the Keyboard window that allows you to turn off the keyboard shortcut.

Page 398: A problem related to bitmapped text being uneditable: Editable text in a PICT file may become uneditable, especially if it is transferred to application other than the one that created the graphic. For example, I had this happen when opening a ClarisWorks-created PICT file with ClarisDraw (or even when reopening the PICT document in ClarisWorks itself).

Page 399-403: A neat trick to check for damaged bitmapped fonts is to build a small streamlined System file and drag all your fonts to it. The system checks the integrity of the font before “accepting” it and gives it a unique ID number. This latter function can also help resolve ID conflicts among these fonts.

Page 408-410: Adobe’s multiple-master fonts are fonts in which you can vary the style characteristics of the font itself (such as how thick the characters are (weight) and how spread apart they are (width)). The details of how all this works are too involved to get into here. However, if you have at all ventured into the world of multiple-master fonts, you are probably a bit mystified by the meaning of all those strange-looking names that appear in your Font menus (which is yet another contributor to Font menu clutter, one that can again be fixed by using a utility such

as Now Utilities' WYSIWYG Menus). In any case, here are a few tips that may help you sort things out:

- “MM” after a name means it is a multiple master font (surprise!).
- Designations (which may or may not be present) immediately after “MM” describe the style of the font (such as “Obl” for oblique or “Ita” for italics). Other letters may indicate the company that made the font.
- Letters and numbers that follow the underscore in the name describe the particular attributes of the font (typically its weight and width). For example, MyriaMM_347wt423wd, indicates a weight of 347 and a width of 423. Other fonts with the same numbers should appear comparable in these attributes.
- Alternatively, after the underscore, you may see something like “540 BD” and/or “200 CN.” The letters are abbreviations reserved by Adobe to describe the font. In this case, BD means Bold and CN means condensed. The numbers again describe how bold or condensed the font is. If the abbreviations are in caps, this means the specific font was supplied by the company that created the font. If the abbreviations are in lower case, it means that you created the specific font yourself (typically via Font Creator).
- If the font name begins with “%M,” this means it is the master font that all other variations are based on. These typically do not appear in Font menus, but they are critical. If you remove this font from the System Folder, none of the other related fonts will work.

[Special thanks to an article by Kathleen Tinkel in Adobe Magazine (November 1995) for providing most of this information.]

See also: Chapter 12, pp. 571-572, for information about similar abilities of QuickDraw GX fonts

Chapter 10: Graphics

Pages 412-414: The resolution of Apple monitors vary from as low as 64 pixels per inch (ppi) to as high as 80 ppi, depending upon the monitor. A multiple scan monitor's ppi will change when you shift resolutions, typically ranging from 64-79 ppi.

Page 446 and 451: With LaserWriter drivers, the rationale between having a choice between Black & White vs. Color/Grayscale is that Black & White is faster. However, with LaserWriter 8, print Speed is apparently the same with either option, so you can always use Color/Grayscale.

Page 451: With current software for Color StyleWriters, remember to select the Color button from the Print dialog box before printing a color document, in order to select the ColorSync option. It apparently does not remain selected by default.

Chapter 11: PowerBooks

Page 473: Starting with version 7.1.3 of the Memory control panel, at least 6Mb of available RAM is required to use a RAM disk. If there is not enough RAM, the RAM disk option appears briefly when you first open the control panel and then disappears.

This also updates: Fix-It #6, p. 668

Page 506: The sentence that contains: "...the File Sharing and extensions on your desktop Mac..." should read: "...the File Sharing and *Network* extensions on your desktop Mac..."

Page 513-514: If you try to turn on file sharing for your entire hard drive (via the Sharing Setup control panel) but the hard drive already includes shared folders, you get the following error message: *"Cannot share selected drive because there is a shared folder contained within it."* The solution is to first turn off file sharing for all shared folders (via the Sharing command in the Finder's File menu) and then turn on file sharing on for the entire drive.

Pages 517-519: If you use a PC Card (PCMCIA) modem and/or the PowerBook PCMCIA Expansion Module on PowerBook 500s, install Apple's PCMCIA Update software (available online of course!). The Update increases performance and resolves certain compatibility problems. Apple's official instructions for installing this update are as follows:

1. Shut down the PowerBook.
2. Make sure your PCMCIA Expansion Module is installed in your PowerBook.
Remove all PC Cards from the PC Card slots.
3. Double-click the PCMCIA Updater icon.
4. Click Update when you are ready to update the module. Follow the instructions on the screen.
5. Click Quit when the update is complete to quit the Updater program.
6. Choose Shut Down from the Special Menu.
7. Restart your computer.

Pages 518-519: For problems getting a modem to work, also try the following:

- Turn the modem off and back on again. Try this especially if you can't get a dial tone from your phone line after a failed attempt at connecting. (This also sometimes solves "PPP Time Out" messages.)

- Disconnect the phone cable from the modem and reconnect it.
- Restart the Mac altogether.
- If you are using a PowerBook with an internal modem, make sure the phone cable is connected directly to the PowerBook's phone outlet and that the Internal Modem option is selected. In particular, if you have zapped the PRAM, this resets the modem setting from Internal Modem back to External Modem.

Pages 523-524: Apple's built-in Ethernet hardware (the "MACE" controller) in Quadras and some Power Macs can cause freezes and/or corruption of data. The Apple Built-In Ethernet extension fixes these problems as does the new Ethernet driver included as part of Network Software Installer 1.5. Network Software Installer 1.5 (which is recommended to solve a variety of performance and compatibility problems) installs software newer than what is installed with System 7.5, so remember to reinstall it if you should ever do a clean reinstall.

See also: "Special Section: Resetting the PowerBook Power Manager," later in this document

See also: "Special Section: Troubleshooting System 7.5.2," later in this document, for problems regarding the use of Open Transport.

Chapter 12: Power Macs, System 7.5 and Beyond

Page 532: A flaw was detected in the PowerPC 603 processor of a very small number of 52XX and 62XX Macs. The problem has since been corrected. To check if you have this problem, get Apple's 52XX/62XX Diagnostic Utility from one of its various online sources. If you have the problem, Apple will replace your logic board at no cost. Call 1-800-SOS-APPL.

It has also been reported that some Performa 5200, 5300, 6200 and 6300 series Macs have a defect in the logic board that causes a crackling or static noise to occur when playing sound files. Fixing this may also require a logic board replacement. However, before you decide you need your logic board replaced, or if you are having a similar problem with 16-bit sounds on any other Power Mac models, get Apple's Audio Volume Extension (available from Apple's online sources). It will likely solve the problem.

Page 532: The SerialDMA extension requires System 7.5 or later. It should be used by all AV 68040 and all PowerPC Macs (especially PCI-based Macs!). It fixes numerous problems that affect serial port devices, such as modems and printers. SerialDMA 2.0.2 (available from various online sources, either separately or as part of System 7.5.2 Printing Update) is compatible with PCI-based Macs and fixes numerous bugs, compatibility and performance problems from previous

versions. For those of you who want to know the details, some of the more significant fixes in version 2.0.2 are:

- The SerialDMA driver will no longer fail to complete a transmission correctly on a Power Macintosh, a particular problem with fax software.
- Hardware handshaking now works reliably.
- A bug in the algorithm used by older versions of SerialDMA for setting some baud rates could give improper results. This has been fixed in SerialDMA 2.0.2. This bug affected Quadra 840AV and 660AV CPUs only.
- A bug in older versions of SerialDMA that caused problems printing to StyleWriters has been fixed in SerialDMA 2.0.2. This bug affected Power Macintosh 7200/7500/8500/9500 CPUs only.
- The SerialDMA driver is now native for Power Macintosh.

Page 533: Modern Memory Manager (as selected from the Memory control panel in Power Macs) is basically a PowerPC native code rewrite of the original Memory Manager (present in all Macs). Keeping Modern Memory Manager on should speed up your Power Mac's performance. Turning it off means you are running the old (slower) Memory Manager in emulation mode. Thus, Apple advises leaving it on at all times. However, some applications are still incompatible with the Modern Memory Manager (and may trigger Type 11 errors for example). If this turns out to be the case, you'll have to turn off Modern Memory Manager to use such applications.

This also updates: Fix-It #6, p. 668

Page 536 and 549: Apple's Shared Library Manager extension is *not* built into System 7.5 (contrary to what is stated in *Sad Macs*). You still need this extension for programs that use this feature. Any application that requires the extension should ship with it. Shared Library Manager also comes with System 7.5.2 (which needs it to use Open Transport software).

Background note: Shared libraries contain code that may be used by multiple programs, eliminating the necessity for each program to maintain a separate copy of that code in memory when they are open at the same time.

Page 538: For more help on dealing with Type 11 errors, see the update item earlier in this document that references Page 95 (Chapter 4).

Page 545: To be safe, before running the System 7.5. Update 1.0 Installer (which installs System 7.5.1), update your disk driver using the new version of Apple HD SC Setup (included on the Update disks). Ric Ford's MacInTouch Web page (<http://www.macintouch.com/~ricford/>) contains a host of other installation tips and

known problems with System 7.5.1 (although the most common ones are already cited in *Sad Macs* or elsewhere in this document).

Page 546: Regarding the section in the text titled “Custom Install Installs Unselected Files”: When using the System 7.5 Installer, if you choose Custom Install and select to install system software “for any Macintosh,” the Installer may install options not designed for your Mac model, even if you specifically do not select them in the other listings of the Installer window.

See also: Fix-It #5 (especially p. 643) for more on installing system software

Page 548: See the update item for page 552 for information about possibly deinstalling file sharing in System 7.5.1.

Page 549: System 7.5 Update 1.0 installs two new files at the root level of your System Folder: System 7.5 Update and Finder Update. Make sure both of these files stay in your System Folder.

Page 549: In System 7.5.x, Threads Manager 2.x is built into the System file, so you should not find it as a separate extension (although, at least in Power Macs, you may find ThreadsLib, as a separate shared library file). If you do find a separate Threads Manager extension installed in System 7.5, remove it. It may help avoid conflicts that can lead to system crashes and freezes. With Systems prior to 7.5, a Thread Manager extension may be required, so do not remove it.

Page 552: System 7.5.1 (the version name after installing System 7.5 Update 1.0) has been reported to cause all sorts of problems. Zapping the PRAM fixes many, but not all, of these problems (see also the previous item for Chapter 4, p. 95). Most other problems are due to extension conflicts. For example, if you use MacTools TrashBack, make sure you upgrade to the latest version (4.0.2 or later), or you may have problems shutting down the Mac and/or ejecting CD-ROM disks.

File sharing code was completely rewritten for System 7.5.1, and has become a new source of problems. For example, you may not be able to use Disk First Aid’s Verify command with File Sharing on. To minimize problems, keep file sharing off when you are not using it. Some people have found it preferable to return to the version of file sharing (version 7.1.1) that comes with the original System 7.5.

See also: Chapter 11, for more on file sharing

Page 553: An Apple Guide Additions file (sometimes referred to as a “Mixin”) acts to add additional topics to a main Apple Guide file. You can’t separately select an Additions file from the Apple Guide menu. Instead, the Addition’s topics are seamlessly integrated within the overall topic list of a main file (such as Macintosh Guide). Additions files typically get automatically installed when and only when the

software that they describe is also installed. For example, the Speech Guide Additions file is installed when you install PlainTalk software and its topics are then integrated into the listing of the Macintosh Guide file.

A problem with all of this is that, in System 7.5.1 or System 7.5.2, all Apple Guide files may become totally inaccessible from the Apple Guide menu if you happen to install an Additions file for software that is not available with your Mac model. Examples of this would be if the PowerBook Additions file was installed on a desktop Mac or if the Video and Speech Additions files were installed on any non-AV Power Mac. The most common way this can happen is if you do a Custom Install and manage to make a selection that leads to this incorrect software installation. The loss of the Apple Guide function may similarly occur if you delete the software referred to in an installed Additions file, but do not remove the Additions file itself (such as if you delete the PlainTalk software, but let the Speech Guide Additions file remain). The solution, in all of these cases, is to locate the problem Additions file(s), usually found in the Extensions folder, and delete them.

Finally, in some cases, a third-party Guide file may prevent your access to Macintosh Guide. In this case, you will have to either give up on Macintosh Guide or delete the third-party file.

Page 553: Apple Guide 2.0 is now available. Among other things, it now works with System 7.0 and 7.1. I don't know whether it fixes the problem just previously described.

Page 556: QuickDraw GX is now up to version 1.1.2. This latest version primarily fixes bugs from the previous version.

Page 561: QuickDraw GX Helper (used to temporarily disable QuickDraw GX) does not work with most non-Apple drivers or even some older versions of Apple drivers (such as for the LaserWriter Select 310).

Page 573-574: If you decide to remove QuickDraw GX, note that in earlier versions of QuickDraw GX, the Installer's Custom Remove feature does not remove QuickDraw GX fonts. You will have to remove these yourself and, if appropriate, replace them with matching non-GX fonts, as stored in the •Archived Type 1 Fonts• folder. Current versions of QuickDraw GX apparently do all of this housework for you as part of the Installer's Custom Remove process. However, even in this case, QuickDraw GX fonts that do not have a match in the •Archived Type 1 Fonts• folder are not removed.

Page 584: PostScript error messages such as *"No PostScript fonts are present," "You will be unable to print since no outline fonts are present,"* and *"Font Mismatch Helveobl..."* typically mean that you cannot print because the application

in use is incompatible with QuickDraw GX. Beyond disabling QuickDraw GX as a solution, your only hope lies with an application upgrade. Check with the application's vendor for information.

Page 587: If you expect to periodically enable and disable QuickDraw GX, make sure both GX and non-GX versions of your fonts are in the Fonts folder of your System Folder.

Pages 587-588: The differences between QuickTime VR and QuickDraw 3D, two new technologies from Apple, can be hard to keep straight. QuickTime VR lets you create graphics that a user can navigate around in a 360° space. For example, it could allow you to view a picture of a room and rotate around to see all four walls, look up to the ceiling or down to the floor, etc. The software (which is available online) includes a simple VR player application that can be used to view VR documents. QuickDraw 3D is a technology that makes 3D rendering easier to do than was previously possible and creates a standard that most developers are likely to adopt. With an optional QuickDraw 3D accelerator card added, it also becomes the Mac's fastest method of 3D-processing. Some PCI Power Macs come with QuickDraw 3D software on their System CD-ROM disk. Otherwise, as always, the latest version is available online. Both technologies will likely be popular in future games and multimedia applications.

Pages 587-588: OpenDoc has now been officially released. Later versions of this update file will contain the inevitable troubleshooting information relevant to this technology.

Pages 587-588: Some things to expect when *Copland (System 8)* finally gets released (which may not be until 1997!):

- Current extensions and desk accessories will no longer work. All of this software will need to be rewritten to work with Copland.
- The Finder interface has been redesigned. The shareware program, Aaron, gives you a good idea of what it will look like.
- Protected Memory, a new feature of Copland, should minimize system crashes by preventing a crash in one program from leading to a system-wide crash that necessitates restarting your Mac. Unfortunately, Copland will not have a full implementation of this feature (that will have to wait until System 9).
- QuickDraw GX will be mandatory.
- All code will be on disk, eliminating the need for the Mac ROM altogether. This will facilitate putting the MacOS on clones.
- Copland will only work with Power Macs.

See also: “Special Section: Troubleshooting System 7.5.2” and “Special Section: Troubleshooting PCI-based Macs,” later in this document, for more on the latest developments in troubleshooting.

Fix-It #2: Preferences Files

Page 600-601: When deleting preferences files of control panels, first restart with extensions off. Otherwise, even though you delete the preferences file, the new preferences file may be created from the corrupted information still present and in use in RAM. This point is also briefly mentioned in Fix-It #4 (page 626).

Fix-It #4: Extensions and Control Panels

Pages 614-616: It turns out that there are differences between what may get disabled by selecting to turn off all extensions via your startup management utility vs. via holding down the Shift key at startup. For example, Apple’s Extensions Manager’s All Off setting switches off Chooser extensions while holding the Shift key down at startup does not.

Here’s another more mysterious example: Holding down the Shift key at startup preserves the resolution setting for Apple’s 1710AV monitor. However, using a startup manager to startup with all extensions off (which then disables the essential AppleVision extension) results in only a 640x480 resolution option available. How is the resolution preserved when you start up with Extensions Off? I am not sure; but it works. Similarly, if you start up with a CD-ROM startup disc, the 1710AV’s resolution reverts to 640x480 (unless you also startup with Extensions Off). However, if you use a startup floppy disk, the correct resolution is always retained.

Page 614-616: More on “INITs that refuse to be disabled...and other oddities”:

- System Update 3.0 is an extension, located as expected in the Extensions folder. However, the System 7.5 Update file (installed as part of System 7.5 Update 1.0) is of type “gbly” and is located in the root level of the System Folder, similar to System Enabler files. Thus, System 7.5 Update is not disabled by holding down the Shift key at startup.
- Now Utilities’ Startup Manager does not list certain atypical (non-INIT type) extensions. Examples include Multimedia Tuner and StuffIt Engine. This can be a problem if you want to selectively disable them. For example, I had a problem where Multimedia Tuner 2.0.1 was causing of a freeze at startup. Startup Manager could not diagnose this because it did not recognize the extension. Conflict Catcher is significantly better in the completeness of its listing. Future versions of Now Utilities will probably remedy this problem.
- In a related wrinkle, there may be files in your Extensions folder of the type “thng” (QuickTime Musical Instruments is an example). These

often work in conjunction with other extensions (such as QuickTime in the case of the Instruments file). Holding down the Shift key at startup disables the functioning of these thng files, thereby preventing any compatibility problems they may be causing. Using a startup management utility to disable all extensions may not have the same effect (for reasons as explained in the previous item) and may thus not prevent the compatibility problem.

Fix-It #5: System Software

Page 643: If you select the “System for any Macintosh” option when your first install system software, you may have a problem if you later try to update using the option to install software only for a specific Mac model. In particular, you will still get the “any Macintosh” set of software. This is because, during the initial installation, the Installer places information in the System file about the type of installation selected. This information is used for updates, rather than the information you select from the Installer. To get around this problem, the solution is to do a clean reinstall or simply remove the System file from the System Folder prior to your update installation.

Page 644: Installation failures may result in messages such: “*There is a problem with the disk you are trying to install onto*” or “*An error occurred while installing onto the active startup disk...*” These errors are most often caused either by an extension conflict or a corrupt font. To check for both, attempt to reinstall with extensions off (a good idea in general) and the Fonts folder out of System Folder. A corrupt font will likely only cause problems if the Installer attempts to install a font (particularly common with printing software installations) that has the same name as a corrupt font currently in your System Folder.

Page 644: To fix problems with the Installer utility failing to launch or freezing during an install (in addition to other solutions described in *Sad Macs*):

- Zap the PRAM and try again.
- If you are using a CD-ROM as a startup disk, there may be dirt on the disc. Try cleaning it. To do so, wipe the shiny side of the disk gently with a soft cloth or tissue. Look especially for sticky “goop” on the disc. Wipe from the center to the edge of the disk; do not wipe not in circles.

Page 646-647: See: “Special Section: Troubleshooting Online/Internet Problems,” later in this document, for an expanded discussion of problems using downloaded files.

Page 647: TechTool v. 1.07 and later includes a new feature, not described in *Sad Macs*, relevant to system software problems. It has an option to check if your System file is corrupt and needs replacement.

Page 647: If you suspect a corrupted System file, and you have a separate backup copy of the file that is not corrupted: drag the corrupted System file out of System Folder, copy the undamaged System file to the System Folder, and restart. Then trash the old System file.

By the way, if you need to store a backup of your System file on floppy disks, and the file is larger than will fit on a floppy disk (even when compressed), you can do it by breaking the file up into segments. This can be done by most backup utilities (such as Retrospect) or with compression utilities (such as StuffIt Deluxe).

Fix-It #6: Memory

Page 659: Shared Library files load into the system heap. The memory they use may remain in system heap even after quitting the relevant applications! This is one reason why you may not regain all of your expected free memory even with all applications closed. Restarting will be needed to get your maximum free memory to return.

This also updates: Chapter 12, pp. 535-536

Page 673-674: Conflict Catcher 3 also now has option to increase the size of system heap. It is called *Guarantee System Heap*.

Again, increasing the system heap should rarely be needed, but may be helpful in certain cases, such as if you cannot load all of your extensions at startup due to insufficient memory.

An alternative to increasing the size of the system heap, that may preferable for less chronic memory problems, is to clear the system heap of unneeded data, such as information from extensions that load when used but then are not cleared when they are no longer needed. A freeware utility called Mac OS Purge can do this. It may be especially useful for clearing out shared library data that accumulates in the system heap of Power Macs.

Page 676: *Helpful Hint continued:* You can turn off RAM Doubler at startup, leaving all other extensions on, by holding down the tilde [~] key at startup. Conversely, you can startup with extensions off, but RAM Doubler on, by holding down Shift-Option at startup.

Page 678-679: RAM Doubler, as stated in *Sad Macs*, works similarly to virtual memory. But Connectix, seeking to distinguish the utility from Apple's virtual memory, refers to both techniques as different forms of using *extended memory*.

Fix-It #7: Viruses

Page 681: A new form of virus is among us: *scriptable viruses*. One category are viruses based on HyperCard scripts (using the HyperTalk language). They infect HyperCard stacks. One example is the “Merryxmas” virus, that was inadvertently present in some copies of (a now out-of-date version of) Apple's SIMM Stack. It does no active harm to your Mac. “HC 9507” is yet another recently reported HyperCard virus. It types the word “pickle” and makes the system behave strangely.

Many anti-virus utilities, including Disinfectant, ignore these HyperTalk viruses, but latest versions of SAM do check for them.

Page 681: Another form scriptable virus can infect Microsoft Word 6.0 documents and templates. One example is a virus named “Word Macro 9508” “WordMacro.Concept” It is written in the Microsoft Word macro-language, Word Basic. It functions when using Word 6 (and is more commonly found on PCs running Windows than on Macs). Infected documents appear with the template icon, rather than the usual document icon. Delete infected files. Otherwise, a file available online from Microsoft, called “mw1222.hqx” at Internet locations, can eradicate the virus.

Page 685-686: Vendors generally no longer notify you of virus updates by mail. Following current trends in the computer world, you are expected to check for updates at the vendor’s online location(s).

Fix-It #9: Rebuild the Desktop

Page 703: Note that, when rebuilding the desktop at startup, the message asking you whether you want to rebuild will not appear until after all startup extensions have loaded. If you have a lot of extensions, this can take a while. Be patient.

Page 705: If your System and Finder icons become generic (sometimes *after* rebuilding the Desktop), this can usually be remedied by resetting the Bundle bit of the System file (via a utility such as Save a BNDL or by using Norton Utilities’ “Add File to Desktop” command). Then restart.

Page 708: I’ve seen occasional reports where rebuilding with extensions on resulted in the loss of all Finder links between documents and applications. You may get unusual error messages (with negative error codes) when you double-click on a document from the Finder. Rebuilding again with extensions off solved the problem.

Fix-It #11: Zap the PRAM

Page 724-725: Some third-party extensions may use parts of the PRAM for their own purposes, contrary to Apple's guidelines. This usage may conflict with Apple's own changing uses of PRAM, leading to freezes and crashes, etc. The only solution here, short of an upgrade to the extension, is not to use the problem third-party software. Contact the vendor for information if you suspect this is a problem.

Page 726: To clarify what is in *Sad Macs* text: To zap the PRAM in System 7: Restart holding down the Command-Option-P-R keys at startup. As long as you hold these keys down, the computer will continuously restart itself. Hold them down until the Mac has restarted three times. Then let go of the keys and let the startup proceed.

See also: “**General troubleshooting hints for System 7.5.2,**” later in this document, for details of a modified procedure for zapping the PRAM on PCI-based Macs.

Page 728: More details about using TechTool: After selecting the Zap PRAM button, a dialog box appears that is not mentioned in text. It asks: *“Do you want to save the current PRAM information before zapping it? Caution, this will overwrite the last save.”* If you are not sure whether zapping the PRAM will help, and you just want to give it a try, saving your settings will allow you to easily restore things to how they were before (should zapping the PRAM turn out to be ineffective). Otherwise, don't save here. Ideally, you should have saved a copy of your PRAM settings at a time when the PRAM was not potentially corrupted.

Fix-It #12: Update the Disk Driver

Page 732: Shipping with System 7.5.2 is a new disk formatting utility called Drive Setup (as I had predicted). It is also available online. Drive Setup replaces both Apple HD SC Setup and Internal HD Format utilities. It works on all Power Macs as well as all 68LC040 computers that have IDE drives. Among its new features, this utility finally lets you partition an Apple-formatted drive. It also lets you format and update removable cartridges (such as used with SyQuest drives).

By the way, Drive Setup 1.0.3 was recently released (it's available online). It corrects some problems specific to IDE drives and fixes a problem with the PowerBook 190, 2300 and 5300 series of computers where, in some cases, the system will freeze after wake up.

Page 735: After installing certain programs that modify the driver (such as disk-level compression utilities), you may be unable to update the driver. If this happens, your only recourse may be to reformat the drive.

Fix-It #15: Format, Initialize and Verify Disks

Page 777: On Power Macs, Apple HD SC Setup has been replaced by Drive Setup. For more details, see the previous item for page 732 (Fix-It #12).

Page 782: In System 7.5, instead of the *“Initialization failed!”* message (as stated in the text), you should see one that says *“Erasing the disk failed.”*

Fix-It #16: SCSI Devices and Connections

Page 792: Eject DOS-formatted removable cartridges before turning on file sharing (otherwise you can't turn it on) and before restarting or shutting down (or you may get a Sad Mac when you restart).

Fix-It #17: Hardware Repairs and Replacements

Page 804-807: A collection of freeware utilities from Newer Technology, grouped together under the name “Gauge Series” can help determine some otherwise hard-to-determine aspects of your hardware. For example, Cache-22 tells you if you have an L2 RAM cache installed and, if so, what size it is. Clockometer tells you the speed of your CPU (though most model names now include the speed of the CPU, such as 7500/100 for a 100Mhz speed, the original CPU may have been upgraded to a faster one; if so, Clockometer will let you know). As is true for all freeware/shareware utilities described in this Update, these files are available online.

Page 805: Apple Personal Diagnostics (APD) 1.1 will incorrectly report problems with the logic board on any Power Macintosh with System 7.5 Update 1.0 installed. This problem is fixed in version 1.1.1. Version 1.1.3 or later is needed to use with PCI-based Power Macs (7200, 7500, 8500 and 9500) and other newer Mac models.

Page 814: Not all modem cables are created equal. Some permit “hardware-handshaking” while others (usually older ones, such as shipped with 2400 bps modems) do not. This capability is important to work with the “flow control” setting needed for most high speed modem connections to the Internet (such as when using MacPPP). If you are having problems using a 14,400 or faster modem, and all your software seems in order, make sure you have a compatible cable.

Page 816-818: Increasingly popular in current models of Macs are Level 2 (L2) RAM cache cards. Some models come with one already installed. In others, it is an optional add-on, accomplished much like adding SIMM/DIMM memory. L2

RAM caches are a special high-speed RAM, whose purpose is to increase the speed of your Mac.

Here are some more technical details: the Mac's CPU operates only on data in its "registers." If these registers don't have the needed data, it looks for it first on the CPU's on-chip (L1) cache (usually about 32K in size). If the on-chip cache doesn't have it, it then searches the L2 RAM cache, if one is present (these run in size from about 256K to 1 Mb). If it still can't find it, it will search the (slower) main RAM (including any disk cache, as described in Chapter 6). Failing that, it reads the needed information from your hard drive (which is the last resort because it has the slowest access of any of these options).

See also: "Special Section: Troubleshooting PCI-based Macs," later in this document, for more hardware-related issues, including the distinction between SIMMs and DIMMs.

Fix-It #18: Technical Support

Page 826: You can now subscribe to an Apple mailing list that will automatically notify you of all updates to Apple software as they are released. Here's what to do to subscribe:

1. Send an email message to: swupdates@thing1.info.apple.com.
2. In the subject field, type only: subscribe yourrealname (example: Subscribe Ted Landau).

The mailings will also be chock full of other information on where to find these files and how to get update news immediately upon request.

Page 827-828: These days, serious Mac troubleshooting requires that you be connected online. It is the fastest way to find out about and obtain the latest software upgrades and freeware/shareware utilities (including all of the ones mentioned in this document!). It's also nearly essential for quickly getting the latest information on bugs and compatibility problems. *Sad Macs* already details the virtues of services such as America Online and CompuServe. Here's a selected list of some of my favorite Macintosh-related World Wide Web sites (and one ftp site):

Addison-Wesley Trade Computer Books (yup, it's my publisher!):

<http://www.aw.com/devpress/>

Apple contacts and phone numbers:

<http://www.info.apple.com/aboutapple/contactapple/contactapple.html>

Apple's site for getting Apple software updates:

http://www.support.apple.com/wwwdocs/apple_sw_updates.html

Apple's site for getting its Information Alley online publication:

<http://support.info.apple.com/info.alley/info.alley.html>

Apple's site for its Tech(notes) Info Library:

<http://dev.info.apple.com/technotes/> or

<http://til.info.apple.com/til/til.html>

BMUG Online: <http://www.bmug.org/Main.Welcome.html>

Cyberian Outpost (a good place to go software shopping):

<http://www.cybout.com/cyberian.html>

FAQ (Frequently Asked Questions) site:

<http://www.astro.nwu.edu/lentz/mac/faqs/home-faqs.html>

MacUser site: <http://www.ziff.com/~macuser/>

MacWeek site: <http://www.ziff.com/~macweek/>

Ric Ford's MacInTouch home page:

<http://www.macintouch.com/~ricford/>

Useful site for information on PowerPC and other new PowerBooks:

<http://www.cs.wisc.edu/~jonb/powerbook/index.html>

Useful sites for information on Power Mac and PCI-based Power Macs:

<http://rampages.onramp.net/~stevent/powermac.html>

<http://www.mit.edu:8001/people/rajiv/PCI/>

<http://www.manual.com/conflicts/>

Useful site for learning about the function of extensions and control panels in System 7.5 (especially 7.5.2):

<http://www.gse.ucla.edu/staff/DEF/PCIpurge.html>

Vendor list: <http://www.macfaq.com/vendor.html>

and

Info Mac's library of Mac files: <ftp://mirrors.aol.com/pub/info-mac/>

Special Section: Troubleshooting Desktop Printers

Current versions of Apple's LaserWriter (version 8.3 or later) and StyleWriter printer drivers now use desktop printers. This means that this feature, originally introduced as part of QuickDraw GX (as described in Chapter 12), is now available even if you do not use QuickDraw GX. The non-GX version does not support PDDs (portable digital documents), but is otherwise similarly featured. Details of how to setup and use these desktop printers (which is basically quite easy) are included with the relevant software. The desktop printer software consists of three extensions: Desktop Printer Extension, Desktop Printer Spooler and Desktop PrintMonitor (which is used in place of the former PrintMonitor extension). In addition, you create a separate Desktop printer icon for each printer connected to your Mac. What follows is a list of troubleshooting issues for these non-GX desktop printers.

This section updates: Chapter 7, on printing problems

- If your desktop printer icons have X's over them, it usually means that the needed extensions were disabled at startup (typically because you started up with extensions off by holding down the Shift key). You can still print, but you don't have access to any of the special features of the desktop printers. Restart with extensions back on and all will return to normal.
- If you have five or more desktop printers, you may get an insufficient memory message whenever you try to print. To solve this, give Desktop PrintMonitor (located in the Extensions folder) more memory by increasing its Preferred memory size as listed in its Get Info window (the default size is 160K). Only a small increase is likely to be needed, no more than 10K for each printer beyond the fourth one.
- If you print large complex documents, a message may appear asking if you want to temporarily adjust the memory size of the desktop printer in use. Say OK and all should go well. However, if this adjustment is not sufficient or if this problem happens often, you can permanently increase the printer's memory by selecting the Get Info window for the printer icon itself and increasing its Preferred memory size by about 100-200K.
- If you drag a document to a desktop printer and nothing happens, it is likely that the document's creating application is incompatible with this drag-and-drop feature. There is nothing you can do about this.

- Occasionally a printing problem may cause the Mac to crash, forcing you to restart. If so, the Mac may crash again near the end of the startup as it automatically retries to print the problem file. The solution? Start up with extensions off. The desktop printer will have an X over it, but double-click it anyway. It will open up like a folder, with the waiting print jobs inside visible as ordinary-looking documents. Drag the document icons to the Trash and restart as normal. Now try printing again. If the problem recurs, you will have to diagnose what may be causing the crash. See other items in this section, or *Sad Macs* itself, for suggestions.
- The Save dialog boxes of applications may list desktop printers as ordinary folders. But don't save a document to these folders. This will not get the document to print. In fact, you will lose access to the document altogether. To get it back, you'll have to start up with extensions off and drag the file out of the desktop printer folder.
- As long as there are any print requests waiting to be printed, Desktop PrintMonitor remains active in memory, even if background printing is off. If you are not printing in the background, remove all print requests from your desktop printer queue. This will "turn off" PrintMonitor, saving you 160K.
- If you are having trouble using desktop printers (including getting system freezes and crashes, especially Type 11 errors while printing), make sure you have the latest version of the desktop printing extensions (currently 1.0.3). Also make sure you have SerialDMA 2.0.2 and (if you are using System 7.5.2) the 7.5.2 Printing Fix extension. These files are all available online from Apple. The Printing Fix extension is included as part of a collection of fixes called System 7.5.2 Printing Update 1.1 (which also includes SerialDMA). Otherwise check for an extension conflict as a possible cause of the errors.
- Desktop printers are incompatible with the Restricted Finder environment of At Ease 3.0. If you need to use the Restricted Finder, you will need to disable the Desktop Printer Extension. Later versions of At Ease will support Desktop Printers.
- If you get a message that says a particular printer cannot be used or if you otherwise cannot get printing to proceed, go to the Preferences folder and delete its Preferences file (for a printer using LaserWriter 8, look for LaserWriter 8 Prefs). Then go back to the Chooser and redo the Setup for the printer. Restart the Mac and try again.

Special Section: Troubleshooting System 7.5.2

System 7.5.2 is a hardware-specific release that currently runs only on the Power Macintosh 7200, 7500, 8500, and 9500 systems, as well as the PowerBook 190, 2300, and 5300 computers. Though superficially similar to System 7.5.1, System 7.5.2 includes numerous significant changes “under the hood.” The most obvious addition is the Open Transport communication software. This section covers mainly material relevant to PCI-based Macs, though there is also some mention of the Power Mac PowerBooks. By the way, Apple should soon release System 7.5.3, expected to contain the basic features of System 7.5.2 (plus some new stuff) and usable by all current Macs.

This section updates, Chapter 12, on System 7.5 problems.

- As a general rule, when updating from one System to another, it pays to be careful about what extensions/control panels/etc. you carry over. This is especially true with moving from System 7.5.x to System 7.5.2. Open Transport, in particular, negates the use of much previous communications software (including MacTCP). Your best bet is to start with a clean install of System 7.5.2 (e.g., as would come pre-installed on any Mac that requires System 7.5.2) and add stuff from your old System Folder a little at a time and then only what is absolutely necessary, checking for possible compatibility problems with each addition.
- If you do a clean reinstall of System 7.5.2 software, remember (as generally advised in Fix-It #5) to reinstall any upgrades you may have added that are newer than those installed by the 7.5.2 Installer (such as a newer version of Open Transport).
- Many third-party utilities have had trouble working with System 7.5.2 (especially with PCI-based Macs). Any version of RAM Doubler earlier than 1.6 will eventually cause the Mac to crash (even this version is reported to have problems). RAM Doubler 1.6 still does not work on PowerBook 190s. With versions of Now Menus prior to 5.0.2, hierarchical menus (such as appears for Control Panels in the Apple menu) sporadically and incorrectly show up as “Empty.” Any versions of SAM prior to 4.0.5 or Symantec’s Copy Doubler prior to 2.0.6 are incompatible with System 7.5.2. The autodial feature of Now Contact does not work. Suitcase is incompatible with PCI-based Macs. Ditto for Faxstf. After Dark appears to work in general, but may be a “hidden” cause of system freezes. Similarly, Adobe Type Manager (up to and including 3.8.2) appears to work okay but has been reported by some as a source of conflicts. If you use disk formatting utilities, such as Drive7

or Hard Disk ToolKit, these too need to be upgraded to PCI-Mac compatible versions. And so it goes. This list is far from complete, so contact vendors to get upgrade information for any program that gives you problems after you make the switch to 7.5.2.

- System 7.5.2 includes a new and faster version of the 680x0 emulator for Power Macs. However, Connectix's Speed Doubler utility includes an extension called Speed Emulator that is significantly faster!
- The Speed Access component of Speed Doubler v. 1.0.2 may potentially cause directory (B-tree) corruption of your hard drive. Speed Doubler 1.1 Update (available online) upgrades Speed Access to version 1.1, which Connectix reports as fixing this problem. Some users have reported related problems with Speed Copy, but the Update apparently leaves Speed Copy unchanged (though its version number changes to 1.1). The Update also installs a new version of Speed Emulator, providing improved performance, although even the previous version was not known to have any data-corrupting bugs.
- If you've had any problems accessing the Internet with your PCI Mac, welcome to the club. System 7.5.2 comes with completely new communications system software, called Open Transport. It's been the cause of so many problems that it's already in its fourth release (version 1.0.8). If you have an older release, get the upgrade. Otherwise you are likely to experience crashes or freezes while attempting to surf the Internet. Even with the latest version, you may find that you have to restart the Mac each time you want to reconnect via TCP. Problems have been especially common with Netscape, Eudora and Claris EMailer (though 1.0v2 should fix most EMailer problems).

To find out what version you have, check the Get Info window of the TCP/IP control panel.

If you use PPP software (such as MacPPP or FreePPP), also make sure you have the latest versions of these programs. Even with the latest upgrades, you may have to turn off virtual memory (or RAM Doubler) to get things to work. And to make matters even worse, recent reports suggest there are more problems with FreePPP 1.0.3 than with 1.0.2. Good luck in figuring this all out!

If you get completely fed up with Open Transport Internet hassles, you can simply get rid of it. To do this, disable the TCP/IP control panel and the Open Tpt Internet Library and OpenTptInternetLib extensions. Then install MacTCP instead (its included as part of System 7.5 in versions prior to 7.5.2). There are some reports that using MacTCP on a PCI-

based Mac can cause problems, including corruption of files on your disk.

However, I have used this setup for months now without any glitches.

Meanwhile, Apple is preparing Open Transport 1.1. This upgrade will hopefully resolve all of these issues, as well as numerous other non-Internet related communications problems (including conflicts with Apple's own AppleShare and Apple Remote Access software).

Finally, for system freezes and unexpected quits specific to Netscape, get and install a freeware extension called Netscape Defrost and/or upgrade to Netscape version 2.0.

- By the way, the difference between shared library files that end in the word "Library" vs. those that end in the word "Lib" (such as Open Tpt Internet Library vs. OpenTptInternetLib) is that the "Library" files are written in 680x0 code while "Lib" files are written in native PowerPC code. Neither file type loads into RAM at startup. They are loaded only when needed.
- System 7.5.2 includes a new control panel called AppleTalk. Among its other uses, it now permits AppleTalk connections to be made from both the printer and the modem serial ports. Prior to this, you could only make AppleTalk connections via the printer port (as stated in Chapters 7 and 11 of *Sad Macs*).
- System 7.5.2 adds a host of new extensions, often with unexpected and/or obscure functions. In general, this means you need to be a lot more careful about what you disable. Here are a few examples:
 - a.** A new control panel, Sound & Displays, completely replaces the old Monitors control panel (as well as adding Sound features). A feature of it that may give you an unexpected surprise is that the control panel needs AppleScript installed in order to work. Otherwise, when you try to open it, you will get a message that says *"Sorry... Sound & Displays cannot operate correctly on this Macintosh."* The control panel also expects to find the SystemAV and AVSetup extensions in the Extensions folder. So leave them there.
 - b.** Holding down the Shift key at startup, to turn extensions off, disables AppleTalk drivers (via Open Transport software). This will prevent you from using any communications software. You will also be unable to print a document to any LocalTalk-connected printer, such as most LaserWriters!! If you try to select such a printer from the Chooser, you will get an error message saying that *"The printer port is in use. AppleTalk cannot be made active now."* You should still be able to print

to non-LocalTalk printers by connecting them through the non-LocalTalk serial port (typically the modem port). Otherwise, you'll have to restart with extensions back on.

C. The Apple Video Player application won't work unless the Video Startup extension is installed.

For more anomalies, including bugs in the Sound & Displays control panel and problems with AppleVision software, check the section on the 1710AV monitor, later in this document. To find out more about what all the new extensions do, check out this Web page:

<http://www.gse.ucla.edu/staff/DEF/PCIpurge.html>. By the way, word has it that when System 7.5.3 gets released (probably in February 96), it will include ReadMe documents that give an unprecedented amount of detail about what all of these extensions do.

- Use Sound Manager 3.1, a major upgrade with asynchronous sound playback and much better Power Mac performance. It was included with the Power Mac 7500 and 8500, but not the 7200 and 9500. But it is available online in any case. While you are at it, make sure you also upgrade to QuickTime 2.1 (or later, if available).
- Having trouble getting your GeoPort Telecom Adapter to work? Do you also use a LocalTalk-connected printer? I thought so. In an almost unbelievable gaff, Apple's Telecom software (needed to use modem features via the GeoPort) doesn't work if you have any LocalTalk device connected to your Mac. A future version of the software (later than 2.4) is expected to fix this. In the meantime, you'll have to unplug your LocalTalk cable before you can use the GeoPort. Simply turning off AppleTalk is not sufficient to prevent this problem.
- Does your Mac sometimes freeze when you print? To avoid this, get Apple's System 7.5.2 Printing Update 1.1 (or later). It includes two extensions (7.5.2 Printing Fix and SerialDMA) and an updated version of LaserWriter 8 (version 8.3.2, which only runs on PCI Macs). Taken together, these files (especially the two extensions) fix a host of serial port-related problems (involving modems as well as printers). For some serial printers (including Apple's own LaserWriter 300), you will also need a separate printer driver upgrade. Also, if you use desktop printers, make sure you upgrade to at least version 1.0.3.
- The Serial Port Arbitrator that ships as part of AppleTalk Remote Access conflicts with SerialDMA on PCI-based Macs. The conflict will cause a

crash at startup. The solution, for now, is to remove Serial Port Arbitrator from your System Folder.

- Does your Mac's screen "blink" (or "flash") a second time at startup, just after the MacOS screen appears? Don't worry. It's normal. It means that the Mac is loading an updated version of the video driver software. If you really want to avoid the flash, hold down the Command-Shift-N-D keys at startup. Unfortunately, this also means you'll be using the older, presumably buggier, driver. Aside from being a bit irritating, the only problem this flash causes is that it wipes out any custom startup screen display.
- PCI Macs have a new Sleep function. If you select Sleep from the Finder's Special menu, the hard drive spins down and the monitor (if capable of doing so) will completely shut off. The Energy Saver control panel can be set to do these tasks automatically after some time interval of inactivity. However, several problems are associated with these features (as described next and in the section on the 1710AV monitor).
- When your PCI-based Mac wakes up from Sleep, it may act as if the Command key is permanently depressed (so that, for example, when you press the O key it gets interpreted as Command-O and issues an Open command). This totally frustrates any attempt to type text! Apparently, this only happens if you use a Command-key shortcut to put the Mac to sleep (as you can do with programs like Now Menus or QuicKeys). To get things back to normal again, press the Command key after waking up. An upgrade that eradicates this bug altogether is presumably forthcoming.
- You may find that your system software takes up more and more memory as the day goes on. This is because of System 7.5.2's increased use of shared libraries. When you run an application that uses a shared library, the library loads into system software memory but doesn't necessarily get released again when you quit the application (especially so if virtual memory is off). Thus, as you continue using shared library files, your available memory starts to shrink. A forced quit (Command-Option-Escape) from the Finder sometimes frees up the memory again. Or you might try a freeware utility called Mac OS Purge. Otherwise, you'll need to restart.
- In general, you may find that even 16Mb of RAM (which is the minimum configuration for the 7500, 8500 and 9500) is not enough to

run System 7.5.2, especially if you don't or can't use virtual memory or RAM Doubler (which is likely to be the case when running certain games and multimedia software that will not launch until you turn off any form of virtual memory).

- **General troubleshooting hints for System 7.5.2** For System 7.5.2 problems beyond those described just previously, the following fixes offer your best shot at a cure:

1. Delete any preference files for the problem software and restart (for extensions, delete their preference files after starting up with extensions off).
2. Do a clean reinstall of the system software. To select this option, hold down Command-Shift-K at the system software Installer's Easy Install window, and select the Install New System Folder option from the window that appears.
3. Reset both the Parameter RAM (PRAM) and the non-volatile video RAM (NVRAM). PCI-based Macs store display settings in NVRAM rather than in PRAM. To do this double reset: shut down the Mac (don't use Restart); *immediately* hold down the Command-Option-P-R keys at startup; wait for the Mac to chime twice; release the keys and let startup proceed. If you don't hold down these keys immediately, you will only reset the PRAM. You should also trash the Display preferences file.

By the way, I am not sure whether using TechTool to zap the PRAM will also zap the NVRAM.

4. If all else has failed, disable Apple's virtual memory, file sharing, PlainTalk speech recognition and/or ColorSync software. Various problems have been attributed to these features. If you absolutely need these features for specific tasks, at least turn them off when you are not using them.

For example, in one unusual case, speech recognition software appears to cause the Mac to fail to recognize the floppy drive after it wakes up from sleep mode (that is, it will not respond to floppy disks inserted into the drive). It also may conflict with the Apple Video Driver. Finally, with speech recognition on, you cannot select Internal CD as your sound input source, which means you cannot listen to audio CDs through your internal speakers.

Special Section: Troubleshooting PCI-based Macs

PCI-based Macs are Apple's new line of Power Macs (including the 7200, 7500, 8500 and 9500). The name comes from the fact that they use PCI slots (rather than the NuBus slots favored in older Macs) for adding peripheral cards to the Mac. However, there is much else that is also different about these Macs, as this (and the previous) troubleshooting sections attest.

- These days, a lot of attention is paid to the clock speed of the processor in your Power Mac. It can get a bit confusing. For example, the Power Mac 7200/90 has a 90MHz 601 processor, whereas the Power Mac 7500/100 has a 100MHz 601 processor. This means, all other things equal, that the Power Mac 7500 is 10MHz faster. What that translates into in terms of your day-to-day experience with the Mac is not always easy to do, especially since all other things are usually not equal. For example, there are differences in the motherboard of the 7200 and 7500 that affect speed. Also, whether or not you have a RAM cache has an effect. Differing amounts of RAM and different types of disk drives also have an effect on overall speed of your Mac. For the same sorts of reasons, the Power Mac 8100 is generally slower than the 7500, even if they both have exactly the same processor.

And of course, if you have a different processor, that can profoundly affect speed, somewhat independent of the clock speed. Thus, the Power Mac 8500/120 has a 120MHz 604 processor. Since the 604 is an inherently faster processor than the 601 (for reasons that go beyond its clock speed), the Power Mac 8500's speed advantage over the 7500 will be greater than the clock speed difference suggests. By the same token, Macs that use the 603 (used in Performas) or the 603e (a low energy version of the 603 used mostly in Power Mac PowerBooks) are slower than the 601, even at the same clock speed.

Got all that?

- To take full advantage of the speed benefits of the PowerPC 604 processor (currently used in the Power Mac 8500 and 9500, and in some clones), software may need to be rewritten to be "optimized" for it. Otherwise, the software may run faster on a comparable 601-based machine. Eventually, vendors may ship separate 601 and 604 versions of their Power Mac software.
- PCI Macs use DIMMs (Dual In-line Memory Modules) rather than the SIMMs (Single In-line Memory Modules) used by previous Macs. DIMMs provide a wider data path than SIMMs, which means they can

carry more data and thus allow for faster performance. Otherwise, this distinction is of little relevance for most users. The basic procedures for installing RAM remain the same.

- The DIMMs should have at least a 70ns speed (if you request DIMMs for a PCI-based Mac from a reliable vendor, this should automatically be the case). Faster DIMM speeds will probably have no noticeable effect on the overall speed of current models. You can, however, safely mix DIMMs of different speeds, as long as all are at least 70ns.
- When installing RAM on your PCI-based Power Mac, install it in the highest numbered slots first (e.g., A4 and B4 on a 7500 and 8500). Then continue downward. These labels are visible on the motherboard when you open up your Mac.

Also, on the 7500, 8500 and 9500, to get the maximum speed benefit of memory “interleaving,” install RAM in pairs on matching A and B slots (e.g., installing two 8Mb DIMMs in A4 and B4 is preferable to installing one 16Mb DIMM in A4 and leaving A3 empty; similarly install a pair of DIMMs in A3 and B3 rather than A3 and A2). Paired DIMMs need to be the same size (e.g., both should be 8Mb) for interleaving to work.

Interleaving lets the computer read and write data to memory at the same time other reads and writes (such as to a hard disk) are occurring. This is how it improves performance.

See also: Chapter 17, for more information about memory upgrades

- The 7500 and 8500 (and possibly other PCI Mac models) have a small button near the processor daughter board (called the “cuda” button) that, when pressed, resets the Mac’s settings even more thoroughly than a reset of the PRAM. You should only need to use this button as an absolute last resort for PRAM related problems.
- The disk images of the Disk Tools and Disk 1 disks on the CD-ROM disc that shipped with early units of the Power Mac 7500 and 8500 were corrupt. Fixed versions are available online.
- If you thought you were lucky to get one of the first PCI Macs to roll off the assembly line, think again. There is a chance that running Norton Disk Doctor can appear to erase your entire hard disk. To eliminate any chance of this happening, get and run Disk Spot Check, a free utility available online from Symantec. It tells you whether you have the problem and it eradicates it if it finds it. It also includes instructions on

how to recover your data if you have already fallen prey to this problem. The problem actually can potentially occur on 5200, 6200, 7200 and 7500 Power Macs. Happily, Apple has since altered its manufacturing process so as to eliminate this problem entirely.

- Under certain network conditions, the Power Macintosh 7200/90 computer's built-in Ethernet port may fail to successfully send large packets over Ethernet. The problem can lead to crashes and timeouts during transfers. This problem has been corrected in currently shipping units (with serial numbers xx544xxxxxx or above). More details on how to determine if your Mac is subject to this problem is available in a Tech Info file (available at Apple's online locations; Web users can search at <http://til.info.apple.com/til/til.html>). But you'll probably find it easier to just call up 1-800-SOS-APPL. If you have one of the defective Macs, Apple will fix it or replace it.
- There appear to be still more Ethernet-related problems that affect all PCI-based Macs. Apple is expected to fix these problems via a soon-to-be-released update to its "Ethernet (Built-in)" extension.
- There have been occasional reports of RAM cache cards not working on PCI-based Macs. If this happens to you, most likely you will start having freezes crashes and/or Sad Macs immediately after installing the card. The problem appears to be an interaction between the cache card itself (some cache cards work; others do not) and the Mac's logic board (the same card works on some Macs but not on others). The ultimate cause remains to be determined. A hardware "recall" from Apple for certain PCI-based Macs (particularly early units of the 7500) remains a possibility, although Apple is not admitting any problem at this time.

Special Section: Troubleshooting Apple's 1710AV Monitor

The 1710AV, Apple's new 17 inch monitor with built-in speakers, is a natural choice for today's AV-enhanced Macs. At least it will be after Apple works out all the bugs that have plagued it. Problems are especially acute if you hook up the monitor to a PCI-based Mac. Other new Apple monitors (such as the 1705) may share some of these same problems.

- If you hear a blipping sound from the monitor's speakers after the monitor goes to sleep, set the auto-sleep setting on the Energy Saver extension to Never and disable the extension altogether. Otherwise, you may find that, after going to sleep, your monitor never wakes up again. Apple has admitted that the sound (which is due to the monitor repeatedly turning on and off very rapidly) can signal imminent permanent damage to the monitor. Apparently, this is a hardware problem with early units of the monitor (a problem that Apple has since corrected). If your monitor has this problem, Apple should replace it (call 800-SOS-APPL).
- If you have the computer's speaker turned off (which you should, relying instead on the 1710AV's speakers), you may find it turned back on again when the Mac awakens from Sleep, as if by some phantom. This is just one of several glitches that appear to revolve around the PCI Macs' quirky Sound & Display control panel and AppleVision software. Most irritating, the control panel appears to "forget" many of its settings when you shut down or restart. One result of this is that a dialog box reappears sometime after each restart, telling you that the display has never been calibrated and asking if you want to calibrate now. This happens even if you have already calibrated the monitor dozens of times!
These problems may all be due to some extension conflict(s), but I have not yet been able to determine this for certain. In the meantime, until Apple upgrades this software, there is no obvious solution to these problems other than to keep resetting your settings (and clicking to Cancel each time you get the calibration request).
- At startup, icons on the desktop may get rearranged in alphabetical order on the right side of the screen (as if you had selected "Clean up all" from the Special menu. If you have left a Finder window open, icons in that window get rearranged instead of the desktop itself. This is due to a bug that Apple will fix eventually. In the meantime, to avoid this, leave an empty Finder window open so that it is the affected window at startup.

- Holding down the Shift key at startup, even though it disables most extensions, still preserves the 1710AV's resolution setting. However, using an startup manager to startup with "all" extensions off (which disables the key AppleVision extension) results in only a 640x480 resolution option available. Similarly, if you start up with a CD-ROM startup disc, the 1710AV's resolution reverts to 640x480 (unless you also hold down the Shift key at startup to startup with Extensions Off). However, if you use a startup floppy disk, the correct (prior selected) resolution is retained in either case.

This same 640x480 problem will apparently occur if you start up with the monitor off and turn it on only after the AppleVision extension has loaded.

Also, make sure you connected the ADB cable (as well as the standard monitor cable) from the 1710 to the Mac. Otherwise, you will likely get (yet again!) only a 640x480 resolution.

Finally, the AppleVision software will occasionally not load at startup, for no discernible reason, resulting again in only a 640x480 resolution option. In this case, simply restarting gets everything back to normal until the next time it happens (no permanent cure is known at this time).

See also: an item earlier in this document: Fix-It #4: Pages 614-616

- While not a bug, you probably won't ever hear the Mac's startup chimes through the 1710AV's speakers. The monitor doesn't turn on (even after a warm restart) until after the chime has occurred.
- Some users have reported problems with: 1) an excessive lack of convergence (blurriness) along the borders of the display, 2) chronic sounds coming from the monitor's speakers, and/or 3) thin diagonal lines appearing across the display. Recalibration of the color settings may fix the diagonal lines problem. There are no known fixes for the other problems.
- The AppleVision software, including the new Control Strip feature, should only be used with AppleVision or AudioVision Displays. While it may at first appear to work with other displays, Apple claims that compatibility problems are likely to occur eventually.
- AppleVision Setup does not appear as a separate control panel on either the Power Macintosh 8500 or 7500 series computers. If you have installed the AppleVision software, the settings options found in the AppleVision Setup control panel are automatically incorporated into the Sound and Displays control panel.

- You can not use Apple's PlainTalk microphone in the microphone outlet of the 1710AV (happily, you really don't need to do this, as the 1710AV comes with a built-in microphone). If you try, the microphone won't work; you won't hear or record any sound. The reason is that the PlainTalk Microphone requires additional voltage from the Macintosh computer to amplify the signal. All of Apple's current displays are not setup to pass the voltage to the PlainTalk Microphone. To use the PlainTalk Microphone, it must be connected directly to the Power Macintosh computer.
Conversely, you *must* use the PlainTalk microphone when connecting to the Power Mac directly. Apple's older non-PlainTalk microphones won't work.
- If you do a clean reinstall of the system software, make sure you reinstall the AppleVision software again afterwards.

Special Section: Troubleshooting Apple's New PowerBooks

Apple's latest PowerBooks include the PowerBook 190, the 2300 and the 5300 series. The 2300 and 5300 use the PowerPC 603e processor (most models use a 100MHz version). The 190 still uses a 680x0 processor (a 33MHz 68LC040 to be exact). The 190 and the 5300 series also support PCMCIA cards (also now called PC-cards), which are needed for modem or Ethernet support. They also have infrared wireless transmission capability. Web users should check out

<http://www.cs.wisc.edu/~jonb/powerbook/index.html> for much more details.

- The lithium ion battery (LiIon) that originally shipped with the PowerBook 5300s was recalled. Currently, these models now ship with NiMH batteries. The problem was that Apple “experienced two isolated instances within the company where a lithium ion battery pack failed, damaged the unit and could have posed a safety risk.” In plain English, the PowerBooks caught fire. Until Apple figures out why, they have discontinued using the battery.
- A review in MacWeek gave the 5300 series PowerBooks very low marks, due to a host of hardware and software (System 7.5.2) related bugs. These include some of those described in “Special Section: Troubleshooting System 7.5.2,” earlier in this document. Some other more specific problems include:
 - a.** With AppleTalk active, the PowerBook started having such frequent crashes that the computer became essentially unusable. Turning off AppleTalk fixed the problem.
 - b.** Sending or receiving faxes via a fax modem may card not work (but then faxing is a problem with almost any Mac). Open Transport software appeared be the ultimate source of the problem here. It is apparently also the source of other communications problems, including a failure of the PowerBook to even acknowledge that a modem card was installed.
 - c.** Animations, especially in screen savers, may temporarily slow to a complete stop and then return to normal speed. The MacWeek review said they could fix this by turning off Processor Cycling in the PowerBook control panel (see page 470 of *Sad Macs* for details on how to do this, if needed). Interestingly, an Apple Tech Info Note claims that PowerPC PowerBooks do not have a Processor Cycling option. Go figure.
Software upgrades should eventually fix most of these problems.
- These PowerBooks (as well as perhaps some 500 series models) may temporarily freeze (for about 20-30 seconds) when you try to move an

icon in the Finder. The exact cause is not known, although Apple is aware of the problem.

- There are some reports of the 5300's floppy drive not working when a PC card is installed.
- Drive Setup 1.0.3 was recently released (it's available online). It fixes a problem with the PowerBook 190, 2300 and 5300 series of computers where, in some cases, the system will freeze after wake up from Sleep. The latest upgrade to Hard Disk ToolKit (1.8s) is similarly needed to correct this glitch.
- If the cursor is jumpy or erratic when you try to move it, make sure you are touching the TrackPad with just your finger (and not also your hand or wrist, for example). Also wipe off any moisture that may have collected on the TrackPad.
- If you want to attach an external microphone to a PowerBook 190, 500 or 5300 series, be aware that you cannot use Apple's PlainTalk microphone (as is used by all desktop Power Macs). However, a microphone with the needed "line-level" design can be purchased from Radio Shack, allowing to use your PowerBook to do "PlainTalk" speech recognition from an external microphone.
- Rather than including a full set of disks with these Macs, Apple includes the disk images of all the disks on the PowerBook itself. This is a distinct improvement over Performas, which came with neither the disks nor the disk images (although still not as good as including a CD-ROM or set of floppy disks). These PowerBooks do come with a Disk Tools disk for startup emergencies.

Special Section: Resetting the PowerBook Power Manager

The Power Manager (as described more in *Sad Macs*) controls battery and other power-related operations. If the data it contains get corrupted (typically caused by power surges), you may have trouble starting up your PowerBook. In this case, you need to reset it.

How to reset the Power Manager on PowerBooks continues to vary with each new PowerBook that comes out. Here (taken from an Apple Tech Info File) is supplementary information and new procedures (for PowerBook models that have been released since the publication of *Sad Macs*).

This section updates: Chapter 11, pp. 482-483

PowerBook 150

1. Shut down the PowerBook.
2. Remove the power adapter and battery from the unit.
3. Push the reset button in the back of the unit with a paper clip and hold for around 30 seconds.
4. Reattach the power adapter and push the reset button in back again, but just briefly. You should hear a small pop from the speaker; this is normal.
(Note: always plug the adapter in the wall outlet before plugging the cable end into the PowerBook.)
5. If the PowerBook did not power up in the previous step, push the main power button in back (the large exposed button). The unit should now power up.
6. If the PowerBook powers on, the battery may be reinserted (Apple suggests charging the battery for at least 8 hours before running on battery power). If it fails to start, the PowerBook may require service.

PowerBook 500 series

1. Press the Command, Option, Control, and Power On key simultaneously. If the computer is on when these keys are pressed, the system will turn off. If the keys are pressed when the computer is turned off, nothing obvious will happen. In both instances, however, the Power Manager will be reset.

PowerBook 5300 and 190 series

1. Shutdown the PowerBook, not restart.
2. Turn the PowerBook on and hold down the Command-Option-P-R keys.
3. In some cases, there may only be a single chime, then the screen will go dark and the green sleep light will be on solid. If so, next press the reset

button on the back of the machine (under the external video port). Then turn the PowerBook back on with the Power-On key on the keyboard.

4. In other cases, if the startup chimes may sound twice. If so, release the keys at this point. The computer may shut down or continue to start up. If it shuts down, use the small power button on the back to restart the computer.

Note: This procedure resets both the Power Manager and the Parameter RAM.

PowerBook 5300 and 190 series (alternate method)

1. Shut down the computer.
2. Remove the power adapter and battery from unit.
3. Push the reset button in the back of the unit and hold for 30 seconds.
4. Make sure the AC adapter is connected to a live AC outlet then connect the AC adapter to the back of the computer.
5. Push the reset button in back again, but just briefly. The computer should power on. If it does not power on, push the main power button on the keyboard.

Special Section: Trouble Ejecting PCMCIA Cards

PCMCIA stands for Personal Computer Memory Card International Association. PCMCIA-cards are cards that conform to that Association's standard. For Macs, these can be used only on certain PowerBooks, specifically the PowerBook 500 series (which uses a PCMCIA Expansion Module) and the built-in PCMCIA (PC card) bay for the PowerBook 190 and 5300 series. PCMCIA cards supplement the features of the PowerBook (such as adding a modem), the exact features depending upon the contents of the card.

When a PCMCIA card is installed, one of the more frequent problems users report is difficulty in ejecting it again. Normally, you do this either by dragging the icon of the card to the Trash or selecting Put Away from the Finder's Special menu (just as you do for disks). However, if this doesn't work, here are some other suggestions:

- If you get a message that says that the card cannot be ejected because it is *"in use,"* and you have quit all open applications, it may be because the PCMCIA modem is in auto-answer mode. To eject the card, you'll have to launch your communications software and turn this option off. Otherwise, make sure file sharing is turned off; then try again to eject the card.
- For other eject problems, a paper clip can be inserted into the small hole next to the PCMCIA slot to manually eject the card. Try to avoid manually pulling the card out of the computer.
- If even this fails, Apple offers the following advice: "You can pull the card out yourself with a pair of needle nose pliers or sometimes with your fingers, if you have strong fingernails. Once the card is pulled out, try inserting the paper clip again to release the spring mechanism. If you hear the springs release, you can try inserting the card (or a different card) again. Of course, the problem may recur." If so, the card may be damaged. Otherwise, especially if the problem occurs with several cards, the Expansion Module (or bay) may be damaged and need to be repaired.

For help with other common PCMCIA-related problems, seek out an Apple Tech Info File called "PCMCIA for PowerBook: Frequently Asked Questions."

Special Section: Troubleshooting Online/Internet Problems

Given the explosive rise in popularity of the Internet, troubleshooting online problems is surely the number one candidate for a new topic to be included in the eventual third edition of *Sad Macs*. For now, here are a few common problems and their solutions:

This section updates: Chapter 11 (pp. 517-519), Fix-It #5 (pp. 646-647) and Fix-It #18 (p. 829)

See also: "Special Section: Troubleshooting System 7.5.2," and the item for Page 814 (Fix-It #18), earlier in this document, for related information

- **Configuring TCP and PPP control panels.** One of the most difficult parts about hooking up to the Internet via a modem is figuring out how to get everything initially set up. In particular, how do you correctly configure the MacTCP (or TCP/IP in Open Transport) control panel? And, if you are connecting by a modem, how do you configure the needed MacPPP (or FreePPP) control panel? What do these do and why do you need them?

The short answer to the last question is that the Internet communicates via a special "Internet protocol" (or IP). Your Mac does not "speak" this language. Thus, these control panels are sort of translators that serve as an intermediary between your Mac and the Internet, doing the conversions necessary to get your Mac successfully hooked up to the Internet. You probably don't need them if you are accessing the Internet via a commercial online service (such as America Online). However, the control panels are required for direct access to the Internet (such as would be the case if you use programs like Netscape, NewsWatcher or Eudora).

The surest way to find out how to configure these control panels is to get the information from the service that you will be using for your Internet connection. Never mind if you understand it all, just follow their instructions *exactly*. In a later version of this update, I intend to provide much more details on this topic.

- **Domain names** Each location along the Internet has its own domain name (or IP address). You use them to tell your Mac where to send (or retrieve) information, much like your ordinary mail address. However, these addresses are a string of meaningless (to you!) numbers. To make things easier for you, you can assign a name to a numeric address. For example, the name address of the university where I work is *oakland.edu*. The name (and the numeric address, if you have it) of the place(s) where you hook up to the Internet should be entered in the Domain Name Server Information area of your TCP control panel. When you try to make a connection (and especially if there is any

problem locating a numeric address or if you didn't provide a numeric address), an attempt is made to "resolve" the non-numeric name (that is, it will figure out the actual numeric address that most closely matches the name you gave). It then uses that address to connect you to the Internet. If it fails altogether, you will get an error message saying something to the effect that it was unable to resolve the domain name. In most cases, your Internet location uses special software called a "domain name server," to try to resolve your domain names when it receives your request. More rarely, you may instead have a "host file," provided by your Internet service and stored at the root level of your System Folder, that contains a table of domain names and IP addresses. This is then used for domain name resolution.

- **Email Addresses** Internet email addresses are based on this same domain name scheme. They may seem a bit like hieroglyphics when you first see them., But there is some sense to them. They are divided into two parts: the person's name and their location. The two parts are separated by the @ symbol. The location name itself is usually divided into a hierarchy of locations separated by periods. For example, my university Internet address is *landau@oakland.edu*. The *oakland* part of the location indicates that my account is at Oakland University; the *edu* indicates that this is an education institution. My America Online name is *Ted Landau*. However, if you want to send me email to that account over the Internet, you will have to send it to *TedLandau@aol.com*. Note that the space between my first and last name is eliminated on the Internet-based address (Internet addresses do not permit spaces). The location name tells you that it is an America Online location (*aol*) and that America Online is a commercial institution (*com*).

From some online services, when sending email over the Internet, you will need to add a special prefix or otherwise indicate that it is Internet email. For example, for CompuServe, you would have to address mail to my university account as "*Internet:landau@oakland.edu*."

- **World-Wide Web addresses** If you are just getting into using the World-Wide Web, you may be a bit mystified by Web addresses (such as the sort that now commonly appear in many advertisements, especially for movies). What exactly are these, why are they the way they are, and how do you use them? Here's what, why and how:

First off, to use these addresses you will need to be connected to the World-Wide Web via special software, called a Web browser. The most well-known examples are Netscape, Mosaic, and the browser that is bundled with America Online's software.

A web address is technically called a URL (or Universal Resource Locator). Most web addresses will begin with the letters “http.” This stands for “HyperText Transfer Protocol.” This is a linking system used by HTML (HyperText Markup Language), the language used to create Web pages. It’s safe to say that the developers of the Web did not have a copy of Apple’s Human Interface Guidelines on their night table when they thought all this up.

Luckily, it isn’t all that critical that you remember these distinctions anyway. What you absolutely will need to remember is *exactly* how an address is written out. Even the most trivial variation will result in the address being rejected. You will see something like:

http://www.macintouch.com/~ricford/. Everything after the colon identifies the specific location. To go to any Web site, you have to enter the exact phrase in the appropriate spot of your Web browser (the spot will be labeled as URL or Net Site and will be followed by a blank area where you can type in the address) and then press Return. If you can’t find this spot, it is probably hidden by default; there should be some menu option to “unhide” it. About the only exception to having to be exact when typing an address is the last slash. If your browser claims it cannot find a given location, try deleting the last slash (or adding one if it isn’t there) and try again. Also, you should realize that the slash divisions within an address represent a hierarchical order of page locations. This means, for example, that if you drop the entire last segment of a URL, you may be taken to a page higher in the hierarchy of a related series of pages (for example, by dropping *technotes/* from *http://dev.info.apple.com/technotes/*, the remaining URL will take you to the main site for Apple Developer Services and Products, rather than the subsidiary Technotes destination of the original URL). In fact, you can often guess an unknown Web location in a similar manner. Do you want the home page for Widgets, Inc.? Try: “*http://www.widgets.com/*.” More often than not, this works.

By the way, when you jump to a location by clicking on some hyperlinked text or graphic on a Web page, it uses the same sort of URL addresses that we have just described. It’s just that it uses them behind the scenes, without you having to know what’s going on. A Web browser, such as Netscape, can also access ftp sites (where you download files) or read newsgroups. When doing this, the initial prefix will be something other than “http.” It may be “ftp” or “news,” for example.

Finally, if you ever select an address and get a message that says something such as “Unable to connect to host,” this doesn’t necessarily mean that there is anything wrong with your address. It may simply

mean, for example, that the computer you are trying to connect to is turned off for the moment! Try again later. It may work.

- **Modem speeds** To access the World-Wide Web over a modem and move at a speed faster than a slow crawl, you need at least a 14,400 bps (*bits per second*) modem. A 28,800 bps modem would be even better. By the way, bps means essentially the same thing as *baud* rate (baud is no longer technically correct and is thus not used much anymore).

However, just because your modem can operate at 14,400 or 28,800 speed, doesn't mean that you will get that speed on a given connection. To some extent, it's like driving a Ferrari in rush hour traffic. It doesn't matter that your speedometer goes up to 200 mph; the needle won't be going anywhere near that range for the moment. For modems to achieve their maximum speed potential, both the sending and receiving modem must operate at the same speed. So if you are trying to connect to a service that sends information at 2400 bps, your 14,400 bps modem needs to slow down to match the 2400 bps of the service. Fortunately, all modems can down shift to lower speeds if necessary, so you don't need a separate modem for each speed.

Major commercial services currently provide access in a range of speeds from 1200 to at least 14,400 bps. This allows people with slower modems to still use the service. These services often have different phone numbers for logging on at different speeds; they may also charge extra for using the faster speeds (though this is less common these days). Unless there is a significant cost savings in using a lower speed, make sure you log on via a phone number that most closely matches the highest speed your modem can use.

- **When is 14400 bps really 19200 bps?** Most high-speed modems (14,440 or faster) include designations such as V.42bis. In this particular case, V.42bis means that, while it may say 14,400 bps on the package, it can handle data at higher speeds (such as 19,200 bps). It does this by working with compressed data. It's like this: suppose you wanted to send a telegram as fast as you could, but it could only go at best 10 letters per second. Your 500 letter telegram would take 50 seconds to send. Now suppose you found a way to eliminate 20% of the letters and still retain all the meaning of the telegram. Your message would now only take 400 letters and thus 40 seconds. When the recipient reads the telegram, he essentially "decompresses" it. So in some sense he received all 500 letters in less time. That's the essence of how data compression speeds things up on a modem. The result is that a 14,400 V.42bis modem can actually transmit at an effective rate of 19,200 bps. In fact, using these

features, a 28,800 bps modem can currently send information at speeds ranging from 57,600 bps to 230,000 bps. However, to get the highest connection speeds, you will need an AV or PowerPC Mac, Apple's SerialDMA extension and communications software that supports these speeds (such as FreePPP). You may also be able to give your 28,800 bps modem a significant speed boost via a shareware utility called SerialSpeed 230. Even if you can't use the program, its excellent Read Me file is worth getting. It explains all of this stuff in more detail than I can do here.

More generally, when setting the speed for your 14,400 bps modem in your telecommunications software, especially for connecting to the Internet, typically select 19,200 bps. For 28,800 modems, try at least 57,600 bps. If your system can't support that speed, it will usually just automatically adjust downward to a speed it can handle. However, if problems occur, you may have to reselect a slower speed yourself.

Oh, one other thing, these higher speeds typically require a special modem cable (that's the one that goes from the modem to your Mac) called a hardware handshake capable cable. All modems that need this cable should come with one. But if you try to use a cable from some other slower modem (as I once did to my chagrin and which is easy enough to do since they look identical in appearance) you may find that you can't connect at these high speeds. This type of cable is necessary to support the high speed flow control settings (such as "CTS and RTS (DTR)") used in software such as FreePPP.

When even these speeds are not fast enough for you, you'll have to start looking at the telecommunications technologies of the future, such as ISDN (Integrated Services Digital Network). They require special digital phone lines that may or may not yet be available in your neighborhood. But they are coming!

- **Problems with downloading software** Downloading a file from an online connection means you now have a copy of the file on your drive. After disconnecting from your online service, you can use it just like any other file you copy to your drive. However, it may not be quite as easy as all that. In particular, you may double-click the file and get a message to the effect that the file can't be opened. Why? And what should you do about it? Here's why and what:
 - a. If you are downloading a file from an Internet FTP site (or if someone sent you a file via email over the Internet), chances are the file name ends in a suffix ".hqx." This means the file is encoded in what is called the *binhex* format. This encoding is needed because most Internet transfers (especially email) do not support a direct binary transfer (which is

standard on commercial services, such as CompuServe and America Online, and which typically does not require any separate encoding or decoding on your part). Before you can use a binhex file on your Mac, you will first have to decode it. Conversely, to send a Mac file (other than an ordinary text file) over the Internet, your best bet is to first encode it into binhex format.

A binhex file is essentially a ordinary text file. However, the content of the file is in “code.” The code, in turn, can be decoded with the right software to recreate the original Mac document or program. The first line of a binhex file will typically read “*(This file must be converted with Binhex 4.0).*” The remaining text will appear to be meaningless nonsense (which, of course, is the coded information). If needed (because of file size restrictions in certain cases), a program can be converted into several smaller binhex file segments, with each segment rejoined when it is decoded, so as to recreate the original single file.

Some communications software automatically decodes downloaded binhex files for you. Otherwise, use a freeware utility (available online itself!) from Aladdin, called StuffIt Expander. Even better, get the enhanced shareware version of it, which includes additional translation options as well as another utility, called DropStuff, which you can use to encode files that you want to send. To use either of these utilities, just drag the file to be converted to the program’s icon and let go (drag-and-drop). The utility will launch and automatically convert the file.

These Aladdin utilities can also decode/encode files using the much less common UUencode format, occasionally found on the Internet.

b. Even after decoding (or if decoding was not necessary), the file may still not be usable. This is because it may be in a compressed format (such as a StuffIt archive, which will typically have the suffix: “.sit”). Other types of compressed files may have suffixes such as “.cpt” and “.zip”). Sometimes these files are “self-extracting,” (often with a suffix such as “.sea”). If so, they can be decompressed simply by double-clicking the file (a new uncompressed copy of the file is created). Again, some online services automatically decompress downloaded software when you quit their program. Otherwise, StuffIt Expander can decompress all of these formats. If in doubt, open the Expander program and select its Preferences command. Here you will have the chance to see what types of files it can decode and decompress and select exactly what you want it to do.

c. After Expander has finished decoding and decompressing the file, it still may not open. Most often, this is because you do not have the needed application for the file. For example, many graphics will have a “.GIF” or “.jpeg” suffix. These indicate special graphics compression

formats that many standard Mac applications cannot open. If you are having trouble, you will need a shareware utility (such as JPEGViewer) to open these. Similarly, sound files of the “.wav” or “AIFF” format may need special applications to open them. Again, there are shareware utilities that can open almost any type of sound file (a popular one is Sound Machine). If you need help determining what shareware program you need to open some file, go online to where you downloaded the problem file, go to the bulletin board area for the forum (or wherever you go to ask questions) and ask for help. They'll tell you what you need.

d. Another problem may be that you do not have the needed “viewer” to read the file. For example, many online documents these days are in the “Acrobat” format. Viewing these files requires the Acrobat Reader program. This too is freeware and is available online.

e. Finally, and this is most likely the case with many of the update files from Apple, the file may be in a disk image format (often with a “.image” or “.img” suffix). In this case, you will need a program called Disk Copy (it comes on the CD-ROM disk that is included with most Mac models these days; otherwise it is available online). With this program, select its “Load Image File” command and open your “.image” file. You can now “Make A Copy” of it to a floppy disk, just as if you were copying a real floppy disk. The floppy disk will now, finally, contain the files you can open. An alternative to this, that I prefer, is to get a shareware program called ShrinkWrap. Simply drag-and-drop the disk image file to ShrinkWrap and ShrinkWrap will mount an image of the file on your disk exactly as if it were a floppy disk. This saves you the hassle of actually having to copy the stuff to a real floppy disk. Of course, this pseudo-floppy disk is just temporary. But it doesn't matter. In most cases, what will be on this disk is not the file you ultimately want, but an Installer utility. You now run the Installer utility and install the files on your hard drive. Finally, you have the files you downloaded in a usable form. You can now trash the ShrinkWrap mounted disk image (but save the original image file as a backup in case you ever need to reinstall this stuff).

What's New in Version 1.0a

Okay, I admit it. In my rush to get Version 1.0 of this Update out the door and uploaded on to online services, I didn't do as thorough a job of proofreading as I should have. Numerous typographical errors slipped through and several items needed to be revised for clarity. Though I am sure there are still a few corrections I have missed (there always will be!), this document should be much cleaner.

Second, I have added several dozen new items, particularly in the Special Sections part of this Update. In the next version of this Update, I will include a method for identifying what items are new, so you can more easily locate the new stuff.

[I especially want to acknowledge Ric Ford's MacInTouch MacWeek column and Web page and Apple's Information Alley and Tech Info files as prime sources for much of the information in this document.]

A Blatant Advertisement for Sad Macs

If you are reading this document but don't yet own the second edition of *Sad Macs, Bombs, and Other Disasters*, why not buy a copy today? Whether you are an eager novice or a jaded power user, you won't regret it. It's the best troubleshooting guide for the Mac that you can get anywhere. But don't take my word for it. Check out this sampling of what other people are saying about *Sad Macs*:

Main selection.

— *Mac Professional's Book Club*

"...the hardware- and software- troubleshooting guide that ought to ship with every Mac."

— *Andy Ihnatko, MacUser*

"Ted Landau is a true expert in Macintosh troubleshooting, and his book, "*Sad Macs, Bombs, and Other Disasters*," is an excellent reference."

— *Ric Ford, MacInTouch, MacWeek*

"For additional disk-repair options and strategies, see Ted Landau's book, *Sad Macs, Bombs, and Other Disasters*, second edition."

— *Lon Poole, Quick Tips (answering a reader's troubleshooting question), Macworld*

"Whether you're still operating with System 6.1 or are in charge of a workgroup, this book gives you the background needed to diagnose a problem and take steps to prevent its recurrence."

— *Macworld*

"Using a nontechnical, step-by-step approach, this book provides disaster relief at its finest. Whether you are a new or seasoned user, this book is crammed full of updated and vital fix-it information you can't survive without."

— *BMUG*

"To get better insight into what causes errors and to find out how to deal with them, you will need a copy of Ted Landau's *Sad Macs, Bombs, and Other Disasters*. It's worth every penny..."

— *Bob LeVitus, Help Folder, MacUser*

"I agree that Ted's sage advice is well worth the investment."

— *Christopher Breen, Help Folder, MacUser*

“With *Sad Macs*, you’ll be well-prepared when trouble hits. This book is like a wise uncle who has seen it all before. A keeper.”

— *Charles Haddad, Mac News, Atlanta Journal/Constitution, “Three books answer most Mac questions”*

“A well conceived and well organized troubleshooting handbook for Mac users, written with the novice in mind but with enough thoroughness and credibility that even experts won't yawn or wince.”

— *Book News, Inc.*

“Every novice Mac user should have this book...Every Mac power user should have this book...Every Mac office should have this book...A clear, complete and helpful book for times of trouble.”

— *Robert M. Slade, Editor and Reviewer, DECUS Canada Communications*

“Out of all the books I have read on the [Macintosh], I found your book to be the most helpful. It is well written and well organized.”

— *Dennis Biswell, Stauffer Magazine Group*

“[*Sad Macs*] has given me an incredibly better and broader understanding of the operation of my Power Mac...If Apple was smart, they’d include a copy with every computer they sell. Again, thanks for your outstanding book. It deserves all the praise it is receiving... I know they don't award Pulitzers to computer books, but I think in your case they should make an exception.”

— *Dave Wood, Free-lance Business Communications*

“...the only book that Apple recommends as reading for its [Support Techs].”

— *R.R., Apple Support Technician*

Sad Macs, Bombs, and Other Disasters, second edition (Addison-Wesley, 1995, \$34.95, ISBN 0-201-40958-5), is available at all major bookstores. It can also be ordered from various Web site locations (including Addison Wesley’s Web site: <http://www.aw.com/devpress/>).

To contact me via email, use any of the following:

Internet: landau@oakland.edu

CompuServe: 72511,337

AOL: Ted Landau