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# REMOVABLE MEDIA DRIVES

## CHAPTER AT A GLANCE



Perhaps the single most important complaint about hard drives has been that they are not portable—you can't just slide out one drive and pop in a new one. Hard drives are traditionally permanent installations. When that drive fills up, you must physically add another hard drive or replace the existing hard drive with a larger model. Both options require an invasive and time-consuming upgrade procedure (and then the drive must be partitioned and formatted before use). High-capacity *removable media drives* overcome this limitation—the drive hardware remains in the PC, but the media (or the disks) can be inserted and removed as needed.

With a removable media drive (such as the Iomega Zip, Iomega Bernoulli, Iomega Jaz, SyQuest EZ-Flyer, or SyQuest SyJet), you can finally achieve *limitless* storage simply by exchanging data cartridges. If you need to use files on another PC, you can just pop out a cartridge, then take it with you to another PC with a compatible drive. Although removable media drives are not quite as fast as hard drives, they are close, and you can usually start programs (or even boot the PC) right from that drive. This chapter highlights a series of troubleshooting procedures for the Iomega Zip, Bernoulli, and Jaz drives, as well as the SyQuest EZ-Flyer and SyJet families.

# Iomega Zip Drives

In order for removable media to be popular, it must follow three basic guidelines: it must record quickly, it must hold a lot of data on a single cartridge (or other media), and it must be portable between drives. Floppy drives are very portable, but they hold only a little data. Tapes hold a lot of data, but they are slow and not very portable between drives. Hard drives are quite fast and hold a great deal of data, but they are simply not portable. CD-ROM drives are relatively fast, they also hold a lot of data, and the CDs themselves are very portable, but you need specialized drives to "burn" a CD—and the disc can be used only once (unless you're using CD-RW drives, as discussed in Chapter 9). The search for reusable, high-capacity media that is transportable between inexpensive, readily available drives led Iomega to produce their Zip drive.

The Zip drive has become perhaps the single most popular nonstandard drive in production today. In fact, Zip drives are so popular that some PC makers include them as standard equipment in new systems. Zip drives offer relatively fast seek times at 29mS, and can sustain data rates of 300KB/s across the parallel port (or 1MB/s via SCSI or ATAPI IDE interfaces). Each cartridge can hold up to 100MB (up to 250MB in recent drive versions), which is large enough to hold huge illustrations, CAD layouts, and even small multimedia presentations. When used with a SCSI interface and a properly configured Adaptec SCSI controller, you may even boot your system from the Zip drive. Zip drives are available in both internal ATAPI and SCSI versions, as well as external parallel port and USB versions. This part of the chapter offers some installation guidelines for Zip drives, provides some tips for using them most effectively, and covers a collection of troubleshooting procedures.



## ZIP DRIVE INSTALLATION AND REPLACEMENT

Zip drives are generally not too difficult to install, but there are some important guidelines that might help smooth possible problems. This part of the chapter highlights the installation sequence for parallel port, USB port, and ATAPI IDE drives.

### Parallel Port

Unpack the Zip drive and verify that all of the software and accessories are in the box.

1. Turn off the computer and all of its peripherals.
2. Connect the cable between the Zip drive and the computer's parallel port. Secure the cables, but do not overtighten them. If there is a printer connected to the parallel port, disconnect it now.
3. Connect the drive's power supply.

You can use a Universal Power Supply—the supply included with your Zip drive can be used worldwide. It works at any voltage from 100 to 240 volts. All you need is the appropriate plug adapter.

4. Power-up the Zip drive.

When you want to power-down your Zip drive, first eject any disk from the drive, and then push the power button to power-down the drive.

5. Boot the PC and allow Windows to fully load.
6. After Windows starts, place the Zip software CD in the CD-ROM drive; the setup program should start automatically. If you don't have a CD-ROM drive, you can download and install the software from the Iomega Web site.
7. Follow the instructions to complete the software's installation. You'll need to restart the PC (and the setup utility) to finish the installation.

You'll see a Guest window that allows you to choose the drive letters you want to use for your Zip drive (and other removable drives). If installing the Zip drive causes your CD-ROM drive letter to change, you should change it back. This prevents having to reinstall applications or games.

8. As an option, you may run the Iomega "Parallel Port Accelerator" utility, which can help to optimize the data transfer rate for your drive.
9. If you have a printer, you can try connecting it to the Zip drive using a standard printer cable.

This completes the general installation of a parallel port Zip drive.

### USB Port

Unpack the Zip drive and verify that all of the software and accessories are in the box.

1. Boot the PC and allow Windows 98 to fully load. You must be using Windows 98 for proper USB support.
2. After Windows 98 starts, place the Zip software CD in the CD-ROM drive; the setup program should start automatically. If you don't have a CD-ROM drive, you may be able to download and install the software from the Iomega Web site.
3. Follow the instructions to complete the software's installation. You'll need to restart the PC (and the setup utility) to finish the installation.

You'll be installing the drivers before connecting your USB Zip drive. This is typical of many USB devices.

4. Connect the USB cable between the Zip drive and the computer's USB port. Do not use USB "extension cables" with the Zip drive—data loss may result.
5. Connect the drive's power supply. Although USB is supposed to supply power to many devices, high-power devices such as drives require the use of a supplemental power supply. The drive's power LED will come on.

You can use a Universal Power Supply—the supply included with your Zip drive can be used worldwide. It works at any voltage from 100 to 240 volts. All you need is the appropriate plug adapter.

6. Insert a new Zip disk into the drive. You will see the Zip drive icon in My Computer or Windows Explorer. Double-click on the Zip drive icon to access your Zip disk.

This completes the general installation of a USB port Zip drive.

## ATAPI IDE Port

Evaluate your system requirements. You'll need an empty 3.5-inch or 5.25-inch drive bay and an open position on your primary or secondary hard drive controller (preferably EIDE or later) in order to support an internal ATAPI IDE Zip drive. Unpack the Zip drive and verify that all of the software and accessories are in the box.

A Zip drive meets the latest ATAPI specifications. However, some computers with early ATAPI support may not meet these specifications and may not work correctly with removable ATAPI drives like the Zip. If the computer locks up or fails to boot correctly after the Zip drive is installed, you may need to update your system BIOS and/or drive controller to a later model.

1. Turn off and unplug the computer, and then remove the outer cover. On some computers (especially tower models), you may need to remove a plastic faceplate as well in order to access an available drive bay.
2. Identify your drive configuration. Examine the drive(s) currently connected to your primary and secondary hard drive controller ports. Based on the current configuration, you can decide on the best way to install and configure the new Zip drive.

If your hard drive and CD-ROM are connected to different controller channels, try installing the Zip drive as the slave drive on the secondary drive controller port. If your hard drive and CD-ROM are connected to the same controller channel, try installing the Zip drive as the master drive on the secondary drive controller port.

3. Locate your secondary IDE connector. Find the wide, flat ribbon cable on the back of the CD-ROM and follow it. If the cable also connects to a hard drive, follow the cable back to the motherboard's connector (usually marked "pri IDE"), and then locate the secondary drive controller (often marked "sec IDE"). If the cable does not also connect to the hard drive, follow the cable back to the motherboard's connector (which is often the secondary controller).
4. Check the jumpers. The Zip drive is configured as the slave device by default. This makes it the second device on the secondary drive controller channel. If you are installing the Zip drive as a slave device, double-check to verify that the drive is jumpered as "slave." Also verify that the jumper on the first (master) device is in fact set to "master." If you want to install the Zip as a master device, set the jumper so that the Zip drive is configured as the master device.
5. Locate an available drive bay. Select a 5.25-inch or 3.5-inch drive bay to install the Zip drive. If you select a 3.5-inch bay, you may need to remove the Zip drive's mounting rails. Since there is a limited amount of cable length between the first (master) drive and the Zip drive, try selecting a drive bay as close as possible to the master device (for example, the CD-ROM drive).
6. Insert the drive into a drive bay. Be sure that the drive is level and oriented properly.
7. Remove the original IDE cable. Locate the wide ribbon cable attached between the first (master) device and the drive controller. Note the orientation of pin 1 (the red or blue stripe in the cable), and then disconnect the cable from the drive and controller, and set the cable aside.
8. Connect the new IDE cable. Use the new IDE cable and connect the "long end" (the end farthest from the middle connector on the cable) to the secondary IDE port on the motherboard. Connect the middle connector to the first drive (such as the CD-ROM), and then connect the other end of the cable to the Zip drive. Be sure to verify the orientation of the cable.

9. Connect power to the Zip drive. Locate an available drive power connector from the power supply, and connect it securely to the Zip drive.
10. Bolt down the Zip drive. Use the original mounting screws and bolt the Zip drive into place. Do not overtighten the screws.
11. Recheck the cables to be sure that nothing has been accidentally loosened, and then reattach the computer's outer cover.
12. Reconnect the AC power cord, turn the PC on, and allow Windows to load.
13. After Windows starts, place the Zip software CD in the CD-ROM drive; the setup program should start automatically. If you don't have a CD-ROM drive, you may be able to download and install the software from the Iomega Web site.
14. Follow the instructions to complete the driver and utility software installation. You'll need to restart the PC (and the setup utility) to finish the installation.

## GETTING THE MOST FROM YOUR ZIP DRIVE

The Zip drive is generally simple and straightforward to use, but if you're new to the Zip drive family, this part of the chapter covers some important nuances that you should be familiar with in order to achieve the best operation from the drive.

### Accessing a Zip Drive

To use the Zip drive, insert a Zip disk, and then select the drive letter assigned to the Zip drive in My Computer (Windows 95/98 or Windows NT 4.0) or File Manager (Windows NT 3.51 or Windows 3.1). You can now read, write, or copy files to and from the Zip drive using the same techniques used with other drives on your system.

The green power/eject button will flash when the Zip drive is transferring data, or when a Zip disk is inserted or ejected.

### Inserting a Zip Disk

Push the disk gently into the drive slot—similar to inserting a floppy drive. The green activity light will flash momentarily, then glow continuously. If the activity light continues to blink slowly, push the eject button to eject the Zip disk, and then reinsert it carefully. Remember that drive power should be connected before inserting a Zip disk.

### Ejecting a Zip Disk

There are two general means of ejecting a Zip disk: use the eject button, or use the Iomega software "eject" command. Remember that you should remove a Zip disk when the drive is not in use, and remove a disk *before* disconnecting power or moving the Zip drive. If you need to eject a disk during a power failure, disconnect the power supply from the Zip drive, and gently push a straightened paper clip into the emergency disk eject hole on the back of the drive. The disk mechanism should release the disk.

### Powering the Zip Drive and System

The Zip drive generally requires that power be available to it *before* your operating system starts to load—otherwise, Windows may not detect the drive at start time. Iomega usually suggests that you connect your PC, Zip drive, and printer (or other parallel port device) to a power strip so that all three devices are powered simultaneously.

### Powering Down the Zip Drive

The power/eject button on the 250MB Zip drive allows you to power-down the drive when it is not in use. In power-down mode, the drive uses a very small amount of power that is needed to support data pass-through (when a printer or scanner is connected to the Zip drive).

The Zip drive also has an automatic sleep mode that spins down a Zip disk after 15 minutes of inactivity. This feature minimizes power consumption when the Zip drive is not being accessed. During a "drive sleep," the green power light remains on, and the Zip disk automatically spins up again when it needs to be accessed. You can use the Iomega software to change the drive sleep setting.

### Zip Disk Compatibility

The 250MB Zip drive is fully backward compatible, which allows you to read and write 100MB Zip disks. But due to the design of the 250MB Zip drive, its performance when writing to a 100MB Zip disk is significantly reduced. The time required to write information to a 100MB Zip disk in a 250MB parallel port Zip drive may be more than twice that needed to write the same information to a 250MB Zip disk. To get top performance from your 250MB Zip drive, you should use 250MB Zip disks whenever you want to store new information. Here are some important guidelines when using Zip disks:

- If you write data to a 100MB Zip disk using a 250MB Zip drive, and later find that the disk cannot be read by a 100MB Zip drive, try reading the disk again in your 250MB Zip drive.
- If the 250MB Zip drive locks up when you're writing to a 100MB Zip disk, you can verify that the drive is operating correctly by checking that the green activity light is blinking irregularly. A slow, steady blink may indicate a serious problem with the drive. If there is a slow, steady blink, try ejecting the disk and reinserting it.
- You can only use the Iomega "Short Format" option if you need to format a 100MB Zip disk in a 250MB Zip drive. The Long Format option is not supported for 100MB Zip disks in a 250MB Zip drive.
- A 250MB Zip disk cannot be used in a 100MB Zip drive. The 100MB Zip drive will automatically reject a 250MB disk.



## ZIP DISK GUIDELINES

Iomega Zip disks are rather delicate and sensitive, and must be treated with care in order to avoid damage to the disk or drive, or loss of your important data. Here are some practical guidelines that can help you get a longer working life from your disks:

- Always make sure the power supply is connected to the drive before inserting a Zip disk. Otherwise you might damage your drive.
- Never *force* a Zip disk into or out of the drive. If the eject button doesn't work, power-down the drive and try the emergency eject feature.
- Never use ordinary 3.5-inch floppy disks or floppy head-cleaning disks in your Zip drive. Such media is not compatible with the heads on a Zip drive and thus may cause severe damage to the drive mechanism.
- Keep your Zip drive on a level surface. Avoid moving the drive when a Zip disk is inserted and in use.
- Always remove the Zip disk from the drive when you are transporting your Zip drive, even if it's just across the room.
- It is a good idea to return the Zip disk to its protective case when it's not in the drive.

- Avoid exposing the Zip drive or Zip disks to dust, direct sunlight, high temperature, moisture, and magnetic fields (such as from monitors and some speakers). Otherwise, you may eventually experience data loss or drive damage.
- If you have a printer connected through a Zip drive, make sure the power supply is connected (even if you're not using the Zip drive). Power to the drive is required for correct data pass-through.
- Before connecting or disconnecting your Zip drive, always shut down the computer and disconnect power from the Zip drive.

## ZIP DRIVE SOFTWARE CONSIDERATIONS AND TESTING

Getting the most from your Zip drive requires that you keep drivers and applications software up-to-date, and install/uninstall those drivers manually if necessary. You'll also need to know how to adjust the Zip drive letter and how to format and write-protect your Zip media. This part of the chapter offers a series of essential Zip drive procedures.

### Obtaining Updated Zip Software

New drivers and applications software can help overcome performance problems and compatibility issues. The latest drivers for your Zip drive may be downloaded from Iomega's FTP site at **http://www.iomega.com/software/index.html**. Once you locate the proper page, choose the operating system you're using (Windows 95/98, Windows NT, Windows 3.1x/DOS, etc.). A listing describing each file available for download will guide you through the process. You may also order the latest Iomega software by calling 1-800-MY-STUFF (though there is a nominal charge when you order the software by phone).

### Manually Installing Zip Parallel Port Drivers

If you cannot install the Zip software automatically (there is no autorun from the CD), you can use these steps to install the drivers manually under Windows 95/98. Start by uninstalling the existing Zip parallel port driver:

1. Click Start, highlight Settings, and click Control Panel.
2. In the Control Panel, double-click the System icon.
3. In the System Properties dialog, choose the Device Manager tab.
4. Under Device Manager, click on the plus (+) symbol next to SCSI Controllers.
5. If the Iomega Parallel Port Interface is listed, highlight the entry and click Remove.

If there are no SCSI controllers listed in Device Manager, or the Iomega Parallel Port Interface is not listed within SCSI controllers, the drive has not been installed yet.

Now manually install the Zip drivers for your parallel port:

1. Insert the IomegaWare CD into your CD-ROM drive.

If the installation begins automatically, cancel the manual installation process.

2. Click on Start, highlight Settings, and then click Control Panel.
3. In the Control Panel, double-click on Add New Hardware.
4. Click on the Next button to begin the installation process.

5. If you're prompted to have Windows search for new hardware, choose No.
6. In the Hardware Types list, choose SCSI controllers, and then click Next.
7. In the next screen, choose Have Disk.
8. At the "Install from disk" prompt, click the Browse button.
9. From the Drives drop-down list, choose the drive letter of your CD-ROM drive.
10. In the Folders list, double-click on the w9xstuff folder and select OK twice.
11. In the Models list, choose the Iomega Parallel Port Zip Interface, select Next, and click Finish.
12. Restart your computer. Your driver is now installed.

## Uninstalling Zip Software

If you need to remove the Zip software (such as Iomega Tools) from your Windows 95/98 platform, use the Add/Remove Programs feature in your Control Panel to remove the Iomega Tools for Windows 95 entry:

1. Click Start, highlight Settings, and select Control Panel.
2. In the Control Panel, double-click the Add/Remove Programs icon.
3. Select Iomega Tools for Windows 95 in the Installed Program list box, and click Add/Remove. Follow the program removal screens that appear.
4. Click OK to close the Add/Remove Programs window.
5. Restart Windows 98.

## Changing the Zip Drive Letter

It may be necessary for you to change the drive letter assignment of your Zip drive in the event that there are drive problems or issues with other software-driven drives like CD-ROMs. Use the following steps to adjust the drive letter(s):



1. Right-click the My Computer icon on your desktop, and then choose Properties.
2. Select the Device Manager tab.
3. Click on the + next to the CD-ROM or Disk drives icon, and choose the Settings tab.
4. Choose Start Drive Letter and assign the drive letter you need from the drop-down menu.
5. Choose the same letter for End Drive Letter.
6. Click OK and allow your system to reboot for changes to take effect.
7. Repeat the steps above by clicking the + next to Disk drives, and assign a different drive letter to your Iomega drive.

## Formatting Zip Disks with Iomega Software

The Iomega software that's installed with the Zip disk offers the facility for reformatting Zip disks if the need arises. Before you format a disk, remember that all of the information on it will become inaccessible, so use caution to avoid accidental data loss.

1. Right-click the Zip drive icon on your Windows desktop.
2. Select Format from the drive shortcut menu, and choose the format type:
   - Use Short Format if you want to quickly erase all data on a disk so you can reuse it.

- Use Long Format with Surface Verify if you are formatting a disk where you have forgotten the password, or if you need to repair a disk that has developed read/write errors due to bad sectors.

3. Click Start to begin formatting the Zip disk.

### Formatting Zip Disks with Windows 95/98 Format

1. Double-click the My Computer icon on your desktop.
2. Right-click on the Iomega drive icon where you'd like to format your Zip disk.
3. Select format, and specify the format type.
4. Click Start to proceed with the format.

### Formatting Zip Disks with DOS

If you're in Windows, be sure to exit to DOS. Make note of your Iomega drive letter.

1. Click Start and select Shut Down.
2. Select "Restart your computer in MS-DOS mode."
3. Click Yes.
4. Insert the disk that you would like to format into your Iomega drive.
5. At the DOS prompt, type **format *x*:** (where *x* is the letter of your Zip drive), and then press ENTER.
6. Type **Y** for yes to proceed with the format.

### Protecting Zip Disks

Iomega includes a special read/write-protect feature that allows you to write-protect a disk through software instead of with a mechanical write-protect switch. You can write-protect a disk (and assign a password that must be used to remove the write protection). You can also add read/write protection to a disk so that it cannot be written to (or read from), without a password. Use the steps below to protect your disks:

1. Insert the disk you want to protect into your Zip drive.
2. Right-click the Zip drive icon on your Windows desktop.
3. Select Protect from the drive shortcut menu.
4. Choose the protection option you want to use.

Although Zip disk protection options are set by using Iomega's software, the actual protection mechanism is part of the drive hardware. The disk protection cannot be bypassed using other software programs.

# Zip Drive Troubleshooting

**SYMPTOM 46-1** **Zip drive operation seems erratic, or you experience data transfer problems** In virtually all cases, this is a problem with the Zip drive's cabling. For external drives, check that the parallel port cable or USB cable is attached securely. See that any screws or clips are hold-

ing the cables in place. For internal drives, verify that the 40-pin IDE cable or 50-pin SCSI signal cable is attached securely. (SCSI cable chains must also be terminated properly.)

If problems persist, there may be a problem with the controller operating your drive (the parallel port, USB port, IDE controller card, or SCSI adapter). Double-check the controller's configuration and see that each drive is jumpered (identified) properly.

**SYMPTOM 46-2 A Zip disk is automatically ejected after you insert it into the drive** The problem here is almost always the disk itself. You may be using a 250MB Zip disk in a 100MB Zip drive, or you're using a non-Zip disk in the drive. Check the disk and verify that you're using the proper Zip media for your drive. If the problem persists and the disk(s) operate in other Zip drives, the drive itself may be at fault.

**SYMPTOM 46-3 The Zip drive refuses to work with software "dongles" or other pass-through devices** This is a common problem because there is no single parallel port specification. There are some parallel port devices (such as multi-I/O adapters, scanners, printers, and software "dongles") that are not fully compatible with a Zip drive.

- *Remove the device.* The easiest way to check compatibility is to remove the dongle or other parallel port device. If the Zip drive works, you know the other device is at fault, and it may be necessary to update the dongle or other device.
- *Add a parallel port.* If you cannot replace, remove, or tweak your existing parallel port devices, it may be necessary to add another parallel port to the system in order to support the Zip drive.

**SYMPTOM 46-4 There is no drive letter for the SCSI Zip drive under Windows 95/98** The drive does not appear to respond. In virtually all cases, the SCSI driver has not loaded properly.

- *Check the device driver(s).* Open the Device Manager and expand the SCSI Controllers entry; then check the Iomega Adapter line beneath it. If there is a yellow symbol with an exclamation mark on it, the Windows 95/98 driver did not load. Check the controller next by highlighting that Iomega Adapter line, and then select Properties. Click on the Resources page, and then verify that your I/O Range and IRQ options are set correctly. They must match the jumper settings on your adapter board. If you must update the resource settings manually, make sure the Automatic Settings box is not checked (and remember to save any changes). If you allocated new resources, you may have to shut off the PC and change jumper settings on the controller board itself to match the resources allocated in the Device Manager. Restart the computer. Once the system reboots, the Windows 95/98 driver should load normally.
- *Check the cables.* If problems persist, check the signal connector (especially for SCSI adapters). Make sure the SCSI cable is intact and connected to the drive properly. If problems continue, your SCSI adapter is probably installed correctly, but the bus may be terminated improperly. Make sure that you terminate both ends of the SCSI bus properly.

**SYMPTOM 46-5 There is no drive letter for the parallel port Zip drive under Windows 95/98** Parallel port drive problems can almost always be traced to faulty connections, port configuration issues, or driver problems.

- *Check the cables.* Check the external power connector first. Parallel port drives are powered externally. Make sure that the power pack is working, and see that the power cable is connected properly to the drive. If the drive does not appear to power-up, try a different power pack or drive. Check the signal cable next, and make sure that you are using a good-quality, known-good parallel port cable that is

attached securely at the PC and drive. The Zip drive is very sensitive to devices such as copy protection modules (or dongles), and other "pass-through" devices. Try connecting the drive directly to the parallel port. Also disconnect any printers on the parallel port.

- *Check the parallel port.* The parallel port setup may be incorrect. Reboot the PC and enter CMOS setup. Check to see that the parallel port is configured in EPP or bidirectional mode. If the problem continues in the EPP mode, try configuring the parallel port for "compatibility mode."
- *Check the host controller.* For SCSI installations, check the SCSI host controller. There is a known incompatibility between the Iomega Zip drive and the Adaptec 284x adapter. The Iomega PPA3 driver does not work with the Adaptec 284x controller. Check with Iomega for an updated driver.
- *Check your driver(s).* Open the Device Manager and find the SCSI Controllers entry (even though it is a parallel port device). If there is no such entry, the driver is not installed. If you expand the SCSI Controllers section, there should be an entry for the Iomega Parallel Port Zip Interface. If not, the driver is not installed. Check for hardware conflicts. If the Device Manager entry for the Iomega Parallel Port Zip Interface has a yellow circle with an exclamation mark on it, the interface is configured improperly and is conflicting with other devices. Also check for device properties. Highlight the Iomega Parallel Port Zip Interface entry, click on Properties, and then select the Settings page. Find the box marked Adapter Settings; then type

  ```
  /mode:nibble /speed:1
  ```

  Save your changes and reboot the system. If that fails, try reinstalling the drivers. Highlight the Iomega Parallel Port Zip Interface and select Remove. Then reinstall the drivers from scratch. Next, try running in DOS. Start the PC in DOS mode (command prompt only), and then install the Iomega installation disk and type

  ```
  a:\guest
  ```

  If the Zip drive still does not receive a drive letter, the parallel port may be faulty or incompatible with the drive. Try the drive on another system. If this tactic works on another system, the problem is definitely related to your original PC hardware. If the problem follows the drive, the fault is likely in the drive. Try another drive.

**SYMPTOM 46-6 The Zip drive displays a floppy disk icon under Windows 95/98** However, the drive appears to operate properly. This is almost always due to the use of a real-mode DOS driver to support the Iomega drive and adapter. You will need to update the real-mode driver to an appropriate protected-mode driver for Windows 95/98. For SCSI adapters, you need to find the protected-mode SCSI driver for your particular SCSI adapter and install it through the Add New Hardware wizard in the Control Panel. After the protected-mode driver is installed, you can remove the obsolete real-mode driver from CONFIG.SYS. For native Iomega SCSI adapters, get the protected-mode drivers directly from Iomega. For parallel port Zip drives, uninstall the old drive software and install the new Windows 95/98 driver software.

**SYMPTOM 46-7 The Zip drive takes over the CD-ROM drive letter in Windows 95/98** You may simply need to switch drive letters between the Zip drive and CD-ROM drive:

1. Open Device Manager and double-click on the Disk Drives entry.
2. Highlight the Iomega Zip drive entry and click on Properties.
3. Click on the Settings page.

4. In the Reserved Drive Letters section, you will see a Start Drive Letter and an End Drive Letter setting. Enter the desired drive letter for the Zip drive in both start and end drive entries. (Be sure to use the same drive letter for both start and end.) Click on OK.
5. Double-click on the CD-ROM entry.
6. Highlight your CD-ROM Drive entry and click on Properties.
7. Click on the Settings page.
8. In the Reserved Drive Letters section, you will see a Start Drive Letter and an End Drive Letter setting. Enter the desired drive letter for the CD-ROM drive in both start and end entries. (Be sure to use the same drive letter for both start and end.) Click on OK.
9. Click on OK to close Device Manager, and then shut down and restart the computer.

**SYMPTOM 46-8** **You encounter Zip drive letter problems under DOS** The drive letters following C: may change unexpectedly when Iomega drivers are installed to support a new device. This can interfere with applications that look at specific drives or with access to network resources. You will need to relocate the drives before installing Iomega software. Since the GUEST.EXE utility loads at the end of AUTOEXEC.BAT, the Iomega drive will be assigned the last drive letter. DOS assigns letters to network drives alphabetically after assigning letters to any internal or external drives connected to the computer. When a new drive is added, the network drive may be "pushed down" one letter (for example, from E: to F:). Applications that reference specific drive letters may then fail to work correctly unless they are reinstalled or adjusted for the drive letter change. If you use a batch file to connect to a network, it will need to be updated to the new drive letter. A network login script may also need to be revised.

Use the DOS LASTDRIVE= command to relocate your first network drive letter farther down the alphabet. This insulates your network drive letter assignment from future changes should you add other drives to your system. For example, you can make your network drive N: by adding the following line to the end of CONFIG.SYS. This would allow you to add ten drives (D: through M:) to a system without pushing down your network drive letter.

```
LASTDRIVE=M
```

Do not set your last drive to Z:, or you will be unable to access any network drive. If you use multiple network drives, do not set your last drive to a letter late in the alphabet (such as X: or Y:) since that will limit the number of network drives you can use simultaneously.

Check your CD-ROM drive letters. CD-ROM drives have a specific drive letter determined by the /L option of MSCDEX in AUTOEXEC.BAT (for example, /L:E assigns the CD-ROM as drive E:). When a new drive is installed, DOS may assign the CD-ROM drive letter to the new drive, and the CD-ROM drive may seem to disappear. Change the drive letter for the CD-ROM to a letter not assigned to another drive. You may want to relocate your CD-ROM drive several letters down the alphabet so that you do not have to relocate it each time you add a new drive to your system. You must have a LASTDRIVE statement in CONFIG.SYS that sets the last drive equal to or later than the CD-ROM letter. Finally, check the overall system configuration. When DOS *does* reassign drive letters, be sure to check each of the points below:

- Edit the PATH statement in AUTOEXEC.BAT to correctly reference new drive letters.
- Edit any batch files (including AUTOEXEC.BAT) to correctly reference new drive letters.
- Edit all Windows INI files and Windows groups to correctly reference new drive letters.

- Check other application setup files and rerun the application's setup if drive letters cannot be edited.
- For networks, check your user login script for references to specific network drive letters.
- Reboot the computer and check major applications. Those that do not work with the new drive letter may need to be reinstalled.

**SYMPTOM 46-9 You encounter duplicate ZIP drive letters** You notice that the Zip drive (or another drive) has been assigned a duplicate drive letter. In most cases, the problem can be traced to a third-party SCSI adapter and drivers that conflict with Iomega SCSI drivers. *Do not use any drive before correcting this problem.* Open your CONFIG.SYS file and examine each driver that scans the SCSI bus to assign drive letters. Chances are very good that you have a third-party driver that is assigning a letter to the Zip drive, as well as an Iomega-specific driver assigning another letter to the Zip drive. Use a command-line switch with the third-party SCSI driver to limit the number of IDs that will be assigned.

**SYMPTOM 46-10 The GUEST utility cannot find an available drive letter** If all drive letters are in use, GUEST will not be able to assign a drive letter to the Zip drive. Change the last drive designation. Use the DOS LASTDRIVE command at the end of CONFIG.SYS to increase the number of available drive letters. Do not use a letter near the end of the alphabet.

**SYMPTOM 46-11 The system hangs when installing drivers for Windows 95/98** System hang-ups during installation are usually the result of hardware conflicts or problems. Check the signal cable first, and make sure that you are using a good-quality, known-good cable that is attached securely at the PC and drive. Open the Device Manager and find the SCSI Controllers. If there is no such entry, the driver is not installed. If you expand the SCSI Controllers section, there should be an entry for the Iomega Parallel Port Zip Interface. If not, the driver is not installed.

Check for hardware conflicts. If the Device Manager entry for the Iomega Parallel Port Zip Interface has a yellow circle with an exclamation mark on it, the interface is configured improperly and is conflicting with other devices. Highlight the Iomega Parallel Port Zip Interface entry, click on Properties, and then select the Settings page. Find the box marked Adapter Settings, and then type

```
/mode:nibble /speed:1
```

Save your changes and reboot the system. If problems continue, try running in DOS. Start the PC in DOS mode (command prompt only), and then install the Iomega installation disk and type

```
a:\guest
```

If the Zip drive still does not receive a drive letter, the parallel port may be faulty or incompatible with the drive. Try the drive on another system. If this tactic works on another system, the problem is definitely related to your original PC hardware. If the problem follows the drive, the fault is likely in the drive. Try another drive.

**SYMPTOM 46-12 After installing a Zip drive, you find the other drives in the system are using the DOS compatibility mode** This is almost always the result of the GUEST.EXE program. The real-mode GUEST.EXE program supplied by Iomega is designed to allow you to access the Zip drive in DOS and Windows 95/98, and this causes the other drives in your system to use the DOS compatibility mode. (You may also notice a decline in drive or system performance.) Try installing the protected-mode drivers for the Iomega drive:

1. In the Control Panel, double-click the Add New Hardware icon.
2. Click Next, click the No button, and then click Next.
3. Click Other Devices, and then click Next.
4. In the Manufacturers box, click Iomega, and then click Have Disk.
5. Install the files from the Windows 95/98 CD by inserting the CD in the drive, typing the following line in the Copy Manufacturer's Files From box, and then clicking Next:

   ```
   <drive>:\drivers\storage\iomega
   ```

   Replace <drive> with the drive letter of the CD-ROM drive.
6. After the files are copied, click Finish.
7. Restart the computer when prompted to do so.

**SYMPTOM 46-13 A Zip guest locks up or cannot locate the drive or adapter** Chances are that an ASPI manager referenced in the GUEST.INI file is conflicting with hardware in the PC. This often happens in systems with two SCSI adapters (and parallel ports). Try editing the GUEST.INI file. Open the GUEST.INI file on your Iomega install disk and specify which ASPI manager needs to load in order to access the Zip drive. Remember to make a backup copy of the GUEST.INI file before editing it. As an alternative, choose the Iomega SCSI adapter driver. If you are using a native Iomega SCSI adapter, choose the ASPI manager that applies to the adapter, as shown in Table 46-1. Once you've identified the proper ASPI manager for your adapter, REMark out all of the other ASPI lines in GUEST.INI except for the one that you need.

If you're using a non-Iomega SCSI adapter, you will need to add the complete path and file name for the driver to GUEST.INI, and REMark out all of the other ASPI drivers. Once the GUEST.INI file is updated, save your changes and reboot the system; then run GUEST from the drive and directory containing the updated GUEST.INI file. If problems persist, try the drive on another system, or try a new drive on the suspect system.



**SYMPTOM 46-14 System recovery fails after the Zip Tools setup process is complete** If the Zip Tools software for your Zip drive fails to install properly (or if the system hangs or was powered down), the Windows Startup group will have a Zip setup icon that will attempt to run each time Windows is started. Delete the Zip icon in your Startup group, and then reinstall the Zip software.

**TABLE 46-1 NATIVE IOMEGA ASPI DRIVERS**

| IOMEGA ADAPTER | ASPI MANAGER |
|---|---|
| Zip Zoom SCSI Accelerator | ASPIPC16.SYS |
| Jaz Jet SCSI Accelerator | ASPI2930.SYS |
| Parallel Port Zip Drive | ASPIPPA3.SYS or ASPIPPM1.SYS |
| PPA-3 Adapter | ASPIPPA3.SYS |
| PC1616 | ASPIPC16.SYS |
| PC800 | ASPIPC8.SYS |
| PC2 | ASPIPC2.SYS |
| PC4 | ASPIPC4.SYS |

**SYMPTOM 46-15 The Zip drive setup could not find a Zip Tools disk for Zip parallel port drives** This is usually an issue with the GUEST.INI file, which needs to be edited for proper operation. Start the system from a clean floppy disk, insert the Iomega installation disk, and then try running the GUEST utility. If a drive letter is assigned, there may be a driver in CONFIG.SYS or AUTOEXEC.BAT that is conflicting with the Zip drive. If GUEST fails to assign a Zip drive letter from a clean boot, open the GUEST.INI file in a text editor, locate the ASPI=ASPIPPA3.SYS line, and then add the switches /MODE=1 and /SPEED=1. This makes the complete command line look like this:

```
ASPI=ASPIPPA3.SYS SCAN /INFO SL360=NO SMC=NO /MODE=1 /SPEED=1
```

Reboot the PC and run the GUEST utility again. If GUEST does run, but you still cannot read the Zip Tools disk, make sure that the signal cables are secure between the drive and system. If problems persist, try the Zip drive on another PC. If GUEST works on another PC, the original PC is using an incompatible parallel port. If the drive still refuses to work, try another Zip drive.

**SYMPTOM 46-16 You see error messages such as "Can't Find Zip Tools Disk" or "No Drive Letters Added" when using Zip parallel port drives** In most cases, you will have to manually assign the proper ASPI driver by editing your GUEST.INI file. Open the GUEST.INI file on your Iomega install disk. Highlight the ASPI driver line that reads ASPIPPA3.SYS, and then add the following commands: /MODE=1 and /SPEED=1. Remember to make a backup copy of the GUEST.INI file before editing it. The final command line should look like this:

```
ASPI=ASPIPPA3.SYS SCAN /INFO SL360=NO SMC=NO /MODE=1 /SPEED=1
```

Save your changes to GUEST.INI, and then run GUEST from the drive and directory that contain your edited GUEST.INI file. GUEST should now assign a drive letter to the Zip drive. Reboot the PC, start Windows, and then run the Iomega setup routine from the drive and directory that contains your edited GUEST.INI file. The Windows installation should now proceed normally.

Next, check the signal connector, and make sure that the parallel port or SCSI cable is connected properly between the drive and system. Try a known-good working signal cable. If problems persist, boot the system from a clean disk and try running GUEST. If a drive letter is assigned properly, there is a driver loading in CONFIG.SYS or AUTOEXEC.BAT that conflicts with the Zip drive. You will have to systematically locate the offending driver. Finally, try the Zip drive on another PC. If GUEST works on another PC, the original PC is using an incompatible parallel port. If the drive still refuses to work, try another Zip drive.

**SYMPTOM 46-17 Windows 3.11 allows the network drive letter to conflict with the Zip drive letter** You may see this as a "No Zip Tools Disk Detected" message. The drive may also no longer be accessible from the File Manager or DOS prompt. The problem is that Windows for Workgroups allows GUEST to assign a drive letter that is already used by a network drive. Remap the shared volume. Since GUEST is typically run first, you will need to alter the network drive letter under Windows for Workgroups.

**SYMPTOM 46-18 You cannot print while using a Zip drive** The Iomega parallel port Zip drive works as a "pass-through" device, and the software allows the drive to share a parallel port with printers. However, some printers require two-way communication between the printer and parallel port, and this conflicts with the Zip software. This can cause data corruption and system lockups. In many cases, disabling the bidirectional communication features of the printer will clear the problem. Work-arounds for Canon, Okidata, Lexmark, and Hewlett-Packard printers are covered here.

Several Canon printers use a driver that is incompatible with the Zip drive. The drivers need exclusive access to the parallel port for proper operation of the printer. To work around this problem temporarily, you can disable the drivers for that printer.

- **Canon BJ-610** Insert two semicolons (;;) in front of the following lines in the [386Enh] section of the SYSTEM.INI file:

```
DEVICE=WPSRCOM.386
DEVICE= WPSCREM.386
DEVICE=CANON BJ-610, WPSCR, LPT1
```

- **Canon BJC-610** Insert two semicolons (;;) in front of the following lines in the [386Enh] section of the SYSTEM.INI file:

```
DEVICE=WPSRCOM.386
DEVICE= WPSCREM.386
DEVICE=WPSRBND.386
```

  In the WIN.INI file, insert two semicolons (;;) in front of the following lines:

```
LOAD=WPSLOAD.EXE
DEVICE=CANON BJC-610, WPSCR, LPT1
```

- **Canon BJC-620** Insert two semicolons (;;) in front of the following line in the [386Enh] section of the SYSTEM.INI file:

```
DEVICE=WPSRCOM.386
DEVICE= WPSCREM.386
DEVICE=WPSRBND.386
```

  In the WIN.INI file, insert two semicolons (;;) in front of the following lines:

```
LOAD=WPSLOAD.EXE
DEVICE=CANON BJC-620, WPSCR, LPT1
```

After these lines have been REMarked out, the Zip drive will function, but the printer will not. To restore printer capability, remove the semicolons from the WIN.INI and SYSTEM.INI files and restart Windows.

Rather than disabling the printers, you can install the drivers for the Canon BJC-600e (if you are using the Canon BJC-610 or BJ-610). If you are using the BJC-620 printer, install the Canon BJC-210 drivers. This allows access to both the Zip drive and the printer—though at a reduced resolution.

- **Canon Multi-Pass 1000** You cannot use this printer and the parallel port Zip drive at the same time. The only way to make this printer and drive compatible is to change the output of the printer to "File" when you need to use the Zip drive, then back to "LPT1" when you want to use the printer. Use the following procedure to toggle the output from File to LPT1 under Windows 9x:

  1. Double-click on My Computer.
  2. Double-click on Properties.
  3. Right-click on the Canon printer.

4. Click on Details.
5. Click the down arrow button in the window labeled "Print to the following port."
6. Click on FILE (to switch back, choose LPT1).
7. Click on OK at the bottom of your screen.

The Okidata 600e also exhibits port problems when used with a Zip drive. To enable the Zip drive, insert two semicolons in front of the following line in the [BOOT] section of the SYSTEM.INI file:

```
COMM.DRV=INSYTHCOMM.DRV
```

Just below that line, add the following line:

```
COMM.DRV=COMM.DRV
```

In the [386Enh] section of SYSTEM.INI, insert two semicolons in front of the line:

```
DEVICE=OKIPORT.386
```

In the WIN.INI file, insert two semicolons in front of the lines:

```
LOAD=C:\WINDOWS\SYSTEM\STATMON.EXE
DEVICE=OL600E, OKIGDI, LPT1
```

Most Lexmark printers can work when the Zip drive's bidirectional support is disabled. Under Windows 95/98, you can disable bidirectional support using the following steps:

1. Right-click on the My Computer icon, and then double-click on the Printers icon.
2. Right-click on the Lexmark printer icon, and then select Properties.
3. Choose Details and select Spool settings; then choose Disable Bidirectional support.
4. Save your changes and reboot the PC if necessary.

Hewlett-Packard printers are known for their extensive use of the parallel port, so it is quite common to encounter problems between recent HP printers and other parallel port devices such as the Zip drive. Fortunately, there are some work-arounds available for most HP models.

- **HP 4S, 4+, 4V, 4SI, 4L, 4P, and 5P** You need to disable the bidirectional communication between the printer and system. This can be accomplished by executing the following command from the RUN command line:

  ```
  c:\windows\dinstall -fdinstall.ins
  ```

  You can also use the steps outlined below:

  1. Bring up the WIN.INI file through either SYSEDIT (in Windows) or EDIT (in DOS).
  2. In the first section of this file, you should see a line that reads LOAD=HPSW.EXE. You need to disable this line by inserting a semicolon (;) at the beginning of the line.
  3. Now scroll down to the section labeled [Spooler] and insert a semicolon (;) at the beginning of the line that reads QP.LPT1=HPLJ4QP.DLL.
  4. Save the WIN.INI file, exit Windows, and restart the system.

You can now use the HP printer and Zip drive together. These changes will not affect the printer; they just disable the status windows that may pop up, telling the current status of the printer.

- **HP 5L** If you installed your printer using the HOST option, you will need to uninstall the printer, then reinstall it using the PCL option:

  1. Disconnect the printer from the computer or the Zip drive.
  2. Select Start, Settings, and then select the Printers icon.
  3. Click the HP 5L Printer icon and press DELETE. When the system asks to delete files that were only used by this printer, choose Yes (or OK).
  4. Reboot the computer with the printer still disconnected.
  5. When the computer reboots, use the 5L installation disks to reinstall the drivers. When prompted for a Custom or Express Installation, choose Custom and select PCL Mode.

  If the problem persists, disable the WIN.INI line that reads LOAD=HPLJ5W.EXE by placing two semicolons at the beginning of the line. You will need to do the same with the line that reads QP.LPT1=??? in the [Spooler] section of your WIN.INI file.

- **HP 5P, 5M, 6P, 6M, DeskJet 600c, and HP DeskJet printers** The Status Monitor utility (HPPROPTY.EXE) loaded with these printers must be disabled. There are two ways to disable the HPPROPTY.EXE utility that will disable the Status Monitor without disabling the printer. The quick fix is to press CTRL+ALT+DEL, choose HPPROPTY, and then choose End Task. This closes the Status Monitor, but you need to remember to do this each time you boot the PC. For a more permanent fix, right-click on the My Computer icon. Open the Windows folder, then the SYSTEM folder. Right-click on the file HPPROPTY.EXE and rename this file to HPPROPTY.BAK. You may need to reboot the PC so that your changes will take effect.

- **Other HP printers** Another work-around for HP compatibility problems involves editing the HP printer's INI file (located in the \Windows directory) in order to disable the status monitoring and bidirectional mode. This example uses the HP 855C, and the INI file is called HPRDJC02.INI. The INI file name will be different for the various models of printers (for example, HPDJ850C.INI, HPDJ660C.INI, or HPLJ4.INI).

  1. Open the INI file in Notepad.
  2. In the first section of the INI file, find the line that reads

     ```
     2DSMEnable=0200
     ```

     and change this line to read

     ```
     2DSMEnable=0000
     ```

     This will disable the status monitor.
  3. Now locate the [COMMON] section of the INI file and find the line that reads

     ```
     0Bidi=0100
     ```

     Change this line to read

     ```
     0Bidi=0000
     ```

     This will disable the bidirectional mode of the printer.
  4. Save your changes and reboot the system.

**SYMPTOM 46-19 You encounter problems installing a Zip SCSI drive** In virtually all cases, SCSI problems can be traced to hardware problems or driver issues. Make sure that power is provided to the drive (see that the drive power light comes on). See that the SCSI signal cable is intact and connected securely between the drive and SCSI adapter. Try a new signal cable. Both ends of the SCSI bus must be terminated properly. Make sure that terminators are installed in the correct places. Ensure that the Zip SCSI drive is assigned to a SCSI ID that is not in use by any other SCSI device. Finally, check the drivers. The drivers for your SCSI adapter and drive must be correct, use the right command-line switches, and be the very latest versions. Also check for conflicts between SCSI drivers or other drivers in the system.

**SYMPTOM 46-20 The drive letter is lost each time the PC is turned off** In many cases, the GUEST utility does not load properly because it is at the end of AUTOEXEC.BAT. Relocate the GUEST command line by opening the AUTOEXEC.BAT file and moving the GUEST command line to a point earlier in the file. Ideally, the GUEST command line should be the entry immediately following the MSCDEX command line. Save your changes and reboot the computer. The GUEST utility should now load each time the system is rebooted.

**SYMPTOM 46-21 When installing IomegaWare software for your Zip drive, a virus checker reports a virus** The typical report may indicate a "Romeo & Juliet" virus. This is often an error made by the virus checker when its virus definitions mistake the IomegaWare as a virus. Disable the antivirus software before attempting to install the software. If the IomegaWare software installs without error, you may reenable the antivirus program after the installation is complete. If not, you may need to obtain an updated version of the antivirus software.

**SYMPTOM 46-22 You see an error message such as "Drive X does not exist"** There are several different reasons for this kind of problem. Check the disk first. You must use a "PC-formatted" disk—a "Mac-formatted" disk will not work in a PC. Try several different disks. If the error message occurs on only one disk, try reformatting that disk. (Remember that formatting the disk will remove all data from the disk.) If you're receiving the error using more than one disk (or the disk will not format), the drive may be defective and should be replaced. Finally, there may be a driver or TSR interfering with the Zip drive. Try a clean DOS boot to eliminate the use of real-mode drivers and TSRs, and try the drive again.

**SYMPTOM 46-23 Your Windows 98 system locks up when using a USB Zip drive** The most common problems occur when you connect or use the USB Zip drive in the wrong way. Verify that you're following the proper guidelines:

- Power-up your USB Zip drive at the same time you turn on your computer (or immediately after).
- Wait at least 30 seconds before reconnecting your USB Zip drive to your computer (if you remove your USB Zip drive while your computer is on).
- Confirm that your computer meets the USB 1.1 specification. If not, do not combine your USB Zip drive with other low-speed devices (such as a USB keyboard or mouse).
- Use only USB hubs that have an independent power supply. If you connect the USB Zip drive to a nonpowered hub, your computer may lock up. The USB Zip drive may not transfer data correctly or may not be recognized by your computer.

**SYMPTOM 46-24 When installing a USB Zip drive under Windows 95/98, you see an error such as "No Iomega drives found"** This error occurs when the Iomega Tools software fails to assign a drive letter to your Zip drive. The problem is your software. Iomega Tools is an older ver-

sion of software that shipped with Zip and Jaz drives. IomegaWare is the latest version of the software. Iomega recommends that you obtain the most current version of the IomegaWare software from **www.iomega.com/software/**.

Download the IomegaWare package onto your system, and then double-click on the icon to begin the installation process. Once you've downloaded and installed the software, you should no longer receive the error message. If you now have a drive letter, the updated software resolved your problem, and you can use your drive.

**SYMPTOM 46-25 You notice that USB Zip drive performance is poor** Other USB devices running at the same time as the USB Zip can affect performance. Digital cameras, page scanners, and other USB devices that process large amounts of data may affect performance. Here are some tips to tweak performance:

- Disconnect all USB devices from your computer, and then reconnect the USB Zip drive. Try the USB Zip alone and test performance again.
- Make sure you are using the cable that came with your USB Zip drive.
- Close all open applications through the Task Manager.

**SYMPTOM 46-26 The system locks up when connecting other USB devices to your existing USB Zip drive** Computers that are not compliant with USB hub specification 1.10 may lock up when a device (such as a USB keyboard, mouse, or joystick) is plugged in while the USB Zip drive is connected. Contact your computer manufacturer to verify that your USB hub is version 1.10 compliant. If not, you will continue to experience lockups. To correct the problem, you may want to consider upgrading your USB hub. If the hub is compliant, you may need to update the USB drivers, your Windows version, or stick with the USB Zip drive only.



**SYMPTOM 46-27 You see an error such as "Disk in drive X not formatted"** There are several different reasons for this kind of error. Check the disk first. You must use a "PC-formatted" disk—a "Mac-formatted" disk will not work in a PC. Try several different disks. If the error message occurs on only one disk, try reformatting that disk. (Remember that formatting the disk will remove all data from the disk.) If you're receiving the error using more than one disk (or the disk will not format), the drive may be defective and should be replaced. Finally, there may be a driver or TSR interfering with the Zip drive. Try a clean DOS boot to eliminate the use of real-mode drivers and TSRs, and try the drive again.

**SYMPTOM 46-28 When formatting a Zip disk, the Iomega format software returns a fatal exception error** This type of formatting error is almost always because of problems with outdated or corrupted Zip drivers. Such an error may appear as follows:

```
"A fatal exception 0E has occurred at 0028:C3C64C51 in VXD IOMEGA (01) +
00000CB5. The current application will be terminated. Pressing any key
closes the Explorer window."
```

You'll need to update the Zip driver(s). Check the Iomega Web site at **www.iomega.com** and obtain a new IOMEGA.VXD file. Click Start, highlight Find, and then click Files or Folders. Find the old IOMEGA.VXD file and replace it with the newer version.

**SYMPTOM 46-29 The Zip drive's green power light does not illuminate** The green light on a Zip drive indicates that the drive is plugged in and receiving power. If the light is not on, then the drive is either turned off, not plugged in, or there is a physical problem with the drive.

- *Check the power button.* If there is no disk in the drive, press the eject button once. The eject button doubles as a power button, so pressing it will turn the drive on and off. Inserting a disk will also turn the drive on automatically. If there is already a disk in the drive, the button functions as an eject button, and the disk should be removed before turning off the power.
- *Unplug the drive.* Disconnect the drive from power and the computer. Take the drive to another outlet and plug the power cable in. If the light comes on, there may be a problem with the first power outlet. If the light does not come on, the drive and/or power supply needs to be replaced.

**SYMPTOM 46-30 You see an error such as "Cannot create or replace, make sure the disk is not full or write protected"** There are several different reasons for this kind of error. Check the disk first. You must use a "PC-formatted" disk—a "Mac-formatted" disk will not work in a PC. Try several different disks. If the error message occurs on only one disk, try reformatting that disk. (Remember that formatting the disk will remove all data from the disk.) If you're receiving the error using more than one disk (or the disk will not format), the drive may be defective and should be replaced. Finally, there may be a driver or TSR interfering with the Zip drive. Try a clean DOS boot to eliminate the use of real-mode drivers and TSRs, and try the drive again.

**SYMPTOM 46-31 You encounter a fatal exception error when using the Iomega Copy Machine software** This kind of problem is typically due to an issue with the Zip drive's automatic spin-down/eject feature used when doing a multiple disk copy. It may be necessary for you to disable the automatic spin-down/eject function. Start the Copy Machine software by choosing its icon within the Iomega Tools folder. Next, select Options and then Runtime. Deselect the Auto Spin-Down/Eject option by removing the check from the box. Finally, choose OK to accept the changes, and reboot the PC if necessary. When performing subsequent multiple disk copies, you'll be prompted to eject each disk by pressing the eject button on the front of your Zip drive.

**SYMPTOM 46-32 You encounter an error such as "General failure reading drive X"** There are several different problems that can cause this kind of error. Check the disk first. You must use a "PC-formatted" disk—a "Mac-formatted" disk will not work in a PC. There may be a driver or TSR interfering with the Zip drive. Try a clean DOS boot to eliminate the use of real-mode drivers and TSRs, and try the drive again. Finally, try several different disks. If the error message occurs on only one disk, try reformatting that disk. (Remember that formatting the disk will remove all data from the disk.) If you're receiving the error using more than one disk (or the disk will not format), the drive may be defective and should be replaced.

**SYMPTOM 46-33 You encounter an error such as "Insufficient disk space"** You may also see this error as "Disk is full" or "Destination is full." This error message may be caused by several possible problems—the disk is full, it's exceeding the operating system's file limit, or the Zip disk is bad.

- *Check the disk space.* Use a tool like Windows Explorer to verify that there is actually enough free space on the Zip disk to contain the file(s) you need. If not, try copying fewer files, or use a fresh Zip disk.
- *Check the number of files.* Make sure that you have not exceeded the file limit of your operating system. Remember that DOS will not allow you to have more than 511 files in the root directory. Use

Windows Explorer (or the DOS DIR command) to list the files on your Zip disk. The number of files on the root directly should be less than 511. If the number of files is 511, you'll have to move some files into other directories to reduce the number of files on the root directory.

- *Cycle power to the system.* If the error persists, try shutting down the computer and Zip drive, and then repower the system in the correct order.
- *Try several different disks.* If the error occurs on only one disk, try reformatting that disk. (Remember that formatting the disk will remove all data from the disk.) If you're receiving the error using more than one disk (or the disk will not format), the drive may be defective and should be replaced.

**SYMPTOM 46-34 When using Iomega Tools or other Zip drive software, you see an error such as "Program performed an illegal operation"** In virtually all cases, there is a conflict between the Zip software and another program running on your system. You'll need to reboot the system and isolate the offending software.

- *Reboot the system.* This will clear the error from memory and allow you to check other software. When you reboot the system, make sure to turn off the power to the drive and then turn it back on again.
- *Close all open programs.* Open the Close Program dialog box by pressing the CTRL+ALT+DEL keys at the same time. Close open programs by highlighting a program, and then choose the End Task button. (Do not close Explorer.) As you close one application at a time, try your Zip drive again. Once the problem is resolved, the last application that was closed is the one causing the conflict. Once you have determined which application is causing the conflict, either discontinue use of that application when using your Zip drive, or obtain an updated version from the software maker (if possible).
- *Reinstall the Zip software.* If the problem persists, delete and then reinstall the Iomega Tools software.



**SYMPTOM 46-35 When using Microsoft Backup under Windows 95, you receive an error such as "The disk is full—disk linking is not supported"** This problem occurs because Microsoft Backup cannot back up over multiple disks (a.k.a. "disk spanning"). Instead of using Microsoft Backup, install the backup software intended for use with the Zip disk (such as "1-Step Backup").

To install Iomega Tools for Windows 95, put the Zip installation floppy in the A: drive. From the Start menu, select Run. In the Open dialog box, type **A:\guest95** and click OK. Guest95 should find a drive letter for your Zip drive. Now put your Zip Tools disk into the Zip drive. Double-click on the My Computer icon, and then double-click on the Zip drive icon. You should see a folder called W95stuff. Double-click on the W95stuff folder, and double-click on setup95.exe. Follow the screen instructions to complete the installation.

**SYMPTOM 46-36 When using Iomega Tools software under Windows 95/98, you see an error message such as "No Iomega drives found"** This occurs when the Iomega Tools software fails to assign a drive letter to your Zip drive, and is often a fault of old software. Iomega Tools is an older version of software that shipped with Zip drives. IomegaWare is the latest version of the software and should be updated in every possible case before troubleshooting. You can download the various components of IomegaWare from the Iomega site at **www.iomega.com/software**. Start by downloading the Core IomegaWare Tools package onto your desktop, and then double-click on the icon to begin the installation process. Once you have downloaded and installed the Core IomegaWare Tools software, you should no longer receive the error message.

**SYMPTOM 46-37 When installing IomegaWare software under Windows 98, you see an error such as "ISINST30 caused a general protection fault"** When you attempt to install the IomegaWare software, you may receive the following error message:

```
ISINST30 caused a general protection fault in module _INS0433._MP at <address>
```

This error is caused by the Microsoft MSWHEEL.EXE wheel-mouse driver software. To resolve this error, you'll need to disable the wheel-mouse software, install the Zip software, and then reenable the wheel-mouse software. Start by disabling the MSWHEEL.EXE program:

1. Click on Start, point to Programs, Accessories, System Tools, and click System Information.
2. Click the System Configuration utility on the Tools menu.
3. Click the Setup tab.
4. Click the check box next to MSWHEEL.EXE to clear the box.
5. Click File and choose Exit.
6. Restart your computer when prompted.

Install the IomegaWare software. Insert the IomegaWare CD into your CD-ROM drive, and installation should start automatically. If you need a later version of IomegaWare, you can download it from **www.iomega.com/software**. Now reenable the MSWHEEL.EXE program:

1. Click on Start, point to Programs, Accessories, System Tools, and click System Information.
2. Click the System Configuration utility on the Tools menu.
3. Click the Setup tab.
4. Click the check box next to MSWHEEL.EXE to add a check mark.
5. Click File and choose Exit.
6. Restart your computer when prompted.

**SYMPTOM 46-38 When using a Zip drive, you see an error such as "X:\ is not accessible. The device is not ready"** When the drive refuses to respond, there are several points to check.

- *Check the Zip disk.* Verify that there is a Zip disk in the drive. If there is no disk in the drive (or if the disk is ejected after restarting your computer), Windows will display the error message. Place a disk into your Zip drive, wait a few seconds, and click the Retry button.
- *Check/disable read/write protection.* Read/write protection is a security feature that requires a password, and it should be reserved for highly sensitive data. If your Zip disk is read/write protected, you'll get the error message when trying to access a protected disk. The following steps should remove read/write protection:
    1. Double click on the My Computer icon.
    2. Right-click on the icon that represents your Zip drive, and choose the Protect option.
    3. The Present Disk Status dialog will indicate whether your disk is read/write protected.
    4. If your disk is write protected, you must remove the read/write protection by selecting the Remove Protection button before accessing the disk.

You'll need to enter the correct password in order to remove read/write protection. If you do not have the correct password, you won't be able to remove that protection from the disk.

- *Check the cables.* Shut down the drive and computer, disconnect the data cable from the Zip drive, and carefully examine both ends of the cable for bent or broken pins. If the cable is damaged, it should be replaced. If not, reconnect it securely. Restart your computer to Windows, place a Zip disk in the drive, and try accessing the disk again.
- *Try the drive on another PC.* Install your Zip drive on a different computer and see if you can read the disk on that system. If so, there may be a problem with the original computer's interface. If the problem persists, the drive may be defective and require replacement.

**SYMPTOM 46-39 When using a Zip drive under Windows 95/98, you see an error such as "The disk in drive X: is not formatted"** This kind of behavior is almost always caused by incompatible formatting or software conflicts.

- *Check the disk format.* You must use a PC-formatted Zip disk—a disk formatted for a Macintosh computer will not work. Zip disks come preformatted for either Macintosh or PC. A disk that is formatted for a Mac will have a small dot (·) located on the lower-left corner of the disk label. If you have a Mac-formatted disk and you wish to reformat it for use on your PC, follow the steps below. (Remember that formatting will permanently remove all data from that disk.)
  1. Insert the Zip disk into the drive.
  2. If you receive a message such as "The disk in drive X: is not formatted. Do you want to format it now?" choose No.
  3. Double-click the My Computer icon, and then right-click on the Zip drive's icon.
  4. Select Format.
  5. Select Long Format with Surface Verify.
  6. Click Start and allow the process to complete.
- *Try the disk in a clean environment.* Boot to DOS and see if you can access the disk. If so, there may be a software conflict, If not, the trouble may be with the disk itself.
  1. Restart your computer with a blank bootable disk in drive A:.
  2. When you get a "non-system disk" error message, eject the floppy disk from the A: drive and press F8 twice.
  3. From the Windows 95/98 Startup menu, choose "Safe mode command prompt only."
  4. At the DOS prompt, type **progra~1\iomega\tools\guest** to obtain a drive letter for your Zip drive.
  5. Insert the Zip disk into the Zip drive.
  6. At the DOS prompt, type **dir *x*:** (where *x* is the drive letter assigned to your Zip drive) and read the directory of files on your Zip disk.
- *Try another Zip disk.* If the error occurs on only one disk, try reformatting that disk. If you're receiving the error message with more than one disk (or the disk will not format), the drive is probably defective and should be replaced.

- *Try another parallel port setting.* If problems persist, try setting another parallel port mode such as bidirectional, standard, ECP, or EPP. In many cases, "downgrading" the parallel port mode will correct hardware issues, but it will also reduce drive performance.

**SYMPTOM 46-40 You see an error such as "Cannot create or replace – make sure the disk is not full or write protected"** In most cases, this problem is caused by exceeding the file limit imposed by the operating system (such as 511 files under DOS).

- *Check the disk space.* Use a tool like Windows Explorer to verify that there is actually enough free space on the Zip disk to contain the file(s) you need. If not, try copying fewer files, or use a fresh Zip disk.
- *Check the number of files.* Make sure that you have not exceeded the file limit of your operating system. Remember that DOS will not allow you to have more than 511 files in the root directory. Use Windows Explorer (or the DOS DIR command) to list the files on your Zip disk. The number of files on the root directly should be less than 511. If the number of files is 511, you'll have to move some files into other directories to reduce the number of files on the root directory.

**SYMPTOM 46-41 You see an error message such as "No drives are supported by Iomega Tools"** The trouble is with your version of the Zip drive's software. Iomega Tools is an older version of IomegaWare software. To correct this error, you should download and install the latest version of IomegaWare software from Iomega's Web site at **www.iomega.com/software**. Install the IomegaWare software by double-clicking the file you have downloaded to your computer. This will begin the installation process.

**SYMPTOM 46-42 The Zip drive is clicking continuously** A click is perfectly normal when inserting or removing a disk, but *continuous* clicking indicates a serious problem. This problem is often referred to as the "click of death" and is often a problem related to a fault in the Zip drive (especially older versions of the Zip drive). Check the disk first. Try another Zip disk in the drive. (Make sure the disk is blank in order to prevent damaging good disks.) If the problem persists, the drive is almost certainly defective and should be replaced. Iomega recommends the following precautions for Zip disks:

- Eject disks prior to transporting any Zip drive. This forces the drive heads (which read and write to the disks) to park safely.
- Avoid dropping your drive. It will almost certainly damage internal structures.
- Make it a point to transport and store Zip disks in approved disk cases.

Iomega also offers a utility that tests the integrity of the drive heads and Zip media. If you're uncertain about the reliability of your Zip drive or disks, running the diagnostics could help isolate the problem. (Use a blank formatted disk while running these tests.)

1. Open My Computer or Windows Explorer.
2. Right-click on the Zip drive icon in My Computer or Windows Explorer.
3. Choose Properties from the menu.
4. Click the Diagnostics tab.
5. Click the Diagnose Now button to start the test.

The diagnostic will report "Passed" or "Failed." If the diagnostic reports "Failed," you should contact Iomega to repair or replace the drive.

**SYMPTOM 46-43** **The Zip drive's LED flashes continuously** This almost always indicates a problem with the drive. When you insert or eject a disk (or copy files to or from your Zip drive), the light on the Zip drive will normally blink several times. If the light flashes continuously, there is a problem.

- *Check the disk.* Try ejecting and reinstalling the Zip disk. (Be sure to use a blank disk to avoid accidental data loss.) You may also wish to try a different disk. If a new disk corrects the problem, the original disk is defective and should be replaced or discarded.
- *Cycle the drive.* Power-down the computer and Zip drive; then restart the system properly. After restarting the system, try the Zip disk(s) again. If the problem persists, the drive is probably defective and should be replaced. Otherwise, the drive simply needed to be cycled.

If the Zip drive is an external model, unplug the power cord from the drive, wait at least five seconds, and plug the power cord back into the drive.

**SYMPTOM 46-44** **You cannot eject a Zip disk from a drive** This is a frequent problem reported with parallel port Zip drives. If the Zip disk won't eject from the drive (either when pushing the eject button or using the software "eject" feature), there may be a hardware failure or an incorrect software setting.

- *Close your open applications.* Press CTRL+ALT+DEL to open the Close Program dialog box. Close all open applications one at a time (except Explorer and Systray) by highlighting an application and choosing the End Task button. Once all applications are closed (except Explorer and Systray), try to eject the disk from the Zip drive using the eject button on the front of the drive. If the disk ejects, there is a software application problem.
- *Cycle the drive.* Power-down the computer and Zip drive; then restart the system properly. After restarting the system, try ejecting the Zip disk(s) again. If the problem persists, the drive is probably defective and should be replaced. Otherwise, the drive simply needed to be cycled.
- *Try another disk.* Insert a different blank formatted Zip disk into the drive (without connecting the data cable to the computer). If the disk ejects, the original disk is defective. If the disk still does not eject, the drive is probably defective and should be replaced.
- *Try the emergency eject button.* Remove the power cord from your Zip drive. Straighten out a paper clip and insert it into the "emergency eject" hole located on the back of the drive (above the right-hand cable connector). If the disk still refuses to eject, the drive is probably defective and should be replaced.

**SYMPTOM 46-45** **You cannot format a 100MB Zip disk in a 250MB Zip drive** This is known to be a problem under Windows 3.1x. If you try to format a 100MB disk in a 250MB drive in Windows 3.1x, an error message indicates that the format has failed. This is an erroneous error—the format was successful, and files *can* be copied to and from the disk correctly. The disk and drive are working properly (no damage has occurred), but an incorrect message is being displayed.

**SYMPTOM 46-46** **The Zip drive refuses to spin up** There are a variety of possible problems that might contribute to this symptom.

- *Try another disk.* Insert a different blank formatted Zip disk into the drive. If the new disk works properly, the original disk is defective. If the problem persists, the trouble is with conflicting software or Zip drive problems.
- *Try a clean boot.* Real-mode drivers and TSRs can sometimes interfere with the Zip drive. Start the PC from a bootable DOS disk. If the drive spins up, there is an issue with your startup files (CONFIG.SYS and AUTOEXEC.BAT). Try systematically REMarking out any files that might interfere with the Zip drive.
- *Check the parallel port.* If you're using a parallel port Zip drive, change the mode of your parallel port to SPP, EPP, Standard, or bidirectional.
- *Replace the drive.* If problems persist, the drive is probably defective and should be replaced.

**SYMPTOM 46-47 You notice poor performance with a parallel port 250MB Zip drive** Zip drive performance depends on the performance of your LPT port. Optimum performance requires a parallel port running in EPP mode—a parallel port in ECP or unidirectional mode may cause erratic performance. Access your system's CMOS setup to reconfigure the parallel port. Once you have located the parallel port settings, choose either EPP, bidirectional, SPP, standard, AT, PS/2, or fast mode. Save your changes and reboot the system.

Your BIOS may not allow you to change the parallel port mode (especially older systems). In this case, you may be able to change the parallel port mode through a jumper setting on the motherboard.

If you're using a SCSI Zip drive, check your cable length and optimize the chain. The combined SCSI chain length (the total of all cables in the SCSI chain) should not exceed 6 meters (about 19.6 feet). This includes both internal and external SCSI devices. The fastest device should be the last (or farthest) from the computer.

**SYMPTOM 46-48 There is no power light on the external Zip drive** The green light on an external Zip drive indicates that the drive is plugged in and receiving power. Check that all the connections are tight. If the problem persists and the light still does not come on, try another power supply to determine whether the first one is defective. Also, plug the power supply into another outlet to determine whether the first outlet is the problem. If there is still no response, the drive is probably defective and should be replaced.

**SYMPTOM 46-49 The computer locks up after running the parallel port accelerator utility** In some cases, a system lockup may occur after installing the parallel port driver and then running the Parallel Port Accelerator. Sometimes, running the Parallel Port Accelerator utility will cause the drive to stop running (or even cause the system to lock up during boot). Disconnect the Zip drive and reboot the computer. Remove the modifications made by the Parallel Port Accelerator:

1. Right-click the My Computer icon and select Properties.
2. Click on the Device Manager tab.
3. Click the plus sign (+) next to SCSI controllers.
4. Double-click on Iomega Parallel Port Interface.
5. Click on the Settings tab.
6. Remove all the information from the Adapter settings box.

7. Click OK, and then click OK again.
8. Click Yes to restart your computer.
9. Reconnect the Zip parallel port drive and try it again.

**SYMPTOM 46-50 The computer locks up when running an open application and trying to eject a Zip disk** If a file or application that resides on your Zip disk is open or in use, and you try to eject that disk, the computer may lock up. Before you eject your Zip disk, make certain that you close any files or applications that may be open (or in use).

**SYMPTOM 46-51 There is a Zip disk read failure on the Zip drive under Windows 95/98** In virtually all cases, the problem is a defective Zip disk. Using an improperly formatted Zip disk in the drive may also cause a problem.

- *Check the disk.* Use a different Zip disk and see if another disk resolves the problem (or try the original disk on another Zip drive). Make sure to use a blank Zip disk so that you won't lose any critical data.
- *Try reformatting the disk.* If a different disk works, and the original disk seems to have a problem, try reformatting the original Zip disk:
  1. Double-click the My Computer icon on your desktop.
  2. Right-click the Zip drive icon and select Format.
  3. Select Long Format with Surface Verify.
  4. Click Start, and click Start again.
  5. When the disk has finished formatting successfully, click OK.

  If you cannot format the Zip disk successfully, the disk is almost certainly defective and should be replaced.
- *Try the drive on another system.* If the disk can be read when moving the Zip drive to another PC, there may be a problem with the PC or with the way the drive was connected to that system.
- *Suspect the drive.* If no disks can be read on the Zip drive, double-check the drive's installation and setup. If the problem persists, the drive itself may be defective and should be replaced.

**SYMPTOM 46-52 You see a "fatal exception error" when using an ATAPI IDE Zip drive** This is a known issue under Windows 95 (and OEM2), but fixed under Windows 98. This problem occurs when you're using an Intel motherboard and AMI (or Intel) BIOS. The Zip drive may also be installed on the secondary IDE channel. The error may also occur when you start the computer without a disk in the drive, or you eject the disk from the Zip drive. This is a problem with Windows 95, but can be corrected by obtaining the latest update files for Windows:

- ESDI_506.PDR version 4.00.956 (dated 5/14/96) and later
- VOLTRACK.VXD version 4.00.954 (dated 3/6/96) and later

To install this update, download the REMIDEUP.EXE file from the Microsoft Software Library to an empty folder. In My Computer or Windows Explorer, double-click the REMIDEUP.EXE file, and then follow the instructions on the screen. The following files are installed by REMIDEUP.EXE:

```
ESDI_506.PDR  4.00.1116  8/25/97    11:16a    24,426    Windows\System\Iosubsys
```

and

```
VOLTRACK.VXD  4.00.954   3/6/96     9:54a     18,518    Windows\System\Iosubsys
```

**SYMPTOM 46-53 You encounter "Windows Protection" errors at startup (the Windows logo screen) when using an HP printer and parallel port Zip drive** This issue can occur if you have an HP 4000 or 8000 series printer attached to a Zip drive, and the Zip drive is attached to the parallel port. To work around this problem, disable bidirectional support in your computer's CMOS setup (or in the properties of your printer). To disable bidirectional support:

1. Click Start, highlight Settings, and click Printers.
2. Right-click your HP 4000 printer, and then click Properties.
3. Click the Details tab, click Spool Settings, click "Disable bi-directional support for this printer," click OK, and then click OK again.

# Iomega Bernoulli and Jaz Drives

The Bernoulli disk is a variation of fixed disk technology. Conventional hard drives rotate rigid disks that force read/write heads to ride on the resulting cushion of air. By comparison, the Bernoulli disk uses a *flexible* platter that is forced to flex beneath a fixed read/write head. At first glance, you probably would not know the difference between a fixed-platter cartridge (such as a SyQuest or Iomega Jaz cartridge) and a Bernoulli cartridge.

Bernoulli disks have been around for years, and have been through 20MB, 35MB, 44MB, 65MB, 90MB, 105MB, 150MB, and 230MB incarnations. The Iomega Bernoulli 230 drive will operate with all of the previous disk sizes (except 20MB and 44MB) with only a negligible performance hit. Bernoulli drives are traditionally SCSI devices, but Iomega offers a parallel port-to-SCSI adapter to allow operation with a PC parallel port. When used on a SCSI system, you can use the Iomega PC2x, PC4x, PC90, PC800, PC1600, and PC1616 SCSI adapters. Other SCSI adapters can also be used as long as they are ASPI compatible and an ASPI driver is provided by the adapter vendor.

By contrast, the Iomega Jaz family uses more conventional "rigid disks," which suspend the read/write heads under a thin layer of air (the same approach used in hard drives). The Jaz is also a more recent development, offering faster drive performance and storage capacities of 1GB and 2GB per cartridge.

## READ/WRITE-PROTECTING JAZ DISKS

Read/write protection prevents data from being written to (or read from) the disk. Jaz disks are protected "electronically" rather than by a traditional mechanical write-protect tab. Jaz disk protection is available from Iomega SCSI utilities 2.2 for DOS, and in the Windows version of Iomega Tools. Protection features include four options:

- Write protection
- Read/write protection
- "Unprotect" until ejection
- Remove protection

Note that password protection is optional for write protection, but is required for read/write protection. When set, this password must be used to access the disk (or change protection options). Keep in mind that no one can recover data from a read/write-protected disk—should you forget the password. If the

password is forgotten, you'll have to reformat the Jaz disk using a "surface verify" option. Reformatting the disk will destroy all the data on it. You cannot use DOS FORMAT (or any other type of disk management software) to remove the password protection. To unprotect a Jaz disk, you must run the Iomega SCSI utilities (or use the Iomega Tools program):

1. Double-click the My Computer icon.
2. Read/write-protect the Iomega disk by right-clicking on the disk icon and choosing the Protect option. (If a disk is not inserted in the drive, the Protect option will not be available.)
3. Use the same processes to remove the read/write protection.

## UNPROTECTING THE JAZ SOFTWARE DISK

During a normal successful install from the Jaz Tools disk, the unused partition is removed and the disk becomes formatted for the platform that the software is installed on. Until this process is performed (or the software reclaims the disk), the disk will remain write protected. Use the following steps to remove the write partition and reclaim the disk. To reclaim the Tools disk, double-click on the My Computer icon, and then double-click the Jaz drive icon. In the Jaz drive folder, open the W95STUFF folder, and then run RECLAIM. Once reclaimed, the write protection should be removed. If this does not reclaim the disk properly, try the following DOS procedure:

1. Start the PC to the Startup menu.
2. From the Startup menu, choose Command Prompt Only.
3. Place the Jaz software floppy disk into your A: drive.
4. At the C:\ prompt, type **A:\GUEST** and press ENTER.
5. Once GUEST assigns a drive letter, insert the Tools disk into the Jaz drive.
6. Type ***x*:** (where *x* is the drive letter for the Jaz drive) and press ENTER.
7. At the ***x*:** prompt, type **cd\dosstuff** and press ENTER.
8. Finally, type **RECLAIM** and press ENTER to reclaim the Tools disk.

## REMOVING IOMEGA TOOLS FROM THE STARTUP GROUP

Programs located in the Startup folder are automatically executed when Windows is loaded. During installation, Iomega Tools places several programs in this group. If a program icon is moved or deleted from the Startup group, the program will no longer start automatically when Windows starts. (The program will have to be started manually.) To move or remove items from the Startup group:

1. Open the Iomega Tools folder by double-clicking on it from My Computer.
2. Click on Start, highlight Settings, and then click on the Taskbar entry.
3. Choose the Start Menu Programs tab, and then click the Advanced button.
4. Click on the (+) symbol next to Programs, and then double-click on the Startup folder.
5. To move the contents, highlight all the icons to be moved, and then drag them to the open Iomega Tools folder. To delete the icons instead, highlight the icons and press the DELETE key.

Once icons have been removed from the Startup folder, the Iomega Tools software must be reinstalled in order to reinsert them into the Startup group.

## UNINSTALLING JAZ TOOLS SOFTWARE

You may need to remove the Jaz software in order to upgrade it or resolve possible software/driver conflicts. Use the following steps to remove the Iomega Tools software under Windows:

1. Click Start, point to Settings, and click Control Panel.
2. From the Control Panel, open the Add/Remove Programs wizard.
3. Highlight Iomega Tools for Windows 95/NT and click on Add/Remove.
4. Restart your computer when prompted to do so.

If you need to remove Iomega Tools software under DOS:

1. From the C:\ prompt, type **edit autoexec.bat** and press ENTER.
2. Remove the following lines:

```
@SET SCSI_DRIVER=C:\IOMEGA
@SET SCSI_UTILITY=C:\IOMEGA
```

3. From the File menu, select Exit and save the changes when prompted.
4. From the C:\ prompt, type **edit config.sys** and press ENTER.
5. Remove the following lines:

```
DEVICE=C:\IOMEGA\SCSICFG.EXE
DEVICE=C:\IOMEGA\SCSIDRVR.SYS.
```

6. From the File menu, select Exit and save the changes when prompted.
7. From the C:\ prompt, type **deltree iomega** and press ENTER.
8. Reboot the computer.

# General Drive Installation and Replacement

Removable media (or RM) drives are generally easy devices to install or replace. Most are installed as master devices located on the secondary IDE drive controller channel, though a few will coexist as slave devices alongside a hard drive or other drive device. The most important issue to remember is that the BIOS will not support an RM drive directly (even if the BIOS identifies the RM drive at boot time). You'll need real-mode drivers for the RM drive under DOS, or protected-mode drivers for the RM drive under Windows. In most cases, you'll also install a set of software utilities for disk cartridge partitioning, formatting, R/W protection, and so on. This part of the chapter covers the guidelines needed to install a basic internal IDE-type RM drive.

## SELECT JUMPER CONFIGURATIONS

An IDE-type RM drive may be installed as a master or slave device on any hard drive controller channel. These master/slave settings are handled through one or two jumpers located on the rear of the drive (right next to the 40-pin signal cable connector). One of your first decisions when planning an installation should be to decide the drive's configuration:

- If you're installing the RM drive as the first drive on the secondary drive controller channel, it must be jumpered as the master device.
- If you're installing the RM drive alongside another drive (on either the primary or secondary drive controller channel), the RM drive must be jumpered as the slave device.

Refer to the documentation that accompanies your particular RM drive in order to determine the exact master/slave jumper settings. If you do not have the drive documentation handy, check the drive manufacturer's Web site for online information.

## PREINSTALL ANY SOFTWARE

Some RM drive designs require that you preinstall one or more software utilities prior to installing the physical drive. This ensures that Windows will "find" the drive after installation. If your particular RM drive suggests that you insert a software CD and install software prior to the drive's physical installation, you should handle that software installation now. After the required software is installed, you can power-down the PC and begin the actual drive installation.

## ATTACH CABLES AND MOUNT THE DRIVE

Follow these steps to mount the drive:

1. Turn off and unplug the PC, and then remove the outer cover to expose the computer's drive bays.
2. Attach one end of the 40-pin drive interface cable to the drive controller connector on your motherboard (or drive controller card). Remember to align pin 1 on the cable (the side of the cable with the blue or red stripe) with pin 1 on the drive controller connector.
3. Locate an available drive bay for the RM drive. Remove the plastic housing covering the drive bay, and then slide the drive inside. Locate the four screw holes needed to mount the drive. In some cases, you may need to attach "mounting rails" to the drive so that the drive will be wide enough to fit in the drive bay. In virtually all cases, you should mount an RM drive horizontally (though some RM drive models may be mounted vertically).
4. Attach the 40-pin signal cable and the 4-pin power connector to the new drive, and then bolt the drive securely into place. Do not overtighten the screws since this may damage the drive. If you do not have an available 4-pin power connector, you may use an appropriate Y-splitter if necessary to "split" power from another drive (preferably the floppy drive).

## CONFIGURE THE CMOS SETUP

Although virtually all RM drives require real- or protected-mode driver support, recent motherboard designs can identify the ATAPI IDE RM drive in BIOS, so you should configure your computer's BIOS to accept the drive if possible (through the CMOS setup).

1. Turn the computer on. As your computer starts, watch for a message that describes how to run the CMOS setup (for example, "Press F1 for Setup"). Press the appropriate key to start the CMOS setup program.
2. Select the "hard drive settings" menu, and choose the drive location occupied by the RM drive (for example, "primary slave," "secondary slave," or "secondary master," depending on how you've physically jumpered and installed the drive).

3. Select "automatic drive detection" if available. This option will automatically identify the new drive. If your BIOS does not provide automatic drive detection, select "NONE" or "NOT INSTALLED" for the RM drive, and rely on drivers *only*.
4. Save the settings and exit the CMOS setup program. Your computer will automatically reboot.

## REASSEMBLE THE COMPUTER

Double-check all your signal and power cables to verify that they are secure, and then tuck the cables gently into the computer's chassis. Check that there are no loose tools, screws, or cables inside the chassis. Now reattach the computer's outer housing(s).

Since the operating system will only assign a drive letter to a partitioned and formatted disk cartridge, you should be sure to insert an appropriate disk cartridge into the drive before rebooting the system. If you do not insert a disk cartridge, the drive may not receive a drive letter at boot time.

## INSTALL THE SOFTWARE

To complete your RM drive installation, you'll need to install the software drivers and utilities that accompanied the drive on floppy disk or CD. If you've preinstalled any software before installing the drive, you'll likely need to complete the software installation now. Windows 95/98 systems will generally detect the presence of the new RM drive and prompt you for the protected-mode drivers automatically. After you install the drivers and reboot the system, the RM drive should be ready for use.

# Bernoulli Drive Troubleshooting

**SYMPTOM 46-54** **The Bernoulli drive has a "floppy" icon in Windows 95/98** This is usually the result of running a real-mode driver to support the Bernoulli drive and adapter under Windows 95/98. Check the Bernoulli driver. You may need to disable the real-mode driver (in CONFIG.SYS) and install the protected-mode driver under Windows 95/98. The Iomega software bundle typically provides protected-mode drivers for Jaz Jet, Zip Zoom, PC1600, PC1616, PC800, PC2x, PPA-3, and parallel port devices. If you're using a different drive adapter, you may need to upgrade and update the driver accordingly. If you are using a non-Iomega adapter (such as a SCSI adapter), you'll need protected-mode drivers from the particular SCSI adapter vendor (such as Adaptec). However, Windows 95/98 does have a comprehensive library of protected-mode drivers already available.

**SYMPTOM 46-55** **A Bernoulli SCSI drive does not have a drive letter in Windows 95/98** The drive does not appear to respond. In virtually all cases, the SCSI driver has failed to load.

- *Check the SCSI driver.* Open the Device Manager and expand the SCSI Controllers entry; then check the Iomega Adapter line beneath it. If there is a yellow symbol with an exclamation mark on it, the Windows 95/98 driver did not load. Highlight that Iomega Adapter line and select Properties. Click on the Resources page, and then verify that your I/O Range and IRQ options are set correctly. They must match the jumper settings on your SCSI adapter board. If you must update the resource settings manually, make sure the Automatic Settings box is not checked. Remember to save any changes. If you allocated new resources, you may have to shut off the PC and change jumper settings on the controller to match the resources allocated in the Device Manager. Restart the computer. Once the system reboots, the Windows 95/98 driver should load normally.

- *Check the connections.* If the driver checks out properly, you'll need to check the device connections. Check the SCSI signal connector first, and make sure the SCSI cable is intact and connected to the drive properly.
- *Check SCSI termination and ID assignments.* If problems persist, your SCSI adapter is probably installed correctly, but the bus may be terminated improperly. See that you terminate both ends of the SCSI bus properly. Finally, make sure that the SCSI ID for your drive does not conflict with the ID of other SCSI devices in the system.

**SYMPTOM 46-56 The Bernoulli drive takes over the CD-ROM's drive letter in Windows 95/98** You may simply need to switch drive letters between the Bernoulli drive and CD-ROM drive:

1. Open Device Manager and double-click on the Disk Drives entry.
2. Highlight the Iomega Bernoulli drive entry and click on Properties.
3. Click on the Settings page.
4. In the Reserved Drive Letters section, there is a Start Drive Letter and an End Drive Letter setting. Enter the desired drive letter for the Bernoulli drive in both start and end drive entries. (Be sure to use the same drive letter for both start and end.) Click on OK.
5. Double-click on the CD-ROM entry.
6. Highlight your CD-ROM Drive entry and click on Properties.
7. Click on the Settings page.
8. In the Reserved Drive Letters section, there is a Start Drive Letter and an End Drive Letter setting. Enter the desired drive letter for the CD-ROM drive in both start and end entries. (Be sure to use the same drive letter for both start and end.) Click on OK.
9. Click on OK to close Device Manager, and then shut down and restart the computer.



**SYMPTOM 46-57 You encounter an "Invalid Drive Specification" error after installing an Iomega SCSI drive** Your system automatically boots into Windows, and it will not return to the installation program. The error occurs when you try to access the Iomega drive. In most cases, you need to install the Iomega SCSI software from the DOS prompt. Boot the system from a clean disk, and then try installing the Iomega SCSI software again.

**SYMPTOM 46-58 You encounter SCSI communication problems** In virtually all cases, SCSI problems can be traced to hardware problems or driver issues. Check the power connector first, and see that power is provided to the drive. (The drive power light should be on.) Make sure that the SCSI cable is intact and connected securely between the drive and SCSI adapter. Try a new signal cable if possible. Termination may also be a problem. Both ends of the SCSI bus must be terminated properly. Make sure that terminators are installed in the correct places on your SCSI chain. The Bernoulli SCSI drive must be assigned to a SCSI ID that is not in use by any other SCSI device. Finally, check the drivers. Make sure that the drivers for your SCSI adapter and drive are correct, use the correct command-line switches, and verify that you're using the very latest versions. Also check for conflicts between SCSI drivers or other drivers in the system.

**SYMPTOM 46-59 Your IDE Bernoulli drive receives two drive letters** Your plug-and-play (PnP) BIOS is detecting the Bernoulli drive as a fixed drive and assigning one drive letter, but the

Iomega drivers detect the Bernoulli drive *again*—assigning a second drive letter. PnP support for the Bernoulli drive may be a problem. Enter your system's CMOS setup and disable the PnP support for the Bernoulli drive. Save your changes and reboot the system. If you cannot disable BIOS support for the Bernoulli drive, power-up the system with the Bernoulli disk removed. This causes BIOS to overlook the drive, but the Iomega drivers will still assign the drive letter properly.

**SYMPTOM 46-60 The compressed removable media drive(s) are not automatically mounted on startup** This problem can occur under Windows 95 if the computer has two floppy disk drives and the following settings exist in the DRVSPACE.INI file:

```
MaxRemovableDrives=2
AutoMount=1
```

To resolve this issue, you'll need to increase the value of the MaxRemovableDrives= setting to match the total number of removable media drives in the computer. For example, if your computer has two floppy disk drives and a double Bernoulli drive, use MaxRemovableDrives=4 (two floppy disk drives plus two Bernoulli drives). Edit the DRVSPACE.INI file as follows:

1. Locate the DRVSPACE.INI file using Windows Explorer. (It should be in the root directory.) Right-click the file, and then click Properties.
2. Click the Read-only check box to clear it, and then click OK.
3. Double-click the DRVSPACE.INI file to open it.
4. Change the value of the MaxRemovableDrives= setting to match the total number of removable media drives, or set the AutoMount= entry to the drive letters assigned to the removable media drives. For example, if you have a double Bernoulli drive with drive letters D and E assigned to the drive, use the setting AutoMount=DE.
5. Save and close the file; then reboot Windows 95.

When you use an Iomega RCD driver with a double Bernoulli drive, you may receive a "General Failure" error message the first time you access the second drive. This causes automatic activation and automatic mounting to fail. Use an Iomega OAD or SCSI driver to resolve the problem.

# Jaz/Bernoulli Adapter Troubleshooting

**SYMPTOM 46-61 You encounter an error such as "chipset error 0x8" when using a Jaz Jet PCI card** When starting the computer, you find that the Jaz Jet PCI card will display the error, and the computer may lock up. This error is usually caused by a bad connection in the PCI slot.

- *Check the PCI card.* Make sure the SCSI adapter card is seated properly. Shut down your computer, and disconnect the power supply. Disconnect the Jaz drive from the Jaz Jet SCSI adapter card. Remove the case from your computer and locate your SCSI adapter card. Reinsert the card in the *same* slot, pressing firmly on the edge of the card to ensure proper connections. Be sure to bolt the card securely into place. If the error disappears after you restart the computer, you may reconnect the Jaz drive and continue using it normally.

- *Exchange the slot or card.* If the error persists, try the card in another slot. If this corrects the problem, the slot is defective. This will not damage the card, but you may need to replace or upgrade the motherboard at another point in the future. If the card still refuses to work in another slot, the card may be defective, so try another card.

**SYMPTOM 46-62** **Using an Iomega PC2X 8-bit Bernoulli controller may cause the system to crash** According to Iomega, their PC2X 8-bit Bernoulli controller cards may not function properly on 486/33MHz and faster computers. For Windows 95 setup, you may need to run setup with the "ignore hardware detection" parameter, such as:

```
SETUP /I
```

To correct this problem, you'll need to use the controller on a slower computer (rarely a practical option), or install a better Bernoulli controller card in the existing system.

**SYMPTOM 46-63** **The parallel port adapter (PPA-3) does not have a drive letter in Windows 95/98** Parallel port drive problems can almost always be traced to faulty connections, port configuration issues, or driver problems.

- *Check the power/signal connections.* Parallel port drives are powered externally, so ensure that the power pack is working, and see that the power cable is connected properly to the drive. If the drive does not appear to power-up, try a different power pack or drive. Also make sure that you are using a good-quality, known-good parallel port cable that is attached securely at the PC and drive.
- *Isolate the parallel port.* Remove any other devices on the parallel port. Parallel port drives are often very sensitive to devices such as copy protection modules (or dongles), and other "pass-through" devices. Try connecting the drive *directly* to the parallel port. Also disconnect any printers on the parallel port.
- *Check the CMOS setup.* The parallel port's setting may not be compatible with the drive. Reboot the PC and enter CMOS setup. Check to see that the parallel port is configured in EPP or bidirectional mode.
- *Check the SCSI controller.* There is a known incompatibility between the Bernoulli drive and the Adaptec 284x adapter. The Iomega PPA-3 driver does not work with the Adaptec 284x controller. Check with Iomega for an updated SCSI driver. You may also try contacting Adaptec for updated drivers.
- *Check the SCSI drivers.* Open the Device Manager and find the SCSI Controllers entry (even though it is a parallel port device). If there is no such entry, the driver is not installed. If you expand the SCSI Controllers section, there should be an entry for the Iomega Adapter. If not, the driver is not installed. If the Device Manager entry for the Iomega Adapter has a yellow circle with an exclamation mark on it, the interface is configured improperly and is conflicting with other devices in the system.
- *Check the host adapter configuration.* Highlight the Iomega Adapter entry, click on Properties, and then select the Settings page. Find the box marked Adapter Settings, and then type:

  ```
  /mode:nibble /speed:1
  ```

  Save your changes and reboot the system.
- *Try reinstalling the host adapter drivers.* Highlight the Iomega Adapter and select Remove. Then reinstall the drivers from scratch.

- *Check/replace the drive.* Try the drive on another PC. If the drive works on another system, the parallel port is incompatible (or the PPA-3 is not configured properly). If the drive does not work on another PC, try a new Bernoulli drive.

**SYMPTOM 46-64 You encounter an "Invalid Unit Reading Drive <x>" error** Software drivers appear to load properly, and the Bernoulli drive is assigned a drive letter as expected. This often occurs under Windows 3.1x or DOS. In virtually all cases, there is a problem with the SMARTDRV statement in AUTOEXEC.BAT.

- *Check the drive controller BIOS.* There may be a conflict with the BIOS on your PC1616 controller card. If you are not booting from the PC1616, try disabling the PC1616 BIOS with the ISACFG.COM utility accompanying the PC1616 adapter. (You can also obtain the utility from Iomega at **www.iomega.com**.) Reboot the PC. The error should be corrected.
- *Check for SmartDrive.* If you are booting from the PC1616 controller (the Bernoulli drive), leave the controller's BIOS enabled, but try loading SMARTDRV "high" (into the upper memory area). If you cannot load SMARTDRV "high," disable its command line in AUTOEXEC.BAT and reboot the system; then load SMARTDRV from the DOS command line once the PC initializes. If problems persist, try the new GUEST program from Iomega. (Make sure you're using the latest version.) Once you install the GUEST.EXE and GUEST.INI files in your PC, enter the path and command line for GUEST near the end of AUTOEXEC.BAT (before Windows starts), such as:

```
c:\zinstall\guest.exe
```

If these solutions fail to correct the error, SMARTDRV cannot be loaded and will need to be REMarked out of the AUTOEXEC.BAT file entirely.

If you use the GUEST program, you cannot compress the disks using DISKSPACE. Also, GUEST does not support the PC80 or PC90 adapter cards.

**SYMPTOM 46-65 You encounter problems using the parallel port interface (PPA-3) with a Bernoulli drive** Problems with the PPA-3 are usually related to installation issues, but drivers can also prevent the PPA-3 from responding.

- *Check the power/signal connections.* The external device must be turned on before powering up the computer. If the device refuses to power-up, check the power pack and its connection to the Bernoulli drive. Make sure that the signal cable is the proper length and is connected securely to the drive and system. Unusually long cables may cause read/write errors.
- *Isolate the parallel port.* Try disconnecting the printer or other parallel port devices from the system, and try the PPA-3 as the only parallel port device attached to the parallel port.
- *Check the drive termination.* The PPA-3 board is terminated, and the last drive attached to the PPA-3 cable must also be terminated. If the Bernoulli drive is the last device attached to the PPA-3, make sure it is terminated properly.
- *Check the driver installation.* You need either OAD 1.3 (or higher), or Iomega SCSI 2.0 (or higher) to use the PPA-3 board. Once the drivers are installed, you should see several lines in CONFIG.SYS, such as

```
REM OAD 1.3 or later:
DEVICE=C:\OADDOS\ASPIPPA3.SYS /L=001
```

```
DEVICE=C:\OADDOS\DOSCFG.EXE /M1 /V /L=001
DEVICE=C:\OADDOS\DOSOAD.SYS /L=001
```

or

```
REM Iomega SCSI 2.0 or later:
DEVICE=C:\IOMEGA\ASPIPPA3.SYS /L=001
DEVICE=C:\IOMEGA\SCSICFG.EXE /V /L=001
DEVICE=C:\IOMEGA\SCSIDRVR.SYS /L=001
```

Try some ASPIPPA3.SYS command-line options. The ASPIPPA3.SYS driver provides several important command-line options (shown following) that can be employed to streamline its operation. If the ASPIPPA3.SYS command line generates any errors, you can decipher the errors using Table 46-2.

**/MODE=n**
/MODE=1 is the most compatible mode.
/MODE=2 is the Bi-directional Transfer Mode. Your PC must have a bidirectional parallel port.
/MODE=3 is Enhanced Mode, which requires an Intel SL series microprocessor (such as 80386SL, 80486SL, or 82360SL).

/SL360=Yes/No
Tells the ASPIPPA3.SYS driver whether the computer uses an Intel SL microprocessor chipset. If you're not sure (or a divide overflow occurs during loading), set to /SL360=No

/SPEED=n
Values 1 to 10 are available. Start by setting /SPEED=1. If that solves the problem, continue to increase the value until the problem recurs; then use highest value that functions properly. If you are still not sure which value to use, set /SPEED=1.

/SCAN
Forces the ASPIPPA3.SYS driver to check all parallel port addresses. There are three addresses possible: 278h, 378h, and 3BCh.

/Busy_Retry=Yes
Forces the driver to retry several times when a device is busy (instead of just reporting an error).

**/Port=<Address>**
Used to manually specify the port address of the parallel port.

**SYMPTOM 46-66** **The Iomega PPA-3 locks up on installation** Chances are that the ASPIPPA3.SYS driver is causing the computer to lock up, or is causing a "Divide by zero overflow" error

- *Check the power/signal connections.* The external device must be turned on before powering up the computer. If the device refuses to power-up, check the power pack and its connection to the Bernoulli drive. Also make sure that the signal cable is the proper length and is connected securely to the drive and system. Unusually long cables may cause read/write errors.
- *Check the drive termination.* The PPA-3 board is terminated, and the last drive attached to the PPA-3 board must also be terminated. If the Bernoulli drive is the last device attached to the PPA-3, make sure it is terminated properly by setting the termination switch on the back of the drive to "I." If the

**TABLE 46-2 ASPIPPA3.SYS ERROR MESSAGES**

| ERROR CODE | POSSIBLE CAUSE |
|---|---|
| 4001 | Command-line syntax error. |
| 4002 | Adapter initialization failed—possible problem with the adapter or the parallel port. |
| 4003 | User specified a port address, and there was no adapter there. |
| 4004 | No adapter found. |
| 4005 | User pressed both SHIFT keys to bypass this driver. |
| 4006 | Current DOS version is not supported by this driver. |
| 4100 | Conflicting port address was detected in command line. |
| 4107 | Improper speed value. Acceptable range is 0 to 10 decimal. |
| 4108 | Bad value—value outside limits. |

switch is set to "O," turn off the drive, set the switch to "I," turn the drive on, and reboot the PC. Update the ASPIPPA3.SYS driver. Try adding the /SL360=NO switch to the command line, such as:

```
DEVICE=C:\IOMEGA\ASPIPPA3.SYS /SL360=NO
```

Save your changes to CONFIG.SYS and reboot the computer.

- *Isolate PPA-3 problems.* Try the PPA-3 board and Bernoulli drive on another PC. If they work on another system, the original parallel port is probably incompatible. If the PPA-3 and drive do not work on another system, try another set of cables. If problems persist, try the Bernoulli drive directly on a SCSI adapter. If the drive works directly, the PPA-3 has probably failed. If the drive still does not work, it has probably failed.

## JAZ DRIVE TROUBLESHOOTING

**SYMPTOM 46-67 You have problems when running Iomega Jaz Tools under Windows 95** When Iomega Tools for Windows 95 is installed on your computer, the system may crash (or you may receive an error message referencing the IOMEGA.VXD file) when you attempt to use the Iomega Jaz Tools. This occurs most frequently under FAT32 partitions of OSR2. Chances are that you're using an old version of Jaz Tools for Windows 95 (earlier than version 5.0). Early versions of Jaz Tools are not compatible with FAT32 (OSR2). You'll need to uninstall the Jaz Tools package, and then install version 5.0 or later, which is FAT32 aware.

**SYMPTOM 46-68 The system runs in "DOS Compatibility Mode" when booting from a removable media drive** When your PC is configured to boot from a removable media drive, the Performance tab in System properties may show that the computer is using "DOS Compatibility Mode" for virtual memory. This is known to be a frequent problem under Windows 95 and OSR1, and is known to occur with Zip drives, Jaz drives, and SyQuest EZ drives (and may also occur with other IDE or SCSI removable media drives). This problem does not occur with Windows 95 OEM Service Release 2. To avoid this problem, configure Windows 95 so that the Windows swap file is located on a nonremovable disk:

1. In Control Panel, double-click System.
2. Click the Performance tab, and then click Virtual Memory.
3. Click "Let me specify my own virtual memory settings," click a nonremovable disk in the Hard Disk box, click OK, and then click OK again.

**SYMPTOM 46-69 The Jaz drive isn't detected when connecting it through a SCSI adapter card** In many cases, this is a software problem. Boot clean (from a bootable floppy disk), and then run your GUEST software from the Jaz installation disk by typing

```
a:\guest
```

If the drive is detected using the GUEST utility under DOS, the problem is software related. Try removing the Jaz drivers and software utilities, and then reinstall the latest software version from scratch. If the problem is not resolved, the trouble is hardware related. Verify that there are no other devices using the same IRQ as your SCSI adapter. Also make sure that your Jaz drive is correctly terminated and is not using the same SCSI ID as another SCSI device. Check all power connections to the Jaz drive. If the Jaz drive doesn't respond and the power connections are secure, the drive is probably defective and should be replaced.

Try the Jaz drive on a different computer. If the drive is detected properly on a different computer, there may be a problem with the first computer's configuration. If the Jaz drive is not detected on another computer, the Jaz drive may be defective.

**SYMPTOM 46-70 The Jaz drive isn't detected when connecting it through a Jaz Traveler** In many cases, this is a software problem. Boot clean (from a bootable floppy disk), and then run your GUEST software from the Jaz installation disk by typing

```
a:\guest
```



If the drive is detected using the GUEST utility under DOS, the problem is software related. Try removing the Jaz drivers and software utilities, and then reinstall the latest software version from scratch. If the problem is not resolved, the trouble is hardware related. The Jaz drive must be connected directly to the parallel port. The Jaz drive will not work properly if connected through a switch box, "dongle," or software key. Also verify that no other device is using IRQ 7. Check all power connections to the Jaz drive. If the Jaz drive doesn't respond and the power connections are secure, the drive is probably defective and should be replaced.

Try the Jaz drive on a different computer. If the drive is detected properly on a different computer, there may be a problem with the first computer's configuration. If the Jaz drive is not detected on another computer, the Jaz drive may be defective.

**SYMPTOM 46-71 The PC locks up (or does not finish booting) when connected to a SCSI Jaz drive** Make sure you're powering on the Jaz drive and your computer at the same time. (Try connecting both the computer and the Jaz drive to a power strip, and power the system from the power strip.)

Try removing the Jaz drive and SCSI card from your computer. If the computer still won't boot, there may be a problem with your system's configuration. Try the Jaz drive on a different computer. If the system boots after removing the Jaz drive, the drive may be defective. If the Jaz drive works properly on another computer, you may need to reconfigure the system (or the SCSI adapter card). If the computer locks up, boot clean and run the GUEST utility from the Jaz installation disk by typing

```
a:\guest
```

If the drive is detected using the GUEST utility under DOS, the problem is software related. Try removing the Jaz drivers and software utilities, and then reinstall the latest software version from scratch. Try isolating any conflicting software. Open the Close Program dialog box by pressing CTRL+ALT+DEL. Close open programs by highlighting a program, and then choose the End Task button. (Do not close Explorer.) Remember to close one application at a time; then try your Jaz drive again. Repeat this process until the problem is resolved. Once the problem is resolved, the last application that was closed is the one causing the conflict.

If the problem is not resolved, the trouble is hardware related. Verify that there are no other devices using the same IRQ as your SCSI adapter. Also make sure that your Jaz drive is correctly terminated and is not using the same SCSI ID as another SCSI device. Check all power connections to the Jaz drive. If the Jaz drive doesn't respond and the power connections are secure, the drive is probably defective and should be replaced.

Try the Jaz drive on a different computer. If the drive is detected properly on a different computer, there may be a problem with the first computer's configuration. If the Jaz drive is not detected on another computer, the Jaz drive may be defective.

**SYMPTOM 46-72** **An incorrect icon appears for a Jaz drive** Ideally, the icon should be a green Jaz drive, so the actual problem depends on the icon that is shown in Windows Explorer.

First, the Jaz icon may look like a floppy or hard disk drive icon. Chances are that there's a real-mode TSR or driver interfering with the Jaz drive. Restart your computer. When you see the message "Starting Windows XX…," press F8. From the Startup menu, choose Step-by-Step Confirmation. As each step is processed, answer yes to every entry except "Process your startup device drivers (CONFIG.SYS)" and "Process your startup command file (AUTOEXEC.BAT)." This will prevent real-mode drivers from loading at startup. If the incorrect Jaz icon is now replaced with the correct green Jaz icon, there is a driver conflict in either your AUTOEXEC.BAT or CONFIG.SYS file. You'll need to systematically disable each real-mode command line until you identify the offending command line. If the Jaz icon is not the correct green Jaz icon, then there is a Windows driver causing the problem. You may need to remove the Jaz drivers and other software and update/reinstall that software from scratch.

If the Jaz icon takes any other form, there may be a problem with Imgicon software. Open the Close Program dialog box by pressing CTRL+ALT+DEL. Highlight the Imgicon entry, and then click the End Task button. Click on Start, point to Programs, Startup, and then click on Iomega Disk Icons. If the problem persists, reboot your computer and run ScanDisk. Correct any file system problems indicated by ScanDisk. If the problem still continues, delete and then reinstall the Iomega Tools software.

**SYMPTOM 46-73** **The system locks up while installing Jaz Tools software** In most cases, you'll notice lockups when launching the Iomega setup software. This is usually caused by a conflict with another driver that is loading during Windows 95/98 startup. To determine which file is causing this conflict, close all open programs.

1. Open the Close Program dialog box by pressing CTRL+ALT+DEL.
2. Close open programs by highlighting a program, and then click the End Task button. (Do not close Explorer.)
3. Close one application at a time, and then try your Jaz drive again.
4. Repeat this process until the problem is resolved. Once the problem is resolved, the last application that was closed is the one causing the conflict.

Once you have determined which application is causing the conflict, you should discontinue the use of that application when using your Jaz drive, or obtain an updated version of that software.

**SYMPTOM 46-74** **You receive an "insufficient disk space" message writing to the Jaz disk under DOS** This error message may be caused if the disk is full, if it exceeds the file limit imposed by your operating system, or the disk is defective.

- *Check the disk space.* Verify that the disk has enough space available to hold the files you wish to copy.
- *Check the operating system.* Make sure that you do not exceed the file limit of your operating system. DOS will not allow you to include more than 511 files in the root directory. Switch to the drive letter of your Jaz drive. From the drive prompt, type **dir** and press ENTER. The number of files in the root directly should be less than 511. Otherwise, you'll have to move individual files into other directories to reduce the number of files on the root directory.
- *Try cycling power.* If the error persists, try shutting down the computer (and Jaz drive). Then restart the system from a "cold" start.
- *Try several different disks.* If the error message occurs on only one disk, try reformatting that disk. (Formatting the disk will remove all data from the disk.) If reformatting the disk doesn't help, discard the disk and use a fresh one. If you're receiving the error message with more than one disk, the drive may be defective.

**SYMPTOM 46-75** **There are no drives on your system supported by Iomega Tools in DOS** Boot the system clean, and then run GUEST from the Jaz installation disk by typing **a:\guest**. If the drive is detected using the GUEST utility under DOS, the problem is software related. Try removing the Jaz drivers and software utilities, and then reinstall the latest software version from scratch. Try isolating any conflicting software. Open the Close Program dialog box by pressing CTRL+ALT+DEL. Close open programs by highlighting a program, and then choose the End Task button. (Do not close Explorer.) Remember to close one application at a time. Then try your Jaz drive again. Repeat this process until the problem is resolved. Once the problem is resolved, the last application that was closed is the one causing the conflict.

If the problem is not resolved, the trouble is hardware related. Verify that there are no other devices using the same IRQ as your SCSI adapter. Also make sure that your Jaz drive is correctly terminated and is not using the same SCSI ID as another SCSI device. Check all power connections to the Jaz drive. If the Jaz drive doesn't respond and the power connections are secure, the drive is probably defective and should be replaced.

Try the Jaz drive on a different computer. If the drive is detected properly on a different computer, there may be a problem with the first computer's configuration. If the Jaz drive is not detected on another computer, the Jaz drive may be defective.

**SYMPTOM 46-76** **The GUEST utility cannot locate the Jaz Tools disk** Verify that the Jaz Tools disk is in your Jaz drive. If the Jaz Tools disk is already inserted into your Jaz drive, eject and then reinsert the Jaz Tool disk. You may also wish to try another Jaz Tools disk. Next, verify that your Jaz drive is assigned a drive letter. Double-click the My Computer icon. There should be an icon representing the Jaz drive. If your Jaz drive is not assigned a drive letter, you'll need to connect the drive properly.

Close all open programs. Open the Close Program dialog box by pressing CTRL+ALT+DEL. Close open programs by highlighting a program, then clicking the End Task button. (Do not close Explorer.) Close

one application at a time, and then try your Jaz drive again. Repeat this process until the problem is resolved. The last application that was closed is the one causing the conflict. Once you've determined which application is causing the conflict, discontinue the use of that application while using your Jaz drive (or obtain an updated version of the software).

**SYMPTOM 46-77 No drive letters were added for the Jaz drive in DOS** Boot the system clean, and then run GUEST from the Jaz installation disk by typing **a:\guest**. If the drive is detected using the GUEST utility under DOS, the problem is software related. Try removing the Jaz drivers and software utilities, and then reinstall the latest software version from scratch. Try isolating any conflicting software. Open the Close Program dialog box by pressing CTRL+ALT+DEL. Close open programs by highlighting a program, and then choose the End Task button. (Do not close Explorer.) Remember to close one application at a time; then try your Jaz drive again. Repeat this process until the problem is resolved. Once the problem is resolved, the last application that was closed is the one causing the conflict.

If the problem is not resolved, the trouble is hardware related. Verify that there are no other devices using the same IRQ as your SCSI adapter. Also make sure that your Jaz drive is correctly terminated and is not using the same SCSI ID as another SCSI device. Check all power connections to the Jaz drive. If the Jaz drive doesn't respond and the power connections are secure, the drive is probably defective and should be replaced.

Try the Jaz drive on a different computer. If the drive is detected properly on a different computer, there may be a problem with the first computer's configuration. If the Jaz drive is not detected on another computer, the Jaz drive may be defective.

**SYMPTOM 46-78 You see an error indicating that the Jaz disk is not formatted** First verify that you're using a PC-formatted disk. (A Mac-formatted Jaz disk will not work in a PC.) Try several different Jaz disks. If the error message occurs on only one disk, try reformatting that disk. (Remember that formatting the Jaz disk will remove all data from that disk.) If you cannot format the suspect Jaz disk, it may be defective and require replacement. If you're receiving the error message with any Jaz disk (or the disk will not format on your drive), the drive may be defective and need to be replaced.

**SYMPTOM 46-79 You encounter a "general failure reading drive" message in DOS** In many cases, this is a disk problem. First check your connections and confirm that the Jaz drive's signal and power cables are attached properly. Verify that you're using a PC-formatted disk (a Mac-formatted Jaz disk will not work in a PC), and compare results with several different Jaz disks. If the error message occurs on only one disk, try reformatting that disk. (Remember that formatting the Jaz disk will remove all data from that disk.) If you cannot format the suspect Jaz disk, it may be defective and require replacement. If you're receiving the error message with any Jaz disk (or the disk will not format on your drive), the drive may be defective and need to be replaced.

**SYMPTOM 46-80 You get a "disk full" error even though there is still space on the Jaz disk under Windows 95/98** In virtually all cases, you've exceeded the file limit imposed by the operating system (though in a few cases, a defective disk may cause this error message). Verify that the Jaz disk has enough room available to contain the files you wish to copy. The number of files you see when you first open your Iomega drive cannot exceed the limit imposed by your operating system (typically 511 files under DOS and Windows 95/98). If the number of files exceeds this limit, you will have to move individual files into another folder (usually on your hard drive) to temporarily reduce the number of files, and make a new folder on your Jaz disk. You may then move the files back to your Iomega disk:

1. Click on Start and select Windows Explorer.
2. Make a new folder on your hard drive by clicking File, New, and selecting Folder.
3. Type a name for the new folder.
4. Move two or more files from the root directory of your Jaz disk into the newly created folder.
5. Move the new folder from your hard drive to your Jaz drive.
6. Move other files from the root directory of your Jaz drive to this new folder to make additional space.

If the problem persists with a certain disk, compare results with several different Jaz disks. If the error message occurs on only one disk, try reformatting that disk. (Remember that formatting the Jaz disk will remove all data from that disk.) If you cannot format the suspect Jaz disk, it may be defective and require replacement. If you're receiving the error message with any Jaz disk (or the disk will not format on your drive), the drive may be defective and need to be replaced.

**SYMPTOM 46-81 When backing up, you receive an error indicating that "disk linking is not supported under Windows 95/98"** This is a problem with Microsoft Backup. It does not support disk linking over multiple Jaz disks. Instead, you should remove Backup and install Iomega's "1-Step Backup for Zip and Jaz" software (part of the Iomega Tools software bundle).

To install Iomega Tools for Windows 95/98, put the Jaz installation floppy in the A: drive. Click Start and select Run. In the Open box, type **a:\guest95** and click OK. Put your Jaz Tools disk into the Jaz drive. Double-click on the My Computer icon, and then double-click on the Jaz drive icon. You should see a folder called W95stuff. Double-click on the W95stuff folder, and then double-click on setup95.exe. Follow the screen instructions to complete the installation. Now try backing up with the Iomega software.



**SYMPTOM 46-82 You encounter a "fatal exception" error when using the Copy Machine software for your Jaz drive** In virtually all cases, the problem is caused by the Auto Spin-Down/Eject feature in the Iomega Copy Machine software. You'll need to disable the feature under Windows 95/98. Start the Iomega Copy Machine software by clicking its icon in the Iomega Tools folder. Select Options, and then choose Runtime. Deselect the Auto Spin-Down/Eject option by clearing the check box. Finally, choose OK to accept the changes.

**SYMPTOM 46-83 You see an error such as "program performed an illegal operation"** Try rebooting the system first. (Make sure to cycle power to the drive also.) Close all open programs to clear possible conflicting software. Open the Close Program dialog box by pressing CTRL+ALT+DEL. Close any open programs by highlighting a program and choosing the End Task button. (Do not close Explorer.) Close one application at a time. Then try your Jaz drive again. Repeat this process until the problem is resolved. Once the problem is resolved, the last application that was closed is the one causing the conflict. You may be able to patch or update the offending program. As an alternative, you may be able to uninstall and reinstall the Iomega Tools software.

**SYMPTOM 46-84 You receive a DOS error such as "Cannot create or replace: make sure the disk is not full or write protected"** You may also see this as a "General failure writing to drive" error or a "Drive does not exist" error. In most cases, the Jaz disk is formatted improperly, or the disk is defective. Start by checking the disk format. You must use a PC-formatted disk. (A Mac-formatted disk will not work on a PC.) Try several different disks. If the error message occurs on only one disk, try reformatting that disk. (Remember that formatting the disk will remove all data from the disk.) A defec-

tive disk should be replaced. If you're receiving the error message with any disk (or the disk will not format on that drive), the drive may be defective. Try another drive.

**SYMPTOM 46-85 You receive an error such as "ASPI for Win32 not installed" when working with a SCSI Jaz drive** This error message is known to occur while trying to install the IomegaWare software, and is caused by a conflict with the MSWHEEL application (which is part of the Microsoft IntelliMouse Pro). The MSWHEEL software controls the functionality of the wheel on the mouse. Start by closing the MSWHEEL application:

1. Open the Close Program dialog box by pressing CTRL+ALT+DEL.
2. Highlight the MSWHEEL application by clicking on Mswheel.
3. Click on the End Task button to close the application.

Now manually install the Iomega SCSI driver in Windows 98/95:

1. Insert the IomegaWare CD into your CD-ROM drive. If the installation begins automatically, cancel the installation process.
2. Click on Start, highlight Settings, and then click on Control Panel.
3. Double-click on Add New Hardware from the Control Panel.
4. Click on the Next button to start the installation process.
5. If you're prompted to have Windows search for new hardware, choose No.
6. Choose SCSI Controllers from the Hardware Types list, and then click on Next.
7. Choose Have Disk from the next screen.
8. From the "Install from disk" prompt, click on the Browse button.
9. From the Drives drop-down list, choose the drive letter of your CD-ROM drive.
10. From the Folders list, double-click on the w9xstuff folder and select OK twice.
11. In the Models list, choose the driver for the Zip or Jaz drive you are installing, as shown below:

| IF YOU'RE USING... | USE THIS DRIVER... |
|---|---|
| Jaz or Zip drive with a PCMCIA card | Iomega Jaz and Zip Card PCMCIA SCSI Host Adapter |
| Jaz drive with a Jaz Jet ISA card | Iomega Jaz Jet ISA SCSI Host Adapter |
| Jaz drive with a Jaz Jet PCI card | Iomega Jaz Jet PCI SCSI Host Adapter |
| Zip parallel port drive | Iomega Parallel Port Interface |
| Zip SCSI drive with a Zip Zoom PNP card | Iomega Zip Zoom PNP SCSI Host Adapter |
| Zip SCSI drive with a Zip Zoom card | Iomega Zip Zoom SCSI Host Adapter |

12. After highlighting the driver, select Next and click Finish.
13. Restart your computer.

Finally, install the IomegaWare software manually:

1. Click on Start, then Run.
2. Click on Browse. In the Browse dialog box, highlight your CD-ROM drive by clicking in the "Look in" drop-down box.

3. Highlight the file setup.exe and click on the Open button.
4. In the Open box (after the path and file name), type a space, then **/N**. This will prevent GUEST from running during the installation.
5. Follow the prompts to complete the installation of your IomegaWare software.

**SYMPTOM 46-86** **You receive an "INST30" error with your Jaz disk under Windows 95/98** When you attempt to install IomegaWare software, you may receive the following error message: "ISINST30—this application performed an illegal operation and will be shut down." In virtually all cases, the problem is due to a software conflict or corruption. Start by closing any background software. Open the Close Program dialog box by pressing CTRL+ALT+DEL. Close each application (one at a time) by highlighting an application and clicking on the End Task button. Remember not to close Explorer. If the error disappears, the *last* program to be closed was responsible for the error. You may need to stop using that software while installing the Iomega software (or the Jaz drive). In some cases, you may be able to patch or update the offending software. If the problem persists, you may need to remove and/or reinstall the IomegaWare software from its installation CD.

**SYMPTOM 46-87** **You get an error such as "Disk not in the drive" when using IomegaWare 2.0 under Windows 95/98** If you receive the error message "Disk not in the drive" when a disk is actually inserted in the drive, it may be that the disk has been read/write protected. Double-check your Jaz drive to be sure a Jaz disk is inserted. Eject the disk and reinsert it to ensure that it is positioned properly. Also try several different disks. If no disks are detected, the drive may be defective. If only one disk is causing the problem (and the steps below don't help), then the disk itself may be defective.

If the problem persists, check the read/write protection status on the Jaz disk. If the disk is protected, it may not respond until it is unprotected. Make sure the Jaz disk is inserted properly in the drive. Locate the Iomega drive icon where the disk is inserted, and then click on it. If you don't have an IomegaWare shortcut on your desktop, click Start, select Programs, select Iomega, and then double-click on the IomegaWare icon. From the pop-up menu, choose Properties located at the bottom of the list. In the dialog area labeled "Disk," there is a padlock symbol, which will indicate whether the disk has been protected or locked. If the padlock is displayed as closed (or locked), the disk has been protected using the read/write protection tool.

If you have forgotten the password, you will be given the option to perform a "long format" on the disk. Performing a long format on the Jaz disk will erase all information.

If the Jaz disk is protected, you'll need to unlock the read/write-protected disk now. Locate and click on the Iomega drive icon where the disk is inserted. If you don't have an IomegaWare shortcut on your desktop, click Start, select Programs, select Iomega, and then double-click on the IomegaWare icon. From the pop-up menu, select Properties located at the bottom of the list. Click on the Change button in the Disk section. In the Unprotect window, type the password for the disk and click OK.

There is an option within the Unprotect window that allows you to remove the read/write protection *temporarily*. Checking this option will allow you to access the disk in that session, but once the disk is ejected, it will be read/write protected again.

**SYMPTOM 46-88** **The Jaz drive fails to spin up** This is a surprisingly common problem that can be caused by three issues. First check the drive's power connections. If the drive is not receiving adequate power, it will not spin up a Jaz disk. If the drive is external, you may need to replace the Jaz drive's power adapter. The disk itself may also be at fault. Make sure that the disk is inserted properly and

securely. (You may need to eject and reinsert the disk.) Also try a new disk. If a new disk works, the original disk may be damaged or defective. Finally, boot the system clean from a floppy disk and try the drive/disk again from the GUEST utility under DOS. If the problem clears, there may be some DOS (or Windows) utility software that is conflicting with the disk. If a clean boot fails to clear the problem, the Jaz drive itself may be defective.

**SYMPTOM 46-89 The Jaz drive will not format a disk** In many cases, this occurs when the Jaz disk is read/write protected. So you'll need to verify that the disk is not protected. Double-click the My Computer icon, and then right-click on the Jaz drive. From the drop-down menu, select the Protect option. In the Disk Protect Options dialog, choose Remove Protection. If the disk is password protected, you must supply the password that was used initially to write-protect the disk before removing the protection.

If the disk is not protected, you should try several different disks. If other unprotected Jaz disks format normally, the original disk is probably defective. If the problem continues with more than one disk, try a clean DOS boot and enable the drive using the GUEST utility. If problems disappear with other disks, you're probably getting software interference from one or more TSRs or drivers on the system. If the problem persists on any disk (even after booting the system clean), the Jaz drive may be defective.

**SYMPTOM 46-90 The computer locks up after running parallel port accelerator software** This problem may occur after installing the parallel port driver and then running the Parallel Port Accelerator utility. Running the Parallel Port Accelerator utility will sometimes cause the drive not to work (or even cause the system to lock up during boot). Turn off the PC, disconnect the drive, and try rebooting the computer with the drive's signal cable disconnected. The system will almost certainly boot normally. Now remove the system changes made by your Parallel Port Accelerator software:

1. Right-click the My Computer icon on your desktop.
2. Select Properties from the menu.
3. Click on the Device Manager tab.
4. Click on the plus sign (+) next to SCSI controllers.
5. Double-click on Iomega Parallel Port Interface.
6. Click on the Settings tab.
7. Remove all the information from the Adapter Settings box.
8. Click OK, and then click OK again.
9. Click Yes when prompted to restart your computer.

**SYMPTOM 46-91 You cannot "long format" a 1GB Jaz disk in a 2GB Jaz drive** The internal read/write heads on a 2GB Jaz drive are different from those on a 1GB Jaz drive. A short format will work correctly on the 1GB Jaz disk, but a long format will fail. Use only a 1GB Jaz drive to perform a long format on a 1GB Jaz disk.

**SYMPTOM 46-92 The Jaz drive makes a grinding noise when reading or writing to a disk** This is a very serious symptom that may indicate a mechanical problem with the drive. Carefully eject and reinsert the Jaz disk. Do not try another disk in the drive. If the drive is defective, it may cause damage to other Jaz disks. Immediately eject the disk if the grinding noise begins again. If the noise returns, try the disk on another Jaz drive. If the disk is readable on another Jaz drive (and there is no grinding noise), chances are that the original Jaz drive is defective and should be replaced.

# SyQuest EZ-Flyer and SyJet Drives

SyQuest is another drive manufacturer that has capitalized on the popularity of removable media drives. Rather than using the flexible disk media of Bernoulli technology, SyQuest chose to employ the rigid platter/floating head approach used by more conventional hard drives. As with Iomega Jaz drives, SyQuest drives are a bit closer than Bernoulli drives to being "real" hard drives. The traditional 44MB and 88MB SyQuest drives of years past have been replaced by products such as the EZ-Drive (135MB), EZ-Flyer (230MB), and SyJet (1.5GB) drives.

As of April 1999, SyQuest has sold off virtually all of its resources to Iomega and changed its name to SYQT. It is unlikely that SYQT will continue to provide substantial support for its products, and drive failures may require upgrading to another make and model. The last information available on SYQT is SYQT, Inc., Suite 222, 21060 Homestead Road, Cupertino, CA 95014; e-mail **info@syquest.com**. You can learn more about the situation at **http://www.syquest.com/infaqans.html**.

## EJECTING A "POWERED" SYQUEST CARTRIDGE

1. Verify that the Power LED glows green.
2. Exit all applications that use the cartridge, and close all open files on the cartridge.
3. Software unlock the cartridge (if you use Windows 3.1x, OS/2, or DOS only).
4. Press the eject button on the front of the drive.
5. Remove the cartridge and place it in its protective case.

If you remove or eject the cartridge, you must pull it out halfway or more *before* you can reinsert it. This built-in feature prevents partial insertion.



## EJECTING AN "UNPOWERED" SYQUEST CARTRIDGE

1. Wait for 45 to 60 seconds after power is turned off.
2. Open the drive door and remove the cartridge.
3. Return the cartridge to its protective case for storage or transport.

Never manually eject a cartridge while the power is on. This can damage the drive.

## SYQUEST DRIVE AND CARTRIDGE TIPS

- Never eject a cartridge without the system knowing about it. File Share opens a hidden file. If this file is not closed properly, the directory of that cartridge may be damaged and inaccessible until the system is restarted.
- Do not load multiple SyQuest drivers if you can avoid it.
- Never optimize a data cartridge without a backup.
- It is better to place the cartridge in its protective case when not in use (instead of the cartridge being partially inserted in the drive).

- Do not turn off power to the drive in order to remove the cartridge. If power has been turned off, wait at least 45 seconds before removing the cartridge. Removing the cartridge *before* it has stopped spinning may result in damage to the recording surface and read/write head.
- Never disconnect/connect the drive and the computer while power is on.
- Always remove the data cartridge *before* moving the drive or the computer.
- Do not apply cleaners or lubricants of any kind to the drive or cartridge.
- To keep the cartridge free of dust or contamination (and to protect it from shock damage), always store it in the protective case when the cartridge is not installed in a SyQuest drive.
- Never open the cartridge. Opening the cartridge door may result in contamination of the recording surface, possible damage to the cartridge, and loss of data.
- Use only cartridges that are at "room temperature." Allow the cartridge to stabilize at room temperature before using it (for example, when moving the cartridge from a cold car into a warm room, or from a warm car into an air-conditioned room).
- Do not use a bulk tape eraser to erase the cartridge. The cartridge has magnetic calibration information written on the recording surface, which bulk erasing will remove. This *cannot* be restored.
- Do not expose the cartridge to magnetic fields. Note that the X-ray machines at airports will *not* affect the data stored on SyQuest cartridges.
- Use only the cartridge label provided. Do not apply cartridge labels that will interfere with the operation of the drive or cartridge door.
- Do not write on the cartridge labels with a graphite pencil. The graphite dust from the pencil could contaminate the recording surface.
- Place only one cartridge label on the cartridge at a time. More than one label may interfere with the insertion and ejection of the cartridge.

## GENERAL SYQUEST DRIVE TIPS

- *Make the system safe.* Turn off and unplug the PC (and drive if it's external).
- *Check your cabling.* Verify that the striped or colored edge of the EIDE cable attaches to pin 1 of the EIDE devices and the EIDE controller port. For most EIDE devices, the striped edge of the cable should be nearest to the DC power connector. Make sure that all ribbon-cable connectors fully engage 40 pins and that no pins are bent. See that all power connectors to the EIDE devices are fully seated. If you're using a parallel port drive, see that the external cable is attached securely at both ends.
- *Check the jumper settings.* Verify that the drive is jumpered as a master or slave device as appropriate. For SCSI drives, the drive should have its own SCSI ID. If the drive is cabled with other devices, check their jumpers as well.
- *Check the CMOS setup.* Restore power to the system and drive and go into the CMOS setup. Select the setup screen that lets you manage hard drives. Locate the SyQuest entry (for example, SyJet EIDE) as the Primary Master, Primary Slave, Secondary Master, or Secondary Slave. If the BIOS does not detect the SyQuest drive automatically, you'll need to enter the drive geometry manually:

  Logical Block Addressing (LBA) mode: Yes
  Multiple sector read/write: 2, 4, 6, 8, or 16 sectors at a time
  Fast Programmed I/O mode: 0 through 4

Cylinders: 2906
Heads: 16
Sectors per track: 63

SyQuest drives ignore Write Precomp and Landing Zone entries. You may enter any valid number for these parameters.

- *Reboot the computer.* If the drive still does not appear, use the Add New Hardware wizard to detect and install the SyQuest drive.

## SYQUEST DRIVE TROUBLESHOOTING

**SYMPTOM 46-93** **Your EIDE SyQuest SparQ or SyJet drive doesn't work properly under a Phoenix 4.0 (v.6.0) BIOS** In most cases, you find that your system locks up while loading Windows 95/98, or when attempting to access the drive while some EIDE removable cartridge hard drives (over approximately 500MB) are attached to your computer. The solution to this problem is almost always to perform a BIOS upgrade, so contact your system or motherboard maker to see if there's an update available. If there is no BIOS update available, you may consider upgrading your drive controller with a model offering its own onboard BIOS.

**SYMPTOM 46-94** **Windows 95/98 locks up with a SparQ 1.0GB drive attached** The computer will lock up while loading Windows (or when attempting to access the drive) when the following three conditions are met:

- You have a SparQ drive with firmware revision SA_0032 or SA_0033.
- You have a computer that has a 1997 or 1998 release of Phoenix BIOS.
- Windows DMA support for the SparQ drive is enabled.

To correct this problem, you'll need to turn off the DMA support for the drive. SyQuest recommends that you perform this using the SyQuest DMA wizard:

1. Restart your computer. When the "Starting Windows" message is displayed, press F8.
2. Select the Safe Mode option and press ENTER.
3. While in Safe Mode, run the SyQuest DMA wizard by double-clicking its icon.
4. Follow the on-screen prompts to disable Windows DMA support for the drive.
5. When the wizard finishes, restart your system for the changes to take effect.

Other SyQuest drives and other versions of the SparQ firmware do not have this problem.

**SYMPTOM 46-95** **A SparQ parallel port drive doesn't work when installing Windows 98** You'll generally see a "Fatal error" message during the hardware detection phase of Windows 98 setup (or Windows 98 simply will not recognize the drive). This is known to be a driver problem. Replace the SyQuest EPATHD.MPD driver located in the \Windows\System\Iosubsys folder. One option is to download the files PI_355_1.EXE and PI_355_2.EXE (**www.syquest.com**). These contain an updated version of EPATHD.MPD. Now reinstall your drive using these new files.

**SYMPTOM 46-96** **Your EZ-Flyer 230 or EZ-135 drives do not work after upgrading to Windows 98** You'll generally see a "Fatal error" message during the hardware detection phase of Windows 98 setup (or Windows 98 simply will not recognize the drive). This is known to be a driver problem. Replace the SyQuest EPATHD.MPD driver located in the \Windows\System\Iosubsys folder. One option is to download the PI_352_2A.EXE file (**www.syquest.com**). This contains an updated version of EPATHD.MPD. Now reinstall your drive using these new files.

**SYMPTOM 46-97** **You encounter an error indicating "invalid media"** You cannot copy files to the SyQuest cartridge. This is almost always caused by a media mismatch (for example, you're probably using a Mac-formatted cartridge in a PC). To correct the problem, you'll need to partition and format the cartridge from scratch using FDISK and FORMAT. You can also run the SyQuest Format Utility, which partitions and formats the cartridge automatically.

**SYMPTOM 46-98** **There is no drive letter assigned to your SyQuest SCSI drive** You notice that the drive doesn't have an icon in My Computer. This is often a problem with the SCSI adapter itself. Check the SCSI host adapter to verify that it's installed properly, and see that any necessary SCSI drivers are installed:

1. Right-click on My Computer.
2. Select Properties, and then select Device Manager.
3. Now double-click on SCSI Controllers.

If there isn't an entry for your SCSI controller, you'll have to use the Add New Hardware wizard to install your SCSI adapter under Windows 95/98. Update your Windows 95/98 drivers for the SCSI adapter if possible. If your adapter is not responding (or is not compatible with Windows 95/98), replace the SCSI adapter with another model.

If your SCSI controller is present and operating properly in the Device Manager, there are a few more checks that you can make. Verify that power is applied to your SyQuest SCSI drive. The SCSI cable must be properly connected from the controller to your SyQuest drive. The SyQuest drive must also be properly terminated (if it's the last drive in the SCSI chain).

**SYMPTOM 46-99** **Your modem stops responding after installing a SyQuest parallel port EZ-135 or EZ-Flyer 230 drive** You'll typically notice that this happens under Windows 95/98 when using SyQuest driver versions 3.42 (or later). But you'll almost always find that this issue occurs on systems with a VL bus IDE controller. Check to see that your modem and the SyQuest drive are not both assigned to the same IRQ—the SyQuest drive normally uses IRQ 7. You might also try adding the /DE switch to your existing driver:

1. Right-click on My Computer.
2. Select Properties from the pop-up menu.
3. Select Device Manager, and then double-click on SCSI Controllers.
4. Double-click on SyQuest Parallel Port Device.
5. Select Settings.
6. Enter **/DE** into the Settings window.
7. Select OK, and then shut down Windows.
8. Cycle the power to your computer.

If the steps above don't solve the problem, you may need to replace your current driver with the version 3.41 (or higher) driver. You need the EPATHD.MPD file from your version 3.41 SyQuest disk 2, or download the latest driver version from the SyQuest Web site.

**SYMPTOM 46-100 The SyQuest parallel port drive works in DOS but not in Windows** Your SyQuest EZ-135 or EZ-Flyer 230 parallel port drive is not recognized by Windows 95, but it works fine in MS-DOS mode using VISIT. Check for hardware conflicts in the Device Manager. If your SyQuest Parallel Port Device (under your SCSI Controller entry) is marked with a yellow exclamation mark, you may have an IRQ conflict. SyQuest drives connected to LPT1 use IRQ 7, but many sound cards default to using IRQ 7. Use an IRQ other than 7 for your sound card. If you have a second parallel port (LPT2), connect your SyQuest drive there instead of LPT1. If that fails, try adding the driver setting /di to your existing driver:

1. Right-click on My Computer.
2. Select Properties, and then select Device Manager.
3. Double-click on SCSI Controllers.
4. Double-click on SyQuest Parallel Port Device.
5. Select Settings.
6. Enter **/di** into the Settings window.
7. Select OK, and then shut down Windows.
8. Cycle the power to your computer.

If the problem persists, you may have to run the SyQuest Parallel Port drive in DOS Compatibility Mode. Edit the CONFIG.SYS file by adding the following two lines at the bottom of the file:

```
device=C:\SYQUEST\SQATDRVR.SYS
device=C:\SYQUEST\EPATSYQ.SYS
```

You may need to make a directory called C:\SYQUEST, and then add the SQATDRVR.SYS and EPATSYQ.SYS to that directory.

**SYMPTOM 46-101 You cannot use your floppy drive(s) after installing your SyQuest EZ-135 or EZ-Flyer 230 parallel port drive** You'll typically notice that this happens under Windows 95/98 when using SyQuest driver versions 3.42 (or later). But you'll almost always find that this issue occurs on systems with a VL bus IDE controller. You might try adding the /DE switch to your existing driver:

1. Right-click on My Computer.
2. Select Properties from the pop-up menu.
3. Select Device Manager, and then double-click on SCSI Controllers.
4. Double-click on SyQuest Parallel Port Device.
5. Select Settings.
6. Enter **/DE** into the Settings window.
7. Select OK, and then shut down Windows.
8. Cycle the power to your computer.

If the steps above don't solve the problem, you may need to replace your current driver with the version 3.41 (or higher) driver. You need the EPATHD.MPD file from your version 3.41 SyQuest disk 2, or download the latest driver version from the SyQuest Web site.

**SYMPTOM 46-102 After changing a data cartridge, the new cartridge is not recognized** If you just reformatted a Mac-formatted cartridge using the FORMAT utility from DOS or Windows, it may not be recognized by your system. (Mac cartridges need to be partitioned before they're formatted.) Partition and format the cartridge using the SyQuest utilities. The format option automatically partitions the cartridge before formatting it. Enable "Removable and Int 13 support" for the SyQuest drive. FDISK (partition) the cartridge, and then format it with FORMAT.

1. Right-click on My Computer.
2. Select Properties.
3. Select Device Manager.
4. Double-click on Disk Drives.
5. Double-click on the SyQuest drive.
6. Select Settings.
7. Click on the Int 13 check box.
8. Click on the Removable box.
9. Close any open windows, and then restart Windows.

**SYMPTOM 46-103 You cannot remove or reinstall SyQuest utilities** Download and install the latest version of the SyQuest utilities. This cleans out any traces of previous installations and installs the new version. If your object was to remove the utilities, you can now do so cleanly using the uninstall feature. There are three installation versions available. Download the version that's appropriate for the drive interface that you're using:

- IDE interfaces—use the W95Innn.EXE file
- Parallel port interfaces—use the W95Pnnn.EXE file
- SCSI interfaces—use the W95Snnn.EXE file

The term "nnn" denotes a driver version. You can download the later driver version from the SyQuest site at **http://www.syquest.com/support/ftp.html**.

**SYMPTOM 46-104 The SyQuest EZ-Flyer 230 parallel port drive appears in My Computer, but is not detected by SyQuest Windows 95/98 software** In virtually all cases, the computer is using a VL bus IDE controller, and Int 13 support is not enabled. Int 13 support must be enabled. This can be accomplished automatically by updating the drivers to the latest version. You can also try enabling Int13 support manually:

1. Right-click on My Computer.
2. Select Properties, and then select Device Manager.
3. Double-click on Disk Drives.
4. Double-click on the SyQuest drive.

5. Select Settings.
6. Click on the Int 13 check box. A check mark should appear in the box.
7. Save your changes, and then shut down and restart Windows.

**SYMPTOM 46-105 After shutting down to DOS mode, your EZ-135 or EZ-Flyer 230 parallel port drive cannot be accessed** This is probably because there are no real-mode (DOS) drivers installed for the drive. You'll need to add DOS drivers. Edit your DOSSTART.BAT file to load the drivers when you enter MS-DOS mode. Edit C:\WINDOWS\DOSSTART.BAT, adding the following three lines at the bottom of the file:

```
PATH=C:\SYQUEST;%path%
SQLOAD C:\SYQUEST\SQATDRVR.SYS /P
SQLOAD C:\SYQUEST\EPATSYQ.SYS /DE
```

Save your changes to DOSSTART.BAT. Remember that you may need to make the directory C:\SYQUEST if it doesn't already exist. Then use your version 3.45 SyQuest disk 3 to copy the files SQLOAD.COM, SQLOAD.INI, SQATDRVR.SYS, and EPATSYQ.SYS to that directory. The next time you exit Windows to DOS mode, your SyQuest parallel port drive should be available.

**SYMPTOM 46-106 You receive a "read capacity" error when writing to your SyQuest drive** You may also find that your SyQuest Windows 95/98 utilities don't work. This is almost always due to a driver configuration error, so try adding the /DE switch to your SyQuest driver:

1. Right-click on My Computer.
2. Select Properties, and then select Device Manager.
3. Double-click on SCSI Controllers.
4. Double-click on SyQuest Parallel Port Device.
5. Select Settings, and then enter **/DE** into the Settings window.
6. Save your changes, and then shut down Windows.
7. Turn your PC off, and turn it back on again.

**SYMPTOM 46-107 Your SyQuest EZ-135 or EZ-Flyer 230 parallel port drive cannot be accessed (or shows errors) while running Seagate (Arcada) Backup software version 1.1** This is a known problem between the backup software and SyQuest drives. You'll need to update the Seagate/Arcada Backup software, or disable it and use Microsoft Backup.

**SYMPTOM 46-108 You cannot print through the printer pass-through port of an EZ-135 or EZ-Flyer 230 drive** This problem frequently occurs when using an advanced printer that requires an "Enhanced Capabilities Port" (or ECP). Hewlett-Packard 820 printers are just one example of printers that may have trouble. Chances are that the computer's parallel port is configured for "standard" or "compatibility" mode. Check the computer's printer port in the CMOS setup and verify that the port is set for ECP or EPP mode.

**SYMPTOM 46-109 While copying data, the drive's orange "Activity" indicator flashes, and Windows 95/98 freezes** This is almost always due to problems with the data cartridge. Reboot the system if necessary, and then run ScanDisk and/or format the cartridge. The EZ-Flyer 230 parallel port

drive performs extensive error recovery that can take several minutes. If new errors are discovered each time you run ScanDisk, the cartridge may need to be replaced.

**SYMPTOM 46-110 The SyQuest drive's printer pass-through works only intermittently** Sometimes printing works fine, but at other times it's impossible to print. In virtually all cases, the printer needs to be "refreshed":

1. Double-click on My Computer.
2. Double-click on Printers.
3. Highlight the printer that needs to be refreshed.
4. Press the F5 key to refresh the printer.

If the problem persists, you may need to remove and reinstall the printer's driver.

**SYMPTOM 46-111 Windows 95 may change from 32-bit to 16-bit mode after installing a SyQuest IDE drive** The SyQuest drive may appear as a nonremovable hard drive (for example, the D: drive) instead of "Removable Disk D:.".You may note that there is a loss of drive performance or access speed. You may also see no drive letter at all for the SyQuest drive. In most cases, this is due to a registry problem due to a NOIDE entry. Check the NOIDE entry:

1. Click Start, and then click Run.
2. In the Run box, type **REGEDIT** and press ENTER.
3. In the Registry Editor utility, go to the Edit menu and select Find.
4. In the Find box, type **NOIDE**, and click Find Next.
5. If NOIDE is not found in the registry, close RegEdit and check/replace the SyQuest drive.

If NOIDE is found in the registry, you will need to remove it. Back up your registry first:

1. Run the RegEdit program as shown above.
2. From the Registry menu, click Export Registry File.
3. In the File Name box, type **C:\REGBACK.REG** and click Save.

Now locate the NOIDE entry again and correct it:

1. Go to the Edit menu and select Find.
2. In the Find box, type **NOIDE** and click Find Next.
3. Highlight and remove each occurrence of NOIDE. If there is a DEFAULT VALUE NOIDE, it may refuse to be removed. Ignore this entry if it occurs.
4. Close the RegEdit program.
5. Open the SYSTEM.INI file (found in the Windows directory), and check to make sure that the RemovableIDE=TRUE entry is present in the [386enh] section.
6. Reboot the computer.

This should fix the problem. If Windows 95 experiences any significant problems, (such as video resolution changing or icons distorted) or if it reports a registry error, run the RegEdit program and restore the original registry:

1. From the Registry menu, click Import Registry File.
2. In the File Name box, type **C:\REGBACK.REG** and click Open.
3. After the registry information has been loaded, restart the computer.

**SYMPTOM 46-112** **There is no drive icon assigned to your SyQuest drive under Windows 95** First, be sure to boot with a cartridge in the drive. Windows 95 declares the drive nonfunctional if it can't read from it at boot time. Second, check for a LASTDRIVE statement in your CONFIG.SYS file. If it is set too low, you can increase it. If you're using Windows 95, you can REM out the statement entirely.

**SYMPTOM 46-113** **Your SyQuest DOS software won't install** During installation, you receive a message such as "Missing COMMAND.COM" or "insufficient memory." This is due to a shortage of conventional memory. You need 500KB of free memory to run the install routine. Use the MEM /C feature to see how much "free conventional" memory you have available. If you have less than 500KB, you'll have to REMark out TSRs or device drivers in your CONFIG.SYS and/or AUTOEXEC.BAT file (at least temporarily) to perform the install. After the SyQuest software is installed, remove the REMs that you added.

**SYMPTOM 46-114** **Iomega's ToolBox utility takes over the SyQuest EIDE drives** This is a problem with the Iomega software, and you'll need to download and install the latest version of that software from **http://www.iomega.com/software** in order to correct the problem. SyQuest EIDE drives and Iomega drives can coexist on the same system, but the updated Iomega ToolBox utility must be loaded.

**SYMPTOM 46-115** **Your SyQuest Windows software won't install** In virtually all cases, this is due to interference from other Windows software operating on your system. Some programs impede the installation sequence and need to be disabled until your drive and software are installed. Disable the troublesome program(s), perform your SyQuest installation, and then reenable the program(s). The following programs typically have to be disabled to perform an installation:

- Norton Antivirus
- Flexicd
- QuickRes

**SYMPTOM 46-116** **You encounter problems with removable media IDE drives in Windows 95** There are several potential problems, such as:

- The removable drive is not detected (or not accessible) within Windows 95.
- Media changes (such as removing a disk and inserting a new disk) are not detected.
- The removable drive appears as a nonremovable hard disk in Windows Explorer or Device Manager.

This happens because removable media IDE drives are not fully supported by the IDE drivers included with Windows 95. You'll need to install the following patch files for Windows 95: ESDI_506.PDR (version 4.00.1116, dated 8/25/97 or later) and VOLTRACK.VXD (version 4.00.954, dated 3/6/96 or later). Both of these files are available in the REMIDEUP.EXE file available from the Microsoft Software Library (**www.microsoft.com**). Once downloaded, find the file in Windows Explorer and double-click on it; then follow the on-screen instructions. The new files will be patched to the \Windows\System\Iosubsys directory.

The VOLTRACK.VXD file is installed on Windows 95a computers only. This file is not installed on computers running OSR2.

**SYMPTOM 46-117 You encounter problems with SyQuest drives and Future Domain SCSI adapters** Although SyQuest drives should perform properly with Future Domain SCSI adapters, there are some issues that might cause problems. Inspect the SCSI ID first. Future Domain SCSI adapters install drives from the higher SCSI ID (6) to the lowest (0). This is opposite from the majority of HBA manufacturers, which assign drives from ID 0. Make sure any hard disk drives have a higher SCSI ID number than the SyQuest drives when you install a removable drive on the SCSI bus. That way, the hard drives will be assigned the lower DOS drive letter (for example, C:, then D:).

Future Domain controllers will not allow the SyQuest drive to serve as a boot device. If you must make the SyQuest drive bootable, contact Future Domain for a firmware upgrade. Cartridge preparation can also be a problem. Future Domain PowerSCSI software works with cartridges prepared and used on the same PC. When exchanging the cartridge for one of a different format, size, or partition, the PowerSCSI driver will not handle the new cartridge properly. You might need different SCSI drivers. Check your SCSI drivers. In order for the SyQuest utilities to work properly with Future Domain adapters (and handle non-native cartridges), the CONFIG.SYS file must contain the following drivers:

```
DEVICE=C:\PWRSCSI!\DCAM18XX.EXE
DEVICE=C:\PWRSCSI!\ASPIFCAM.SYS
DEVICE=C:\SYQUEST\SCSI\SQDRIVER.SYS
```

The correct CAM.EXE driver for your particular adapter must be used in the CONFIG.SYS file (such as CAM950.EXE). Do not use FDBIOS.SYS or INT4BCAM.SYS with SQDRIVER.SYS. (Only one driver can be used to control the SyQuest drive.) The SyQuest DOS formatting program SQPREP will partition and format DOS cartridges with Future Domain adapters if the drivers are correctly installed in CONFIG.SYS as shown above.

**SYMPTOM 46-118 You encounter problems with SyQuest drives and NCR SCSI adapters** SyQuest drives are reported to work well with NCR (now part of AT&T Global Systems) adapters, but you must be using version 3.12 or later SyQuest utilities. The SCSI drivers may be causing problems. To make the SyQuest cartridges removable under DOS, the following three entries must be present in CONFIG.SYS:

```
DEVICE=C:\SDMS\DOSCAM.SYS (10-08-93 or later)
DEVICE=C:\SDMS\ASPICAM.SYS (10-08-93 or later)
DEVICE=C:\SyQuest\SCSI\SQDRIVER.SYS
```

If you choose to use the NCR driver SCSIDISK.SYS instead of SQDRIVER.SYS, the ability to remove cartridges and use non-native cartridges will be lost. Make sure that both drivers are not loaded together, or data corruption will result. Also suspect an issue with the SCSI ID. Typical NCR SCSI priority is from lowest (0) to highest (6), and the NCR adapter is SCSI ID 7. The SyQuest DOS partition and format utility (SQPREP) works well with NCR adapters as long as the drivers are loaded in CONFIG.SYS as shown above.

**SYMPTOM 46-119 You encounter problems with SyQuest drives and Rancho Technology SCSI adapters** SyQuest SCSI drives are reported to work properly with Rancho Technology SCSI adapters, but there are some issues that you must be aware of. First, Rancho Technol-

ogy SCSI BIOS requires that a cartridge be installed in the SyQuest drive at *boot time*. (Older Rancho Technology BIOS versions may hang if no cartridge is installed and the drive is ready.) SCSI drivers can also be an issue. SyQuest utilities will work through the ASPICAM driver supplied with Rancho Technology adapters. To make the cartridges removable under DOS, the CONFIG.SYS file must have drivers loaded in this order

```
REM For the Rancho Technology 1600:
DEVICE=C:\RT1600\DOSCAM.SYS (12-14-94 or later)
DEVICE=C:\RT1600\ASPICAM.SYS (12-14-94 or later)
DEVICE=C:\SyQuest\SCSI\SQDRIVER.SYS
```

or

```
REM For the Rancho Technology 1000:
DEVICE=C:\RT1000\RTASPI10.SYS (01-26-93 or later)
DEVICE=C:\SyQuest\SCSI\SQDRIVER.SYS
```

If you choose to use the Rancho Technology driver SCSIDISK.SYS instead of SQDRIVER.SYS, the ability to remove cartridges and use non-native cartridges will be lost. Make sure that both drivers are not loaded together, or data corruption will result. Check the SCSI ID. Typical Rancho Technology SCSI priority is from lowest (0) to highest (6), and the Rancho Technology adapter is SCSI ID 7. The SyQuest DOS partition and format utility (SQPREP) works well with Rancho Technology adapters as long as the drivers are loaded in CONFIG.SYS as shown above.

**SYMPTOM 46-120** **You encounter problems with Packard-Bell multimedia PCs and SyQuest drives** Packard-Bell systems often use unusual IRQ assignments that may interfere with the default settings of many SCSI adapters. Check the hardware settings. Many Packard Bell PCs use IRQ 11 and IRQ 12 for the CD-ROM drive, sound board, and mouse. When installing a SCSI adapter, make sure to use IRQ 10 and the I/O address of 340h. If there is any other 16-bit card (especially a network card) in the system, use IRQ 15 instead.



**SYMPTOM 46-121** **You encounter problems using BusLogic SCSI adapters and SyQuest drives** The BusLogic ASPI driver (BTDOSM.SYS) will operate with the SyQuest device driver SQDRIVER.SYS, but the order of installation can be very important. Install the BusLogic driver first, and then install the SyQuest software. Once the drivers are installed, the CONFIG.SYS file should be in this order:

```
DEVICE=C:\BUSLOGIC\BTDOSM.SYS /D
DEVICE=C:\SYQUEST\SCSI\SQDRIVER.SYS
```

Remove the BusLogic disk driver BTMDISK.SYS:

```
REM DEVICE=C:\BUSLOGIC\BTMDISK.SYS
```

Relocate any other BusLogic device drivers *after* SQDRIVER.SYS. Reboot the system after making any changes to CONFIG.SYS. Finally, check the driver dates. Make sure that you are using SQDRIVER.SYS version 7.72 or higher, or the SyQuest software release 3.12 or higher (01/27/95 or later).

**SYMPTOM 46-122 You encounter problems using Qlogic SCSI adapters and SyQuest drives** Although SyQuest SCSI drives are reported to operate properly with Qlogic SCSI adapters, there are some issues that can cause problems. First, Qlogic FastSCSI software does not support SyQuest cartridge exchange without installing the SyQuest SQDRIVER.SYS driver. Install the two Qlogic drivers, and then install the SyQuest drivers. Make sure that the QL00DISK.SYS driver is not installed in CONFIG.SYS. A typical CONFIG.SYS file will look like this:

```
DEVICE=C:\QLOGIC\QL41DOS.SYS
DEVICE=C:\QLOGIC\QL00ASPI.SYS
DEVICE=C:\SyQuest\SCSI\SQDRIVER.SYS
```

Make sure to use the correct QLxxDOS.SYS driver for your particular Qlogic SCSI adapter. CorelSCSI software is often shipped with Qlogic SCSI adapters. If a CorelSCSI driver is installed to support a SyQuest drive, do not install the SQDRIVER.SYS driver. Finally, disable or REMark out the QL00DISK.SYS driver if it is entered in the CONFIG.SYS file. If the QL00DISK.SYS driver is allowed to coexist with SQDRIVER.SYS, data corruption will result.

**SYMPTOM 46-123 You encounter problems using an IBM MicroChannel SCSI controller and SyQuest drive** This note applies to the /A and /2A MicroChannel SCSI adapters. The IBM ASPI driver (ASPI4B.SYS) will only operate with the SyQuest driver SQDRIVER.SYS under DOS—not under Windows. The MSDRVR.ZIP shareware has been known to circumvent this incompatibility. For current pricing and availability, contact the shareware maker:

Micro Staff Co., Ltd.
1-46-9 Matsubara, Setagaya-ku, Tokyo, Japan 156
Tel: 011-81-3-3325-8128
Fax: 011-81-3-3327-7037
CompuServe ID: 100157,1053

**SYMPTOM 46-124 You encounter problems using Data Technology Corporation (DTC) SCSI adapters and SyQuest drives** The DTC SCSI adapters will operate with SyQuest drives, but there are several points that can cause problems. Install the DTC ASPI driver first; *then* install the SyQuest utility software. Once all the drivers are installed, the CONFIG.SYS file should appear in this order:

```
REM For the DTC 3280AS ISA version and the DTC 3290AS EISA version:
DEVICE=C:\DTC\ASPI3xxx.SYS
DEVICE=C:\SYQUEST\SCSI\SQDRIVER.SYS
```

Remember to remove the DTC device driver ASCSI.SYS in the CONFIG.SYS file:

```
REM DEVICE=C:\DTC\ASCSI.SYS
```

Also remove it in the AUTOEXEC.BAT file:

```
REM C:\DTC\ASCSI.EXE
```

Load any other DTC device drivers after SQDRIVER.SYS, or:

```
REM For the DTC 3130 PCI version:
DEVICE=C:\DTC\DOSCAM.SYS
DEVICE=C:\DTC\ASPICAM.SYS
DEVICE=C:\SYQUEST\SCSI\SQDRIVER.SYS
```

Remember to remove the DTC device driver SCSIDISK.SYS in the CONFIG.SYS file:

```
REM DEVICE=C:\DTC\SCSIDISK.SYS
```

Load any other DTC device drivers *after* SQDRIVER.SYS. Remember to reboot the PC after making any changes to your CONFIG.SYS and AUTOEXEC.BAT files. Finally, check the driver dates. Make sure that you are using SQDRIVER.SYS version 7.72 or higher, or the SyQuest software release 3.12 or higher (01/27/95 or later).

**SYMPTOM 46-125** **The lights on the SyQuest drive are blinking in a regular pattern**

The drive has suffered a fault and generally must be replaced. Use Table 46-3 to find the specific error code. In most cases, you will have to replace the drive outright.

**TABLE 46-3 SYQUEST ERROR CODES FOR SQ555, SQ5110C, AND 5200C DRIVES**

| GREEN FLASHES | AMBER FLASHES | PROBLEM | ACTION |
|---|---|---|---|
| 0 | 3 | Microprocessor problems | Replace drive |
| 1 | 1, 2, 3 | PCBA (drive circuitry) failure | Replace drive |
| 2 | 1, 2, 3, 4, 5, 6 | PCBA (drive circuitry) failure | Replace drive |
| 3 | 0, 3 | Microprocessor problems | Replace drive |
| 3 | 1, 2, 4, 5 | PCBA (drive circuitry) failure | Replace drive |
| 4 | 1, 2, 3 | Drive motor problem | Replace drive |
| 4 | 4, 5 | Drive motor speed problem | Replace cartridge |
| 4 | 6 | Cannot find servo | Reinsert cartridge |
| 5 | 1 | Power failure | Check power supply |
| 5 | 2 | Drive motor speed problem | Replace cartridge |
| 5 | 3, 4, 5, 6, 7, 8, 9 | Power-up initialization incomp. | Reinsert cartridge<br>Replace cartridge |
| 6 | 0, 1, 2, 3 | PCBA (drive circuitry) failure | Replace drive |
| 6 | 4 | Drive motor speed problem | Replace cartridge |
| 6 | 5 | Excessive run-out failure | Reinsert cartridge<br>Clean spindle motor<br>Replace cartridge |
| 6 | 6 | Incompatible cartridge | Use proper cartridge |
| 6 | 7 | PCBA (drive circuitry) failure | Replace drive |
| 7 | 1, 2, 3, 4, 5 | PCBA (drive circuitry) failure | Replace drive |
| OFF | Solid ON or flashing light | Power fault<br>Defective cartridge<br>Head loading failure | Replace drive<br>Replace cartridge<br>Replace drive |
| Solid ON | Solid ON | Microprocessor problem | Reinitialize the drive<br>Replace the drive |

# Further Study

Exabyte: **http://www.exabyte.com**

Fuji for Zip media: **http://www.fujifilm.com/home/sbu/comprod/cp_magd.htm**

Imation for Zip media: **http://xenon.imationstudio.com/crossref/compsearch.nsf/comp+search**

Iomega: **http://www.iomega.com**

SyQuest: **http://www.syquest.com**