Lisa
Owner's Guide

029-0212-A

Lisa Owner's Guide

029-0087-A

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Lisa
Owner's Guide

029-0088-A

Guide to Lisa Manuals

Set up your Lisa following the setup procedures in the Lisa accessories box or in Appendix 1, Setup Procedures, in the *Lisa Owner's Guide*.

▶ Go through Section A, LisaGuide, in the *Lisa Owner's Guide*, for an introduction to the Lisa.

If your dealer or service representative did not set your system Preferences so that the Lisa knows what external devices are attached, follow the instructions in Section D, Desktop Manager Reference Guide, under Set, in the *Lisa Owner's Guide*.

Go to Section A, Getting Started, in the manual for each office tool that you want to learn, for the essentials of using that tool.

Go to Section B, Lisa Fundamentals, in the *Lisa Owner's Guide*, for the background information you need before beginning long-term work on the Lisa.

You are now ready to start doing your own work on the Lisa:

- If you want self-paced instructions for using a tool, go to Section B, Tutorial, in that tool manual.
- If you want instructions for performing specific tasks with a tool, go to Section C, Reference Guide, in that tool manual.

For specific instructions on filing and desktop management, go to Section D, Desktop Manager Reference Guide, in the *Lisa Owner's Guide*.

For more information on the Lisa hardware, tips on caring for the Lisa, and suggestions for troubleshooting when the system isn't working properly, go to the other sections of the *Lisa Owner's Guide*.

Contents

Preface

A. LisaGuide

This section tells you how to start LisaGuide, which introduces you to the Lisa.

B. Lisa Fundamentals

This section contains the background information you need to know before doing long-term work on the Lisa.

C. Lisa Hardware

This section covers the major Lisa components and explains how they interact.

D. Desktop Manager Reference Guide

This section provides detailed instructions for preparing your system for long-term use and for using the Lisa filing system.

E. Calculator

This section explains how to use the Lisa desktop calculator.

F. Maintenance

This section explains routine maintenance — mostly how to clean the system.

G. Troubleshooting

This section is a step-by-step guide to identifying the problem when your Lisa doesn't do what you expect.

H. Service

This section guides you through replacing, adding, and removing the Lisa internal parts.

I. Appendixes

Appendix 1. Setup Procedures
This appendix contains the Lisa setup procedures. It repeats the setup instructions that are packaged in the Lisa accessories box.

Appendix 2. Handling Diskettes
This appendix contains suggestions on caring for diskettes.

Appendix 3. Automatic Startup Tests
This appendix describes what the Lisa is doing during the first few seconds of system startup. Refer to this appendix when you are trying to interpret a startup error message. You may be directed to this appendix by Section G, Troubleshooting.

Appendix 4. On-Off Procedures
This appendix contains a summary of how the Lisa on-off button works.

Appendix 5. Hardware Specifications
This appendix contains information on the size, weight, compatibility, and other hardware specifics of the Lisa.

Appendix 6. Office System Error Messages
This appendix contains a series of discussions covering the error messages generated by the Lisa Office System. You may be referred to this appendix by screen messages while you are using the Lisa.

J. Index

Preface

The Lisa Owner's Guide contains:

- Background information on preparing the Lisa for long-term use.
- A brief introduction to the Lisa components and special features.
- Detailed instructions for using the Lisa filing system.
- Suggestions for keeping the system clean and problem-free.
- Detailed instructions for diagnosing problems and for repairing them.

Before beginning long-term work on your Lisa, read Section B, Lisa Fundamentals, making sure you understand all of the concepts in the section. Look over Section C, Lisa Hardware, for details about how the system works. Refer to Section D, Desktop Manager Reference Guide, for specific instructions for performing the tasks outlined in Section B. Refer to Section E, Calculator, when you want to use the desktop calculator.

Scan the contents of Section F, Maintenance, so that you will know which parts of the Lisa you can and should clean. Review the descriptions of the appendixes and note the ones that are important to you. Then keep this manual with your Lisa and refer to it whenever you need more information. If something goes wrong, refer to Section G, Troubleshooting, and Section H, Service.

This owner's guide is intended to be used in conjunction with the Lisa tool manuals.

Guide to Lisa Manuals

Set up your Lisa following the setup procedures in the Lisa accessories box or in Appendix 1, Setup Procedures, in the *Lisa Owner's Guide*.

Go through Section A, LisaGuide, in the *Lisa Owner's Guide*, for an introduction to the Lisa.

If your dealer or service representative did not set your system Preferences so that the Lisa knows what external devices are attached, follow the instructions in Section D, Desktop Manager Reference Guide, under Set, in the *Lisa Owner's Guide*.

▶ Go to Section A, Getting Started, in the manual for each office tool that you want to learn, for the essentials of using that tool.

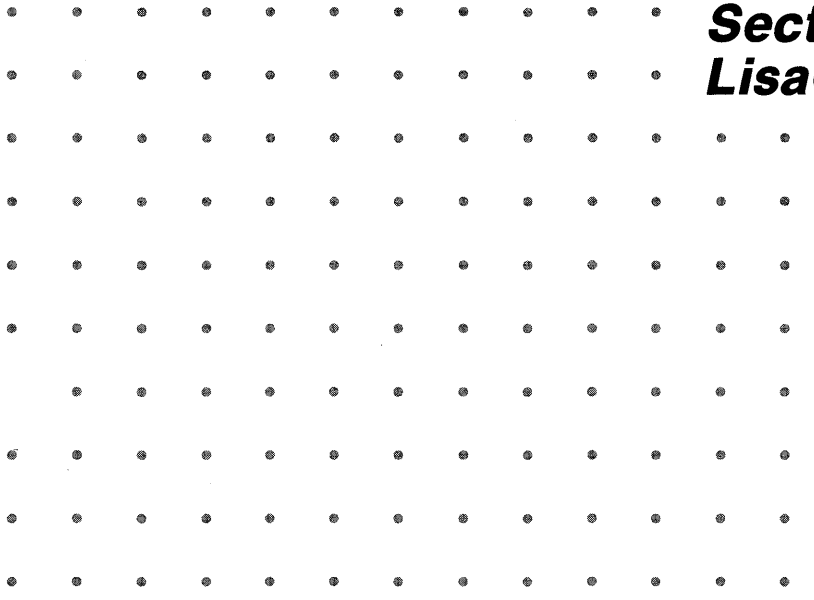
Go to Section B, Lisa Fundamentals, in the *Lisa Owner's Guide*, for the background information you need before beginning long-term work on the Lisa.

You are now ready to start doing your own work on the Lisa:

- If you want self-paced instructions for using a tool, go to Section B, Tutorial, in that tool manual.
- If you want instructions for performing specific tasks with a tool, go to Section C, Reference Guide, in that tool manual.

For specific instructions on filing and desktop management, go to Section D, Desktop Manager Reference Guide, in the *Lisa Owner's Guide*.

For more information on the Lisa hardware, tips on caring for the Lisa, and suggestions for troubleshooting when the system isn't working properly, go to the other sections of the *Lisa Owner's Guide*.



Section A
LisaGuide

LisaGuide

Your Lisa is like an "electronic desktop" — a personal office system that works much the same way you're already used to working.

The diskette named LisaGuide contains exercises, demonstrations, and examples that will teach you the Lisa's basic operations. LisaGuide's exercises are grouped into these topics:

Of Mice & Menus
Starting a Document
Editing a Document
Filing a Document
Viewing a Document
Stopping LisaGuide
More Editing - Optional
More Filing - Optional
Shortcuts - Optional
Summaries - Optional

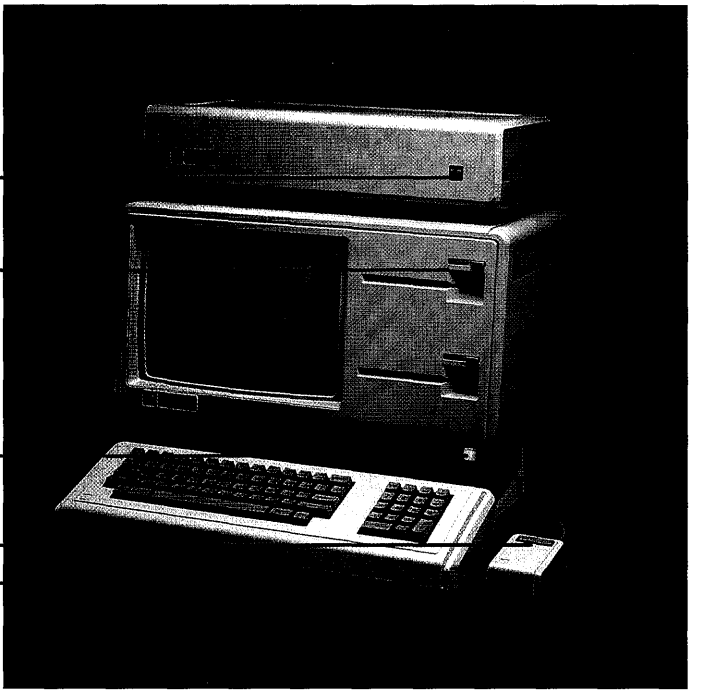
We recommend you complete the first six topics in the order shown. Then you'll have learned the Lisa's basics and be ready to work on whatever type of document you wish. You can complete the optional topics at any time.

Two pull-out cards (cards 2 and 3) under your Lisa's keyboard summarize the skills taught by LisaGuide.

Instructions and photographs on the next two pages explain how to start, stop, and restart LisaGuide.

To Start LisaGuide for the First Time

1. If your Lisa is not already set up and configured, see Appendix 1, Setup Procedures, in this manual.
2. Be sure your Lisa's power is off: If the on-off button is lit, press it once.
3. Remove any diskette that your Lisa ejects from drive 1. Don't touch the shiny plastic.
4. Remove the LisaGuide diskette from its pocket inside the front cover of this manual, and place it in drive 1. Don't touch the shiny plastic. Make sure the cutout parts of the diskette are oriented as shown in the photograph. Push the diskette into the drive until you hear a click.
5. Be sure the ProFile is turned on: If the ProFile's red light is not glowing or flashing, press the on-off switch on the back of the ProFile to On.
6. Turn on your Lisa's power: Press the on-off button once. The power will go on, and the button will light up.



7. It takes a few minutes to get LisaGuide ready. When the screen says "Welcome to LisaGuide," read and follow the instructions on the screen.

To Stop LisaGuide at Any Time

1. Hold down the key with the picture of an apple (it's to the left of the space bar) while you press the period key.
2. When your Lisa ejects the LisaGuide diskette, remove it and replace it in its pocket inside the front cover of this manual. After a few minutes you'll see your Lisa's "usual" desktop without LisaGuide.

To Restart LisaGuide

1. Follow steps 1 through 6 under "To Start LisaGuide for the First Time."
2. When "Welcome to LisaGuide" appears, choose the topic you're interested in from the Topics menu.

Section B
Lisa Fundamentals

Contents

B1 What's in Lisa Fundamentals?

B2 The Lisa System

B2 System Startup

B3 Disks and Diskettes

B3 Disk Initialization
B4 Disk Organization
B4 Disk Backup
B5 LisaTest
B5 Startup and Tool Disks
B5 Documents

B6 Clock/Calendar

B6 System Configuration

B7 Turning Off the Lisa

B8 Power Interruptions

B9 Desktop Management

B10 The Desktop
B14 Disks and Diskettes
B15 Folders
B15 Tools
B15 Documents
B16 Stationery Pads
B16 Wastebasket
B17 Clipboard
B17 Clock
B18 Calculator
B18 Preferences
B18 Shadows
B19 Working on the Desktop
B20 Selecting Icons and Activating Windows
B21 Choosing Menu Items
B22 Moving Objects
B23 Shortcuts

B24 Cutting and Pasting between Documents

B25 Arranging the Desktop

B25 Moving Windows
B25 Sizing Windows
B25 Layering Windows
B26 Straightening Up Icons

What's in Lisa Fundamentals?

Lisa Fundamentals is a summary of the background information you need to use the Lisa effectively.

The first half of this section includes some basic concepts about computers in general, as well as some useful details about the Lisa in particular. If you are already used to working with computers, you can probably scan this section fairly quickly. But before you begin long-term work on your Lisa, make sure you read and understand the material in this section on these subjects:

- System Startup.
- Disk Backup.
- System Configuration.

The second half of this section is an overview of the Desktop Manager, the filing system that the Lisa uses to organize your work on the desktop and on your disks. The fundamentals of desktop management are covered in Section A, LisaGuide. The discussion in this section under the heading Desktop Management is a summary of that material.

Lisa Fundamentals provides only a brief discussion of the tasks needed for long-term use of the Lisa. Refer to Section D, Desktop Manager Reference Guide, in this manual, for step-by-step instructions for performing all of the tasks presented in this section.

The Lisa System

Like all computers, the Lisa system consists of two parts, hardware and software. The Lisa hardware is the cabinet, the keyboard, the mouse, and the ProFile storage disk. When you turn the Lisa on, the computer begins looking for and following instructions. These instructions, known as software, are stored on disks and diskettes and in a few places inside the computer. This section, Lisa Fundamentals, is concerned mostly with the Lisa software. For a description of the physical parts, see Section C, Lisa Hardware, in this manual.

System Startup

Each time you turn the Lisa on, the computer looks for a set of startup instructions. When you are using the Lisa Office System, the startup instructions are stored on a ProFile attached to the Lisa. Your dealer or service representative should have installed the Office System software, including the startup instructions, on your ProFile. This software is also stored on the two diskettes labeled Office System 1 and Office System 2 in the back of this manual. If your ProFile is still blank, follow the installation instructions in Section D, Desktop Manager Reference Guide, under Initialize a Startup ProFile and Install the Tools.

The disk drive that holds the startup instructions is known as the startup device. Unless you specify otherwise, the Lisa automatically assumes that the startup device is a ProFile attached to the built-in parallel connector. See Section C, Lisa Hardware, for a description of the various connectors. Sometimes, however, you may want to start the system using a different device. Instructions for specifying your usual startup device and for specifying a different device during startup appear in Section D, Desktop Manager Reference Guide, under Set Startup Specifications and Set Startup Device during Startup.

If your startup ProFile also contains software other than the Lisa Office System, the Lisa may ask you during startup which environment you want to use. If a display something like Figure 1 appears at startup, first click Office System and then click Start. See Appendix 4, On-Off Procedures, for details on the Environments window.

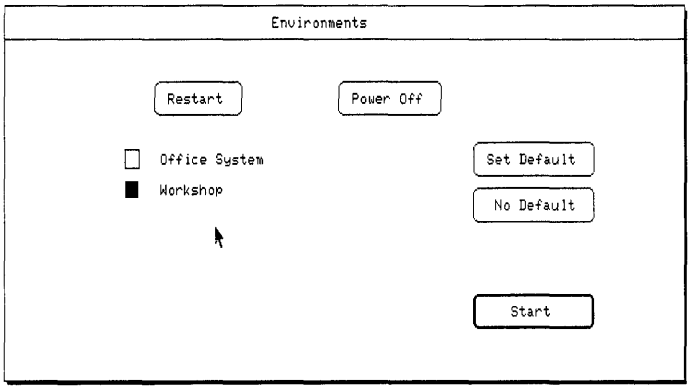


Figure 1. Environments Window

Disks and Diskettes

The Lisa's two built-in floppy disk drives accept special, high-capacity, 5-1/4 inch floppy diskettes. The ProFile hard disk includes both a disk drive and a permanently installed hard disk.

Both hard and floppy disks are flat, magnetic recording surfaces used for storing information. Hard disks are faster and can store more information than floppy disks, but they are less portable. Most Apple-supplied software is sent to you on floppy diskettes, and you can transfer it to your ProFile for day-to-day work.

In Lisa manuals, the term "diskette" is used to mean floppy disk, and the term "disk" is used more loosely to mean either hard or floppy disk.

Refer to Appendix 2, Handling Diskettes, for recommendations on caring for diskettes. The procedures for using diskettes in the Lisa floppy disk drives appear in Section C, Lisa Hardware.

Disk Initialization

On a new disk, the recording surface is completely blank, like an unrecorded audio tape. Before putting any information on the disk, the computer has to organize the disk surface, a process known an initializing the disk. Every time you attach a blank ProFile or insert a blank diskette into one of the floppy disk drives, the Lisa asks if you would like to initialize the disk.

You can also recycle used disks by erasing and reinitializing them.

The procedures for initalizing and erasing disks appear in Section D, Desktop Manager Reference Guide, under Initialize.

Disk Organization

The Lisa system comes with six office applications, known as "tools." The tools are the instructions that tell the computer to work as a word processor, a calculator, or an electronic spreadsheet, for example. Instructions for using the office tools are in the manuals that come with the tools.

Each tool comes on a single diskette containing the tool itself, the stationery pads you need to create new documents, and a folder containing the examples used in the manual. Your dealer or service representative should have duplicated the contents of all six tool diskettes on your ProFile while installing system software. If your startup ProFile is initialized but contains no tools, follow the instructions in Section D, Desktop Manager Reference Guide, under Add the Contents of a Diskette to Another Disk.

Once you start doing your own work on the Lisa, your ProFile will begin to accumulate your own documents and stationery pads. Each disk initialized by the Lisa Office System contains a pad of empty folders, which you can use to organize your disks. See the discussion under Desktop Management later in this section for more information about using folders.

You may also find it convenient to keep some of your documents and stationery pads on diskettes. You can, for example, put all of the documents concerning a single project on one diskette, which can be carried easily to another Lisa.

Disk Backup

Because disks can be damaged or erased accidentally — and because they eventually wear out with use — you should keep backup copies of all disks. The discussion below outlines the backup strategies for different Lisa disks.

LisaTest

The LisaTest diskette in the front of this manual is to help you diagnose the problem in case something goes wrong with your system. Because LisaTest is not part of the Lisa Office System, you cannot use the standard copy procedures for backing it up. Follow the backup instructions in Section G, Troubleshooting, under LisaTest.

Startup and Tool Disks

The other diskettes that come with your Lisa — the two Office System diskettes and the six tool diskettes — are the master copies of your Lisa software. Your ProFile contains the working copies, that is, the copies you use for day-to-day work. Keep the diskette masters in a safe place, and use them only if you need to make new copies.

When you purchase additional Lisa office tools, put the working copies on your ProFile, following the instructions under Add the Contents of a Diskette to Another Disk.

Copies of the tools will work only on the Lisa that made the first copy of the master diskette. If you are setting up your ProFile yourself, be sure to make the tool copies on the Lisa system for which the tools were purchased.

Documents

The purpose of backing up documents is to save you time and lost information on the rare occasion when one of your disks becomes unreadable. The specific backup strategy you use depends on how often you update your documents and how you organize your disks.

There are two general approaches to backing up:

1. Copy the entire disk periodically.
2. Duplicate each document before putting it away, and then put the duplicate on another disk.

In general:

- If you work with a number of different documents every day, and you keep them all on one diskette, you should duplicate that diskette at the end of each day.
- If you do not update your documents very often, and you keep them on a ProFile, you should back up each document on a floppy disk whenever you save a copy on the ProFile.

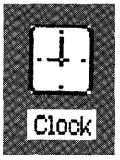
- If you use a hard disk that would take a long time to reconstruct, you should back up the entire disk onto a set of diskettes from time to time. You can also make incremental backups periodically to back up only the information that has changed since the last full backup.

Instructions for making backup copies appear in Section D, Desktop Manager Reference Guide, under Copy.

Clock/Calendar

A clock/calendar inside the Lisa keeps track of the date and time. Using information supplied by the clock/calendar, the Lisa tags each document with the date you created it and the date you last worked on it.

The clock/calendar is represented on your desktop as a picture of a clock. You can open the clock to set it or to see what time it is. Procedures for setting the clock/calendar appear in Section D, Desktop Manager Reference Guide, under Set Clock/Calendar.

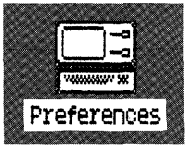


As long as the Lisa is plugged into a working outlet, the clock continues to run. The built-in battery can keep the clock running for up to 10 hours when the system is unplugged.

System Configuration

The Lisa is compatible with a number of different external devices, such as printers, hard disks, and telephone-connect modems. Before you can use these devices, you have to tell the Lisa what you have attached and where each device is connected. The Lisa also allows you to specify a set of system details, such as the rate at which keys repeat when held down and the loudness of the error tones. All of these system specifications constitute the system configuration. You define the system configuration for your Lisa through Preferences.

The system Preferences are represented on your desktop as a picture of the Lisa.



Specifically, you use Preferences to:

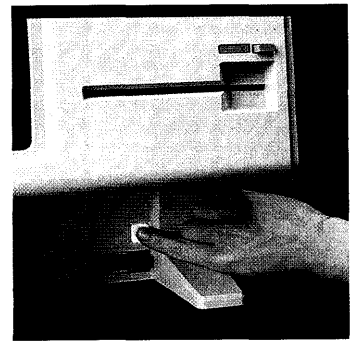
- Tell the Lisa where external devices are attached and how they are set up.
- Tell the Lisa what your startup device is and how thoroughly you want the computer's memory tested during startup.
- Specify the screen contrast, speaker volume, and time lags for repeating keys.

These three sets of information are stored under Device Connections, Startup, and Convenience Settings in your system Preferences. Your dealer or service representative should have set the Device Connections and Startup portions of your Preferences. After you have used the Lisa for a while, you will be ready to set your own Convenience Settings. You may want to open the Preferences icon now to make sure that the information is correct. Instructions for using the Preferences window appear in Section D, Desktop Manager Reference Guide, under Set.

The information in Preferences is saved in the Lisa parameter memory, a small part of memory that remains intact as long as the Lisa is plugged into a working outlet and for up to 10 hours when the Lisa is unplugged. The Preferences settings are also stored on the startup disk. If the parameter memory runs down, it is restored from the information on the startup disk the next time you turn on the Lisa.

Turning Off the Lisa

Turning off the Lisa with the on-off button does not instantly shut down the machine. Instead, it triggers a series of storage procedures.



First, the Lisa removes all documents and folders from the desktop, putting each one on its storage disk. Most open documents are stored in exactly the form you left them, including the last insertion point or selection. When all of its documents and folders are stored, each diskette is released from its disk drive. When everything is off the desktop, the screen goes blank, and the power light goes out.

The next time you turn on the Lisa, the computer can reconstruct the desktop exactly as you left it. The Lisa checks all disk drives during startup and returns the documents and folders you were working on to the desktop.

Power Interruptions

Like all computers, the Lisa depends on a steady supply of current. Occasionally, something interrupts the power to the system — a circuit breaker in the building cuts out, for example. When power is interrupted, everything in the computer's memory is lost, including the state of the desktop and all unsaved edits to any documents you were working on. Documents saved on a disk are unaffected, unless the Lisa happened to be reading from or writing on a disk at the time of the power loss. In this case, the disk itself could be damaged. That's one reason to keep backup copies of all disks.

During a sudden power loss, the normal power-down procedures described above do not occur. The disks are left in an in-between state. When you turn the system back on, the Lisa tries to reconstruct the desktop as usual, but it can't find the desktop information.

Specific instructions for recovering from a power interruption appear in Section D, Desktop Manager Reference Guide, under Repair a Startup ProFile and Repair a Storage Disk after a System Failure. For a more complete discussion of how a sudden loss of power affects disks, see Appendix 4, On-Off Procedures.

Desktop Management

The Lisa desktop management system is designed to reflect the same organization as the physical desktop and file drawers in your office. It also follows the same conventions as the tools you use for creating documents: you select things using the mouse and you act on things using the menus.

The fundamentals of desktop management are covered in Section A, LisaGuide. The purpose of this discussion is to give you a summary of how the desktop works. For specific information and step-by-step instructions, refer to Section D, Desktop Manager Reference Guide, in this manual, and to Chapter 2 of any Lisa office tool manual Reference Guide.

The work flow on the Lisa desktop goes something like this:

- Create a new document.
- Name the document.
- Work on the document.
- Save the document periodically on a disk.
- File the document when you're finished working on it.
- Retrieve the document the next time you want to work on it.
- Periodically make a backup copy.

All of these activities are accomplished using three basic actions:

- Selecting things with the mouse.
- Acting on the selections through the menus.
- Moving things with the mouse.

The Desktop

When you first start up the Lisa Office System, your screen looks something like Figure 2.

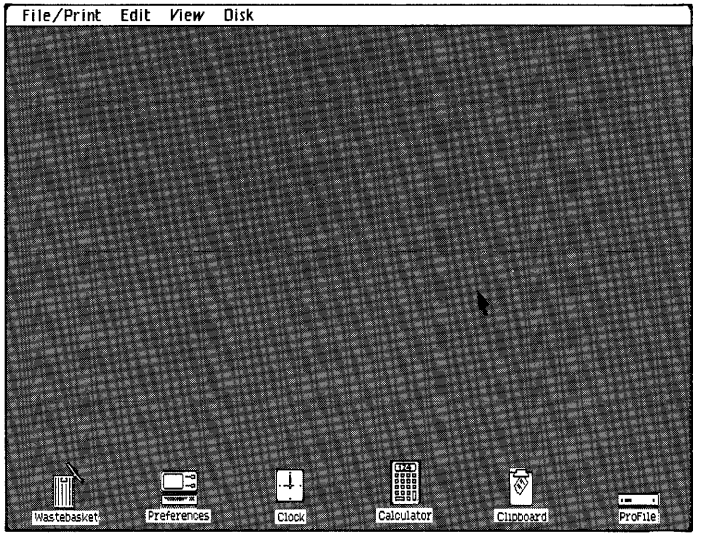


Figure 2. Desktop

The gray area, known as the desktop, contains a number of icons, or pictures, which represent various parts of your system. Some of the icons represent physical devices, such as disks and diskettes, and others represent information, such as documents, folders, and tools. The specific icons that are present vary depending on the specific setup of your system.

Most of the icons can be opened into windows, like the ProFile window shown in Figure 3.

The small icon in the upper left-hand corner of the window tells you what kind of object the window is displaying. In this case, the window shows the contents of the startup ProFile.

The icons described in the following discussion, and their properties, are summarized in Table 1.

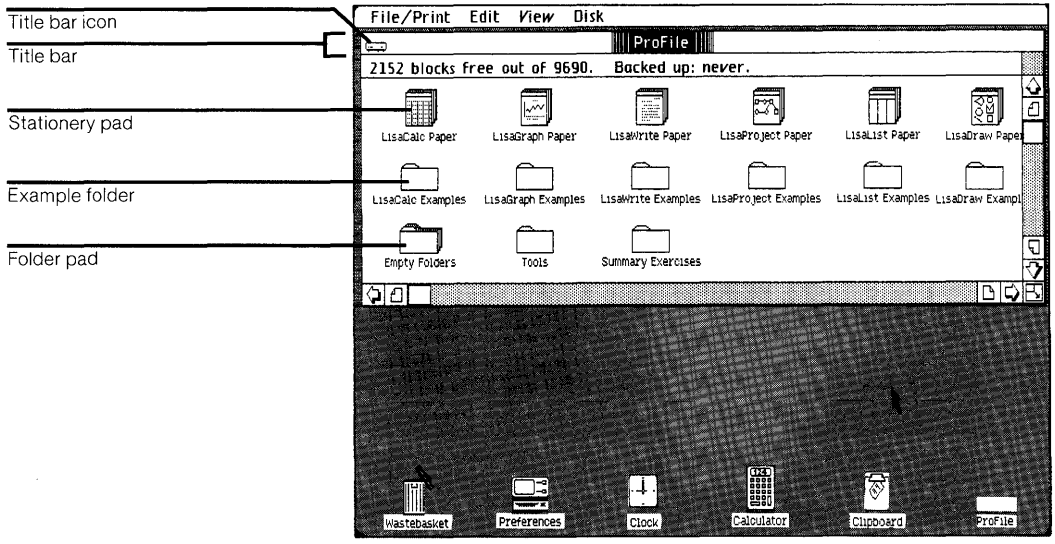
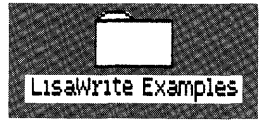


Figure 3. ProFile Window

Table 1. Desktop Objects and Their Properties

Desktop Icon	Can Be Opened and Altered	Can Be Stored and Duplicated	Can Hold Other Objects
Disks and diskettes	Yes	Yes*	Yes
Folders	Yes	Yes	Yes
			

* Cannot be stored in other desktop objects.

Table 1. Desktop Objects and Their Properties, continued

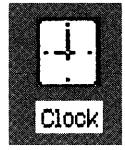
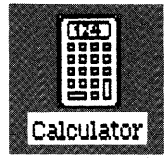
Desktop Icon	Can Be Opened and Altered	Can Be Stored and Duplicated	Can Hold Other Objects
Documents	Yes	Yes	No
Clock 	Yes	Yes	No
Calculator 	Yes	Yes	No
Tools	No	Yes	No
Stationery pads	No	Yes	No

Table 1. Desktop Objects and Their Properties, continued

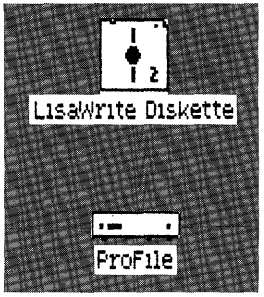
Desktop Icon	Can Be Opened and Altered	Can Be Stored and Duplicated	Can Hold Other Objects
Clipboard	Yes**	No	No
Preferences	Yes	No	No
Wastebasket	Yes	No	Yes
Shadows	No***	No	No

** Can be altered only indirectly by editing other objects with cut and copy.

*** Name can be altered.

Disks and Diskettes

Each hard disk attached to the Lisa and each diskette inserted into one of the disk drives shows up on the desktop as an icon, such as the ones shown here, or a window, such as the one displayed in Figure 3.



An active disk window includes a status panel, which tells you how much space is available on the disk and when the disk was last backed up. The disk window can display either a collection of icons or a list of names representing all objects stored on that disk. The text list includes information on the size of documents and when they were last updated. See Section D, Desktop Manager Reference Guide, under List, for the details of how disks can be displayed.

If a ProFile that is attached does not show up on your desktop, check the Device Connections portion of your Preferences window. See Section D, Desktop Manager Reference Guide, under Set Device Connections.

Folders

Each disk initialized by the Lisa Office System comes with a pad of empty folders. At your option, you can use this pad to create new folders for holding the objects stored on your disks. The reason for folders on storage disks is the same as the reason for folders in your filing cabinets: organization makes it easier to find things.

Empty Folders

Like disk windows, folder windows can display either a collection of icons or a list of object names.

Tools

The tool icons represent the instructions that the Lisa needs in order to work on your documents.

LisaWrite

The tool icons are stored on your ProFile in a folder called Tools. Ordinarily, you do not need to do anything with the tool icons. Opening the tool icons has no effect. However, a copy of the tool used to create a document must be present on one of the disks on the desktop before you can work on that document.

Documents

The documents you create on your Lisa are represented in their storage locations as document icons. The design on the icon matches the design on the tool that was used to create the document.

Stationery Pads

Each stationery pad represents an infinite supply of either blank or customized paper, which you use for creating new documents. The design on the pad matches the design on the tool and documents associated with the pad.

Each tool comes with a pad of blank stationery, and you can make your own custom stationery pads. Instructions for making a new stationery pad appear in Section D, Desktop Manager Reference Guide, under Create a Stationery Pad.

Wastebasket

The Wastebasket is the means by which the Lisa discards obsolete objects. When you no longer need a desktop object, you can throw it away by moving it to the Wastebasket.

Some objects, such as disks and diskettes, cannot be discarded. If you move one of these objects to the Wastebasket, the icon jumps back to its previous location.

Discarded objects remain in the Wastebasket until something else from the same disk is thrown away or until the disk space they occupy is needed. You can usually retrieve the last object or set of objects discarded from a disk by opening the Wastebasket and moving the icons out of the Wastebasket window.

Clipboard

The Clipboard holds the material that you cut or copy when editing documents or object names. It always contains the last text or graphic that was cut or copied. When you choose Paste from the edit menu, the contents of the Clipboard are inserted at the selected location.

You can open the Clipboard to see its contents, but you cannot edit it. Many people leave the Clipboard window open at the bottom of the screen while working on documents, as shown in Figure 4.

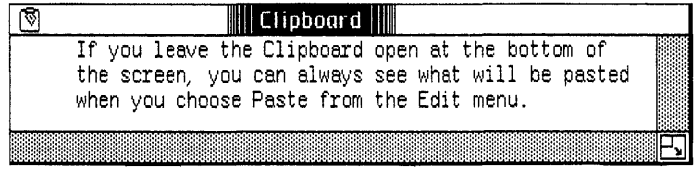
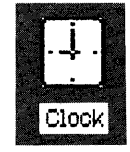


Figure 4. Clipboard

Clock

The Clock icon represents the clock/calendar inside the Lisa.

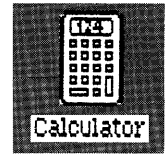


You can open the Clock to see the time and date and to set the time and date. When you first start using the Lisa, the Clock appears at the bottom of the desktop. If you put it away through the File/Print menu, it is stored in the Tools folder on the startup ProFile.

Instructions for setting the clock appear in Section D, Desktop Manager Reference Guide, under Set Clock/ Calendar.

Calculator

The Calculator icon represents the Lisa desktop calculator. You can open the icon to use the Calculator.

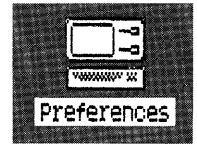


When you first start using the Lisa, the Calculator appears at the bottom of the desktop. If you put it away through the File/Print menu, it is stored in the Tools folder on the startup ProFile.

Detailed instructions for using the Calculator appear in Section E, Calculator.

Preferences

The Preferences icon represents the part of the Lisa memory that stores your system configuration, discussed earlier in this section.



Instructions for setting Preferences appear in Section D, Desktop Manager Reference Guide, under Set.

Shadows

Shadows are place-holders for other icons. When you open an icon into a window or move an icon from its storage location to the desktop, a shadow remains behind. Figure 5 demonstrates both forms a shadow may take.

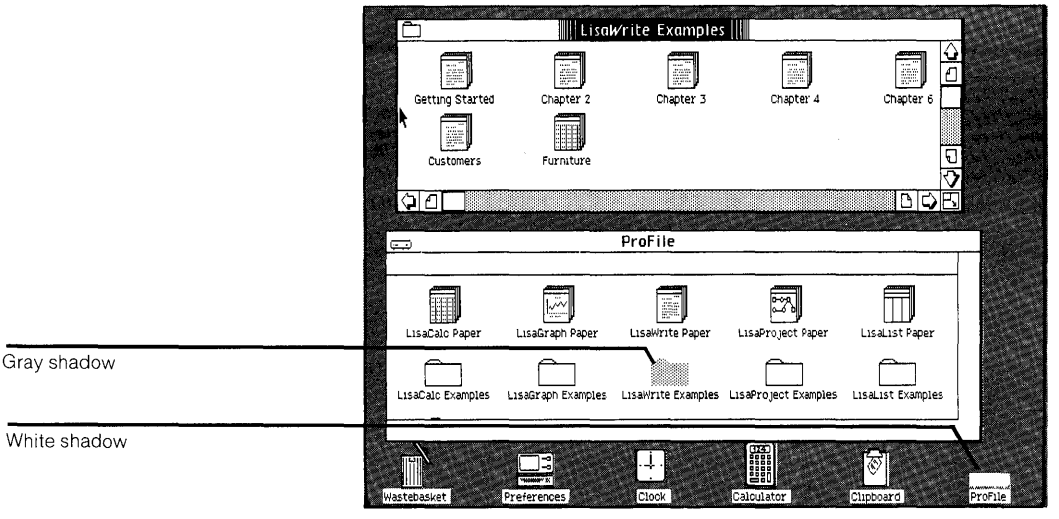


Figure 5. White and Gray Shadows

When you open an icon from the desktop, a white shadow marks where it will return when set aside.

When you take an icon out of its storage location, a gray shadow marks where it will return when put away.

You can't manipulate shadows in any way. They appear only for your information, and they disappear when no longer needed. You can, however, edit the name of a shadow, thereby changing the name of the object as well.

Working on the Desktop

The desktop filing functions are accomplished by manipulating the desktop icons and windows. The discussion below covers the three basic manipulations: selecting objects, choosing menu items, and moving objects. Section D, Desktop Manager Reference Guide, contains detailed instructions for the specific desktop tasks: creating, naming, copying, filing, and discarding. The discussion below covers the background information on how the desktop works.

Selecting Icons and Activating Windows

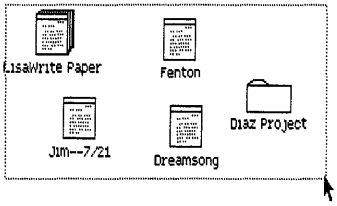
You tell the Lisa which desktop object you want to work on by selecting or activating the object. In Lisa manuals, the term "select" is used to mean "specify which icon" and the term "activate" is used to mean "specify which window." You can have many icons selected at once on the desktop, but you can have only one window active at a time.

The way to select any icon or activate any window is to place the pointer on it and press the mouse button.

A selected icon is highlighted.

If you want to work with more than one icon at a time, you can select a group of icons in either of two ways:

1. Hold down the (Shift) key while clicking on the icons.
2. Press and hold the mouse button to draw a box around a group of icons. When you release the button, all icons in the box are selected.



In either case, you can deselect one or more of the highlighted icons by holding down the (Shift) key while clicking on or drawing a box around the icons you want to deselect.

An active window has a dark bar around the title and a collection of view controls on the right and bottom edges. Examples of active and inactive windows are shown in Figure 6.

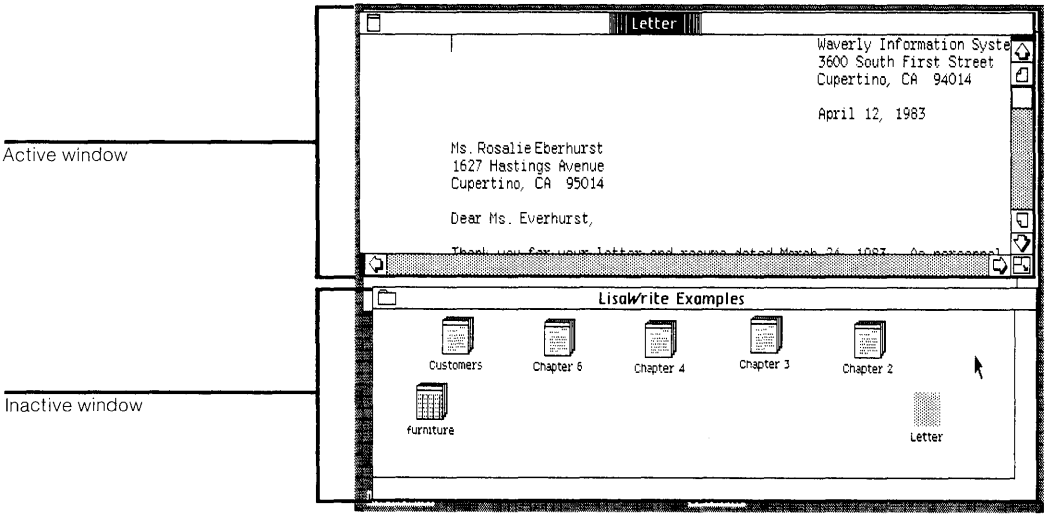


Figure 6. Active and Inactive Windows

The use of the view controls is covered in detail in Section A, LisaGuide, and in the tool manuals.

Whenever you open an icon, its window is automatically activated. If you open more than one icon at once, the window of the last icon to be opened will be active. Whenever you put an icon into an open disk or folder window, that window is automatically activated.

A word of warning about multiple icons: Opening multiple documents at once can take even longer than opening each individually.

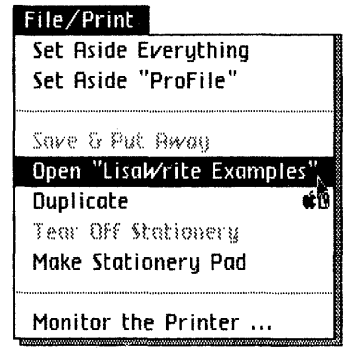
Choosing Menu Items

The words along the top of the Lisa screen are menu titles. After you have selected an icon or activated a window on the desktop, you can work with that object by choosing a command from one of the menus. The menu item you choose affects only the selected or activated objects.

To choose an item from a menu:

1. Move the pointer to the menu title.
2. Press and hold the mouse button to display the menu.

3. Move the pointer down the menu until the item you want is highlighted.



4. Release the mouse button.

The four menus used for desktop management are the File/Print, Edit, Disk, and View menus. The specific tasks these menus are used for are covered in Section D, Desktop Manager Reference Guide. The four menu items used most are Open, Set Aside, Save & Put Away, and Save & Continue.

Open: Opens selected icons into windows.

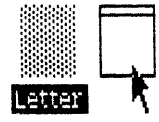
Set Aside: Reduces an open window to an icon, and then puts the icon on the desktop. Setting aside a document merely changes the display; it does not save the document on a disk.

Save & Put Away: Reduces an open window to an icon, and then puts the icon back into its storage location. Any changes you have made since you last saved the document are incorporated on the disk copy.

Save & Continue: Updates the disk copy of a document to match the document on your desktop, but leaves the document window open and active on your desktop.

Moving Objects

You can grasp icons by pointing to them with the pointer and pressing the mouse button. As long as you hold the button down, the icon moves along with the pointer.



You can store an object in a folder or on a disk by moving its icon onto the folder or disk icon or into the folder or disk window. You can discard desktop objects by moving their icons to the Wastebasket. If you move an icon onto an icon or window that cannot hold other objects, the first icon jumps back to its previous location.

Moving an icon around on the desktop or within one window has no effect except to reposition the icon itself.

You can move open windows, grasping them by the title bar, but you cannot store or discard open windows.

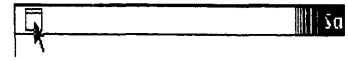
Shortcuts

The File/Print menu contains all of the commands you need for creating, opening, closing, and storing your documents. Because you use these commands so frequently, the Office System includes a simple shortcut for performing these tasks: clicking the mouse button twice.

To tear off a sheet of stationery, click twice rapidly on the stationery pad icon.

To open an icon into a window, click twice rapidly on the icon.

To close an open window, click twice rapidly on the window's title bar icon.



Clicking twice to close a window can either set aside the object or save and put away the object, depending on where the object's shadows are. If there is a shadow on the desktop, clicking twice causes the object to be set aside. If the only shadow is in a folder or on a disk, clicking twice summons a dialog box, which asks you whether you want the object set aside or put away.

Cutting and Pasting between Documents

When you went through the LisaGuide and Getting Started exercises, you learned to cut, copy, and paste text and graphics. You can use these same techniques to transfer text and graphs from one document to another. You can always cut or copy something out of one document and paste it into another document that was created with the same tool. There are limitations, however, on pasting between documents created with different tools.

You can always paste:

- A LisaCalc spreadsheet or LisaGraph table into either a LisaCalc spreadsheet or a LisaGraph table.
- A LisaGraph graph into a LisaDraw document.
- A LisaCalc spreadsheet or a LisaGraph table into a LisaWrite document.
- A LisaProject chart into a LisaDraw document.
- A Calculator tape into a LisaWrite document.
- One "field" of text from any document into any other document. The meaning of a "field" depends on where the text is pasted from and to. A field is one cell in a table, one line of text in most other documents, any icon name, or up to a few lines of text in LisaWrite.

You cannot paste:

- Any LisaDraw graphics into any document created with another tool.
- Any LisaList material into any document created with another tool.

For details of cutting, copying, and pasting between documents created with different tools, see any Lisa office tool manual, Reference Guide, Chapter 2, under Other Tools.

Arranging the Desktop

Like any desk, the Lisa desktop can accumulate an alarming disarray of documents and folders. As you continue to work with the Lisa, you will develop your own habits for organizing both your filing system and your working desktop. The discussion below covers the fundamentals of arranging the desktop.

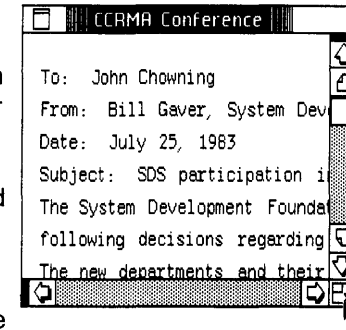
Moving Windows

You can move windows the same way you move any other desktop object, except that you can grasp windows only by the title bar.

You can move a window to see what's under it or to make room for another window to be displayed simultaneously.

Sizing Windows

You can change the dimensions of a window with the size control box, in the lower right-hand corner of the window. To resize a window, move the pointer to the size control box, hold down the mouse button as you move the box, and release the mouse button when the window is the size you want.



Layering Windows

You can have up to 20 windows open at once on your Lisa desktop. When you open an icon, the Lisa usually reconstructs its window in whatever size and location it last appeared. The effect can be that some windows are entirely covered by others.

The active window is always on top. You can bring a different window to the top of the stack by clicking anywhere on that window, thereby activating it.

If the window you want to work on is entirely covered, you can uncover it quickly by choosing Set Aside Everything. All open windows are reduced to icons, which you can quickly scan for the one you want.

Straightening Up Icons

You can have the Lisa arrange all icons on the desktop or in an active window by choosing Straighten Up Icons from the View menu.

In a window, the Lisa arranges the icons in rows, following the shape of the window. If the window is too small to display them all, some icons are moved outside the borders of the visible window.

Guide to Lisa Manuals

Set up your Lisa following the setup procedures in the Lisa accessories box or in Appendix 1, Setup Procedures, in the *Lisa Owner's Guide*.

Go through Section A, LisaGuide, in the *Lisa Owner's Guide*, for an introduction to the Lisa.

If your dealer or service representative did not set your system Preferences so that the Lisa knows what external devices are attached, follow the instructions in Section D, Desktop Manager Reference Guide, under Set, in the *Lisa Owner's Guide*.

Go to Section A, Getting Started, in the manual for each office tool that you want to learn, for the essentials of using that tool.

Go to Section B, Lisa Fundamentals, in the *Lisa Owner's Guide*, for the background information you need before beginning long-term work on the Lisa.

▶You are now ready to start doing your own work on the Lisa:

- If you want self-paced instructions for using a tool, go to Section B, Tutorial, in that tool manual.
- If you want instructions for performing specific tasks with a tool, go to Section C, Reference Guide, in that tool manual.

For specific instructions on filing and desktop management, go to Section D, Desktop Manager Reference Guide, in the *Lisa Owner's Guide*.

For more information on the Lisa hardware, tips on caring for the Lisa, and suggestions for troubleshooting when the system isn't working properly, go to the other sections of the *Lisa Owner's Guide*.

Section C
Lisa Hardware

Contents

C1 What's in Lisa Hardware?

C2 System Parts

C3 Keyboard
C5 Numeric Keypad
C5 Reference Cards
C6 Mouse
C6 ProFile
C7 Cabinet
C7 Video Screen
C9 Disk Drives
C10 On-Off Button
C11 Reset Button
C11 Power Cord
C12 Connectors for Extra Devices
C13 Screen Controls

C15 Radio and Television Interference

What's in Lisa Hardware?

This section introduces the major Lisa components and explains how they interact. The individual discussions include hardware details that will help you use the Lisa easily and comfortably.

This section is concerned only with the physical parts of the Lisa. If you are using the Lisa Office System, you will find the background information on using your system in Section B, Lisa Fundamentals. If you are a programmer using the Development System, refer to the System Manager section of the *Workshop User's Guide* for the Lisa for detailed descriptions of the utility programs and the standard interfaces.

Directions for setting up your Lisa come separately in the accessories box. For your convenience, these instructions are repeated in Appendix 1, Setup Procedures.

System Parts

The Lisa system consists of four separate parts:

- The keyboard.
- The mouse.
- The ProFile hard disk.
- The cabinet containing the computer itself, the video screen, and the disk drives.

Figures 1 and 2 show the front and back views of the Lisa.

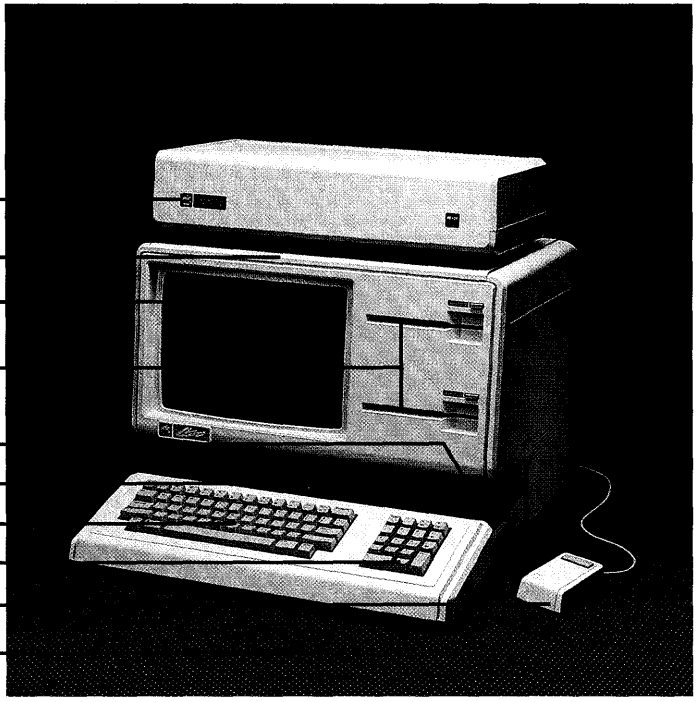


Figure 1. Lisa, Front View

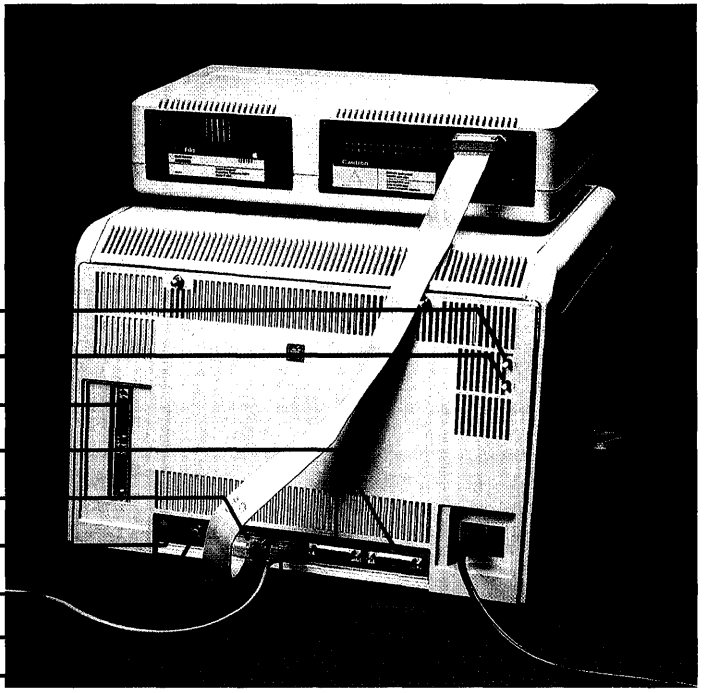


Figure 2. Lisa, Back View

Keyboard

The Lisa keyboard is much like a typewriter keyboard, with a few additional keys.

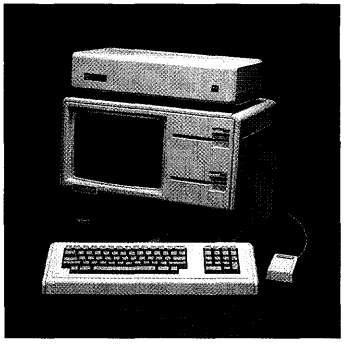
The functions of the Clear, Enter, ⌘, and arrow keys (▲, ▼, ◀, ▶) depend on the tool you're using; they are described in the manuals that come with the Lisa tools. The Caps Lock key is like shift lock, except that it affects only the letter keys, not the number or punctuation keys.

The (Option) keys, which work like shift keys, give you access to a set of special symbols and international characters. These characters are displayed in Figure 3 and on a pull-out card stored under the keyboard. To type one of the special characters, hold down either (Option) key while pressing the key for the character you want.

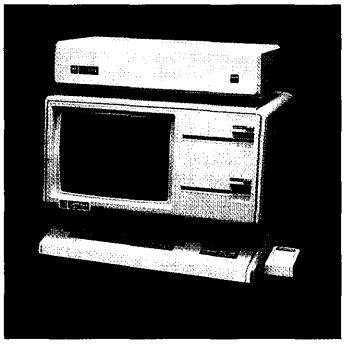
Figure 3. Lisa Keyboard

All letter and number keys on the Lisa keyboard repeat automatically when held down. You can specify the time lag before the keys start to repeat and the rate at which they repeat. Instructions for making these adjustments appear in Section D, Desktop Manager Reference Guide, under Set Convenience Settings, and in the System Manager section of the *Workshop User's Guide* for the Lisa.

The keyboard is attached to the Lisa by a flexible cable so that you can put the keyboard on your lap, or wherever it is most comfortable and convenient while you're working. The maximum safe extension of the cable is 4 feet.

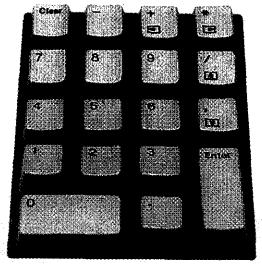


When you are not using the Lisa, you can save space and protect the keyboard by sliding it under the front of the cabinet.



Numeric Keypad

The numeric keypad on the right side of the keyboard is for your convenience when entering numbers and equations; pressing these keys has the same effect as pressing the corresponding symbols on the main keyboard. The Clear, Enter, and arrow keys are discussed in the tool manuals.



Reference Cards

The reference cards under the keyboard hold three kinds of information:

- The top card displays the option keyboard layout, discussed above.
- The two middle cards contain a quick-reference summary of the Lisa Office System.
- The bottom card contains details about your Lisa and your support agreement. If your dealer did not fill in this card when you purchased your Lisa, you should fill it in now so that the information will be handy when you need it.

Once you no longer need the quick-reference cards, you can turn the cards over and use the scratch pads on the back for your own reference notes.

Mouse

Like the keyboard, the mouse is a device for communicating with the Lisa. Rolling the mouse along a flat surface moves a pointer on the video screen; pressing the button on top of the mouse signals the Lisa that the pointer is in the location you want. The mouse is covered in more detail in the LisaGuide diskette, presented in Section A, LisaGuide.

The mouse is quite sturdy and can tolerate a lot of rolling and button-pressing. However, a sudden impact could damage the sensors inside. Avoid dropping the mouse or hitting it against hard objects.

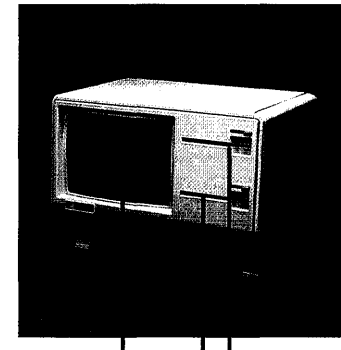
After several hundred hours of use, the inside of the mouse can accumulate enough dust to make pointer control uneven. Instructions for cleaning the mouse appear in Section F, Maintenance.

ProFile

The ProFile hard disk stores the Lisa software and the documents you create with the Lisa. Refer to Section B, Lisa Fundamentals, for a discussion of software and documents, and to the manual that came with the ProFile for more information on the ProFile hardware.

Cabinet

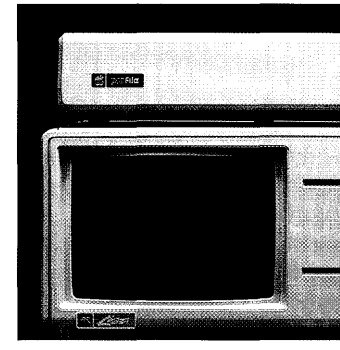
The cabinet contains the computer itself, the video screen, and the disk drives. It also contains the power supply. To prevent electrical accidents, both the front and the back panels of the cabinet are equipped with safety interlock switches. If you remove either panel while the Lisa is running, the safety switches immediately cut off power to the system. Without power, the computer loses everything in its memory, including any documents you were working on.

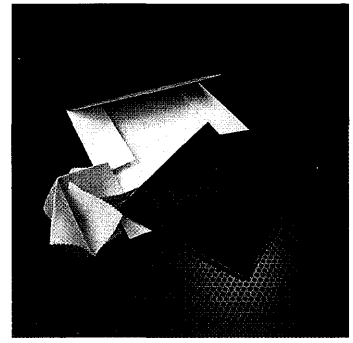


Note: The safety interlock switches do not cut off power to the power supply. You should always turn off and unplug the Lisa before opening the cabinet.

Video Screen

The brightness and focus of the Lisa video screen are controlled mechanically; the contrast is set through software. Instructions for setting the focus appear under Screen Controls, later in this section. Instructions for setting the brightness and contrast appear in Section D, Desktop Manager Reference Guide, under Set Screen Brightness and Contrast, and in the System Manager section of the *Workshop User's Guide* for the Lisa.





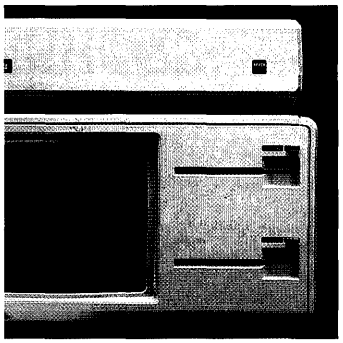
A special glare filter comes in the Lisa accessories box. In most environments the filter is unnecessary, but sometimes windows or overhead lights can cause irritating reflections on the screen. If screen glare is a problem for you, install the filter according to the instructions in Section H, Service, under Install Glare Filter. After you install the filter, you will have to readjust the screen contrast.

After many hours of exactly the same display, video screens are subject to burn-in: the screen picks up a permanent image that is the negative of the display. To protect against burn-in, the Lisa dims the screen if no activity has taken place for several minutes. Once the screen has dimmed, any key press or mouse movement returns it to the normal contrast level. Instructions for setting the time lag before dimming and the contrast level of the dim display appear in Section D, Desktop Manager Reference Guide, under Set Convenience Settings, and in the System Manager section of the *Workshop User's Guide* for the Lisa.

You can dim the screen yourself at a moment's notice, invoking the screen's "privacy feature." To dim the screen, hold down both the right-hand **Option** key and the right-hand **Shift** key while pressing the 0 on the numeric keypad. To return the screen to its normal contrast level, press the same combination of keys.

Disk Drives

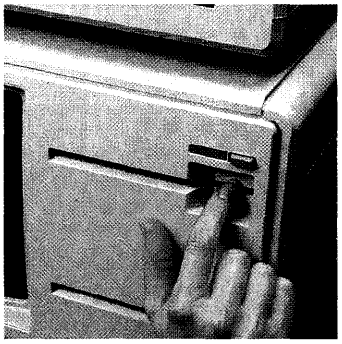
The Lisa's two built-in disk drives accept special, 5-1/4 inch floppy diskettes. When you buy blank diskettes, be careful to get diskettes that are compatible with the Lisa disk drives.



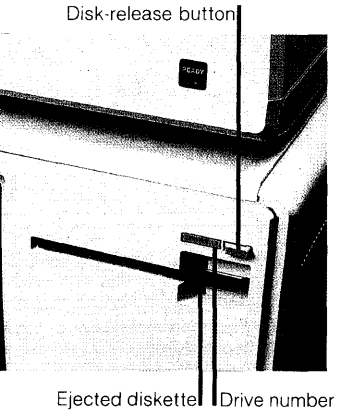
Insert diskettes into the drive slots with the printed label facing up on the right and the notched corner on the right.

Note: Do not touch the exposed, shiny surfaces. See Appendix 2, Handling Diskettes, for recommended procedures for handling and storing diskettes.

Push the diskette into the drive gently. You can feel resistance from an internal spring for the last 1/2 inch or so. When the diskette is in place, you can hear the disk drive clamp onto the diskette. If the Lisa is on, you can also feel the vibrations of the spinning disk. Once a diskette is in place and clamped, do not try to pull it out until it is released by the drive.

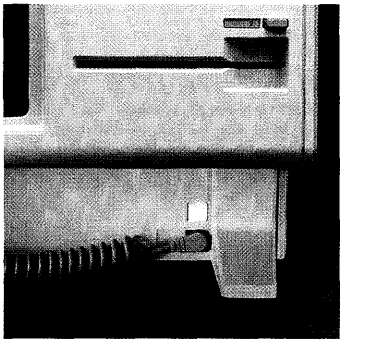


One disk-release button is located above each drive slot, to the right of the drive number. When you want to remove a diskette, press the disk-release button and wait for the Lisa to eject the diskette. There may be a delay while the computer updates and releases the diskette.



On-Off Button

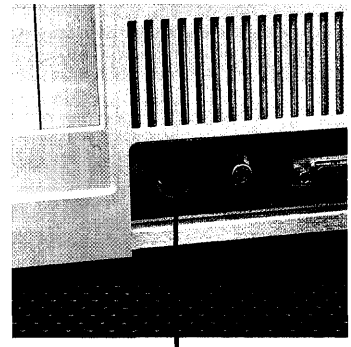
Press the on-off button when you want to turn the Lisa on or off. When the Lisa is on, the on-off button is lit. To prolong the life of the power system, leave the Lisa on continually as long as you are using it every day. Turn it off on weekends or any other time you will not be using it for a day or more.



Generally, pressing the on-off button when the Lisa is on does not instantly shut it off. The on-off button triggers a series of disk-storage procedures, followed by a cutback of power to standby levels. As long as the Lisa is plugged into a working outlet, whether or not the on-off button is lit, the system draws a small amount of current. See Appendix 4, On-Off Procedures, for a description of the startup and shutdown sequences.

Reset Button

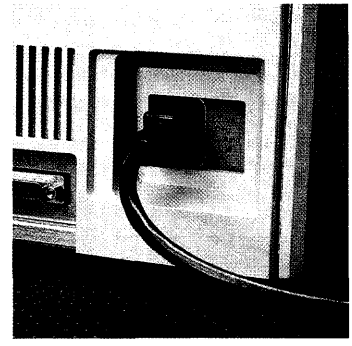
The reset button is a backup device for use when the normal shutdown procedures go awry or when the Lisa doesn't respond to the keyboard, mouse, or on-off button. The use of the reset button is discussed in Section G, Troubleshooting, and in the *Workshop User's Guide* for the Lisa.



Under ordinary circumstances, do not press the reset button.

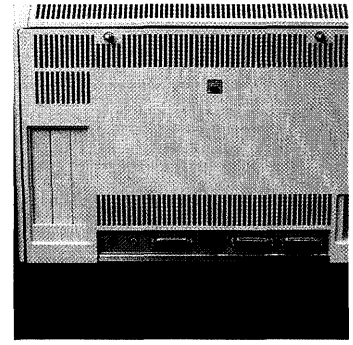
Power Cord

As long as the Lisa is plugged into a working outlet, it draws a small amount of current, which it uses to keep the clock/calendar up to date and to power a small amount of memory known as parameter memory. Parameter memory contains your specifications regarding external devices, repeating keys, and screen contrast. A battery inside the Lisa can power the clock and parameter memory for up to 10 hours so that you can move and service the machine without losing the time and device settings.

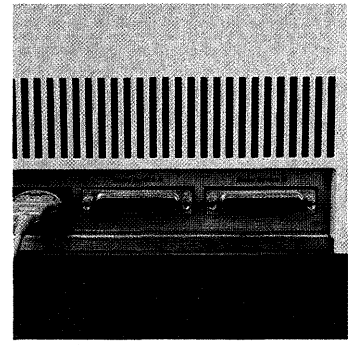


When you must unplug the Lisa, make sure the light in the on-off button is out before you pull the plug. When you are done moving or servicing the machine, reattach the plug as soon as possible, even if you do not need to turn the Lisa on again.

Connectors for Extra Devices

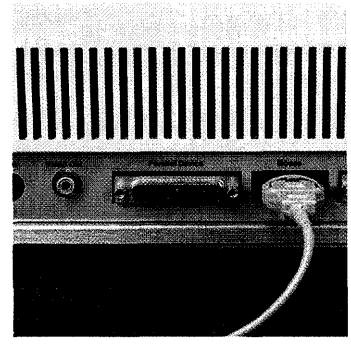


The Lisa is equipped with built-in connectors for attaching extra devices: printers, additional disk drives, telephone-connect modems, and any other equipment that interacts with the Lisa. See Section D, Desktop Manager Reference Guide, under Set, for the procedures for telling the Lisa that you have attached a piece of equipment.



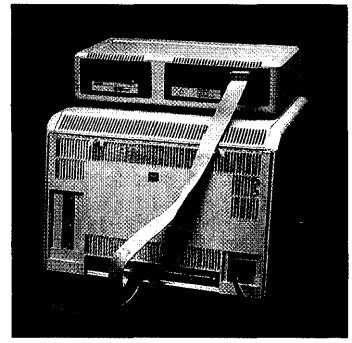
Serial Connectors: The two serial device connectors accept 25-prong, D-shaped plugs for devices that use serial signals. If you do not know whether a device you want to attach is serial or parallel, see the manual that came with the device.

If you are using a high-speed modem (9600 baud), attach the modem to the connector labeled Serial Device A.

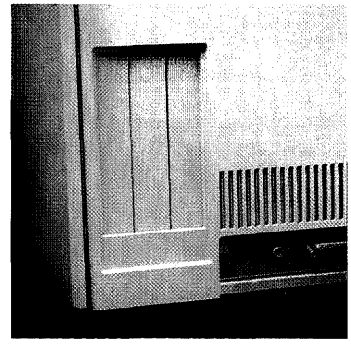


Parallel Connector: The parallel device connector accepts 25-prong, D-shaped plugs for parallel devices. If you have more than one parallel device, you can add additional parallel connectors through the expansion slots on the left side of the back panel.

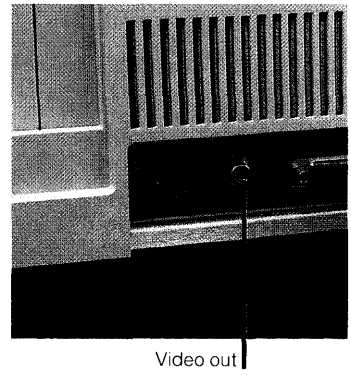
Most Lisa systems use a ProFile hard disk, attached to the built-in parallel connector.



Expansion Slots: The three expansion slots accommodate expansion cards for a variety of general and special functions. Special instructions for installing expansion cards come with all Apple-supplied cards. The general procedure for installing and removing cards appears in Section H, Service.



Video Out: The video out connector is compatible with standard video plugs. You can use it to send the screen display to an external, high-resolution video monitor. The monitor must be compatible with the Lisa video specifications listed in Appendix 5, Hardware Specifications.

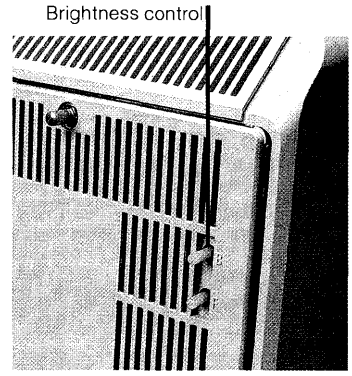


Screen Controls

You can make three kinds of adjustments to the screen: brightness, contrast, and focus. The exact setting of each depends on lighting conditions, the age of the video tube, and your personal preference.

You can avoid eye strain by keeping your screen adjusted at all times, and by occasionally looking away from the screen and focusing on something across the room.

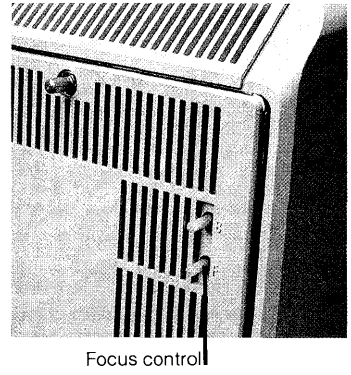
Brightness: The brightness control is the higher of the two white knobs extending from the top right corner of the back panel.



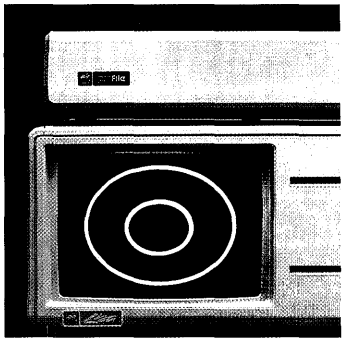
Specific instructions for setting the screen brightness appear in Section D, Desktop Manager Reference Guide, under Set Screen Brightness and Contrast, and in the System Manager section of the *Workshop User's Guide* for the Lisa.

Contrast: The screen contrast is controlled through software. Instructions for setting the contrast appear in Section D, Desktop Manager Reference Guide, under Set Screen Brightness and Contrast, and in the System Manager section of the *Workshop User's Guide* for the Lisa.

Focus: The focus control is the lower of the two white knobs extending from the top right corner of the back panel.



To set the focus, first fill the screen with text or graphics. Adjust the focus to make the picture as sharp as possible in the doughnut-shaped area around the center of the screen.



Radio and Television Interference

The Lisa generates and uses radio frequency energy. If the Lisa is not used in strict accordance with the instructions in this manual, it may interfere with radio or television reception. See Appendix 5, Hardware Specifications, for suggestions on how to eliminate interference should it occur.

Section D
Desktop Manager
Reference Guide

029-0142-A

Contents

D1 What's in the Desktop Manager Reference Guide?

D5 Copy

D17 Create

D23 Discard

D25 File

D31 Initialize

D41 List

D45 Name

D47 Print

D49 Repair

D63 Set

What's in the Desktop Manager Reference Guide?

This section contains step-by-step instructions for using the Desktop Manager, the filing system that the Lisa uses to organize your work on the screen and on your disks. Use the table below to find the part of this guide that describes the task you want to perform.

An overview of the Desktop Manager appears in Section B, Lisa Fundamentals.

Copy

Look here for the procedures for backing up and duplicating.

D6 Add the Contents of a Diskette to Another Disk
D8 Copy a Diskette onto a Diskette
D11 Copy a Document, Folder, Stationery Pad, or Tool
D14 Copy a ProFile onto Backup Diskettes

Create

Look here for instructions for starting new documents and folders and making your own custom stationery pads.

D18 Create a Document or Folder
D20 Create a Stationery Pad

Discard

Look here for the procedures for discarding objects.

D24 Discard a Document, Folder, Stationery Pad, or Tool

File

Look here for the basic filing procedures.

D26 File an Object in a New Storage Location
D27 Get an Existing Document
D28 Return a Document or Folder to Its Storage Location
D29 Revert to Previous Version
D30 Save a Document and Continue Working

Initialize

Look here for the procedures for preparing disks for use with the Lisa Office System.

D32 Erase and Reinitialize a Disk
D33 Initialize a Diskette
D34 Initialize a Startup ProFile and Install the Tools
D39 Initialize a Storage ProFile

List

Look here for the procedures for displaying the contents of a folder or disk.

D42 Alter Display of a Disk or Folder
D44 Display Contents of a Disk or Folder

Name

Look here when you want to name or rename desktop objects.

D46 Name or Rename an Object

Print

Look here when you want to print the screen display.

D48 Print Screen Display

Repair

Look here when you have mechanical problems with a disk.

D50 Reinstall System Software
D53 Repair a Startup ProFile
D56 Repair a Storage Disk
D57 Repair a Storage Disk after a System Failure
D59 Restore a ProFile from Diskette Backups

Set

Look here for the details of setting up your system.

D64 Set Clock/Calendar
D65 Set Convenience Settings
D69 Set Device Connections
D71 Set Printer Configuration, Daisy Wheel
D74 Set Printer Configuration, Dot Matrix
D77 Set Screen Brightness and Contrast
D80 Set Startup Device during Startup
D82 Set Startup Specifications

Copy

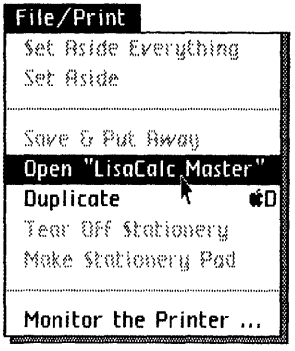
D6 Add the Contents of a Diskette to Another Disk
D8 Copy a Diskette onto a Diskette
D11 Copy a Document, Folder, Stationery Pad, or Tool
D14 Copy a ProFile onto Backup Diskettes

Copy

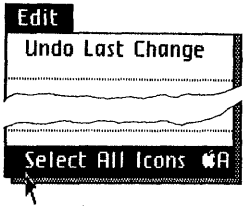
Add the Contents of a Diskette to Another Disk

To add the contents of a diskette to another disk

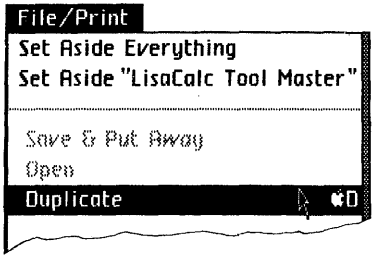
- ▶ Insert the diskette into either floppy disk drive.
- ▶ Choose Open from the File/Print menu.



- ▶ Choose Select All Icons from the Edit menu.



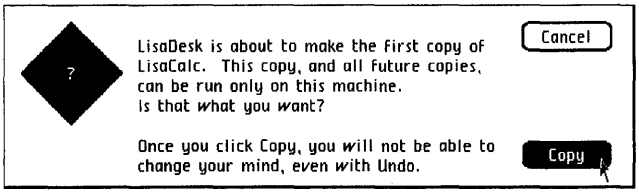
- ▶ Choose Duplicate from the File/Print menu.



- ▶ Move the blinking duplicates onto the destination disk icon.

Add the Contents of a Diskette to Another Disk *(continued)*

▶ If this message appears, click Copy.



This procedure enables you to add new tools — or any other information — to any disk without destroying the information that is already there. If you are setting up your startup ProFile for the first time, refer to the procedure, Initialize a Startup ProFile and Install the Tools, under Initialize, in this section for the procedures for adding tools while initializing the ProFile.

Copies of a tool will work only on the same Lisa that made the first copy of the master tool diskette. If you have more than one Lisa in your office, you need a separate master tool diskette for each Lisa.

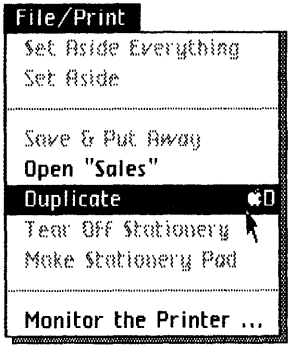
You can keep only one copy of each tool on a single disk.

Copy

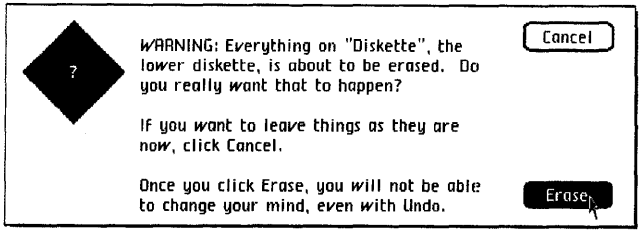
Copy a Diskette onto a Diskette

To copy a diskette onto another diskette

- Select the icon for the diskette you want to copy.
- Choose Duplicate from the File/Print menu.



- Move the blinking duplicate onto the icon that represents the destination diskette, that is, the diskette that will hold the copy.
- In response to the alert message that appears, click Erase.



This procedure always replaces the contents of the destination diskette with the contents of the source diskette. It also leaves the destination diskette with the same name as the source diskette.

Copy a Diskette onto a Diskette *(continued)*

If you want to add the contents of one disk to the contents of another disk without erasing the destination disk, follow the procedure, Add the Contents of a Diskette to Another Disk, in this section.

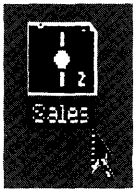
If you prefer to use the keyboard instead of the mouse, you can hold down the ⌘ key while pressing D instead of choosing Duplicate from the File/Print menu.

You cannot copy LisaTest with this procedure. See Section G, Troubleshooting, under LisaTest, for the procedures for backing up that diskette. Refer to the procedure, Add the Contents of a Diskette to Another Disk, in this section, for special information about copying tool diskettes.

Example

Suppose you have just completed all of your monthly sales reports, and you want to update your backup copy of the diskette containing the reports.

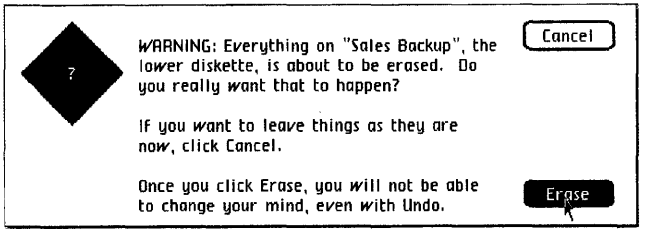
1. You select the diskette Sales.



2. You choose Duplicate from the File/Print menu.
3. Before doing anything else, you move the blinking duplicate onto the Sales Backup icon.

Copy a Diskette onto a Diskette
(continued)

The Lisa gives you this warning message:



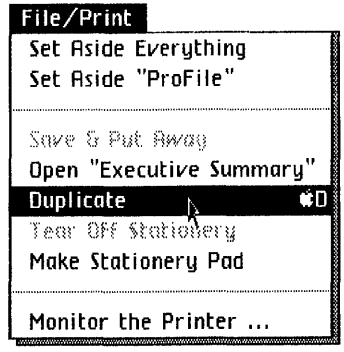
4. Since you want to replace the contents of Sales Backup with the contents of Sales, you click Erase.

When the Wait alert message disappears, you have two copies of Sales. You change the name of the backup to Sales Backup.

Copy a Document, Folder, Stationery Pad, or Tool

To make a duplicate copy of a document, folder, stationery pad, or tool

- Select the icon for the object you want to copy.
- Choose Duplicate from the File/Print menu.



- Move the blinking copy of the icon to its storage location.

If you do anything else before you move the blinking duplicate, an alert appears, asking if you want to cancel the duplication.

This procedure works for individual icons or groups of selected icons. If you duplicate more than one icon at once, moving any one of the blinking duplicates moves all of them. You cannot duplicate an object while it is open.

If you prefer to use the keyboard instead of the mouse, you can hold down the ⌘ key while pressing D instead of choosing Duplicate from the File/Print Menu.

Copy a Document, Folder, Stationery Pad, or Tool
(continued)

If you are copying a single document in order to back it up, you may want to modify the name of the duplicate. If you habitually duplicate documents for the purpose of backing up, you will begin to accumulate old versions of the backup copies. When you are sure you don't need them, simply discard the outdated copies.

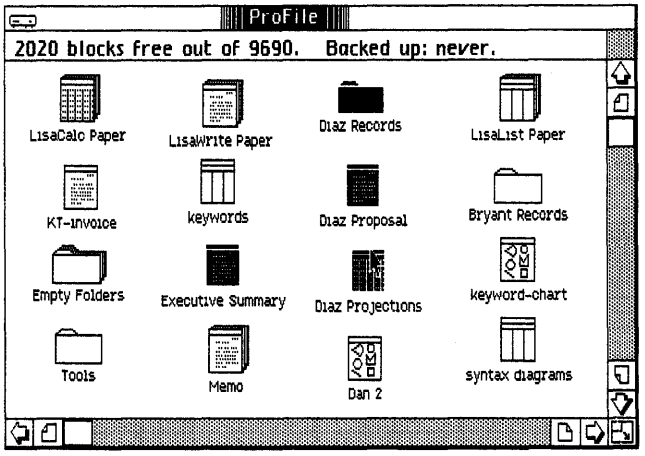
See the procedure, Add the Contents of a Diskette to Another Disk, in this section, for information specific to copying tools.

Example

Suppose you want to keep a backup diskette containing all your records on the Diaz project.

First you initialize the new diskette, following the procedure, Initialize a Diskette, under Initialize, in this section.

1. You open your ProFile and select all the folders and documents related to the Diaz project.



2. You choose Duplicate from the File/Print menu.

Copy a Document, Folder, Stationery Pad, or Tool
(continued)

3. You move the duplicates out of the ProFile window and onto the new diskette icon. When the duplicates are in place, the diskette icon becomes highlighted.

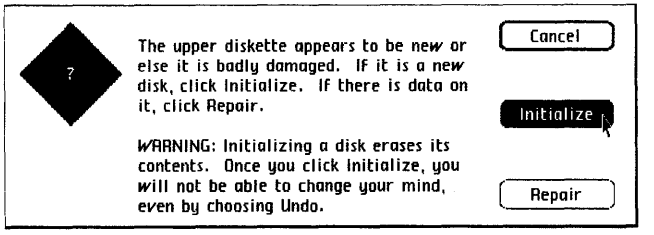
Your new diskette now contains all of the documents related to the Diaz project.

Copy

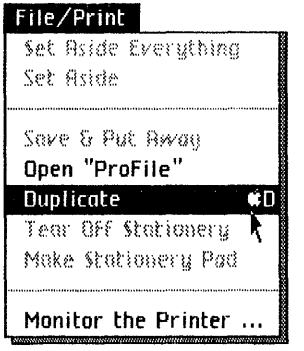
Copy a ProFile onto Backup Diskettes

To make a diskette backup of a ProFile

- Insert the first backup diskette into one of the built-in floppy disk drives.
- If the Lisa asks if you want the diskette initialized, click Initialize.

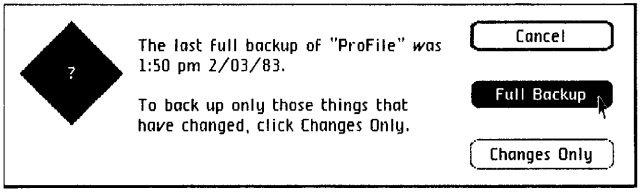


- Select the ProFile icon.
- Choose Duplicate from the File/Print menu.

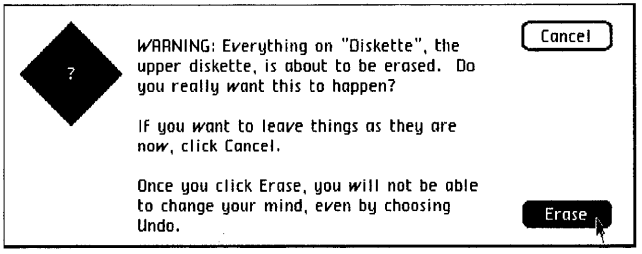


- Move the blinking duplicate onto the icon that represents the backup diskette.
- If this message appears, click Full Backup to back up the entire disk or Changes Only to back up only the information that has changed since the last full backup.

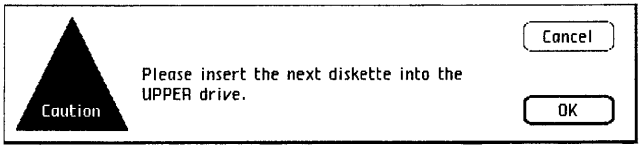
Copy a ProFile onto Backup Diskettes *(continued)*



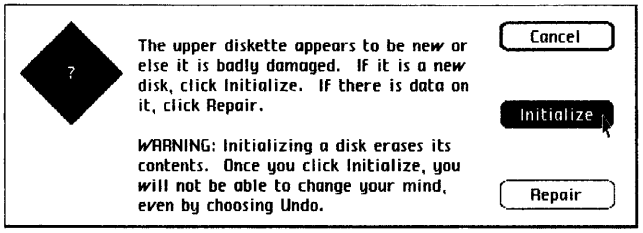
▶ When this warning appears, click Erase.



▶ When this message appears, remove the first diskette and insert another diskette.

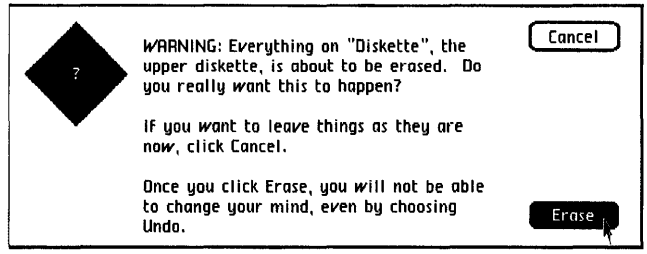


▶ If this message appears, click Initialize.



Copy a ProFile onto Backup Diskettes
(continued)

▶ If this message appears, click Erase.



▶ Continue removing diskettes and inserting additional diskettes until the Lisa ejects a diskette without requesting another.

Depending on how much information is stored on your hard disk, you may need up to eight diskettes to hold it all. You can use the same diskettes each time you make a full backup, but all information previously on the diskettes will be destroyed.

Once you have made one full backup of a ProFile, you can make incremental backups of only the material that has changed since the full backup.

You can make as many incremental backups as you want between full backups: each incremental backup makes a copy of everything that has changed since the last full backup.

If you have to reconstruct the ProFile from the backup diskettes later, you can save time by inserting first the diskettes from the last incremental backup, and then the diskettes from the last full backup.

You should probably make either a full or incremental backup of your ProFile at least once a week.

Create

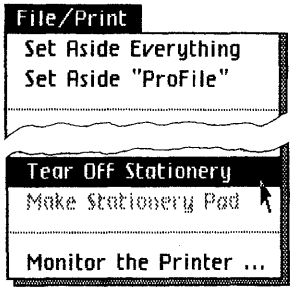
D18 Create a Document or Folder
D20 Create a Stationery Pad

Create

Create a Document or Folder

To start a new document or folder

- Select the stationery pad you want to use.
- Choose Tear Off Stationery from the File/Print menu.



- Name the new document or folder by typing the name you want to use.
- Move the new document or folder to the disk or folder where you intend to store it.
- If you are starting a new document, open the new document to begin working.

You can also tear off a new piece of stationery by clicking twice on the stationery pad icon instead of going through the File/Print menu.

When you first create a new document or folder, its storage location is the same as the storage location of the pad it was created from. If you intend to file the object in another location later, you can simplify the filing process by moving the icon to its intended location before you open it to begin working.

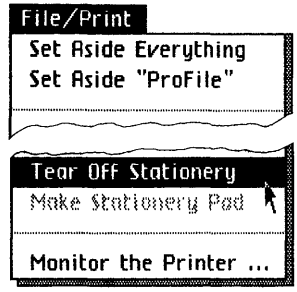
Create a Document or Folder *(continued)*

Example

Suppose you want to write a letter to Jim, using your office letterhead stationery. First you locate the stationery pad Letterhead in your Stationery folder.

1. You select the stationery pad Letterhead.

2. You choose Tear Off Stationery from the File/Print menu.



3. You type in the name "Jim-7/21." The title appears under the new document icon. From now on, whenever you see this icon, you will know that it contains the letter you wrote to Jim on July 21.

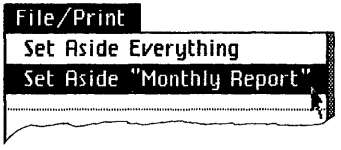
4. You want to store the document in a folder labeled Correspondence. You move the new document icon out of the Stationery folder and into the Correspondence folder.
5. You click twice on the document icon to open it, and you are ready to write your letter.

Create

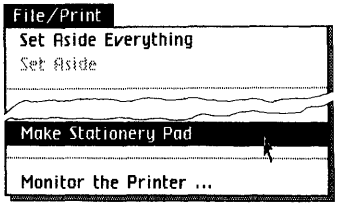
Create a Stationery Pad

To make a new pad of stationery

- Prepare the document or folder that you want to make into a stationery pad.
- Reduce the object to an icon by choosing either Set Aside or Save & Put Away from the File/Print menu.



- With the icon selected, choose Make Stationery Pad from the File/Print menu.



You can make a stationery pad out of any document or folder.

Example

Suppose you want to keep a supply of blank expense spreadsheets for adding up your monthly expense reports.

1. You create a LisaCalc spreadsheet tailored to your monthly report format.
2. You choose Save & Continue, in order to put the document onto its storage disk. Then you set aside the open document. The icon remains selected.

Create a Stationery Pad *(continued)*

3. You choose Make Stationery Pad from the File/Print menu.
4. A stationery pad appears, with the same name as the document.

The next time you have to fill in an expense report, you tear off a blank expense spreadsheet from your customized stationery pad. It will be called "Untitled" until you type in a new name.

Discard

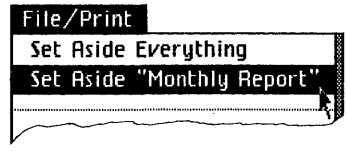
D24 Discard a Document, Folder, Stationery Pad, or Tool

Discard

Discard a Document, Folder, Stationery Pad, or Tool

To discard an object

- If the object is open, reduce it to an icon by choosing Set Aside from the File/Print menu.



- Press and hold the mouse button as you move the icon to the Wastebasket.
- Release the mouse button when the Wastebasket is highlighted or the object is fully inside the Wastebasket window.

The Wastebasket accepts either individual icons or groups of selected icons. If you discard a folder, everything contained in that folder is also discarded.

As you discard icons, they usually remain inside the Wastebasket until something else that resides on the same disk is also discarded. If you are trying to make more room on a disk by discarding old documents, the most efficient procedure is to select and discard all of the old documents, and then to discard an empty folder. Sometimes the Lisa will shred everything in the Wastebasket in order to reclaim disk space.

To retrieve something from the Wastebasket, open the Wastebasket and move the icon out of the Wastebasket window.

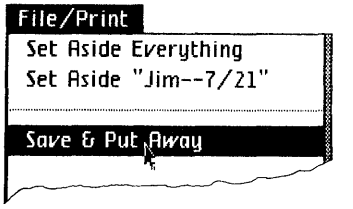
File

D26 File an Object in a New Storage Location
D27 Get an Existing Document
D28 Return a Document or Folder to Its Storage Location
D29 Revert to Previous Version
D30 Save a Document and Continue Working

File an Object in a New Storage Location

To move a document, folder, stationery pad, or tool to a new storage location

- If the object is open, reduce it to an icon by choosing either Set Aside or Save & Put Away from the File/Print menu.



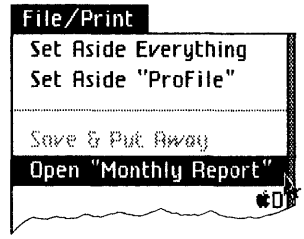
- Press and hold the mouse button as you move the icon to its new storage location.
- Release the mouse button when the destination icon is highlighted or the object being moved is inside the destination window.

Folders, stationery pads, and tools can be moved from one storage location to another any time they are closed. Before you can change the storage location of a document, however, you might have to save and put away the document through the File/Print menu. If so, the Desktop Manager prompts you to reopen the document and put it away before moving it.

Get an Existing Document

To work on a document that already exists

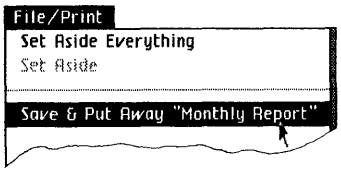
- Select the icon that represents the document you want to work on.
- Choose Open from the File/Print menu.



Return a Document or Folder to Its Storage Location

To file a revised document or folder in the same place it was filed previously

▶ With the document selected, choose Save & Put Away from the File/ Print menu.



Depending on which tool you are using, you might have to open your documents before choosing Save & Put Away.

Save & Put Away has two simultaneous effects: on the desktop, it reduces an open window to an icon and returns the icon to its storage location. On the storage disk, it saves a new version of the document, incorporating any changes you have made since you last saved it. If the disk contains a previous version of the document, the old version is removed. The next time you choose Revert to Previous Version, the document reverts to the state it was in when it was last saved.

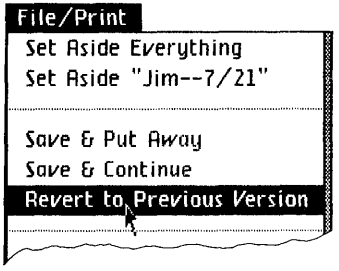
Some Lisa tools automatically update the stored version of all open documents every time you eject their storage disk or turn off the Lisa. Other tools put all open documents into a suspended state, not updating the disk version. See the manual for each tool to find out whether or not turning off the Lisa or removing a storage diskette updates the disk version of a document.

If you have opened a document or a folder from its storage location, without moving the icon onto the gray desktop, then clicking the mouse button twice on the title bar icon brings up an alert that gives you the choice of saving and putting away or setting aside the document.

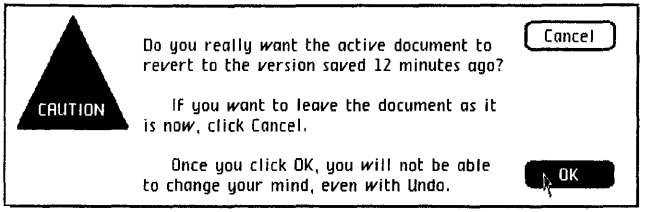
Revert to Previous Version

To cancel all changes you have made since you last saved a document

▶ With the document selected, choose Revert to Previous Version from the File/Print menu.



▶ In response to the Caution alert, click OK.



This procedure causes the document to revert to the state it was in the last time you saved it. All tools save active documents at two times:

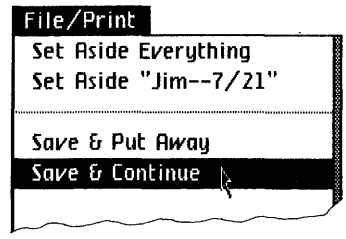
- When you choose Save & Continue from the File/Print menu.
- When you choose Save & Put Away from the File/Print menu.

Some tools also save all open documents any time you eject the disk they are stored on or turn off the Lisa by pressing the on-off button. See the manual for the Lisa office tool you are using, Section C, Reference Guide, under Revert to Previous Version, to find out when that tool updates the document on its storage disk.

Save a Document and Continue Working

To save a document while you are working

▶ With the document open and active, choose Save & Continue from the File/Print menu.



Save & Continue updates the document on the disk to match the document on your desktop, but it leaves the document open and active. You should save the document you are working on any time you feel that it's important to save your recent edits. Some people save periodically, after, for example, 15 minutes of work.

The next time you choose Revert to Previous Version, the document on your desktop will revert to the state it was in when you last saved it.

Initialize

D32 Erase and Reinitialize a Disk
D33 Initialize a Diskette
D34 Initialize a Startup ProFile and Install the Tools
D39 Initialize a Storage ProFile

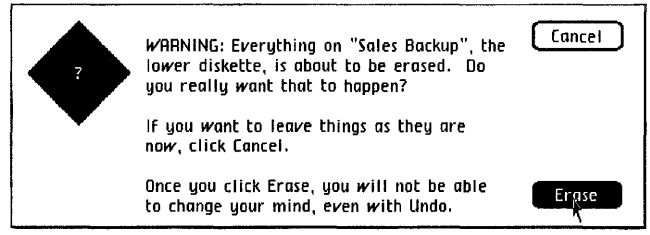
Initialize

Erase and Reinitialize a Disk

To erase and reinitialize a used disk

▶ With the disk icon selected, choose Erase from the Disk menu.

▶ When the alert message appears, double check to make sure that this is the disk you want to erase. If so, click Erase.



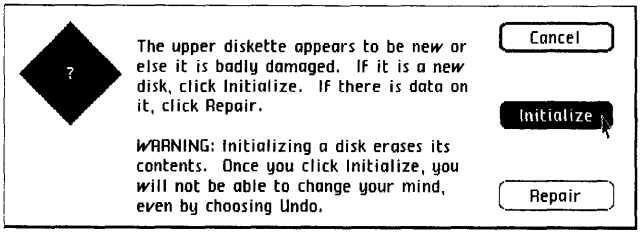
Whenever the Lisa Office System erases a disk, it automatically reinitializes it.

A recycled disk retains its old name.

Initialize a Diskette

To initialize a new diskette

- Insert the blank diskette into an empty disk drive.
- In response to the message that appears, click Initialize.



- When the Wait message disappears, name the new diskette by typing the new name.

Any time you insert a diskette that has not been initialized by the Lisa, the Desktop Manager asks if you would like it initialized. If you cancel the operation, the Lisa ejects the diskette from the drive.

Each diskette initialized by the Lisa Office System contains a pad of empty folders, which you can use to organize your documents.

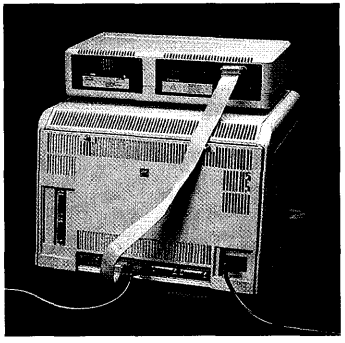
The initialization process takes up a small amount of the total disk space. Therefore, the status panel on a newly initialized diskette shows that some of the disk space is already used.

Initialize

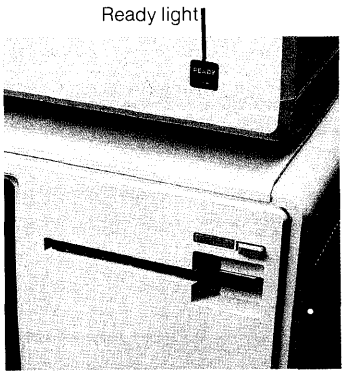
Initialize a Startup ProFile and Install the Tools

To initialize a ProFile as the startup device

- ▶ If the Lisa is on, turn it off by pressing the on-off button once.
- ▶ Insert the diskette labeled Office System 1 into the upper built-in floppy disk drive.
- ▶ Insert the diskette labeled Office System 2 into the lower built-in floppy disk drive.
- ▶ Attach the blank ProFile to the built-in parallel connector on the back of the Lisa.



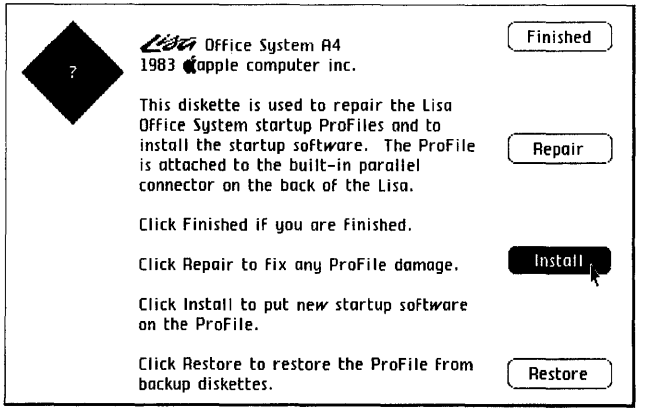
- ▶ Turn on the ProFile. Wait until the ready light stabilizes.



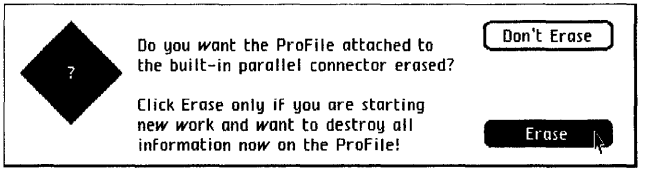
- ▶ Turn on the Lisa by pressing the on-off button once.

Initialize a Startup ProFile and Install the Tools *(continued)*

- When you hear a click from the cabinet, hold down the ⌘ key while pressing 1 on the main keyboard — not the 1 on the numeric keypad on the right of the keyboard.
- When this message appears, move the mouse on your desk until the pointer is over the box that says Install.



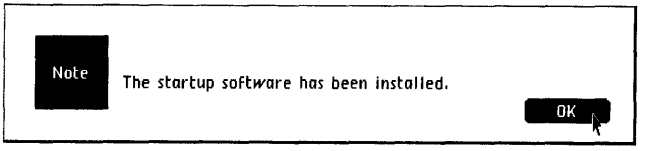
- Click the mouse button once.
- If this message appears, move the mouse until the pointer is over the box that says Erase.



- Click the mouse button once.

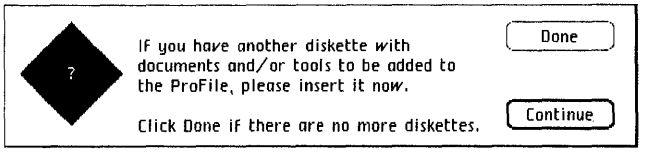
Initialize a Startup ProFile and Install the Tools
(continued)

▶ When this message appears, move the mouse to the box that says OK.

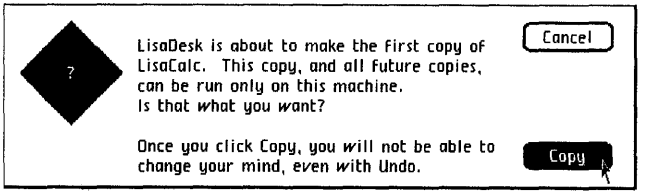


▶ Click the mouse button once.

▶ When this message appears, insert one of your master tool diskettes.

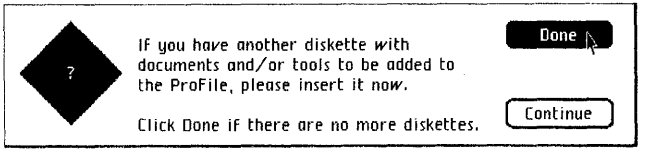


▶ If this message appears, stop and make sure that you are using the Lisa for which that tool diskette was purchased. If so, move the pointer to the box that says Copy.



▶ Click the mouse button once.

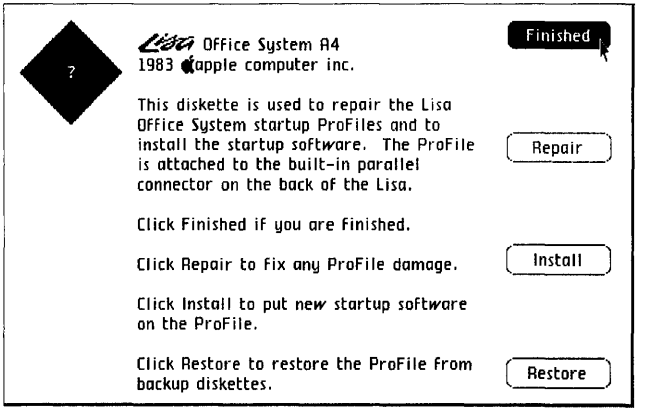
▶ When all tools are installed, move the pointer to the box that says Done.



Initialize a Startup ProFile and Install the Tools *(continued)*

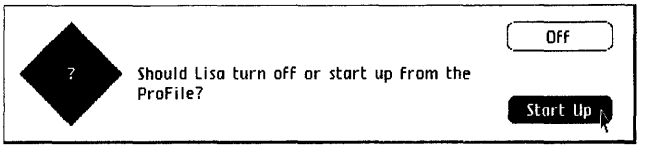
▶ Click the mouse button once.

▶ When this message appears, move the pointer to the box that says Finished.



▶ Click the mouse button once.

▶ When this message appears, move the pointer to the box that says Start Up.



▶ Click the mouse button once.

Initialize a Startup ProFile and Install the Tools
(continued)

This procedure erases any information that may have been stored on the ProFile. If you want to replace the Lisa Office System software on a ProFile that already contains some information, follow the Reinstall System Software procedure, under Repair, in this section. See Section B, Lisa Fundamentals, for a discussion of the Lisa Office System software.

This procedure automatically sets your startup device to the ProFile attached to the built-in parallel connector.

Your dealer or service representative should have initialized your startup ProFile. The instructions are presented here in case you received a blank ProFile with your new Lisa system.

Copies of a tool will work only on the same Lisa that made the first copy of the master tool diskette. If you have more than one Lisa in your office, you need a separate master tool diskette for each Lisa.

You can keep only one copy of each tool on a single disk.

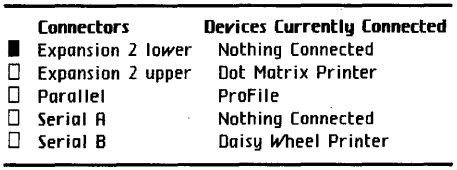
Initialize a Storage ProFile

To initialize a ProFile as a storage device

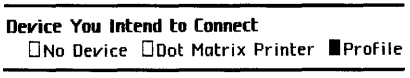
▶ Open the Preferences icon.

▶ Click Device Connections.

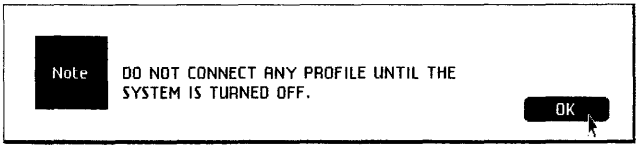
▶ Click the box for the connector you plan to use for the ProFile.



▶ Click ProFile.



▶ In response to the alert, click OK.



▶ Turn off the Lisa by pressing the on-off button.

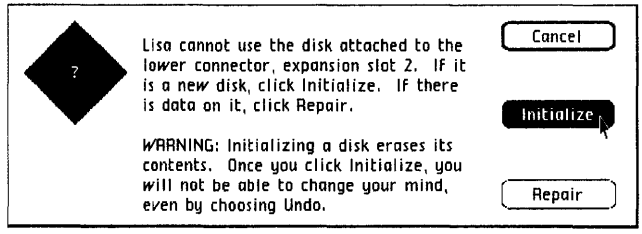
▶ Attach the hard disk to the connector you specified in Preferences.

▶ Turn on the ProFile and wait for the ready light to stabilize.

▶ Turn on the Lisa.

Initialize a Storage ProFile
(continued)

▶ In response to the Caution alert message that appears, click Initalize.



▶ When the Wait message disappears, name the new disk by typing the new name.

You can store documents, folders, stationery pads, and tools on a storage ProFile, but you cannot use it as the startup device. If you are attaching your first ProFile to the Lisa, follow the procedure under Initialize a Startup ProFile and Install the Tools, in this section.

List

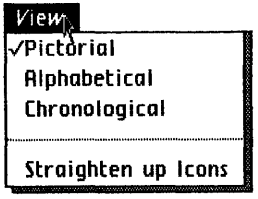
D42 Alter Display of a Disk or Folder
D44 Display Contents of a Disk or Folder

List

Alter Display of a Disk or Folder

To alter the display of a disk or folder

▶ With the open window selected, choose Alphabetical, Chronological, or Pictorial from the View menu.



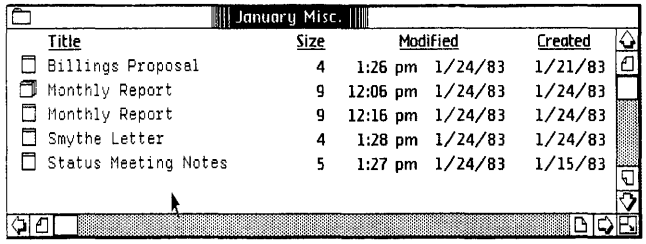
Unless you specify otherwise, all disks and folders are displayed in the pictorial view. The examples in the Lisa manuals usually show the pictorial display. You can, however, change the display of any disk or folder to a text list.

The next time you open the disk or folder, the contents are displayed in whatever format you set the last time the window was open. The format currently in effect is checked in the menu.

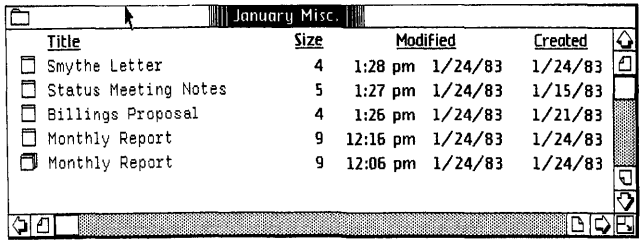
Items in a list can be selected and manipulated just like icons in a pictorial view, except that they cannot be rearranged within the list.

The alphabetical view lists the contents in alphabetical order by name. The list includes the relative size of each object, the date and time it was last modified, and the date it was created. The icon in the left-hand column indicates whether the item is a document, a folder, a stationery pad, or a tool.

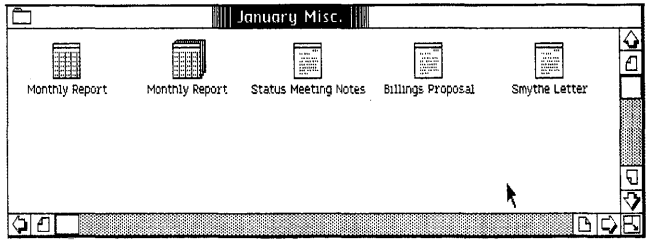
Alter Display of a Disk or Folder
(continued)



The chronological view lists the contents in chronological order by the date last modified. All objects that have never been modified appear in chronological order by the date they were created. The list includes the same information as the alphabetical list.



The pictorial view displays a collection of icons representing the objects.



You can have the Lisa arrange the icons in rows within the active window by choosing Straighten Up Icons from the View menu.

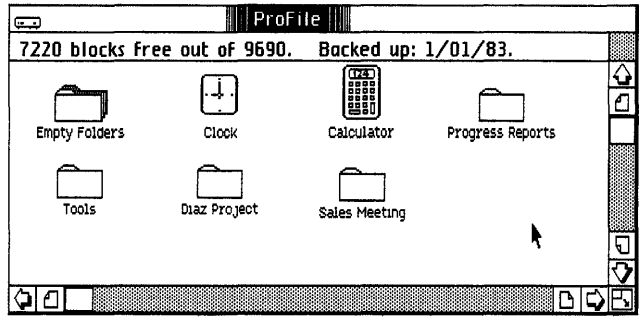
List

Display Contents of a Disk or Folder

To display the contents of a disk or folder

▶ Open the folder or disk.

A disk window includes a status panel showing how much space is still available on the disk and when it was last backed up. The space is expressed in "blocks"; one block equals about 100 words of text.



Name

D46 Name or Rename an Object

Name

Name or Rename an Object

To change the name of a desktop object

- Select the name under the icon or any shadow of the icon that represents the object.
- Type the new name.

If you want to make only a small change in the name, you can use the same text editing procedures that you use within the applications. Cutting, copying, pasting, and inserting text all work for editing object names. You cannot change the name of a tool.

You cannot directly edit the title bar of an open window. You can, however, change the name of an object while it is open by changing the name of any shadow of that object. Changing the name of any object also changes the names of any shadows of that object.

Whenever you create a new document or folder, the new icon bears the name "Untitled." It's a good idea to change the name fairly soon, before you find yourself with a desktop full of documents all with the same name.

Whenever you initialize a new diskette, it bears the name "Diskette." You can change the diskette names, making it easier to distinguish between two different diskettes on your desktop.

Whenever you duplicate any object, the duplicate bears the same name as the original. Depending on your personal filing system, you may want to modify the name of the duplicate.

D48 Print Screen Display

Print

Print Screen Display

To print the screen display

▶ Hold down the right-hand (Option) key and the right-hand (Shift) key while pressing the 4 on the numeric keypad.

This procedure works only if you have a dot matrix printer attached to the upper connector of a parallel interface card installed in expansion slot 2. The printer must also be listed in the Device Connections portion of the Preferences window.

For procedures for printing documents, see Section C, Reference Guide, under Print, in the manual for the tool you are using.

Repair

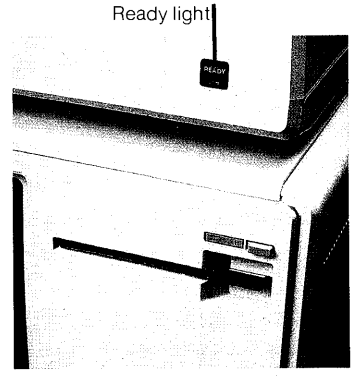
D50 Reinstall System Software
D53 Repair a Startup ProFile
D56 Repair a Storage Disk
D57 Repair a Storage Disk after a System Failure
D59 Restore a ProFile from Diskette Backups

Repair

Reinstall System Software

To reinstall the system software without erasing the startup ProFile

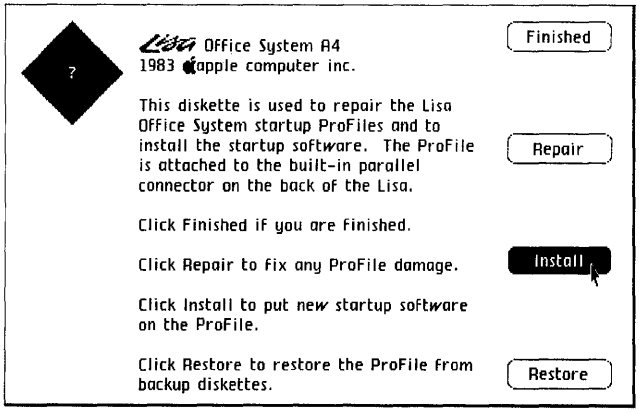
- If the Lisa is on, turn it off by pressing the on-off button once.
- Insert the diskette labeled Office System 1 into the upper built-in floppy disk drive.
- Insert the diskette labeled Office System 2 into the lower built-in floppy disk drive.
- If the ProFile is off, turn it on. Wait until the ready light stabilizes.



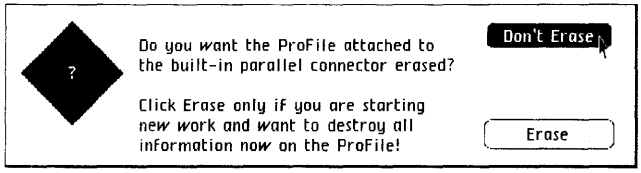
- Turn on the Lisa by pressing the on-off button once.
- When you hear a click from the cabinet, hold down the ⌘ key while pressing 1 on the main keyboard — not the 1 on the numeric keypad on the right of the keyboard.

Reinstall System Software *(continued)*

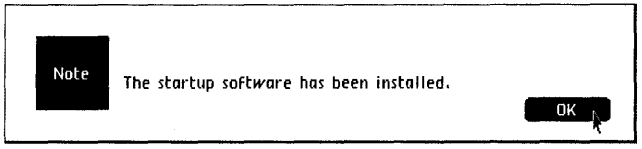
▶ When this message appears, click Install.



▶ When this message appears, click Don't Erase.

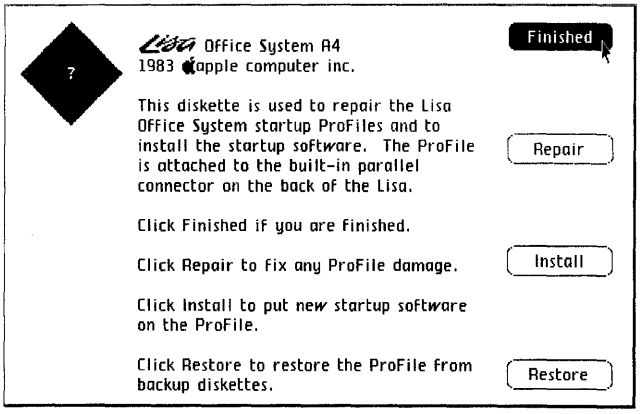


▶ When this message appears, click OK.

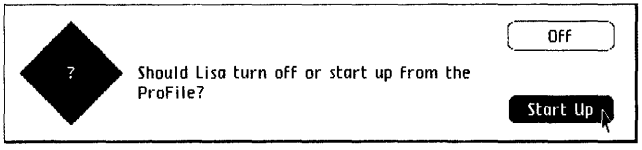


Reinstall System Software
(continued)

▶ When this message appears, click Finished.



▶ When this message appears, click Start Up.



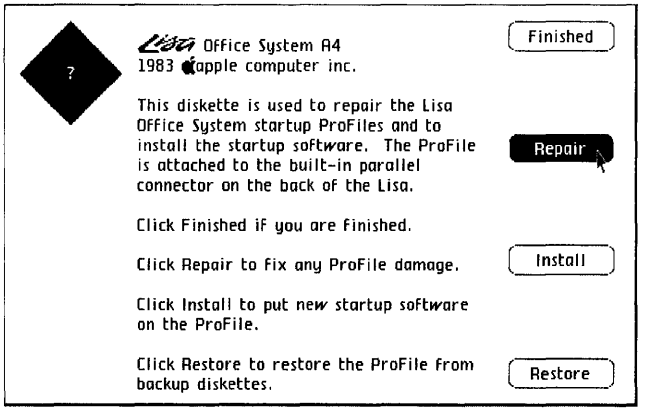
This procedure removes the Lisa Office System software from your startup ProFile and replaces it with a copy of the system software on the Lisa Office System diskettes. Reinstallation is recommended when you think the software on your ProFile may be damaged. See Appendix 6, Office System Error Messages, in this manual, for the symptoms of damaged software.

This procedure works only for a ProFile attached to the built-in parallel connector on the back of the Lisa. After the system software is installed, the startup device is automatically set to that ProFile.

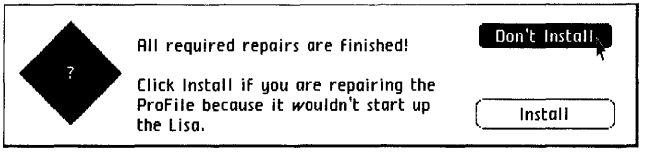
Repair a Startup ProFile

To repair a damaged startup ProFile

- If the Lisa is on, turn it off.
- Insert the diskette labeled Office System 1 into the upper built-in floppy disk drive.
- If the ProFile is off, turn it on. Wait until the ready light stabilizes.
- Turn the Lisa on.
- When you hear a click from the cabinet, hold down the ⌘ key while pressing 1 on the main keyboard — not the 1 on the numeric keypad on the right of the keyboard.
- When this message appears, click Repair.

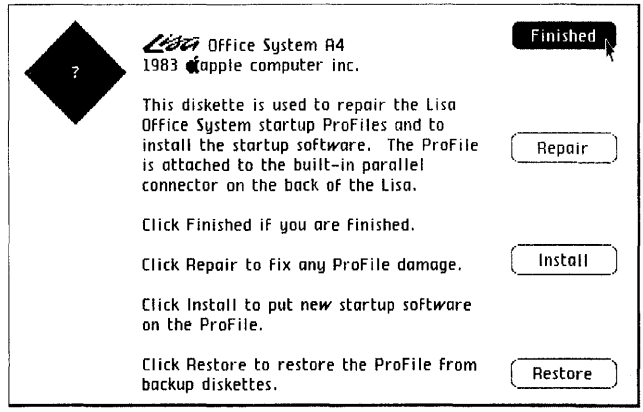


- When this message appears, click Don't Install.

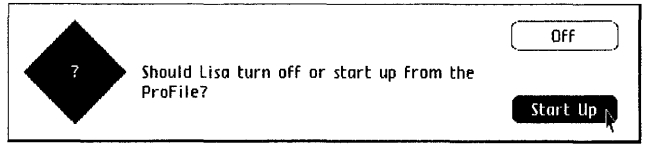


Repair a Startup ProFile
(continued)

▶ When this message appears, click Finished.



▶ When this message appears, click Start Up.



This procedure works only for a ProFile attached to the built-in parallel connector on the back of the Lisa.

Follow this procedure when something seems to be wrong with your startup ProFile. See Appendix 6, Office System Error Messages, in this manual, for a description of the symptoms that indicate repair may be necessary.

Repair a Startup ProFile *(continued)*

During a repair, the Lisa compares the actual contents of a disk with the record of where things are stored on the disk surface. The computer also checks to see that all information on the disk is readable. Unreadable information may be altered or removed; the names of some documents may change.

Depending on the problem you were having, you may want to reinstall your system software at the same time you repair the ProFile. If so, click Install instead of Don't Install after your ProFile has been repaired. See Reinstall System Software, in this section, and Appendix 6, Office System Error Messages, under Tool Failure.

Repair

Repair a Storage Disk

To repair a disk that does not seem to be functioning normally

- ▶ Select the disk icon.
- ▶ Choose Repair from the Disk menu.

During a repair, the Lisa compares the actual contents of a disk with the record of where things are stored on the disk surface. The computer also checks to see that all information on the disk is readable. Unreadable information may be altered or removed; the names of some documents may change.

You should try repairing a disk any time it is behaving unexpectedly. If, for example, the Lisa cannot find a document that you know is there, repairing the disk may solve the problem.

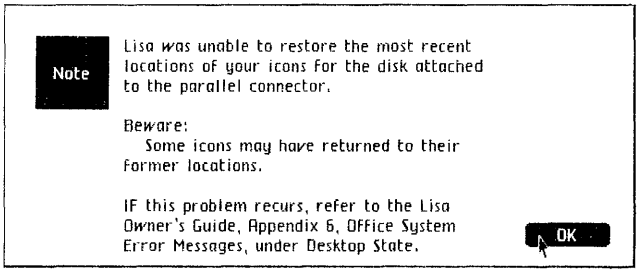
If you have already repaired a disk once and it still behaves oddly, there may be a physical problem with the disk itself. In this case, replace the disk with a backup copy or make a copy of the disk and use the copy instead of the original.

Repair a Storage Disk after a System Failure

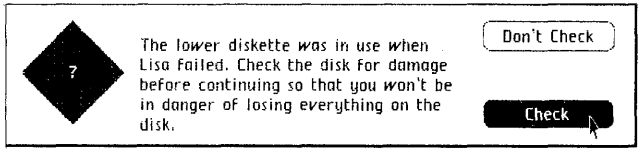
To repair your storage disks after the Lisa has suffered a power interruption or software failure

▶ If the Lisa is off, turn it on.

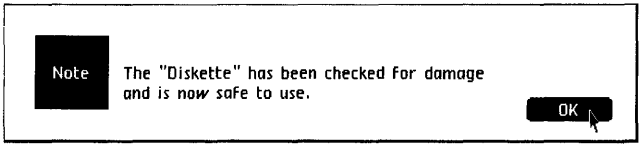
▶ If the Lisa displays this alert, click OK.



▶ If the Lisa suggests you check any disks, click Check.



▶ When the Lisa displays the results of the check, click OK.



▶ Allow the Lisa to check all disks that were in use when the crash occurred.

Repair a Storage Disk after a System Failure
(continued)

The interaction described above is normal after a sudden power loss. See Appendix 4, On-Off Procedures, in this manual, for an explanation of how a sudden power loss affects disk organization.

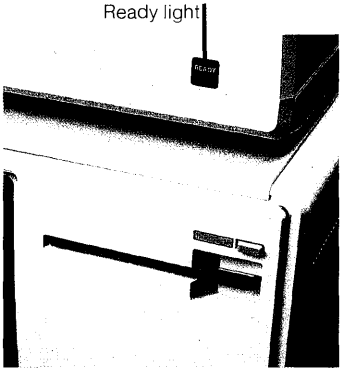
In the course of checking the disks for damage, the Lisa may alter the organization of the disk. Documents may be removed from folders, for example, or the names of some documents or stationery pads may change. After the Lisa has checked your disks, open them and refile any documents that have been removed from their folders.

If any of the repair messages appear at any time other than after a power loss, see Appendix 6, Office System Error Messages, in this manual.

Restore a ProFile from Diskette Backups

To restore all of the information on a ProFile from diskette backups

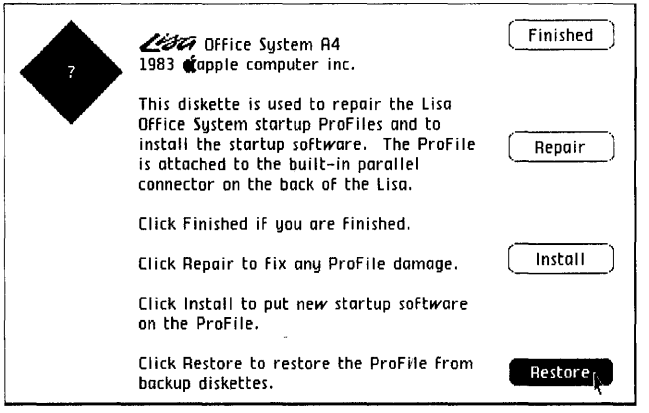
- If the Lisa is on, turn it off by pressing the on-off button once.
- Insert the diskette labeled Office System 1 into the upper built-in floppy disk drive.
- If the ProFile is off, turn it on. Wait until the ready light stabilizes.



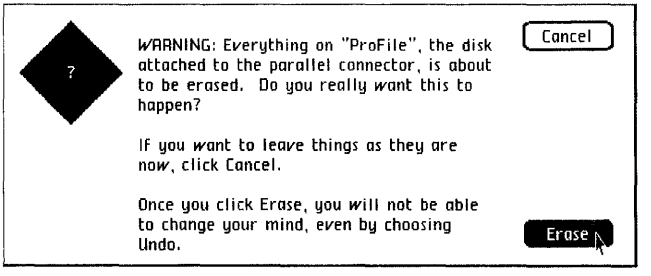
- Turn on the Lisa by pressing the on-off button once.
- When you hear a click from the cabinet, hold down the ⌘ key while pressing 1 on the main keyboard — not the 1 on the numeric keypad on the right of the keyboard.

Restore a ProFile from Diskette Backups
(continued)

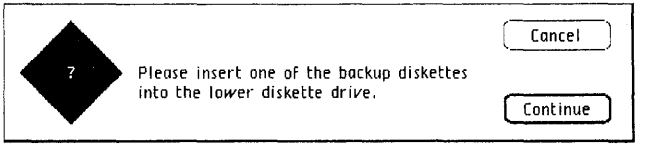
▶ When this message appears, click Restore.



▶ When this message appears, click Erase.

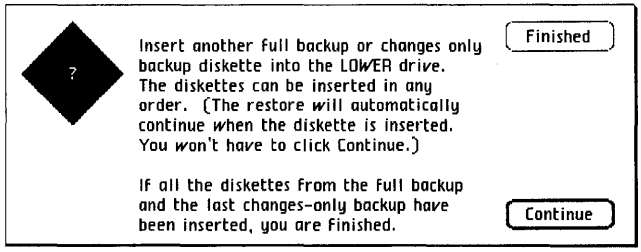


▶ When this message appears, insert one of the diskettes from the most recent incremental backup. If you have not made an incremental backup, insert one of the diskettes from the last full backup.

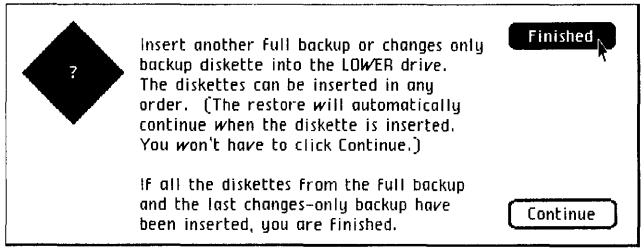


Restore a ProFile from Diskette Backups *(continued)*

- When the Lisa releases the first diskette and puts up this message, insert one of the diskettes from the most recent incremental backup. If you have not done an incremental backup, insert one of the diskettes from the last full backup.

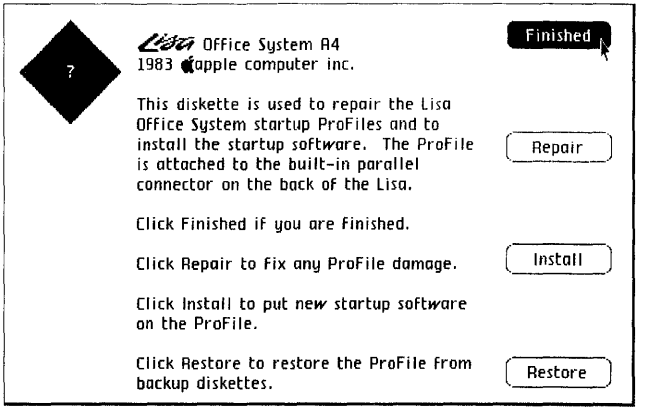


- Continue inserting diskettes when prompted. When you have finished inserting all diskettes from the last incremental backup, insert the diskettes from the last full backup.
- After the Lisa has copied the last diskette back onto the ProFile, respond to the prompt by clicking Finished.

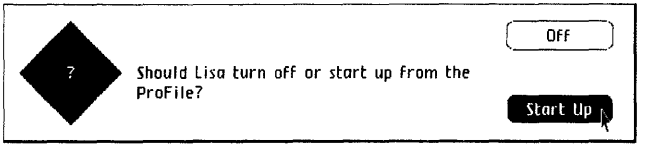


Restore a ProFile from Diskette Backups
(continued)

▶ When this message appears, click Finished.



▶ When this message appears, click Start Up.



Use this procedure only if you have made at least one full backup of your ProFile, following the instructions under Copy a ProFile onto Backup Diskettes, in this section. If you back up your documents individually, then you can reconstruct a damaged ProFile by reinitializing it and copying the contents of all your backup and tool diskettes onto the ProFile. Refer to Initialize a Startup Profile and Install the Tools, under Initialize, in this section.

Set

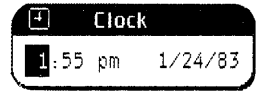
D64 Set Clock/Calendar
D65 Set Convenience Settings
D69 Set Device Connections
D71 Set Printer Configuration, Daisy Wheel
D74 Set Printer Configuration, Dot Matrix
D77 Set Screen Brightness and Contrast
D80 Set Startup Device during Startup
D82 Set Startup Specifications

Set

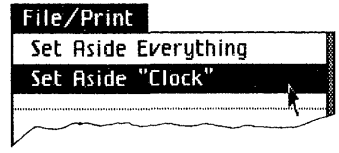
Set Clock/ Calendar

To set the clock/calendar

- Open the clock icon.
- Place the pointer over the hour and click once.



- Type in the correct hour.
- Continue selecting and correcting each part of the time and date until the display is correct.
- Choose Set Aside from the File/Print menu.



The clock/calendar uses a 12-hour setting, with a.m. or p.m. specified. The Lisa will not accept settings outside of the possible ranges for times and dates.

When you first turn on your Lisa, the clock should appear on the gray area of the desktop. If you choose Save & Put Away from the File/Print menu, the clock is stored in the Tools folder on your startup ProFile. You can move it anywhere else you choose.

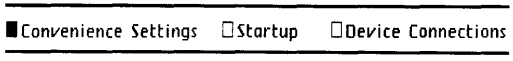
Once you set the clock/calendar, it should continue running as long as the Lisa is plugged into a working outlet and for up to 10 hours after the Lisa is unplugged. If the time is forgotten, the Lisa resets it to 12 a.m. 1/1/83.

The Lisa uses the setting of the clock/calendar to tag each of your documents with the date you created it and the date and time you last worked on it. The Lisa also tags each disk with the date it was last backed up.

Set Convenience Settings

To set the convenience settings

- Open Preferences.
- Check Convenience Settings.

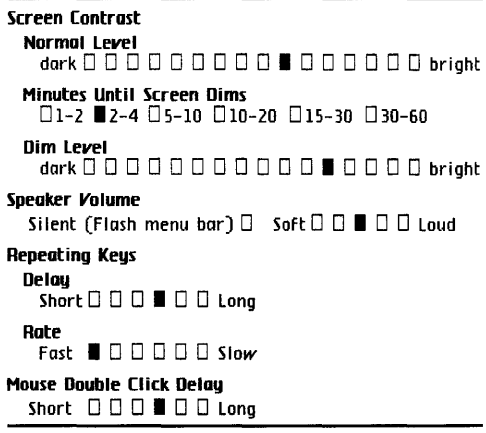


- Check the box for each setting you want.
- Choose Set Aside from the File/Print menu.

Like all information in Preferences, the convenience settings are stored in the Lisa's parameter memory. The settings remain intact as long as the Lisa is plugged in, and for up to 10 hours after the Lisa is unplugged. The Preference settings are also stored on the startup device. If parameter memory is lost, the Lisa restores it from the information on the disk.

When you first open Preferences, each convenience setting already has one option marked: these are the default settings. Whenever you check the first item in the list, Set All Convenience Settings to Lisa Defaults, these options will be set.

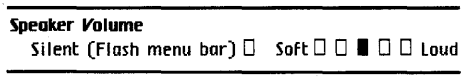
Set Convenience Settings
(continued)



For instructions for setting the screen brightness and contrast, see the procedure, Set Screen Brightness and Contrast, in this section. The other convenience settings are described below.

Speaker Volume

From time to time, the Lisa communicates by sounding various beeps and tones. The meanings of these signals are explained elsewhere in the manuals. The Speaker Volume setting controls the loudness of these beeps and tones.

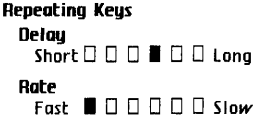


Each time you check one of the boxes, the Lisa sounds two tones, at the low and high extremes of the level you have chosen. Experiment with different settings until you find one you like.

Set Convenience Settings *(continued)*

Repeating Keys

Most of the Lisa keys repeat automatically when held down. The two lines under Repeating Keys control how long you have to hold a key down before it starts repeating, and how fast it then generates additional characters.



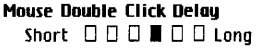
The correct settings depend on your typing speed and the ways you use the Lisa. If you find that the Lisa often generates multiple letters when you intended to type only one, change the repeat delay to a setting nearer the long end of the scale. If you use the repeating keys often, you probably want to specify a short delay and a fast repeat speed.

Whenever you check one of the delay or rate boxes, the Lisa puts a few asterisks on the screen to demonstrate the interval you have chosen.

Mouse Double Click

Some of the desktop functions are accomplished by clicking the mouse button twice rapidly, or "double clicking."

The Mouse Double Click Delay setting determines the maximum time lag between two clicks that the Lisa interprets as one double click.



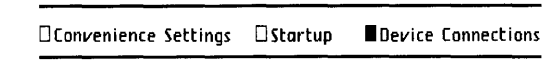
Set Convenience Settings
(continued)

Like the keyboard repeat delays, this setting should reflect your habits and work style. If the Lisa often interprets your double clicks as two single clicks, try adjusting the delay to a longer setting. If the Lisa often interprets two single clicks as one double click, try adjusting the delay to a shorter setting.

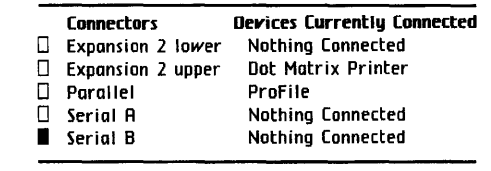
Set Device Connections

To tell the Lisa that you are attaching or removing an external device

- Open Preferences.
- Check Device Connections.



- Check the box for the connector you are using.



- When the list of available devices appears, check the box for the device you are attaching to that connector. If you are removing a device, check the box for No Device.

- If another set of specifications appears, check the appropriate boxes.
- Choose Set Aside from the File/Print menu.

Like all information in Preferences, the device connections are stored in the Lisa's parameter memory. The settings remain intact as long as the Lisa is plugged in, and for up to 10 hours after the Lisa is unplugged. The Preference settings are also stored on the startup device. If parameter memory is lost, the Lisa restores it from the information on the disk.

Set Device Connections
(continued)

In general, use the following connectors for these devices:

- Startup ProFile: built-in parallel connector, labeled Parallel Device.
- High-speed modem: serial connector labeled Serial Device A.
- Daisy wheel printer: serial connector labeled Serial Device B.
- Dot matrix printer: upper connector on a parallel interface card installed in slot 2.
- Storage ProFile: either connector on a parallel interface card installed in slot 2 or 3.

Specific instructions for setting the Preferences when attaching printers appear in this section under Set Printer Configuration, Daisy Wheel, and Set Printer Configuration, Dot Matrix. Specific instructions for setting the Preferences when attaching a storage ProFile appear in the procedure, Initialize a Storage ProFile, under Initialize, in this section.

Detailed instructions for setting up a modem appear in the manual that comes with the modem.

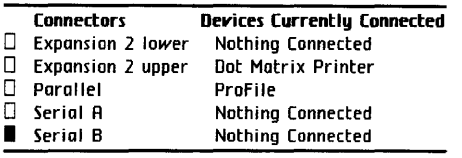
Set Printer Configuration, Daisy Wheel

To tell the Lisa that you are attaching a daisy wheel printer

▶ Open Preferences.

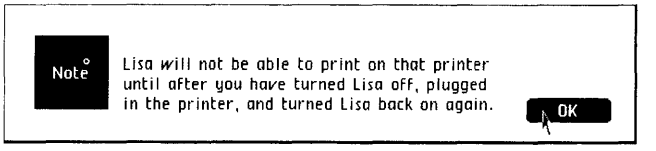
▶ Check Device Connections.

▶ Check the box for the connector you are using.

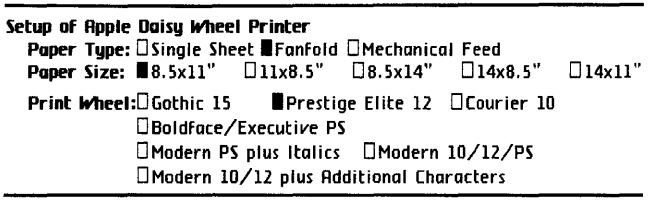


▶ When the list of available devices appears, check Daisy Wheel Printer. If you are removing a printer, check No Device.

▶ In response to the screen message, click OK.



▶ Check the boxes for the paper type, the paper size, and the print wheel you are using.



Set Printer Configuration, Daisy Wheel
(continued)

- ▶ Choose Set Aside from the File/Print menu.
- ▶ Turn off the Lisa.
- ▶ Attach the printer.
- ▶ Turn on the Lisa.

The daisy wheel printer must be attached to one of the serial connectors, marked Serial Device A and Serial Device B on the back panel. Either connector is compatible with the daisy wheel printer. Connector A, however, is more flexible and can be used with a high-speed modem. If you want to leave connector A open for other devices, attach your daisy wheel printer to connector B.

When you are printing a document, the specifications for the document must match the Preferences specifications for at least one of your printers. See the manual for the Lisa office tool you are using, Section C, Reference Guide, Chapter 2, under Print, for instructions on preparing documents for printing.

Like all information in Preferences, the printer settings are stored in the Lisa's parameter memory. The settings remain intact as long as the Lisa is plugged in, and for up to 10 hours after the Lisa is unplugged. The Preference settings are also stored on the startup device. If parameter memory is lost, the Lisa restores it from the information on the disk.

Set Printer Configuration, Daisy Wheel *(continued)*

Paper Type

Check Single Sheet if you are printing on individual sheets of paper, such as letterhead stationery, and you are inserting the paper by hand. When Single Sheet is checked, your Lisa pauses after printing each page and prompts you to insert the next sheet.

Check Fanfold if you are printing on fanfold paper designed to be fed continuously through a printer.

Check Mechanical Feed if you are printing on individual sheets of paper, such as letterhead stationery, and you have a mechanical feeder inserting the paper.

Change the Paper Type setting any time you change the type of paper.

Paper Size

All of the paper size options available for your printer appear when you specify the type of printer. The setting in Preferences should match the size of the paper actually loaded in the printer. When you change the paper size, open the Preferences window and change the setting.

Print Wheel

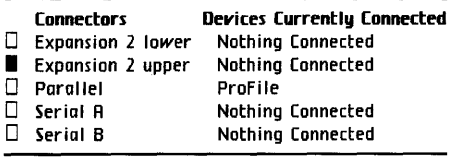
If you are using a daisy wheel printer, you must tell the Lisa what kind of print wheel is attached. This information appears on the wheel itself. You can change print wheels whenever you like, as long as you change the information in Preferences.

Set Printer Configuration, Dot Matrix

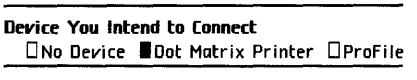
To tell the Lisa that you are attaching a dot matrix printer

- Open Preferences.
- Check Device Connections.

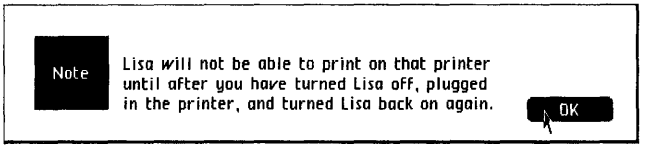
- Check the box for the connector you are using.



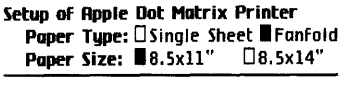
- When the list of available devices appears, check Dot Matrix Printer. If you are removing a printer, check the box for No Device.



- In response to the message that appears, click OK.



- Check the boxes for the paper type and the paper size.



- Choose Set Aside from the File/Print menu.
- Turn off the Lisa.
- Attach the printer.
- Turn on the Lisa.

Set Printer Configuration, Dot Matrix
(continued)

The dot matrix printer must be attached to a parallel connector. If you have a ProFile hard disk attached to the built-in parallel connector, you must install a parallel interface card into one of the expansion slots on the back panel of the Lisa. Once you have installed an expansion card, the Lisa will automatically include that card in the list of available connectors.

If you want to be able to print your entire screen display, attach your dot matrix printer to the upper connector of a parallel interface card installed in expansion slot 2.

When you are printing a document, the specifications for the document must match the Preferences specifications for at least one of your printers. See the manual for the Lisa office tool you are using, Section C, Reference Guide, Chapter 2, under Print, for instructions on preparing documents for printing.

Like all information in Preferences, the printer settings are stored in the Lisa's parameter memory. The settings remain intact as long as the Lisa is plugged in, and for up to 10 hours after the Lisa is unplugged. The Preference settings are also stored on the startup device. If parameter memory is lost, the Lisa restores it from the information on the disk.

Paper Type

Check Single Sheet if you are printing on individual sheets of paper, such as letterhead stationery. When Single Sheet is checked, your Lisa pauses after printing each page and prompts you to insert the next sheet.

Check Fanfold if you are printing on fanfold paper designed to be fed continuously through a printer.

Change the Paper Type setting any time you change the type of paper.

Set Printer Configuration, Dot Matrix
(continued)

Paper Size

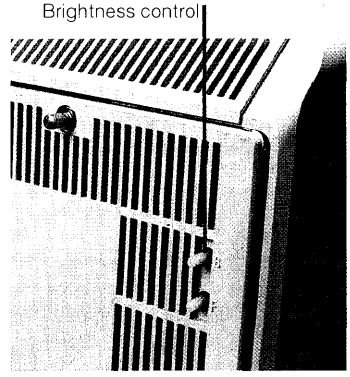
All of the paper size options available for your printer appear when you specify the type of printer. The setting in Preferences should match the size of the paper actually loaded in the printer. When you change the paper size, open the Preferences window and change the setting.

Set Screen Brightness and Contrast

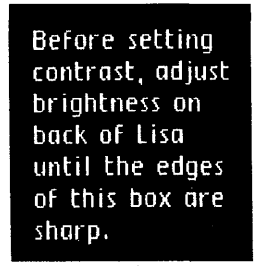
To set the screen brightness and contrast

- Open Preferences.
- Check Convenience Settings.

- Locate the brightness control knob, the higher of the two white knobs extending from the back of the cabinet.

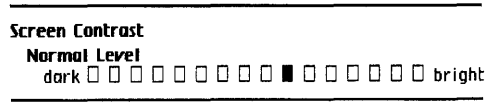


- Turn the brightness control down until your screen is entirely black.
- Turn the knob back up just until the black rectangle turns to gray.
- Slowly turn the knob back down, just until the rectangle is distinctly black, with no video scan lines visible, and there is a clean line on all borders.

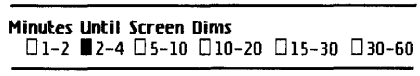


Set Screen Brightness and Contrast
(continued)

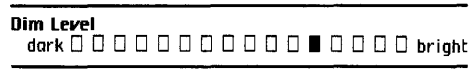
▶ Set the Normal Level by checking different boxes until the screen is at a comfortable contrast level for you.



▶ Set the Minutes Until Screen Dims by checking the box for the delay you want.



▶ Set the Dim Level by checking the box for the dim contrast level you want.



▶ Choose Set Aside from the File/Print menu.

Always set the screen brightness before adjusting the contrast.

The normal contrast level controls the contrast of the screen while you are using the Lisa. The important consideration when setting the contrast level is your comfort.

The automatic fade feature is designed to protect your video screen from burn-in, a permanent image burned into the screen after many hours of the same display. If the Lisa detects no activity from the mouse or keyboard for the length of time specified under Fade Delay, the screen automatically dims to the dim contrast level. Once the screen has dimmed, any key press or mouse movement returns it to the normal contrast setting.

Set Screen Brightness and Contrast *(continued)*

Whenever you check one of the dim contrast levels, the Lisa dims the screen to demonstrate the level you checked. Any key press or mouse movement returns the screen to the normal contrast setting. If you find it irritating to have the screen darken completely, set the dim contrast level to the higher end of the scale. If you want to protect your screen as much as possible from burn-in, set the dim contrast level to the lowest setting.

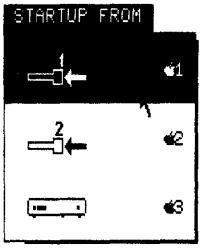
Like all information in Preferences, the contrast settings are stored in the Lisa's parameter memory. The settings remain intact as long as the Lisa is plugged in, and for up to 10 hours after the Lisa is unplugged. The Preference settings are also stored on the startup device. If parameter memory is lost, the Lisa restores it from the information on the disk.

Set

Set Startup Device during Startup

To specify a different startup device during startup

- Turn on the Lisa by pressing the on-off button once.
- As soon as you hear the first click from the cabinet, and before you hear the double click, press the space bar, or any key except (Caps Lock).
- When the Startup menu appears, use the mouse to select your startup device. Or hold down the ⌘ key while pressing the number listed in the menu next to the device you want to use.



You can also bypass the Startup menu if you know the keyboard code for the startup device you want to use. To use this shortcut:

Instead of pressing any key when you hear the first click, hold down the ⌘ key while pressing one of the keys in the list below.

1	Upper built-in drive
2	Lower built-in drive
3	ProFile attached to the built-in parallel connector
4	Expansion card in slot 1, lower connector
5	Expansion card in slot 1, upper connector
7	Expansion card in slot 2, lower connector
8	Expansion card in slot 2, upper connector
a	Expansion card in slot 3, lower connector
b	Expansion card in slot 3, upper connector

Set Startup Device during Startup *(continued)*

If you do not specify a startup device during startup, the Lisa looks in the startup device specified in Preferences. If you have not specified a startup device, the Lisa looks for a startup ProFile attached to the built-in parallel connector.

The alternative startup procedure can be useful if your usual startup device is not working properly, if your system Preferences have been forgotten, or if you are running the LisaTest diskette.

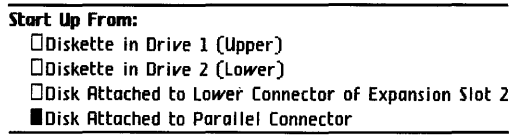
Set Startup Specifications

To specify your usual startup device

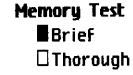
▶ Open Preferences.

▶ Check Startup.

▶ Check the box for the startup device you intend to use.



▶ Check either Thorough or Brief memory test.



▶ Choose Set Aside from the File/Print menu.

Like all information in Preferences, the startup settings are stored in the Lisa's parameter memory. The settings remain intact as long as the Lisa is plugged in, and for up to 10 hours after the Lisa is unplugged. If parameter memory has been lost, the Lisa automatically looks for a ProFile attached to the built-in parallel connector as the startup device.

The Preference settings are also stored on the startup device. If parameter memory is lost, the Lisa restores it from the information on the disk.

If you want to start up from a different disk than the one specified in Preferences, follow the procedure Set Startup Device during Startup, under Set, in this section.

Set Startup Specifications
(continued)

The Memory Test setting determines how thoroughly the Lisa's memory is tested during the automatic startup tests. If you check Thorough, the tests take about a minute. If you check Brief, the tests take about 30 seconds.

Section E
Calculator

Contents

E1 What's in the Calculator?

E2 Organization of the Calculator

E3 Four Function Calculator

E8 Reverse Polish Calculator

E13 Adding Machine

E20 Calculator Menus

What's in the Calculator?

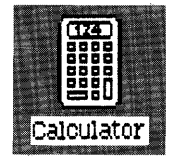
This section introduces the Calculator and explains how it is used. A series of example problems illustrates the different ways the Calculator can work.

Organization of the Calculator

The Calculator can imitate three different types of calculators: a standard four function calculator, a reverse Polish calculator, and a financial adding machine.

To use the Calculator,

▶ Open the Calculator by clicking twice on the Calculator icon.



The Calculator appears on the screen as a drawing of a pocket calculator. You can push the buttons on the screen image by clicking on them with the mouse. You can also select the functions displayed next to the keys by clicking on them with the mouse.

To specify which kind of calculator you want to use,

▶ With the Calculator active, choose Four Function, Reverse Polish, or Adding Machine from the Customize menu.

If you want to display a record of your calculations, you can choose Show Tape from the Customize menu. The tape is not a document and cannot be printed as it is. It can, however, be copied and pasted into a LisaWrite or LisaDraw document, which can be printed. The result displayed on the Calculator itself can be copied and pasted into most other documents.

When you put away the Calculator, the tape and the display are cleared.

Each kind of calculator uses its own set of registers to hold the numbers you are manipulating. The registers are discussed in the descriptions of the calculators. You can choose to display or hide the registers through the Customize menu. You can also specify how the results are to be displayed through the Format menu.

The menu bar shown in Figure 1 appears when the Calculator is active. The two Calculator menus and the Edit menu as it applies to the Calculator are summarized at the end of this section, following the descriptions of the three different calculators.

Figure 1. Calculator Menu Bar

As an alternative to clicking on the keys and functions on the Calculator's displayed image, you can use the corresponding keys on the Lisa numeric keypad. You can select the functions that are shown above or to the side of a key on the Calculator by holding down the (Shift) key while pressing the number on the keyboard that is next to the function displayed on the calculator. For example, the +/− function can be selected from the keyboard by pressing (Shift) and 0.

If one of your calculations results in an infinite value or a register overflow, the Calculator displays an error message and locks the keyboard. Click the CE/C key to clear the error and unlock the keyboard.

The Calculator as initially displayed does not contain a scroll bar, an elevator, or any other devices for manipulating the window. The Calculator cannot be resized. If the transaction tape is displayed, a scroll bar containing an elevator, scroll arrows, and view buttons appears. The size and proportions of the view cannot be adjusted, so there is no size control box.

Four Function Calculator

The four function calculator is the most common type of pocket calculator. The only functions that are not obvious are the constants and the percentage calculations, which are explained below. For most simple calculations, you enter the numbers and symbols in the order in which you would write them.

For example, to divide 355 by 113:

- ▶ Type 355.
- ▶ Click ÷.
- ▶ Type 113.
- ▶ Click =.

Figure 2 shows the result. Both Show Tape and Show Registers have been chosen from the Customize menu.

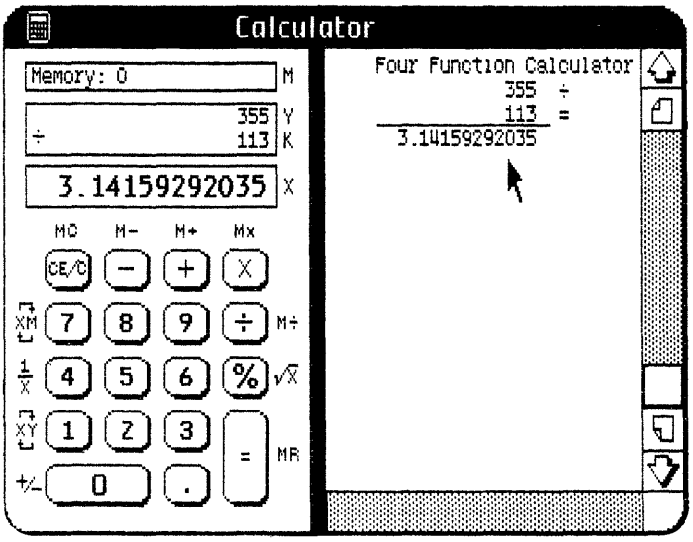


Figure 2. Four Function Calculator

Notice that the transaction tape contains a new symbol, the solid underscore, which indicates the final total of a calculation. In the four function calculator, this is shown each time you click the = key.

Figure 2 shows the registers used by the four function calculator. The K register always contains the current value of the constant. Each time you do a calculation, one of the numbers is stored in the K register as a constant, which can be used repeatedly in other operations of the same kind. Table 1 shows which number is the constant when you enter two numbers; the constant number is underlined in the example column.

Table 1. Use of Constants

Function	Example	Operation
Addition	50+<u>25</u>=	50 [+] 25 [=] 75
	75+<u>25</u>=	75 [=] 100
Subtraction	50−<u>25</u>=	50 [−] 25 [=] 25
	75−<u>25</u>=	75 [=] 50

Table 1. Use of Constants, continued

Function	Example	Operation
Multiplication	25 × 7 =	25 ⊠ 7 = 175
	25 × 9 =	9 = 225
Division	100 ÷ 25 =	100 ÷ 25 = 4
	200 ÷ 25 =	200 = 8

The constant is also replaced when a new function is entered. After a calculation, the Y register contains the other number that was used. The X register, which is always displayed, contains the result.

The percentage key performs the following four functions: it finds the specified percentage of a number, it finds the percentage of one number relative to another, it calculates percent markups, and it calculates percent discounts. The following examples demonstrate these calculations.

To find 25% of 1,200:

- Type 1200.
- Click ×.
- Type 25.
- Click %; 300 is displayed.

To find 108 as a percentage of 360:

- Type 108.
- Click ÷.
- Type 360.
- Click %; 30 is displayed.

To find the retail price of a $50 item to be marked up 60%:

- Type 50.
- Click +.
- Type 60.
- Click %; 80 is displayed.

To find the price of an $80 item that is discounted 30%:

- Type 80.
- Click −.
- Type 30.
- Click %; 56 is displayed.

The four function calculator is shown in Figure 3.

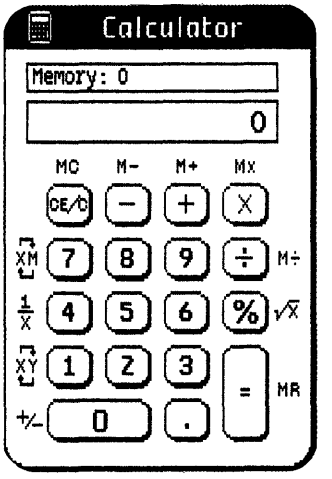
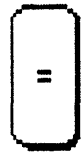


Figure 3. Four Function Calculator

The following brief descriptions explain the functions of the keys.

CE/C	Clears the displayed number when pushed once; clears the entire Calculator when pushed twice.
MC	Clears the memory.
−	Totals the pending operation and causes the next number entered to be subtracted from the total.
M-	Subtracts the displayed number from the number in memory.

	Totals the pending operation and causes the next number entered to be added to the total.
M+	Adds the displayed number to the number in memory.
	Totals the pending operation and causes the next number entered to be multiplied by the total.
Mx	Multiplies the number in memory by the displayed number.
	Totals the pending operation and causes the next number entered to be divided into the total.
M÷	Divides the number in memory by the currently displayed number.
	Finds percentages and performs add-on discount calculations.
	Finds the square root of the displayed number.
	Totals the pending operation.
MR	Recalls the number in memory and displays it in the displayed register, X.
+/-	Changes the sign of the displayed number.
	Exchanges the displayed number, X, with the number entered last, Y.

Finds the reciprocal of the displayed number, X.

Exchanges the displayed number, X, with the number in memory, M.

Reverse Polish Calculator

The reverse Polish calculator uses a four-register stack and a mathematical convention known as Reverse Polish Notation for entering equations. This calculator is a bit tricky to get used to, but it is often more convenient when you are working with long or complex equations.

With Reverse Polish Notation, you first enter the numbers you are working with, and then you press the function key. The operation is executed immediately, and the results are stored automatically. These results are used in subsequent calculations, if appropriate. You can work through an equation the same way you would by hand, without working out the order of calculations ahead of time. The example below illustrates how you enter equations.

To divide 355 by 113:

- Type 355.
- Click Enter.
- Type 113.
- Click ÷.

Figure 4 shows the result. Both Show Tape and Show Registers have been chosen from the Customize menu.

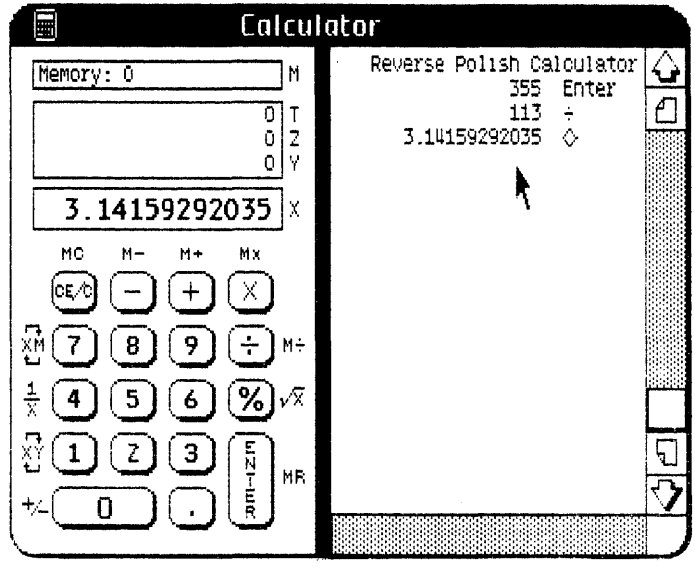


Figure 4. Reverse Polish Calculator — Example 1

The stack consists of the X, Y, Z, and T (top of stack) registers. They function as if they were stacked one on top of the other, with the X register on the bottom. The X register is always displayed. It contains the result of the last operation or the last value you typed in. Clicking Enter pushes everything one register up the stack. That is, the contents of the X, Y, and Z registers are copied to the Y, Z, and T registers, respectively; the contents of the T register are lost off the top of the stack. Clicking on any of the four basic functions ($+$, $-$, $\times$, $\div$) drops everything one register down the stack. The result of the operation is stored in the X register and the contents of the Z and T registers are copied to the Y and Z registers, respectively. The T register is not changed.

The four basic functions always operate on the contents of the X and Y registers. Though the results are initially stored only in the X register, the results are pushed onto the stack if you enter a number immediately afterwards. The reciprocal and square root functions operate on the contents of the X register only; the calculator will still push the results onto the stack if you enter a number immediately afterwards.

The transaction tape shows the numbers that you enter, the functions and operations that you request, and the resulting values. The results of any calculation are identified by a diamond (◊) on the tape.

To solve 7+3/(17×34):

- ▶ Type 7; 7 is displayed.
- ▶ Click Enter.
- ▶ Type 3; 3 is displayed.
- ▶ Click Enter.
- ▶ Type 17; 17 is displayed.
- ▶ Click Enter.
- ▶ Type 34; 34 is displayed.
- ▶ Click ×; 578 is displayed.
- ▶ Click ÷; 0.005190311419 is displayed.
- ▶ Click +; 7.005190311419 is displayed.

Figure 5 shows this calculation on the transaction tape.

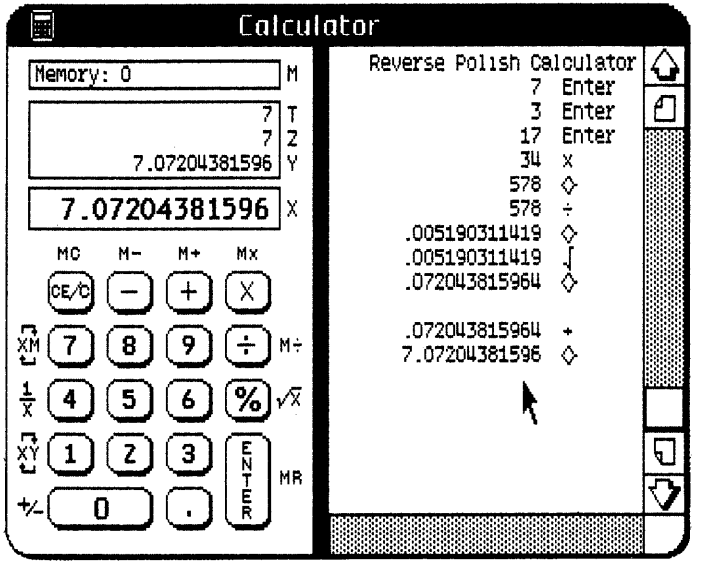


Figure 5. Reverse Polish Calculator — Example 2

To find 25% of 200:

- Type 200.
- Click Enter.
- Type 25.
- Click %; 50 is displayed.

To find the retail price of a $75 item to be marked up 30%:

- Type 75.
- Click Enter.
- Type 30.
- Click %; 22.5 is displayed.
- Click +; 97.5 is displayed.

To find the price of a $90 item discounted by 35%:

- Type 90.
- Click Enter.
- Type 35.
- Click %; 31.5 is displayed.
- Click −; 58.5 is displayed.

The reverse Polish calculator is shown in Figure 6.

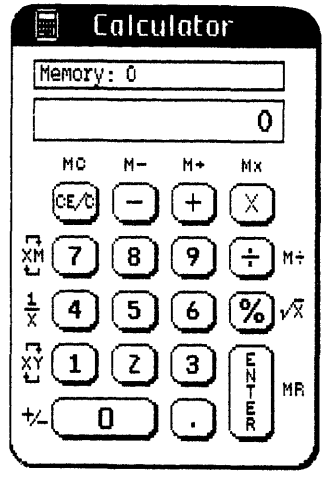


Figure 6. Reverse Polish Calculator

The following brief descriptions explain the functions of the keys.

	Clears the displayed number when pushed once; clears the entire Calculator when pushed twice.
MC	Clears the memory.
	Subtracts the displayed number from the number in the Y register.
M-	Subtracts the displayed number from the number in memory.
	Adds the displayed number to the number in the Y register.
M+	Adds the displayed number to the number in memory.
	Multiplies the displayed number by the number in the Y register.
Mx	Multiplies the number in memory by the displayed number.
	Divides the number in the Y register by the displayed number.
M÷	Divides the number in memory by the currently displayed number.
	Finds the percentage represented by the displayed number divided by the number in the Y register with add-on discount calculations.
	Finds the square root of the displayed number.

	Enters or "pushes" the displayed number onto the four-level stack. All numbers in the stack are also pushed up one level, and the last number in the stack is lost.
MR	Recalls and displays the number in memory.
+/-	Changes the sign of the displayed number.
	Exchanges the displayed number, X, with the last number entered, Y.
	Finds the reciprocal of the displayed number, X.
	Exchanges the displayed number, X, with the number in memory, M.

Adding Machine

This calculator closely resembles a financial adding machine. It is oriented toward adding and subtracting long strings of numbers, computing credit balances, and performing percent markup and discount calculations. It has a subtotal key and a calculation register that contains the current value of chain operations. It also has the ability to print numbers, such as dates and codes, on the transaction tape without entering them into the calculation. These features are shown in the following example.

To solve 11+22+44+55+66 with a subtotal taken after the second addition and the number 55 printed before it is entered into the calculation:

- ▶ Type 11.
- ▶ Click +=.
- ▶ Type 22.
- ▶ Click +=.
- ▶ Click #/◊; see Figure 7 now.
- ▶ Type 44.

- Click +=.
- Type 55.
- Click #/◊.
- Click +=; see Figure 8 now.
- Type 66.
- Click +=.
- Click Total; see Figure 9 now.

In Figure 7, the subtotal 33 has been stored in the calculation register (labeled ◊), displayed in the X register, and shown on the transaction tape. The dotted underscore indicates that a subtotal was taken; the actual value of the subtotal is labeled ◊ Total.

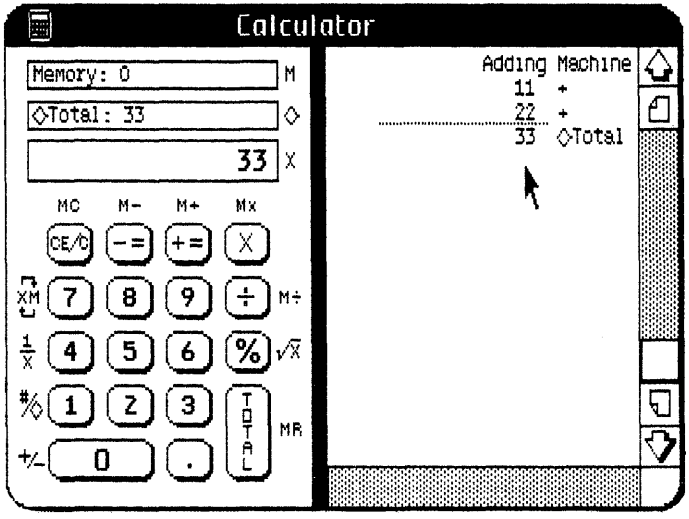


Figure 7. Adding Machine — Example 1

In Figure 8, the number 55 has been shown and then entered into the calculation. A number that is shown without being entered into a calculation is labeled #.

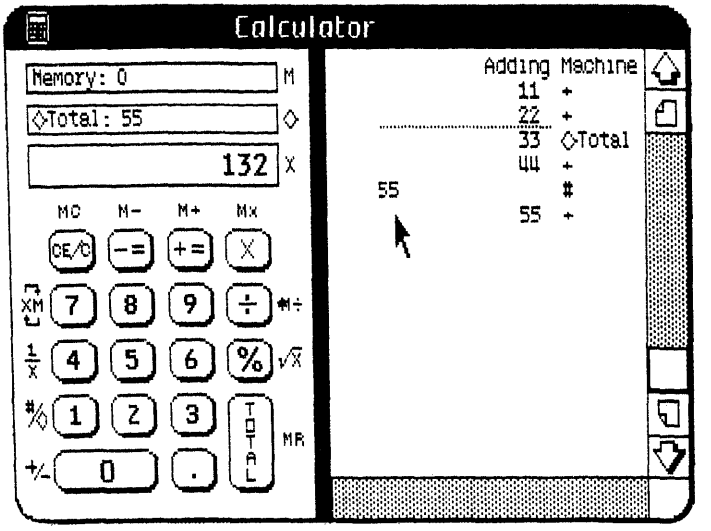


Figure 8. Adding Machine — Example 2

In Figure 9, the final result is displayed in the X register and shown on the tape. The solid underscore indicates that a total was taken; the value is labeled Total. The calculation register is cleared and the Calculator is ready to begin another problem.

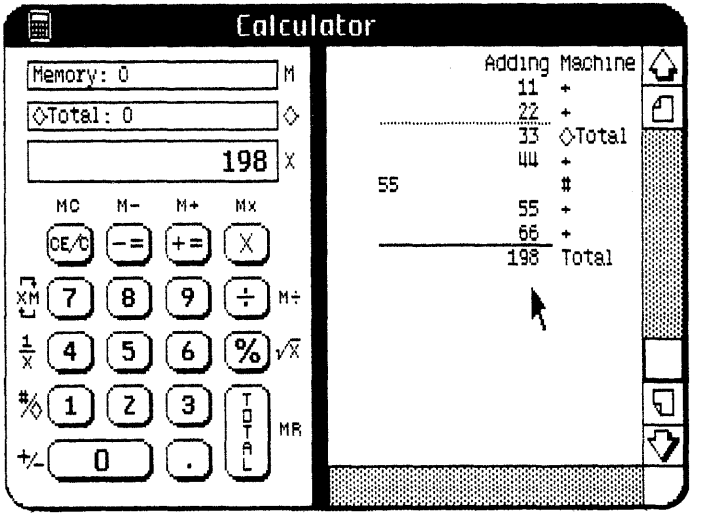


Figure 9. Adding Machine — Example 3

Clicking on Total affects only addition and subtraction. It will not give you the answers to multiplication or division problems; you must use + = (or − =) for these.

To solve (10+2) × 5:

- Type 10.
- Click + =.
- Type 2.
- Click + =.
- Click ×.
- Type 5.
- Click + =; 60 is displayed.

To solve 5 × 2 + 12:

- Type 5.
- Click ×.
- Type 2.
- Click + = to perform the multiplication.
- Click + =.
- Type 12.
- Click + =; 22 is displayed.
- Click Total to print 22 on the tape.

Percentage calculations on the adding machine are similar to those on the four function calculator. However, percent markup and discount calculations must be entered differently.

To find 25% of 175:

- Type 175.
- Click ×.
- Type 25.
- Click %; 43.75 is displayed.

To express 125 as a percentage of 500:

- Type 125.
- Click ÷.
- Type 500.
- Click %; 25 is displayed.

To find the total cost of a $69.95 item, given 6.5% sales tax:

- Type 69.95.
- Click ×.
- Type 6.5.
- Click %.
- Click + =; 74.49675 is displayed.

To find the price of a $79.95 item that is discounted 30%:

- Type 79.95.
- Click ×.
- Type 30.
- Click %.
- Click − =; 55.965 is displayed.

The adding machine is shown in Figure 10.

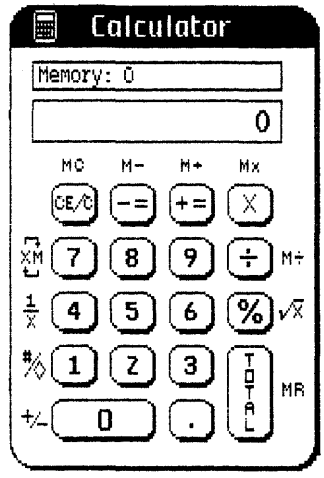


Figure 10. Adding Machine

The following brief descriptions explain the functions of the keys.

	Clears the displayed number when pushed once; clears the entire Calculator when pushed twice.
MC	Clears the memory.
	Subtracts the displayed value from the contents of the calculation register; obtains the result in negative multiplication and division.
M-	Subtracts the displayed number from the number in memory.
	Adds the displayed value to the contents of the calculation register; obtains the result in positive multiplication and division.
M+	Adds the displayed number to the number in memory.
	Completes any pending multiplication or division and causes the next number entered to be multiplied by the total.
Mx	Multiplies the number in memory by the displayed number.
	Completes any pending multiplication or division and causes the next number entered to be divided into the total.
M÷	Divides the number in memory by the displayed number.

Finds percentages and performs add-on discount calculations.

Finds the square root of the displayed number.

Displays the total and clears the calculation register.

Recalls and displays the number in memory.

Changes the sign of the displayed number.

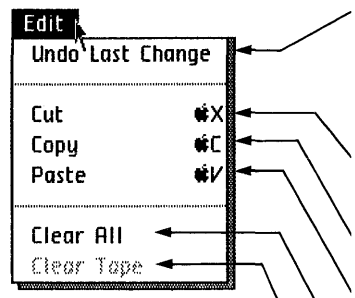
Immediately after an operation, displays the subtotal. Otherwise, displays on the left side of the tape any keys pressed since the last operation. Can be used to show dates or codes, which can then be cleared before calculations are continued.

Finds the reciprocal of the displayed number, X.

Exchanges the displayed number, X, with the number in memory, M.

Calculator Menus

Edit Menu



Restores the calculator to its state before the last operation. If you undo a Cut or Copy, the previous contents of the Clipboard is restored; however, the previous value in the Calculator is lost.

Copies the Calculator's display value onto the Clipboard and clears the Calculator's display.

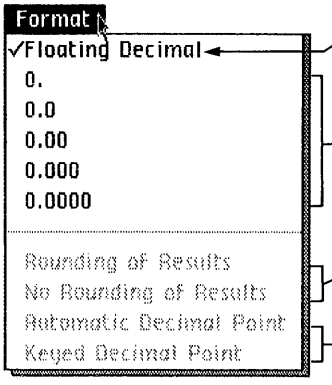
Copies the Calculator's display value or tape onto the Clipboard.

Enters the number currently on the Clipboard into the Calculator's display.

Clears the Calculator's display and all of its registers. This is equivalent to clicking the CE/C key twice.

Erases the Calculator's transaction tape, if it is being displayed.

Format Menu



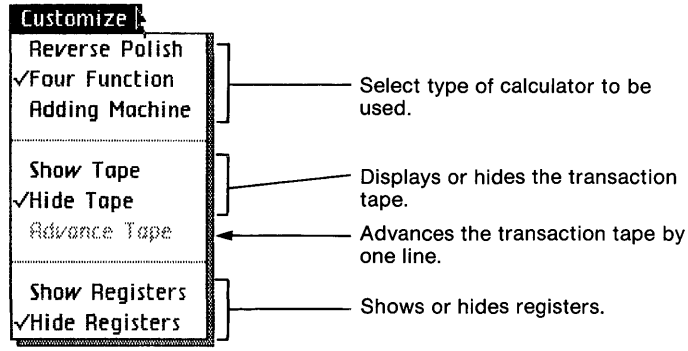
Displays all digits to the left of the decimal point and as many digits to the right of it as there is room for.

Display zero, one, two, three, or four digits to the right of the decimal point, if there is room.

Turn on or off rounding the results to the number of digits specified in the display format.

Automatically enters the decimal point in the location indicated by the display format, or enables you to enter the decimal point yourself.

Customize Menu



Section F
Maintenance

Contents

F1 What's in Maintenance?

F2 Clean Glare Filter

F7 Clean or Replace Mouse Ball

F10 Clean Housing

What's in Maintenance?

The Lisa requires almost no day-to-day maintenance. Most of the procedures recommended in this section, such as cleaning the glare filter, are for your comfort and convenience.

It's a good idea to review Table 1, Suggested Maintenance, soon after you set up your system so that you will know which parts of the Lisa you can clean. Later, when you have spilled something on the housing or you think the mouse may be dirty, look up the procedures in this section.

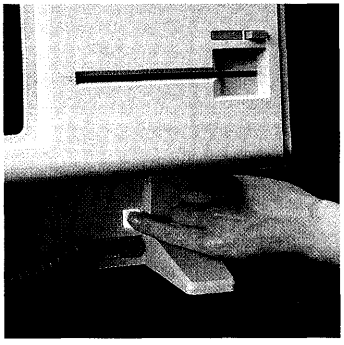
Table 1. Suggested Maintenance

What	When	Page
Clean glare filter	Screen dusty	F2
Clean mouse ball	Mouse response unreliable; ball sticky or dusty	F7
Clean housing	Housing dirty	F10

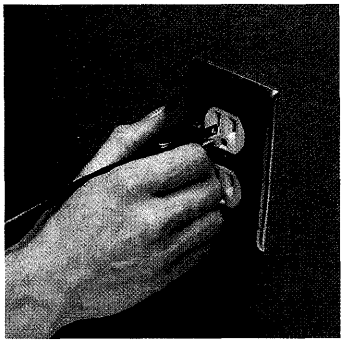
Clean Glare Filter

Whenever the Lisa's video display is on, the screen has a slight static charge, which acts as a dust magnet. The accumulated dust will eventually make the display hard to read. You can keep the screen fairly dust free by wiping it gently every few weeks with the specially treated cloth that comes with your Lisa. If dust has worked its way under the glare filter, or if the screen has spots from liquid spills, use the following procedure to clean the glass and filter.

1. If the Lisa is on, turn it off. Wait until all diskettes are released and the light in the on-off button is off. Remove any diskettes that are ejected from the drives.

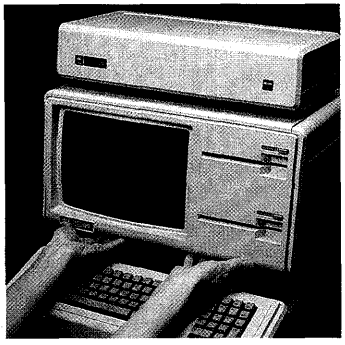


2. Unplug the Lisa at either the back panel or the wall outlet.



3. Remove the front panel, following this procedure:

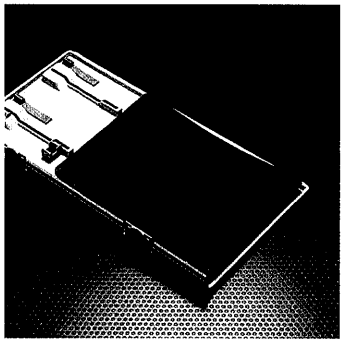
   a. Place one finger on each of the two finger pads beneath the front panel.



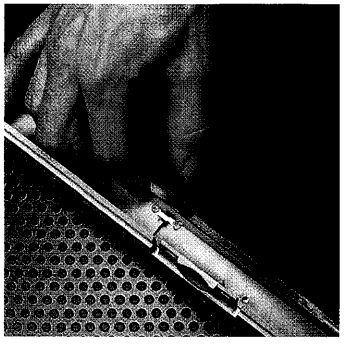
b. Push the pads up to unlatch the panel.

c. Pull the panel forward and down.

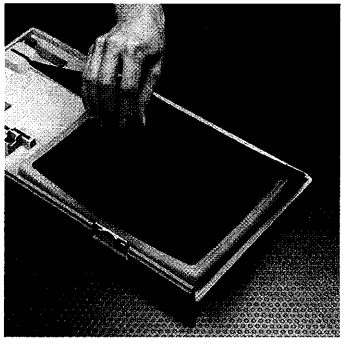
4. Set the panel on a flat surface, face down.



5. Push the frame of the glare filter out from under the metal clip at the bottom center of the frame.



6. Grasp the frame by the lower edge and lift the lower edge up until the top edge pops out from beneath the upper clip.



7. Wipe both the front and the back of the glare filter with the treated cloth that came with your Lisa.

8. Shake out the cleaning cloth to remove the dust. Do not wash the cloth.

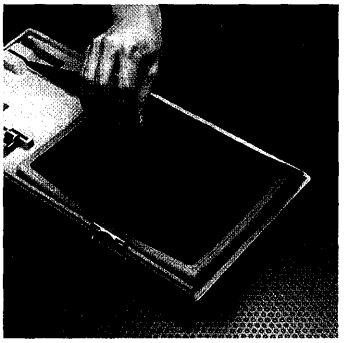
9. If the glare filter has spots from liquid spills, clean it in warm, soapy water. The filter can be torn, so treat it gently. Dry it with a towel before installing it over the video screen. (Do not use the treated cleaning cloth to dry the filter.)

10. Clean the glass on the video screen with any glass cleaner and a soft cloth (not the specially treated cleaning cloth). Do not spray any liquid directly onto the glass, because stray drops could get into other parts of the cabinet. Instead, spray the cleaner onto the cloth, and then wipe the glass.

11. Replace the glare filter, following this procedure:

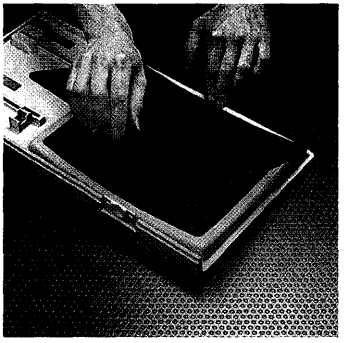
a. Center the glare filter over the opening inside the front panel.

   Hold the glare filter against the clip along the upper edge of the front panel, at a 45 degree angle.



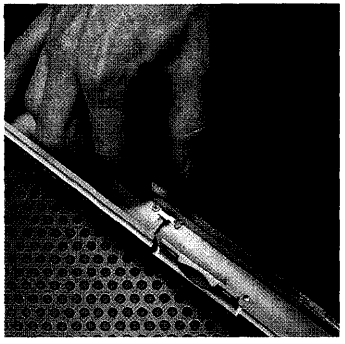
b. While pressing down on the frame at the upper clip, rotate the lower edge until the frame slides under the upper clip.

   Continue rotating the screen until it lies flat against the panel.



c. Push the lower edge of the frame in until it clears the lower clip, and then let it slide into place behind the clip.

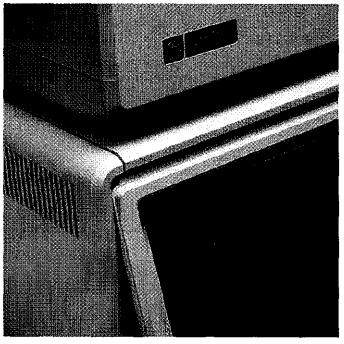
   Make sure the filter fits neatly around the frame and under the clips.



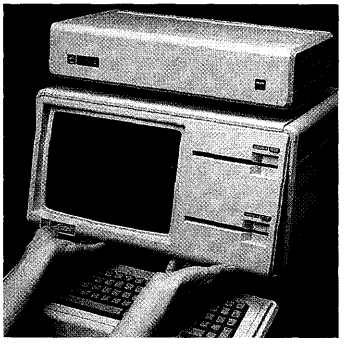
12. Replace the front panel, following this procedure:

a. Hold the panel with one finger on each pad along the bottom edge.

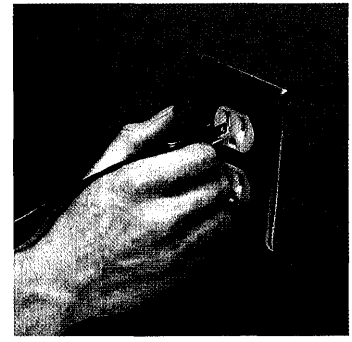
b. Insert the upper edge of the panel behind the lip of the top housing on the cabinet.



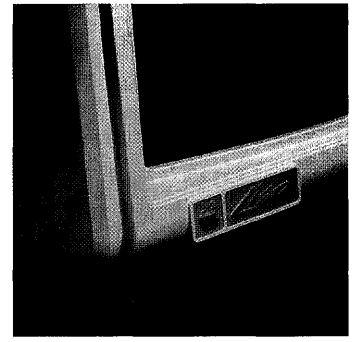
c. Pressing the pads up, push the bottom edge of the panel against the cabinet until the panel clicks into place.



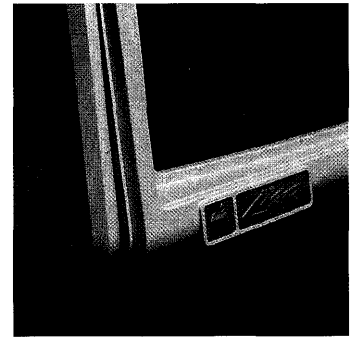
13. Plug in the power cord.



If the front panel is not securely in place, a safety interlock switch prevents you from turning the Lisa on. If you cannot turn the system back on after reinstalling the front panel, check that the panel is in place.



Correct installation



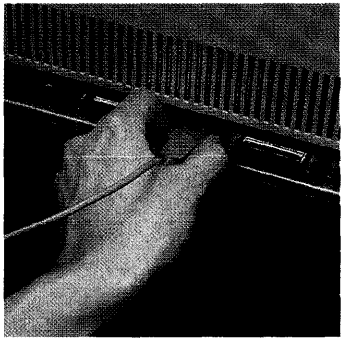
Incorrect installation

Clean or Replace Mouse Ball

If the mouse runs over a sticky spill, or if it is in an environment with a lot of dust or eraser crumbs, dirt may accumulate inside the mouse and make it unreliable. A simple cleaning of the ball will eliminate the problem.

1. Detach the mouse cord from the Lisa, following this procedure:

   a. With one finger on either side of the plug, push in on the soft plastic shell surrounding the connector.

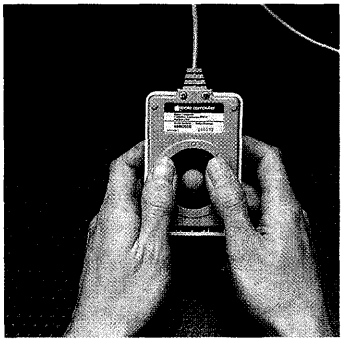


   b. Pull the cord free from the Lisa.

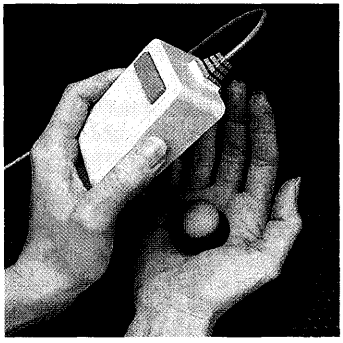
2. Open up the mouse, following this procedure:

   a. Turn the mouse over, exposing the black plastic ring around the ball.

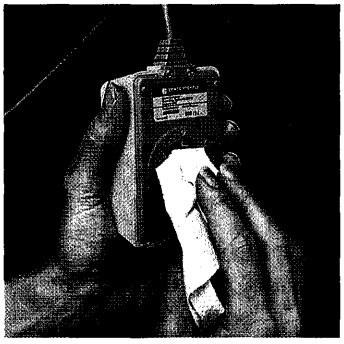
   b. Pressing down on the ring, turn it counterclockwise 45 degrees, until the notch is lined up with the "O" (for open) on the mouse case.



3. Turn the mouse over and let the ring and ball fall into your hand.



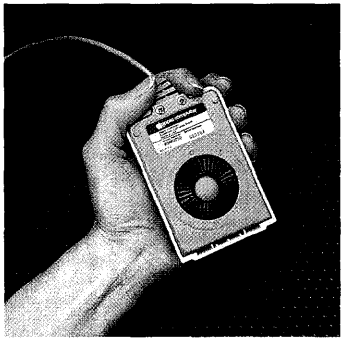
4. If the ball is sticky, rinse it off gently and dry it thoroughly. Wipe the inside of the case with a clean, dry cloth.



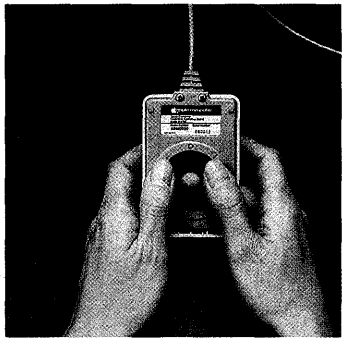
5. Reassemble the mouse, following this procedure:

   a. Drop the ball gently into the hole.

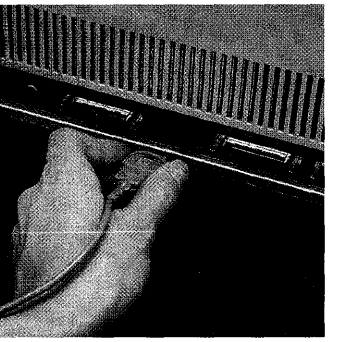
   b. Place the ring over the ball, lining up the notch with the "O" on the case.



   c. Pressing down on the ring, turn it clockwise 45 degrees, until the notch is lined up with the "L" (for locked) on the mouse case. You can feel the ring click into place.



6. Reattach the mouse cord to the back of the Lisa.



Clean Housing

The cabinet, keyboard, and mouse housing can be cleaned with most commercial cleaning solutions. However, don't use any solvent containing kerosene or pine oil, because these chemicals will damage the plastic.

When you clean the housing, follow these safety procedures:

- Turn off and unplug the Lisa before using any liquid on it.
- Don't spray anything into or near the air vents or the disk drive slots.
- Don't spray solvents on the keys.
- Don't try to clean anything inside the housing or the keyboard. You can clean the inside of the mouse, following the procedure under Clean or Replace Mouse Ball, in this section.

Section G
Troubleshooting

Contents

G1 What's in Troubleshooting?

G2 Start Here

G2 Problems during Startup

G4 Problems while Working

G5 Problems while Powering Off

G6 Procedure A. Power Problems

G7 Procedure B. Specific Video Problems

G8 Procedure C. Dark Screen

G9 Procedure D. System Hangs

G10 Procedure E. Mouse Problems

G11 Procedure F. Keyboard Problems

G11 Procedure G. Daisy Wheel Printer Problems

G12 Procedure H. Dot Matrix Printer Problems

G13 Procedure I. Startup ProFile Problems

G14 Procedure J. Startup Diskette Problems

G16 Procedure K. Startup Expansion Card Problems

G18 Procedure L. Retrieving Diskettes

G18 Procedure M. Startup Symptoms and Error Messages

G23 Procedure N. Startup Menu

G24 Procedure O. Operating System Errors

G25 Procedure P. Environments Window

G26 Procedure Q. LisaTest

What's in Troubleshooting?

This section contains suggested troubleshooting paths to help you identify the problem when your Lisa seems not to be working properly.

This troubleshooting guide can be used in two ways:

- If you need help identifying which part of the system is causing the problem, start by answering the first question on the next page. Each possible answer directs you either to another question or to a diagnostic procedure. If you determine that you have a hardware problem, refer to Section H, Service, in this manual, for step-by-step instructions for replacing faulty parts.
- If you think you already know which component is at fault, skip the troubleshooting guide and go to the diagnostic procedure for that module, or run the LisaTest diagnostic on that module. Instructions for using LisaTest appear in Procedure Q, LisaTest.

Every time you turn on the Lisa, it automatically tests enough of the system to verify that startup is possible. For a complete description of the startup tests, see Appendix 3, Automatic Startup Tests, in this manual.

This troubleshooting guide covers only the most likely problems. If the procedures suggested here do not solve your problem, take the system to a qualified service representative for more thorough testing.

Start Here

When did the problem arise?

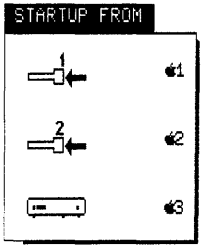
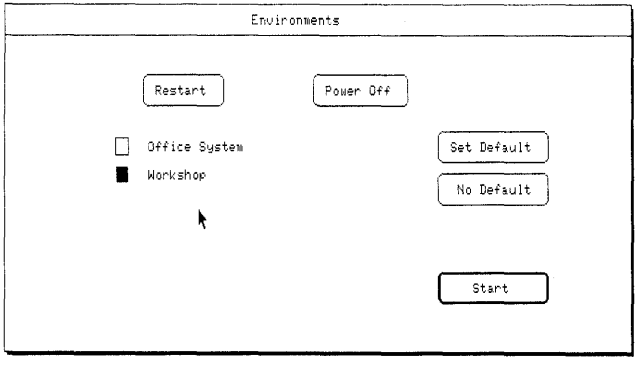
■ While you were starting up the Lisa.	Go to 1A, below.
■ While you were working on the Lisa.	Go to 2A, below.
■ While you were turning off the Lisa.	Go to 3A, below.

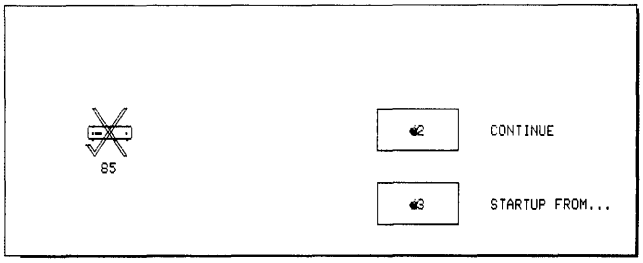
Problems during Startup

1A. Did the power light come on?

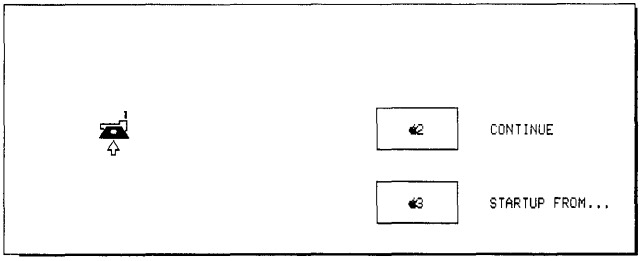
■ Yes.	Go to 1B, below.
■ No.	Go to Procedure A, Power Problems.

1B. What is on your screen?

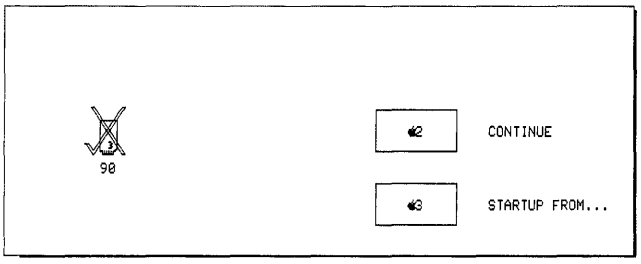
■ Nothing.	Go to Procedure M, Startup Symptoms and Error Messages.
■ 	Go to Procedure N, Startup Menu.
■ 	Go to Procedure P, Environments Window.

■ 

Go to Procedure I, Startup ProFile Problems.

■ 

Go to Procedure J, Startup Diskette Problems.

■ 

Go to Procedure K, Startup Expansion Card Problems.

■ Some other unexpected display.

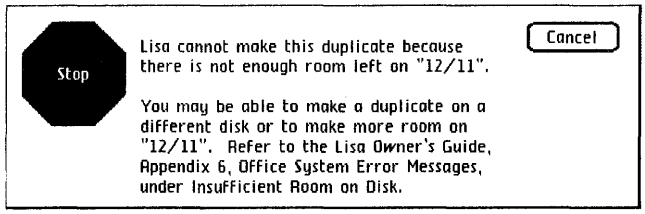
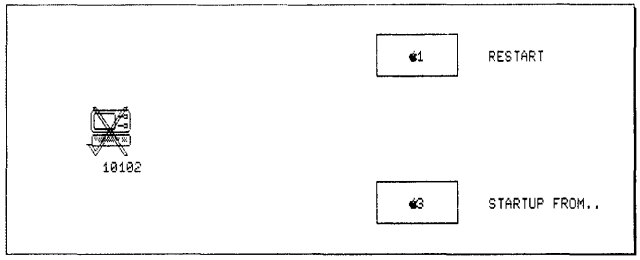
Go to Procedure M, Startup Symptoms and Error Messages.

■ Normal desktop display.

Go to 2B, below.

Problems while Working

2A. What is on the screen?

■ Nothing.	Go to 3B, below.
■ An error message, such as 	Go to Appendix 6, Office System Error Messages.
■ Unstable picture, lines on screen, or display at an angle.	Go to Procedure B, Specific Video Problems.
■ 	Go to Procedure O, Operating System Errors.
■ Normal desktop display.	Go to 2B, below.

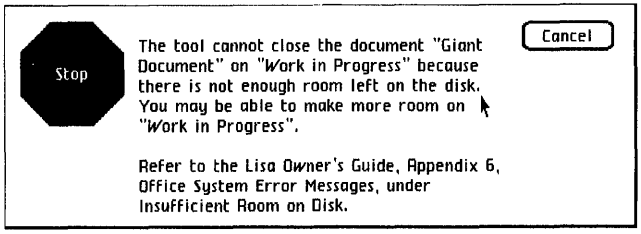
2B. How does the system respond to input from you?

■ Ignores everything: keyboard, mouse, on-off button, and disk-release buttons.	Go to Procedure D, System Hangs.
■ Responds correctly to everything except mouse.	Go to Procedure E, Mouse Problems.
■ Responds correctly to everything except keyboard.	Go to Procedure F, Keyboard Problems.
■ Responds correctly to everything except disk-release buttons.	Go to Procedure L, Retrieving Diskettes.

■ Will not print.	Go to Procedure G, Daisy Wheel Printer Problems, or Procedure H, Dot Matrix Printer Problems.

Problems while Powering Off

3A. What happened when you pressed the on-off button to turn the system off?

■ The system did not respond at all.	Go to Procedure D, System Hangs.
■ Power-down procedures proceeded normally, but one or more of the diskettes was not released from the drive.	Go to Procedure L, Retrieving Diskettes.
■ An error message appeared, such as 	Go to Appendix 6, Office System Error Messages.

3B. Is the power light on?

■ No.	Go to Procedure A, Power Problems.
■ Yes.	Go to Procedure C, Dark Screen.

Procedure A
Power Problems

1. Check to make sure that all cables are firmly in place and that the system is plugged in. If the power cord is loose, insert it correctly and try again to start the system.
2. Verify that both the front and back panels are installed securely. Each panel is equipped with a safety interlock which automatically turns off all power if the panel is not in place.
3. Verify that the wall outlet is actually receiving electricity. Try plugging in a lamp and turning it on. If the lamp works, you know that the outlet is working.
4. Verify that there are at least two inches of air space on all sides of the Lisa and that nothing is blocking the flow of air around the bottom edge of the cabinet.

   A thermostat in the power supply shuts off the system automatically if the temperature surpasses about 90 degrees Centigrade (195 degrees Fahrenheit). If the system may have overheated, unplug the Lisa, remove any obstructions to air flow, and let the system cool down for 10 minutes. Try again to turn it on after everything has cooled.

   If this procedure reveals a temperature problem, rearrange your system setup to allow for adequate ventilation. If the problem persists, replace the power supply.

If the system setup, the electrical supply, and the cables all check out, the likely sources of the problem, in order of probability, are:

- A bad power supply.
- A bad I/O board.
- A bad on-off switch.

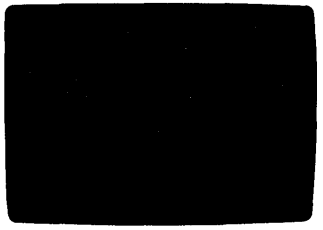
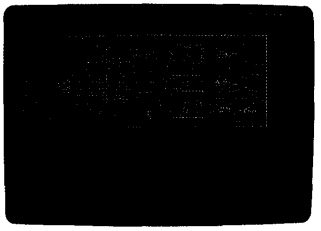
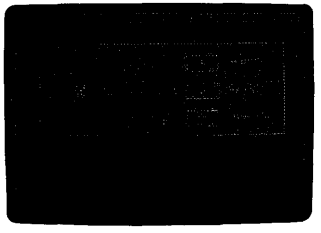
The power supply is most likely to be the cause, but the only way to verify the diagnosis is to try replacing the old power supply. If a new power supply doesn't solve the problem, try replacing the I/O board. Instructions for replacing both the power supply and the I/O board appear in Section H, Service, in this manual.

If neither the power supply nor the I/O board is the problem, take the system to a qualified service center for repair. The on-off switch is not user serviceable.

Procedure B Specific Video Problems

The symptoms listed in Table 1 indicate specific problems, mostly with the video system. Except for adjusting the screen brightness, all of the repairs in this table must be done by a qualified service technician. Do not try servicing the video system yourself; it can be dangerous even when the Lisa is unplugged.

Table 1. Specific Video Problems

If Your Screen Looks Like This	Follow This Procedure
	Take the system to a qualified service specialist.
	Take the system to a qualified service specialist.
	Take the system to a qualified service specialist.
	Adjust the screen brightness.

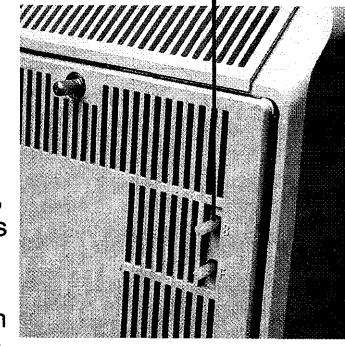
Procedure C
Dark Screen

If your screen goes blank while you are working, your video system may have failed. Before you conclude that there is a hardware problem, however, you should check for other possible causes:

1. Try moving the mouse or pressing the spacebar. The Lisa screen automatically dims if no activity has taken place for several minutes. If this automatic dimming is the cause of your dark screen, moving the mouse or hitting a key should return the screen to its normal contrast level.

2. Try holding down the right-hand (Option) key and right-hand (Shift) key while pressing the 0 on the numeric keypad. This procedure toggles the screen contrast between the normal contrast setting and the darkest setting. If the screen remains dark, repeat the procedure so that the normal contrast setting will be in effect for the next step.

3. Try adjusting the screen brightness, using the higher of the two white knobs extending from the back of the Lisa. If this was the problem, readjust your screen brightness and contrast, following the procedures in Section D, Desktop Manager Reference Guide, under Set Screen Brightness and Contrast, in this manual.



If none of these procedures solves the problem, have the Lisa serviced by a qualified service center. Working on the video system yourself can be dangerous, even when the Lisa is turned off and unplugged.

Procedure D
System Hangs

Sometimes, usually because of software failures, a computer ignores all input. The usual solution is to turn off the system and start over. Since the Lisa on-off button is channeled through the computer, however, turning the system off is not always possible.

The reset button, marked ! on the back of the Lisa, is the backup technique for bringing the system back up when the software hangs.

Warning: Pushing the reset button clears the computer's memory and reinitiates the system startup procedures. This means that anything on the desktop that has not been saved on a disk is lost during a reset.

Before you push the reset button, make sure you have made every effort to save any work that was on the desktop:

- Try pressing the disk-release buttons, which should cause the Lisa to save all documents stored on diskettes.
- Try turning the system off by pressing the on-off button, which should trigger a series of verification and storage procedures.

If the system does not respond to either of these steps, you will not be able to recover whatever you were working on when the system failed. The disk should still contain the most recently saved version of each document, however.

Press the reset button once.

1. If you see a message something like Figure 1, you probably do not have a hardware problem.

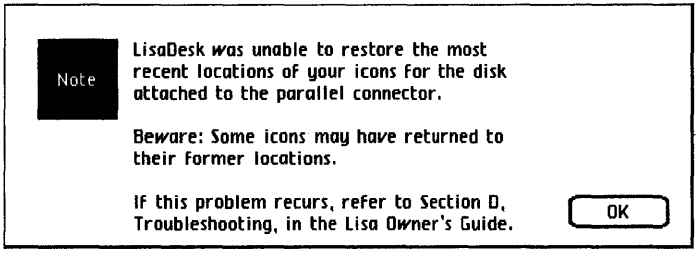


Figure 1. Disk Repair Message

Because you pressed the reset button, however, your disks have been left in a state that the Lisa cannot understand. For more information about how a sudden shutdown affects disk organization, see Appendix 4, On-Off Procedures. For the procedures for repairing your disks, see Section D, Desktop Manager Reference Guide, under Repair a Disk after a System Failure and Repair a Startup ProFile, in this manual.

2. If the Lisa displays any other error message or error tones, you may have a hardware problem. Refer to Procedure M, Startup Symptoms and Error Messages.

3. If the Lisa doesn't respond even to the reset button, unplug the system from the wall outlet. Plug it back in, turn it on, and listen carefully for error tones. If the system starts, see items 1 and 2 in this list.

Procedure E Mouse Problems

Mouse problems fall into two categories:

- General sluggish response. If the screen pointer responds sporadically or unevenly to mouse movement, there is probably dirt inside the mouse. Clean the mouse, following the instructions in Section F, Maintenance, in this manual. While you have the mouse open, check to see if the ball is damaged. If the ball has been gouged, replace it.

  If the ball is neither dusty nor worn, and response is still sluggish, you might be trying to use the mouse on a surface that is too uneven. If your desk or table has a particularly uneven surface finish, you can put a clipboard or other flat object under the mouse. If none of these efforts solves the problem, run the LisaTest diagnostic on the mouse. Instructions for using LisaTest appear in Procedure Q, LisaTest.

- Sluggish response in one direction only, or no response. If the pointer doesn't seem to move in either or both directions, or if the mouse button doesn't seem to work, there is probably a mechanical problem. First, make sure that the mouse cable is plugged securely into the back of the cabinet. Then run the LisaTest diagnostic on the mouse. Instructions for using LisaTest appear in Procedure Q, LisaTest.

Procedure F Keyboard Problems

1. First, verify that the keyboard is plugged securely into the cabinet. Pull out the plug entirely and replace it; don't just jiggle it in the socket.
2. If the keyboard still does not respond, run the LisaTest keyboard diagnostic. Instructions for using LisaTest appear in Procedure Q, LisaTest.

Procedure G Daisy Wheel Printer Problems

1. Check that the power to the printer is on.
2. Check the Device Connections portion of the Preferences window to verify that the Lisa knows where your printer is attached. A daisy wheel printer must be attached to a serial connector.

   Check that the Preferences settings match the actual configuration of the printer: print wheel, paper type, and paper size.
3. Check that the cable connecting the Lisa to the printer is installed securely.
4. Check that the front panel is securely in place on the printer. The printer will not run if the front panel is not fully in place.
5. Check the ribbon on the printer. The daisy wheel printer will not run if the ribbon has run out.
6. Run the printer self-check:

   a. Turn off the printer.

   b. While pressing the form feed switch, turn the printer back on.

   c. Release the form feed switch.

   The printer should start printing a test display that looks something like Figure 2. The test continues until you turn the printer off.

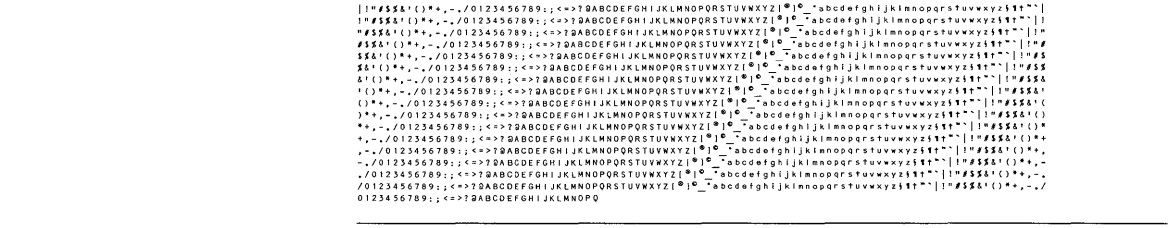


Figure 2. Daisy Wheel Printer Self-Test

7. Run the LisaTest diagnostic on the printer. See procedure Q, LisaTest

Procedure H Dot Matrix Printer Problems

1. Check that the power to the printer is on and that the green select light, labeled SEL, is on.
2. Check the Device Connections portion of the Preferences window to verify that the Lisa knows where your printer is attached.

   Check that the Preferences settings match the actual setup of the printer.
3. Check that the cable connecting the Lisa to the printer is installed securely.
4. Run the printer self-check:

   a. Turn off the printer.

   b. While pressing the top-of-form button, labeled T.O.F., turn the printer back on.

   c. Release the T.O.F. button.

   The printer should start printing a test display that looks something like Figure 3. The test continues until you turn the printer off.

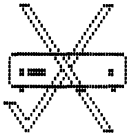
```
LMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<
MNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=
NOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>
OPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?
PQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@
QRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@A
RSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@AB
STUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@ABC
TUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@ABCD
UVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@ABCDE
VWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEF
WXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFG
XYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGH
YZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHI
Z[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJ
[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJK
\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKL
]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLM
```

Figure 3. Dot Matrix Printer Self-Test

5. Run the LisaTest diagnostic on the printer. See Procedure Q, LisaTest.

Procedure I Startup ProFile Problems

The presence of this icon on your screen probably means that the Lisa is looking unsuccessfully for the startup instructions on a ProFile hard disk attached to the built-in parallel connector.



If you ordinarily use a ProFile attached to the parallel connector as your startup device, read step 1, below. If you ordinarily use some other drive as your startup device, read step 2, below.

1. For some reason, the Lisa is having trouble reading your startup ProFile.

First, verify that your ProFile is attached and turned on. *Do not attach or detach a ProFile while either the Lisa or the ProFile is on.* If the ProFile is not attached, follow this procedure for attaching it:

a. Turn off the ProFile.

b. Turn off the Lisa.

c. Attach the ProFile.

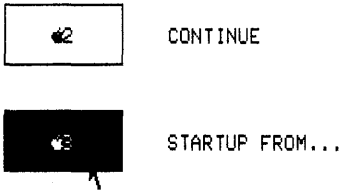
d. Turn on the ProFile.

e. Turn on the Lisa.

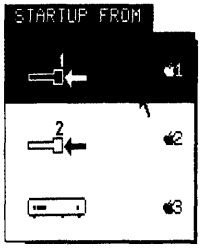
If the ProFile is already attached and turned on, then for some reason the Lisa can't read the startup instructions. Reinstall your system software, using the Lisa Office System diskettes in the back of this manual and following the instructions in Section D, Desktop Manager Reference Guide, under Reinstall System Software.

2. If you are trying to start up from any device other than a ProFile attached to the built-in parallel connector, then the Lisa is looking for the startup instructions in the wrong place.

   a. Click Startup From.



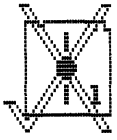
   b. When the Startup menu appears, use the mouse to select the startup device you are trying to use.



   A ProFile attached to the built-in parallel connector is the default startup device, that is, the device the Lisa uses if you do not specify otherwise. If you usually start up from a different device, then the startup specifications in your system Preferences may have been forgotten. When you have started the system, open the Preferences icon and check your startup specifications.

Procedure J Startup Diskette Problems

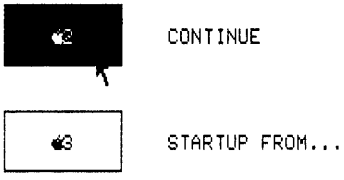
The presence of any of these icons on your screen means that the Lisa is looking unsuccessfully for a startup diskette in one of the built-in floppy disk drives.



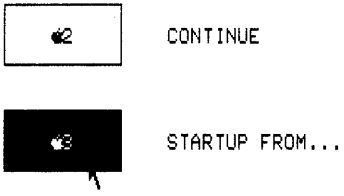
If you are trying to start up from a diskette, read step 1, below. If you are trying to start up from a startup ProFile, read step 2, below.

1. Verify that the diskette is properly inserted in the proper drive. The number over the icon tells you whether the Lisa is looking in drive 1 or drive 2. Check that the diskette is a startup diskette — a Lisa Office System diskette or a Development System diskette, for example.

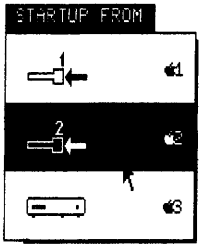
a. After inspecting the diskette, reinsert it and click Continue.



b. If the same message appears, try moving the diskette into the other floppy disk drive. Then click Startup From.



c. When the Startup menu appears, select the disk drive that now holds the startup diskette.

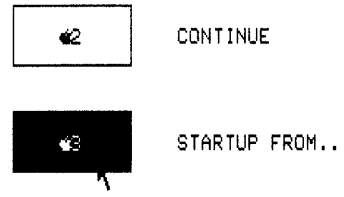


If the Lisa starts successfully from the other disk drive, run the LisaTest diagnostic on the first disk drive, following the instructions in Procedure Q, LisaTest. To test a disk drive, the Lisa needs a blank or obsolete diskette. Any information that may be on the diskette used for the test will be destroyed.

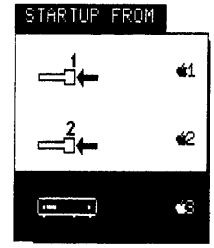
If the Lisa displays the same message for the second drive, your startup diskette may be damaged. Try starting the system with the LisaTest diskette in either floppy disk drive. If the Lisa starts, run a complete system check. If the tests run satisfactorily, the problem is probably with your startup disk.

2. If you are not trying to start up from a floppy disk, then the presence of the floppy disk drive icons on your screen means that the Lisa is trying to start up from the wrong device. To start up from your usual device:

   a. Click Startup From.



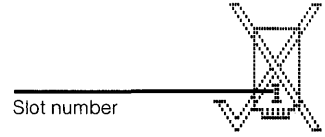
   b. When the Startup menu appears, use the mouse to select your startup drive.



   If this procedure works, the specifications in your system Preferences have probably been altered. Open the Preferences icon and check the startup specifications. If they are correct, then the Lisa probably received an alternative startup command during the initial startup. You may have done this inadvertently by pressing keys while the system was starting up.

Procedure K Startup Expansion Card Problems

The presence of this icon on your screen means that the Lisa is looking unsuccessfully for the system startup software on a device connected to an expansion card. The number of the expansion slot is displayed on the icon.



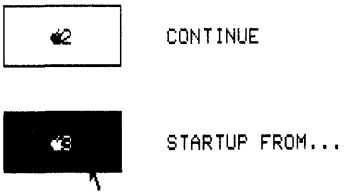
If your startup device is in fact attached to an expansion card in the specified slot, read step 1, below. If your startup device is not attached to an expansion card, read step 2, below.

1. Check to verify that the expansion card is securely in place and that the cable between the expansion card and the startup device is firmly attached. Verify that the startup device is turned on. Try again to start up the Lisa.

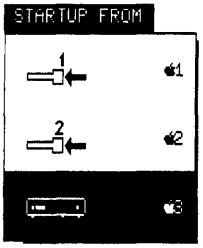
   If the same message appears, run the LisaTest diagnostic on your expansion card. Instructions for using LisaTest appear in Procedure Q, LisaTest.

2. If your startup device is not attached to an expansion card, then the presence of the expansion card icon on your screen means that the Lisa is trying to start up from the wrong device. To start up from your usual device:

   a. Click Startup From.



   b. When the Startup menu appears, use the mouse to select your startup drive.



   If this procedure works, the specifications in your system Preferences have probably been altered. Open the Preferences icon and check the startup specifications. If they are correct, then the Lisa probably received an alternative startup command during the initial startup. You may have done this inadvertently by pressing keys while the system was starting up.

Procedure L Retrieving Diskettes

The disk-release buttons on the built-in floppy disk drives do not work when the power to the Lisa is turned off. The Lisa should automatically release any diskettes before powering off; in case something goes wrong and one of your diskettes is trapped in the drive, follow this procedure:

1. Turn the Lisa on.
2. When you hear the first click, and before you hear the double click, press the spacebar.
3. When the Startup menu appears, press the disk-release button. The diskette should be ejected.

If this procedure doesn't work, there is probably a mechanical problem with the disk drive. *Do not try to pry the diskette out of the drive.* Because the diskette is clamped in place, forcing it out of the drive will probably destroy the diskette.

To retrieve the diskette, take the drive to a qualified service center for repair.

Procedure M Startup Symptoms and Error Messages

Every time you turn on the Lisa, the system automatically runs a series of internal tests. These tests fall into two categories:

- The "kernel" tests, which are designed to catch problems serious enough to interfere with the rest of the sequence. After the kernel tests, the Lisa emits one click.
- The module tests, which may result in specific error messages. After the module tests, the Lisa emits a double click.

Errors detected during the tests can result in screen messages, error tones, or both. If your screen displays an alert, read the discussion following the tables below. Table 2 lists the error tones generated by various startup tests and their meanings. If you do not remember whether or not the Lisa sounded any error tones during startup, press the reset button once to repeat the tests.

Table 2. Startup Error Tones

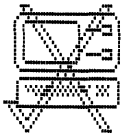
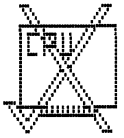
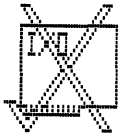
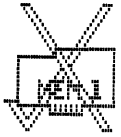
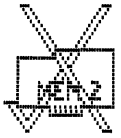
Tones	Icon	Meaning
Lo	No icon displayed	CPU or memory error. Must be diagnosed by a qualified service technician.
Lo,Lo	No icon displayed	Memory failure in preliminary test. Replace one or both memory boards.
Lo,Hi	Card cage 	A problem somewhere in the system. If possible, run a complete system check to identify which board is causing the problem. See Procedure Q, LisaTest.
Lo,Lo,Hi	CPU board 	Replace CPU board.
Lo,Hi,Lo	I/O board 	Replace I/O board.
Lo,Hi,Hi	Memory board  	Replace specified memory board.

Table 2. Startup Error Tones, continued

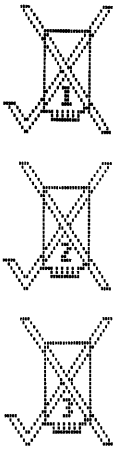
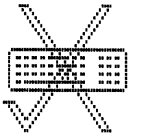
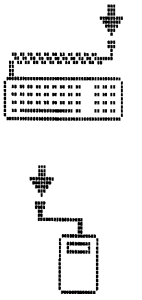
Tones	Icon	Meaning
Hi,Lo,Lo	Expansion card 	Replace expansion card in specified slot.
Hi,Lo,Hi	Keyboard 	Run keyboard diagnostic. See Procedure Q, LisaTest.
Hi,Hi,Lo	Keyboard/mouse disconnected 	Keyboard or mouse disconnected. Continue without keyboard or mouse, or attach keyboard or mouse. If both are attached, run keyboard or mouse diagnostic. See Procedure Q, LisaTest.

Table 2. Startup Error Tones, continued

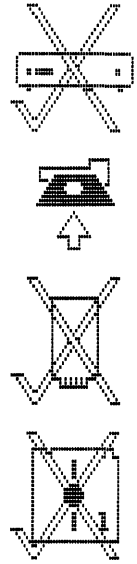
Tones	Icon	Meaning
Hi,Hi,Hi	Disk drive, ProFile, or expansion card 	Startup failure. Insert startup disk, specify a different startup device, or check startup device. See Procedure I, J, or K.

Table 3 lists the most common kernel test failures and the likely solutions. For a more complete discussion of the kernel tests and a list of the specific error messages, see Appendix 3, Automatic Startup Tests.

Table 3. Kernel Test Failures

Symptom	Possible Fix
Blank screen, no error tones	1. Replace CPU board. 2. Replace I/O board. 3. Replace card cage.
White screen with white lines, no error tones	Replace CPU board.
Random display, no error tones	Replace CPU board.
Random display, one error tone	Replace CPU board.

Table 3. Kernel Test Failures, continued

Symptom	Possible Fix
Random display, two low error tones	1. Replace memory board in slot 2. 2. Replace CPU board. 3. Replace card cage.
Flashing screen and repeated error tone, alternating low and high pitch	1. Replace I/O board. 2. Replace CPU board. 3. Replace card cage.
Blank screen or random display, with error tones	Replace board acording to error tone sequence. See Table 2, Startup Error Tones.

Some of the error messages indicate hardware problems with the Lisa; others indicate a problem with the system setup. In general, the presence of an icon with or without a numeric code means that the module represented by the icon should be checked.

Some startup error messages are presented to you as an alert box, which offers you up to three choices, as shown in Figure 4.

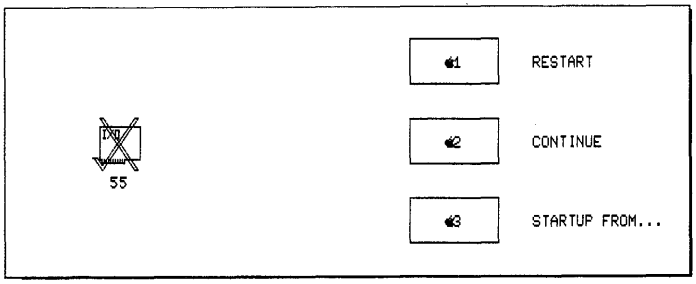


Figure 4. Startup Alert Box

You make your choice either by clicking on one of the boxes or by holding down the ⌘ key while pressing the number displayed in the box.

Restart

If you choose Restart, the Lisa repeats the startup tests. Choose Restart if you want to verify the test results.

Continue

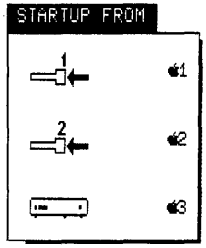
The Continue option appears only if the problem is one that allows startup to continue. If, for example, your startup ProFile was not turned on during startup, you can simply turn it on and click Continue. The Lisa continues the startup procedures.

Startup From

When you choose Startup From, the Lisa displays the Startup menu and waits for you to specify a startup device. Choose this option when you want to use a different startup device from the one specified in your system Preferences or when your system Preferences have been forgotten.

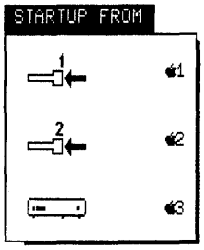
If the Lisa has been unplugged for more than 10 hours, then the Preferences, usually stored in parameter memory, have been forgotten. In this case, the Lisa automatically looks for a startup ProFile attached to the built-in parallel connector. If your startup device is anything else, you will have to tell the Lisa where to find it through the Startup menu.

To choose a startup device, click on the device you want to use, or hold down the ⌘ key while pressing the key listed in the menu next to the device you want to use. As soon as you choose a device, the Lisa continues the startup procedures.



Procedure N Startup Menu

The Startup menu appears any time you hit any key except (Caps Lock) during the module test sequence of the automatic startup tests.



The Startup menu allows you to specify a different startup device from the one you usually use.

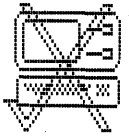
If you unintentionally interrupted the startup sequence by pressing a key, simply select your startup device from the Startup menu. The Lisa will continue normal startup procedures.

If you want to call up the Startup menu during startup, follow this procedure:

1. Turn on the Lisa.
2. When the cabinet emits a single click, and before it emits a double click, press any key except (Caps Lock).

Procedure O Operating System Errors

This icon on your screen means that the Lisa Office System has failed. There is probably nothing wrong with your hardware; you have encountered a problem with the software.



As shown in Figure 5, your only option when presented with the Operating System failure icon is to restart the system, using either your normal startup device or another startup device. The best procedure is to restart using the LisaTest diskette in either built-in floppy disk drive. If the system starts, run a complete system check. See Procedure Q, LisaTest.

If the tests proceed normally, restart the system using your usual startup device. Your disks will probably be left in an unusual state, and the Lisa will suggest you repair them. See Section D, Desktop Manager Reference Guide, under Repair a Storage Disk after a System Failure and Repair a Startup ProFile, in this manual.

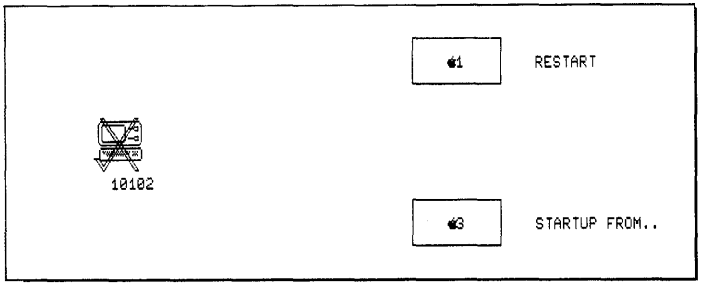


Figure 5. Operating System Error

If you have a support agreement on your Lisa system, you should report the failure. Write down the number under the icon before you restart the system, and report that number to your service representative or the Apple service operator.

Procedure P Environments Window

If your startup ProFile contains any software other than the Lisa Office System, you may encounter a screen similar to the one shown in Figure 6 when you start up the Lisa.

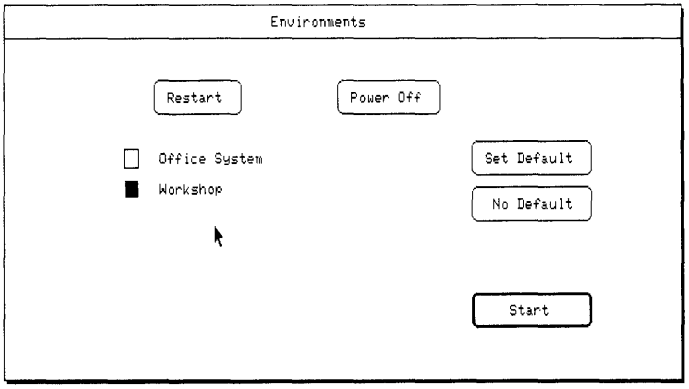
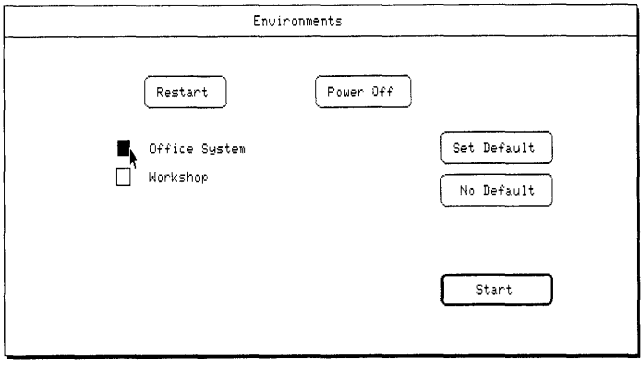


Figure 6. Environments Window

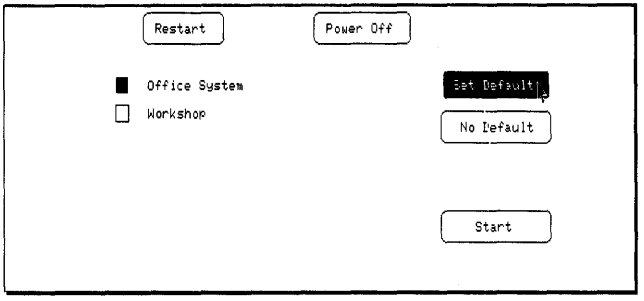
This display, known as the Environments window, allows you to specify which software you want to use. To start up the Lisa Office System, click Office System, and then click Start.

If you always want to use the Lisa Office System:

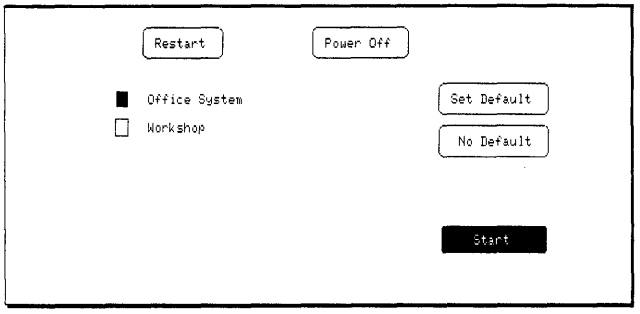
1. Click Office System.



2. Click Set Default.



3. Click Start.



Once you have set the default, you will never see the Environments window unless you specifically request it. To call up the Environments window from the Lisa Office System, hold down the ⌘ key while pressing the on-off button. To call up the Environments window during system startup, press the ⌘ and Shift keys simultaneously after you hear the double click from the cabinet.

For more information on the Environments window, see the *Workshop User's Guide* for the Lisa or the manual that came with the other software on your ProFile.

Procedure Q LisaTest

LisaTest is designed to identify which part of the Lisa is causing a problem. If you think you already know which part may be at fault, follow the instructions below for running a test on that part. If the suspected part checks out, or if you do not know which part to test, run a complete system check.

The first part of this procedure explains the meanings of the testing options presented by LisaTest. The second part describes how to use the LisaTest diskette, and the third part describes how to back up the LisaTest diskette.

The diskette itself is stored on the inside front cover of this manual.

Choosing Options

The LisaTest diskette follows the same conventions as the Lisa Office System. You open menus by pointing to the menu title and holding down the mouse button; you choose menu items by releasing the mouse button when the item you want is highlighted.

Set Diagnostic Controls

This option allows you to specify whether the Lisa runs each test once or repeatedly. If you do not set the controls, the Lisa runs the tests only once.

Choose Set Diagnostic Controls and ask for continuous tests if the problem is intermittent. Then choose either Run Complete System Check or Check. The Lisa continues running the tests until either a problem is found or you stop the tests by pressing the on-off button once.

Run Complete System Check

This option tests all of the modules inside the Lisa, except the controller for the floppy disk drive that holds the LisaTest diskette. You will need a blank or obsolete diskette for the test of the other floppy disk drive; everything on that diskette will be erased.

If you choose Run Complete System Check, the Lisa asks you to participate in some of the tests, such as the keyboard and mouse test. Simply follow the instructions on the screen during these tests.

You can terminate the system check at any time by pressing the on-off button once.

Check

This option allows you to test only the part or parts that you think may be at fault. When you choose Check from the Options menu, the Lisa presents you with a display of all available tests. Only the Lisa component that you select from this display will be tested.

For the test of the floppy disk drive controller, you need a blank or obsolete diskette. This test destroys any information that may have been stored on the diskette. You cannot test the drive that holds the LisaTest diskette.

Using LisaTest

To run LisaTest,

- If the Lisa is turned on, turn it off by pressing the on-off button once.
- Insert the LisaTest diskette into drive 1, if it is working. If drive 1 is not working, insert the diskette into drive 2.
- Turn the Lisa on.
- When you hear the first click, and before you hear the double click, press the spacebar, and then wait for the Startup menu to appear.
- Use the mouse to select the drive that holds LisaTest. If the mouse isn't working, hold down the ⌘ key while pressing the number listed in the menu next to the drive.
- Choose either Run Full System Check, to test the entire system, or Check, to test a specific component, from the Options menu.
- If you chose Check, select the icon for the part you want tested.
- Click OK.
- Follow any instructions on the screen for testing the keyboard, mouse, or disk drives.
- If you want to terminate the tests, press the on-off button once or hold down the ⌘ key while pressing the period.

Backing Up LisaTest

To make a backup copy of LisaTest,

- If the Lisa is turned on, turn it off by pressing the on-off button once.

- Insert the LisaTest diskette into either floppy disk drive.
- Insert a blank diskette into the other floppy disk drive.
- Turn the Lisa on.
- When you hear the first click, and before you hear the double click, press the spacebar, and then wait for the Startup menu to appear.
- Use the mouse to select the drive that holds LisaTest. If the mouse isn't working, hold down the ⌘ key while pressing the number listed in the menu next to the drive.
- Choose Check from the Options menu.
- Select the icon labeled Back Up LisaTest.
- Click OK.

Section H
Service

Contents

H1 What's in Service?

H3 Replace Disk Drives

H3 Getting Inside
H4 Removing Disk Drives
H6 Installing Disk Drives
H8 Finishing Up

H10 Replace I/O, CPU, or Memory Boards

H10 Getting Inside
H13 Removing Boards
H15 Installing Boards
H17 Finishing Up

H20 Replace Card Cage

H20 Getting Inside
H22 Transferring Cards
H25 Finishing Up

H28 Remove and Install Expansion Cards

H28 Getting Inside
H30 Removing Expansion Cards
H33 Installing Expansion Cards
H36 Finishing Up

H38 Replace Power Supply

H38 Getting Inside
H40 Replacing Power Supply
H42 Finishing Up

H43 Install Glare Filter

H43 Getting Inside
H45 Installing Glare Filter
H46 Finishing Up

What's in Service?

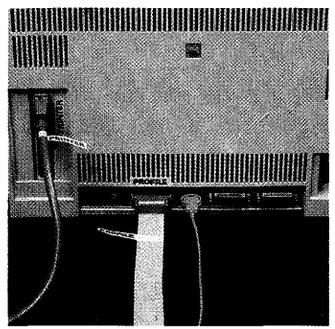
The Lisa has been designed so that you can do most of the servicing yourself. This section is a step-by-step guide to replacing, removing, and installing internal parts.

Figure 1, on the fold-out page, shows all of the user-servicable parts covered in this section.

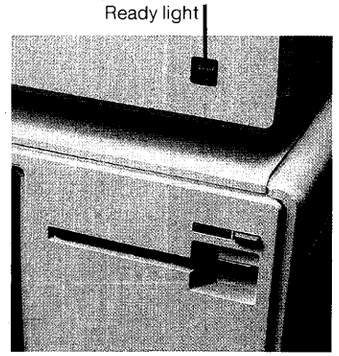
If you are having trouble with the Lisa but don't know which component is at fault, consult Section G, Troubleshooting.

Before you begin any servicing, make sure the Lisa has been turned off and unplugged. As a safety measure, the Lisa automatically turns itself off as soon as you remove either the front or the back panel. But in order to protect your disks from damage during a sudden loss of power, it's a good idea to turn the Lisa off with the on-off button before removing either panel. Since the power supply draws a small amount of current even when the system is turned off, you should always unplug the Lisa before servicing.

When removing the back panel, you will have to detach some or all of the cables connecting the Lisa to peripheral devices. You may save yourself time and confusion later by labeling all connectors with tape when you remove the cables so that you can match the plugs and sockets later.



You should also turn off all peripheral devices before servicing the Lisa. If you have a ProFile hard disk attached to the Lisa, wait until the ready light on the disk has been steady for at least 10 seconds before turning off the ProFile.



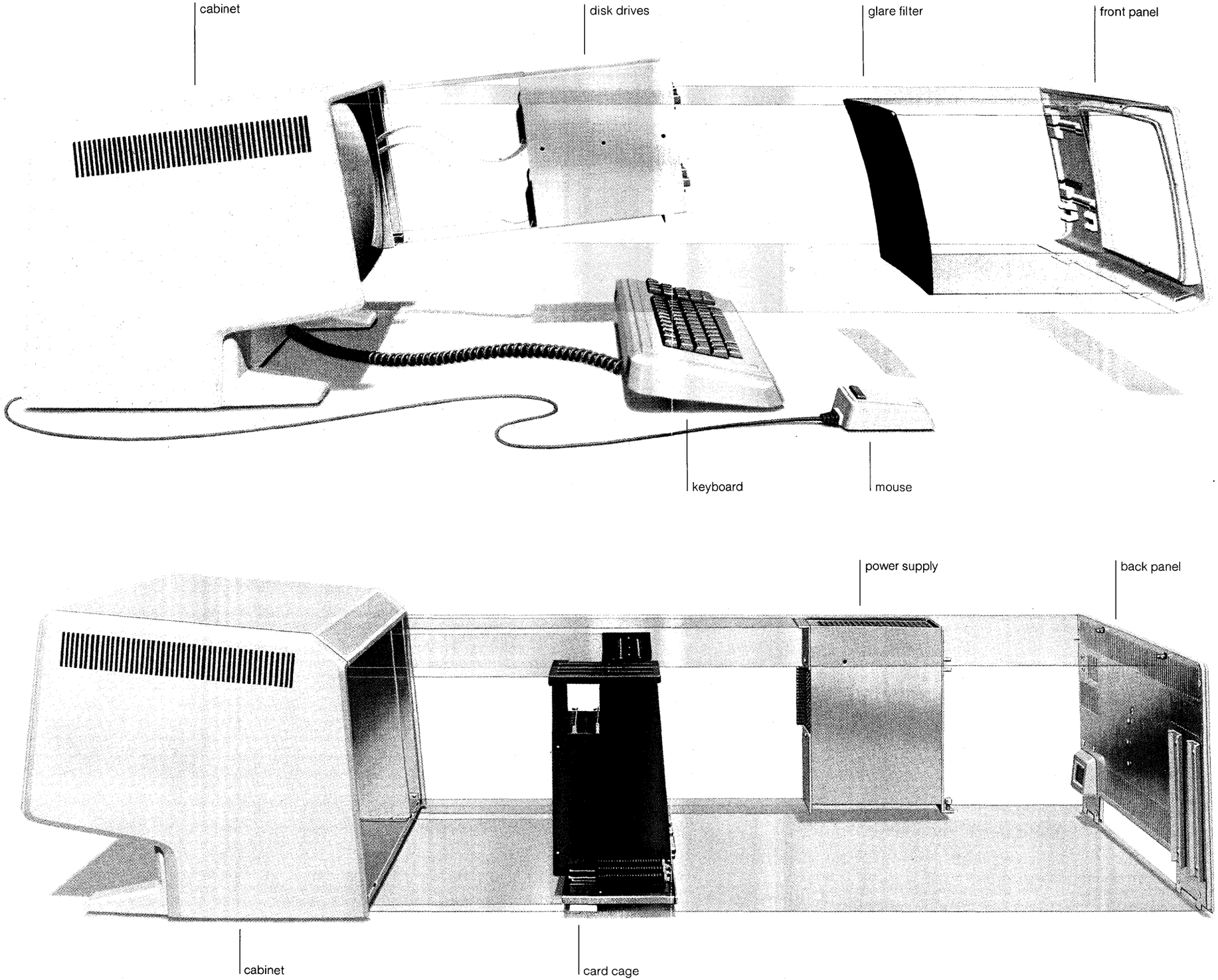
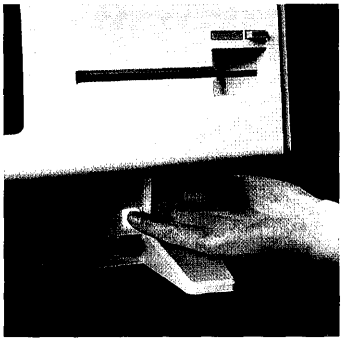


Figure 1. Lisa, Exploded View

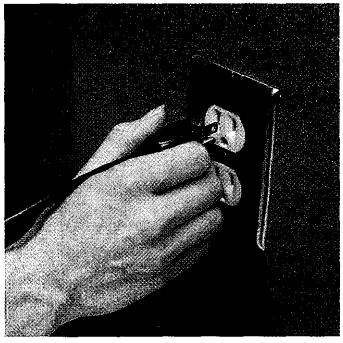
Replace Disk Drives

Getting Inside

1. If the Lisa is on, turn it off by pressing the on-off button. Wait until all diskettes are released and the light in the on-off button is off. Remove any diskettes that are ejected from the disk drives.



2. Turn off all peripheral devices. Unplug the Lisa at either the back panel or the wall outlet.



3. Remove the front panel, following this procedure:

   a. Place one finger on each of the two finger pads beneath the front panel.

   b. Push the pads up to unlatch the panel.

   c. Pull the bottom of the panel forward and down.

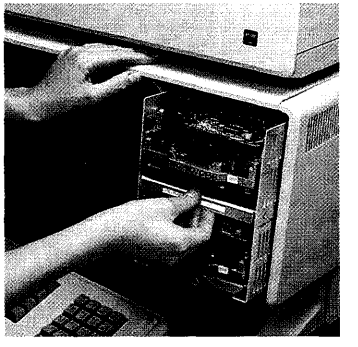
Removing Disk Drives

1. Loosen the thumbscrew at the base of the disk drives by turning counterclockwise.

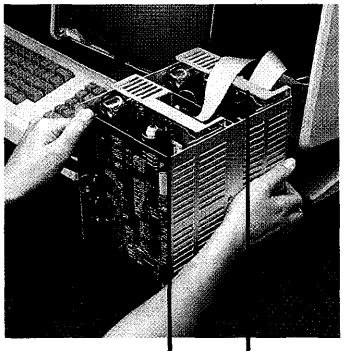
   This screw loosens but does not come free from the module. When it's loose, you can feel the pressure of the spring at the base of the screw, and the screw can be pulled slightly in and out.

2. Grasp the metal tab between the two drives and slowly pull out the module.

   Be careful not to put any strain on the cables connected to the back of the drives.

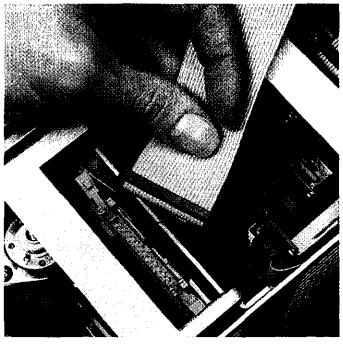


3. Place the module face down, exposing the cable connectors. Identify the connector attached to drive 1, the drive closer to you.

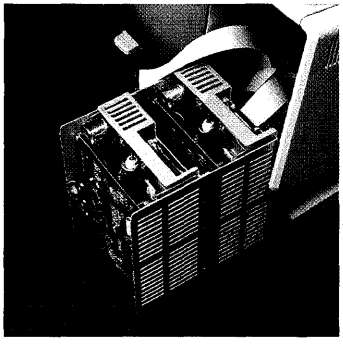


4. Place one thumb on each of the two gray tabs projecting from the cable connector. Pull the tabs apart to release the cable.

5. Remove the cable from the connector.



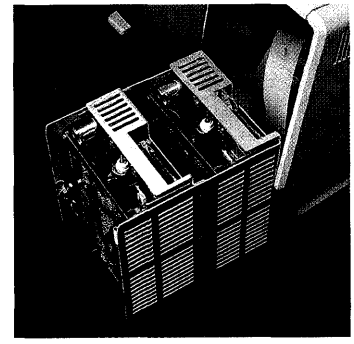
6. Repeat with the second cable connector, removing it from drive 2.



7. Set aside the old disk drive module and unpack the new one.

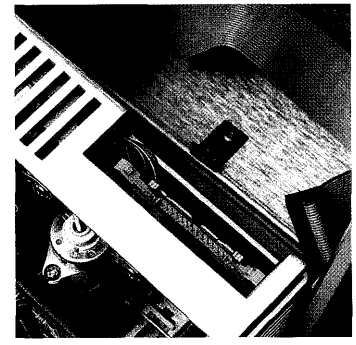
Installing Disk Drives

1. Locate the two cable connectors on the back side of the disk drive module. Place the module directly in front of the cabinet, with the cable connectors pointing up.

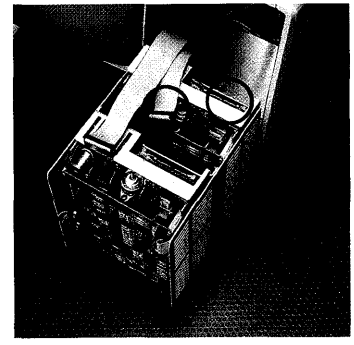


2. Make sure the ridged tabs on either side of the cable connectors are in an open position.

   If these tabs are upright, push them away from each other until they fall open.

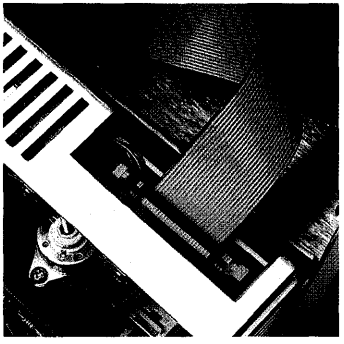


3. Locate the shorter of the two flat, gray cables inside the cabinet. You will insert this cable into the connector on drive 2, the drive closer to the Lisa.



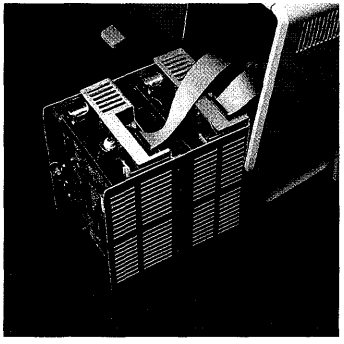
4. Align the black plastic plug over the connector, with the holes pointing down and the ribbon cable extending toward the cabinet.

5. Place the plug gently into the gray connector, making sure it is centered and fitted neatly into the socket. Verify that all 20 prongs on the connector are aligned with the 20 holes in the plug.

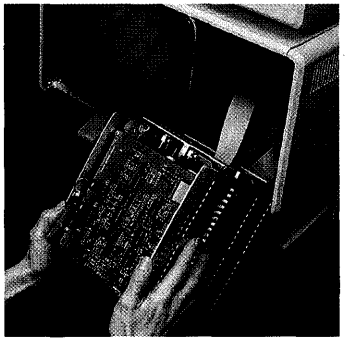


6. Press down firmly on the plug until the gray tabs on either side click into place.

7. Repeat this procedure with the longer cable, inserting it into the connector for drive 1, the drive closer to you.



8. Pick up the disk drive module by the metal housing, tilt it back, and slide it into the cabinet.



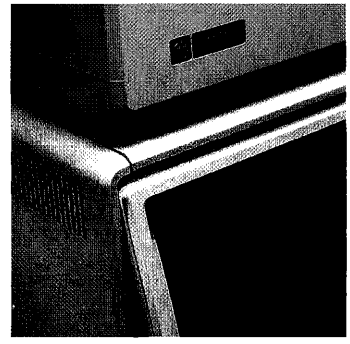
9. Secure the module by pushing in on the screw at the base of the drives and turning the screw clockwise until it is snug.

Finishing Up

1. Replace the front panel, following this procedure:

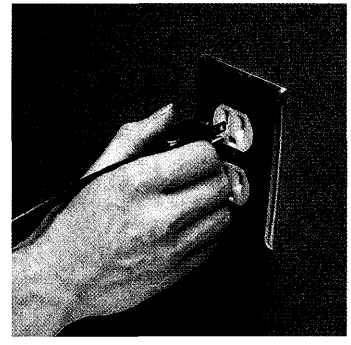
   a. Hold the panel with one finger on each pad along the bottom edge.

b. Insert the upper edge of the panel behind the lip of the top housing on the cabinet.

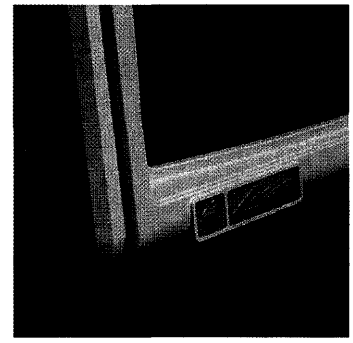


c. Pressing the finger pads up, push the bottom edge of the panel against the cabinet until the panel clicks into place.

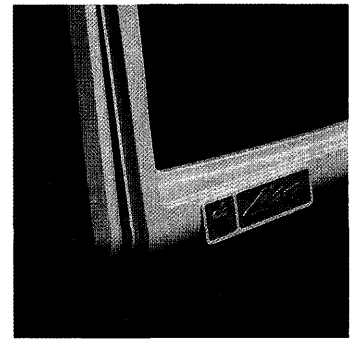
2. Reconnect the power cord.



If the front panel is not securely in place, a safety interlock switch prevents you from turning the Lisa on. If you cannot turn the system back on after reinstalling the front panel, check that the panel is in place.



Correct installation

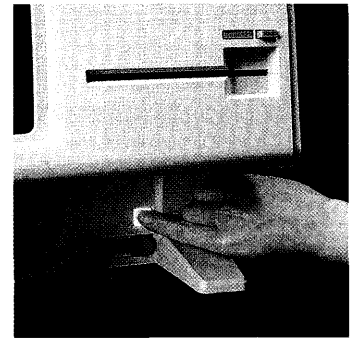


Incorrect installation

Replace I/O, CPU, or Memory Boards

Getting Inside

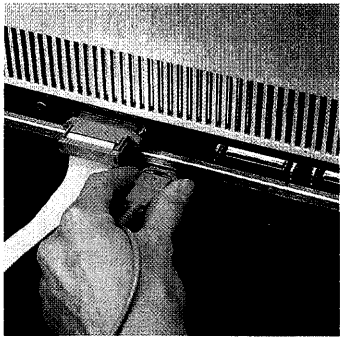
1. If the Lisa is on, turn it off by pressing the on-off button. Wait until all diskettes are released and the power light is off.



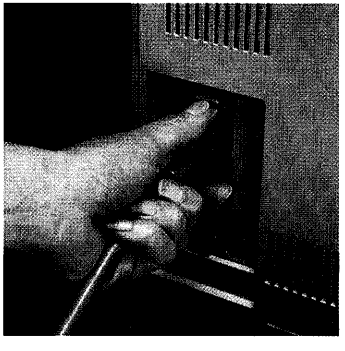
2. Turn off all peripheral devices.

3. Disconnect the power cord from the back of the cabinet. Turn the Lisa so that the back panel is facing you.

If they are in the way, remove any cables that are attached to the connectors along the bottom edge of the back panel.



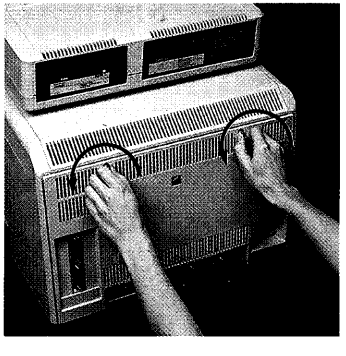
4. Remove any cables extending from the expansion cards on the left side of the back panel.



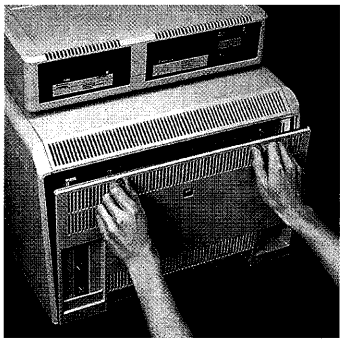
5. Remove the back panel, following this procedure:

   a. Turn the two thumbscrews along the upper edge counterclockwise until they won't turn any further.

      These screws loosen but do not come free from the back panel.



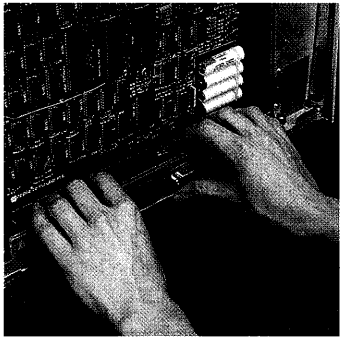
b. Pull the panel toward you slightly and up.



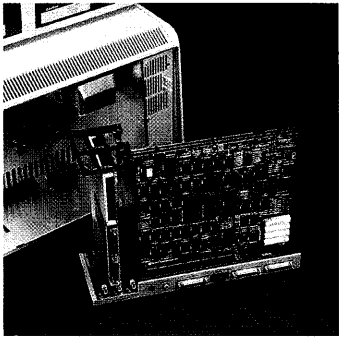
6. Remove the card cage by pulling the bar that runs just above the row of connectors along the bottom of the cage.

   Brace your thumbs against the lower edge of the cabinet and pull hard on the bar to free the card cage from the interior connectors.

   Be careful not to put any pressure on the small components just behind the bar.



7. Pull the cage out and set it upright on the table.



Removing Boards

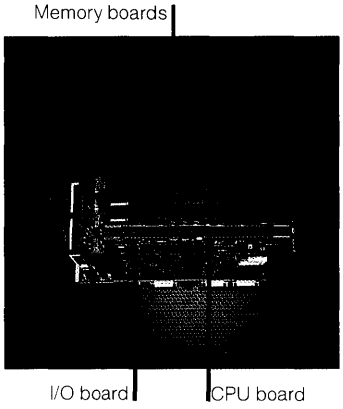
1. Identify the board to be removed.

   The CPU board has a brown lever on the right and a blue lever on the left.

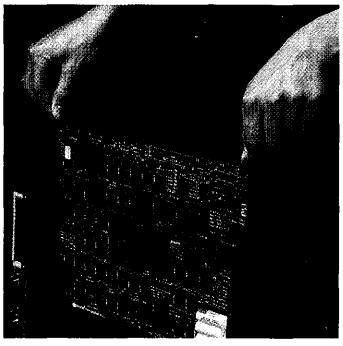
   The I/O board has a brown lever on the right and a red lever on the left.

   The memory boards have brown levers on the right and yellow levers on the left.

   The components on the memory boards and CPU board all face one way; the components on the I/O board face the opposite way.

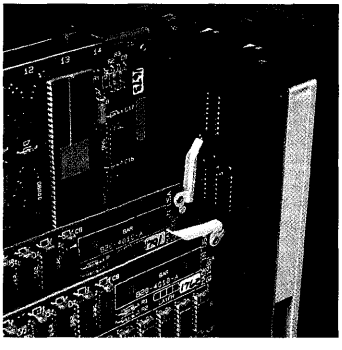


2. Place one thumb on either lever and simultaneously flip up the colored locking levers at the top of the board, and then pull the board up and out of its slot.

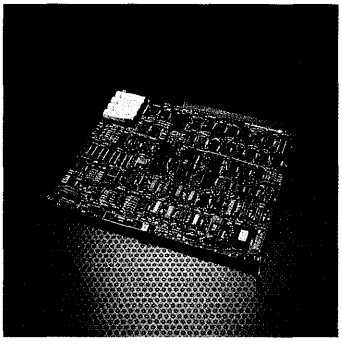


Handle the board by the levers and plastic edges only.

If you are servicing a memory board and there is an expansion card in slot 3, be careful not to scrape the left-hand lever against the expansion card. If you have trouble handling the levers in the tight space, remove the expansion card before servicing the memory boards.



3. Place the board carefully on a flat surface, with the components facing up.



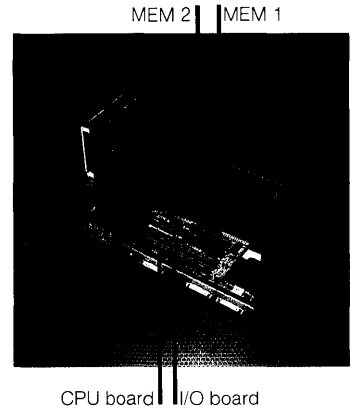
Installing Boards

1. Identify the slot into which the board will be inserted.

   All boards are installed with the brown locking lever on the right. The label on the card cage matches the color of the left tab on the board that goes in each slot.

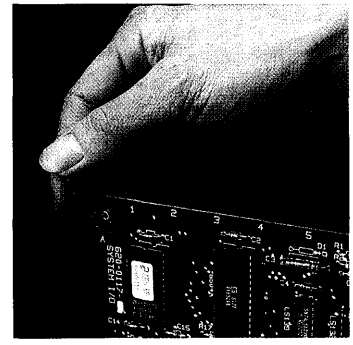
   If you have only one memory board, you can install it in either the slot labeled MEM 1 or the slot labeled MEM 2.

   Your card cage probably contains at least two boards. This photo shows an empty card cage to show the four slots more clearly.

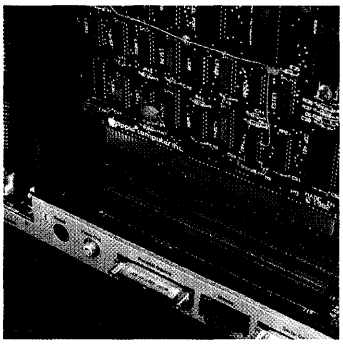


2. If the colored tabs on the board are not already in an up position, flip them up.

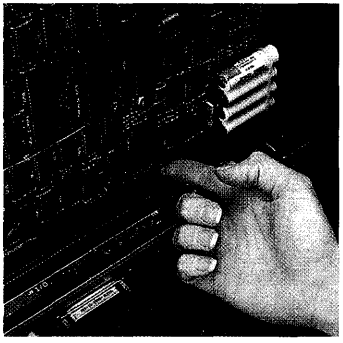
   Handle the board by the levers and plastic edges only.



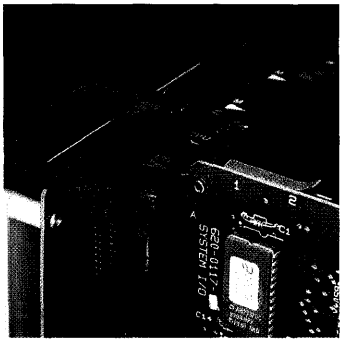
3. With the brown lever on the right, slide the board into the thin grooves in the black plastic cage. Note that the slots in the bottom of the cage are staggered. This prevents you from inserting the board into the wrong slot.



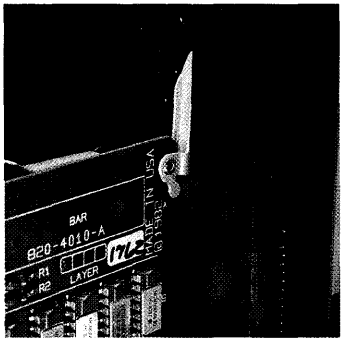
You may have to center the bottom edge of the board in the slot. If so, touch only the plastic edge of the board. Do not touch the gold connector.



The tabs on the CPU and I/O boards should be resting in the notches along the top of the cage.

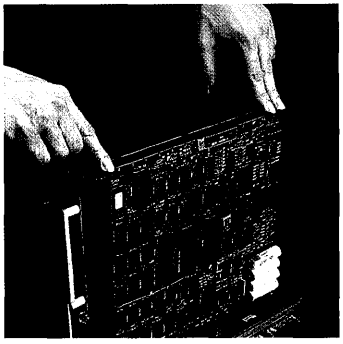


The tabs on the memory boards should be resting on the black plastic frame.



4. Push down the levers simultaneously to lock the board into place.

   If this requires excessive force, check to see that the gold fingers along the bottom of the board are aligned over the slot.

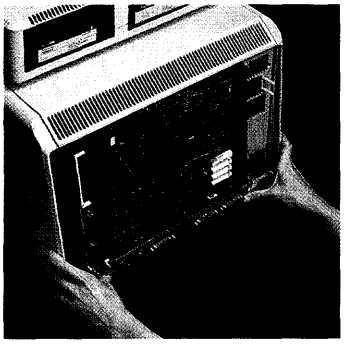


   At this point, the rounded tabs below the levers should be set in the lower notches on the plastic card cage.

Finishing Up

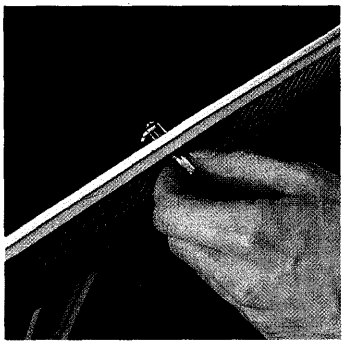
1. Holding the card cage by the plastic frame, slide it back into the cabinet.

2. The cage will offer some resistance for the last 1/4-inch, while the card cage connectors slide into their slots inside the cabinet. Hold the frame with your fingers and press with your thumbs against the bottom of the cage. The cage is installed when the panel along the bottom is just inside of the bottom edge of the cabinet.

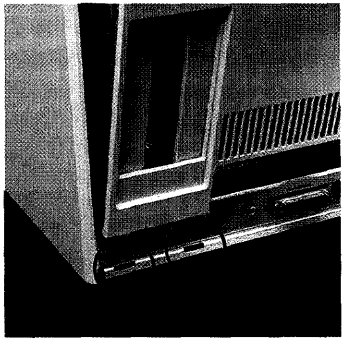


3. Replace the back panel, following this procedure:

   a. Make sure the metal prongs attached to the two screws on the panel are pointed to the left.

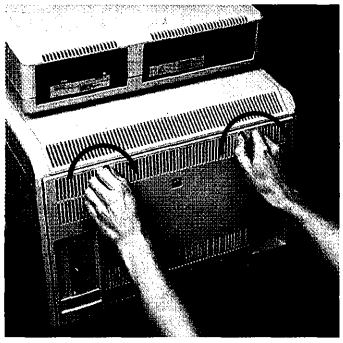


   b. Insert the four tabs along the lower edge of the back panel into the slots at the base of the cabinet.

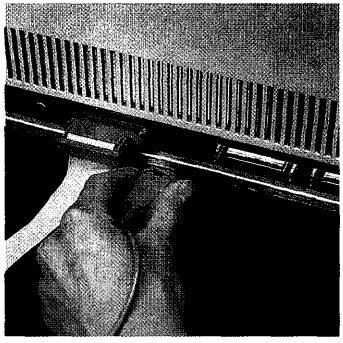


c. Push the panel flat against the back of the cabinet. If you encounter resistance, check to make sure that the card cage is pushed as far into the cabinet as it will go.

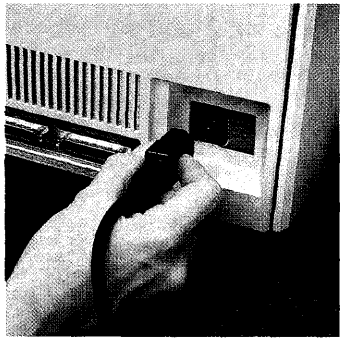
d. Turn the two thumbscrews clockwise until they are snug.



4. Reattach any cables that you removed from the expansion cards or from the bottom edge of the back panel.



5. Connect the power cord to the back of the Lisa.

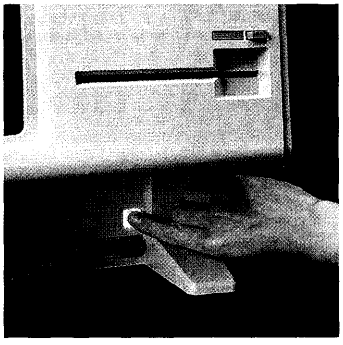


Replace Card Cage

Although most of the Lisa's components are on the I/O, CPU, and memory boards, there are a few circuits on the bottom of the card cage. If the LisaTest diskette could not identify whether a problem is with the cage or one of the boards, the recommended procedure is to replace the card cage, which comes with new boards installed.

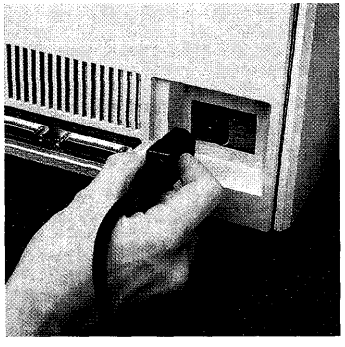
Getting Inside

1. If the Lisa is on, turn it off by pressing the on-off button. Wait until all diskettes are released and the power light is off.

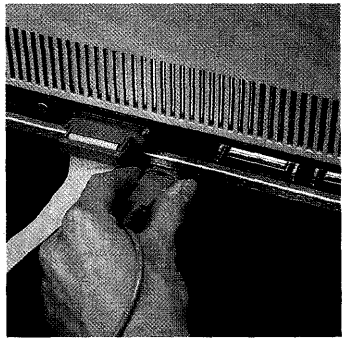


2. Turn off all peripheral devices.

3. Disconnect the power cord from the back of the cabinet.



4. Remove the cables that are attached to the connectors along the bottom edge of the back panel. Turn the Lisa so that the back panel is facing you.

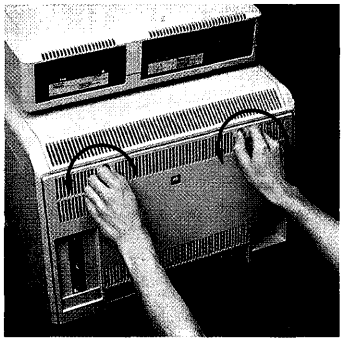


5. Remove any cables extending from the expansion cards on the left side of the back panel.

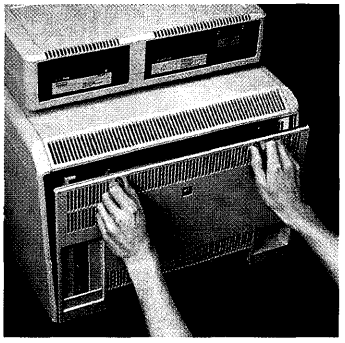
6. Remove the back panel, following this procedure:

   a. Turn the two thumbscrews along the upper edge counterclockwise until they won't turn any further.

      These screws loosen but do not come free from the back panel.



   b. Pull the panel toward you slightly and up.

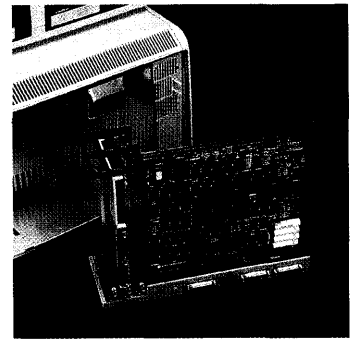


7. Remove the card cage by pulling the bar that runs just above the row of connectors along the bottom of the cage.

   Brace your thumbs against the lower edge of the cabinet and pull hard on the bar to free the card cage from the interior connectors.

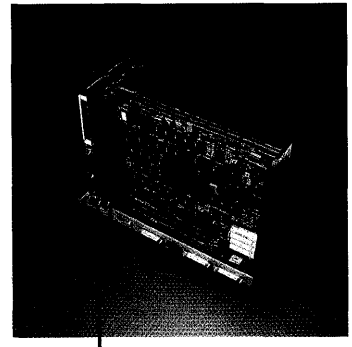
   Be careful not to put any pressure on the small components just behind the bar.

8. Pull the cage out and set it on the table.



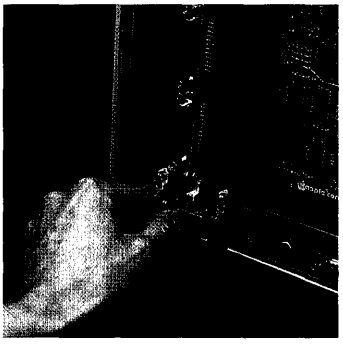
Transferring Cards

If you have any cards installed in the expansion slots, transfer the cards one at a time into the new card cage, following this procedure:

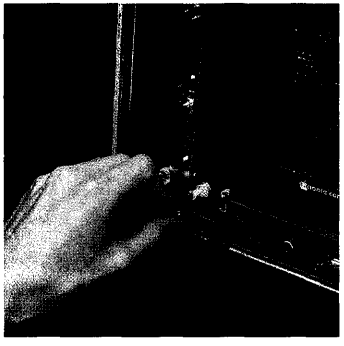


1. Remove each card, following this procedure:

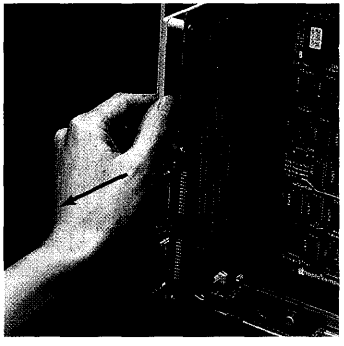
   a. Pull out the metal lever extending from the plastic cap below the card you want to remove.



   b. Turn the lever clockwise 90 degrees, to the 3 o'clock position.

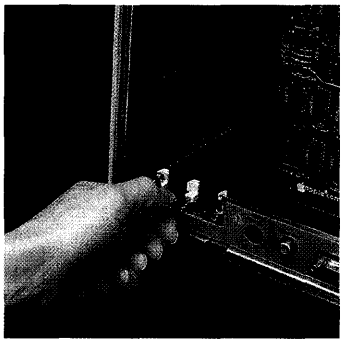


   c. Holding the card by the metal edge, pull it straight out of the slot.

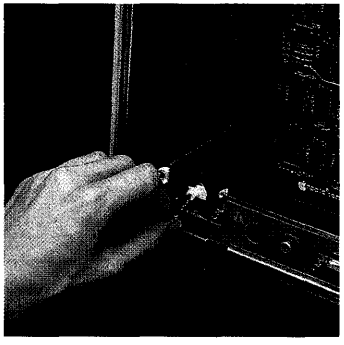


2. Install the card into the corresponding slot in the new card cage, following this procedure:

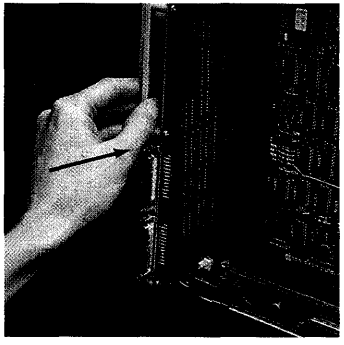
a. Pull out the metal lever extending from the plastic cap in front of the card slot.



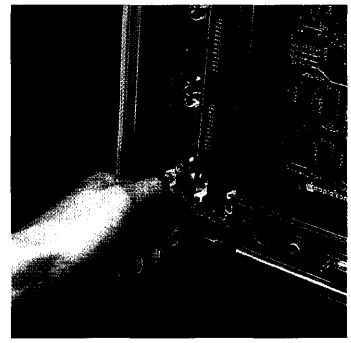
b. Turn the lever clockwise 90 degrees, to the 3 o'clock position.



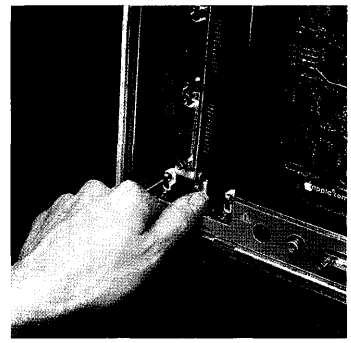
c. Hold the expansion card by the metal edge, with the green plastic card facing right and the white cover facing left. Insert the bottom of the green card into the connector slot and the top of the green card into the plastic slot above the connector. Slide the card evenly into the cage as far as it will go.



d. Turn the metal lever counterclockwise 90 degrees, back to the 12 o'clock position.



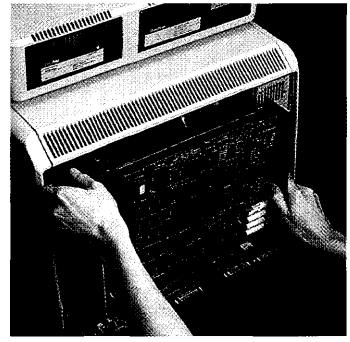
e. Push the lever back into the plastic cap.



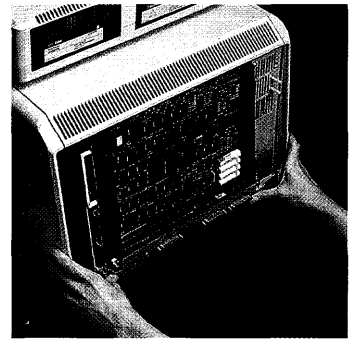
3. Repeat this procedure until all expansion cards have been transferred to the new card cage.

Finishing Up

1. Holding the new card cage by the plastic frame, slide it into the cabinet.

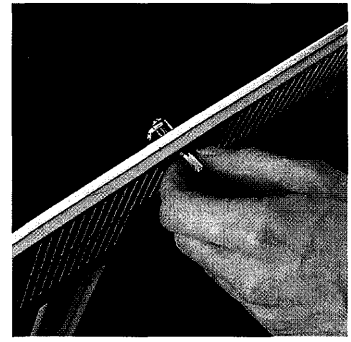


2. The cage will offer some resistance for the last 1/4-inch, while the card cage connectors slide into their slots inside the cabinet. Hold the frame with your fingers and press with your thumbs against the bottom of the cage. The cage is installed when the panel along the bottom is just inside of the bottom edge of the cabinet.

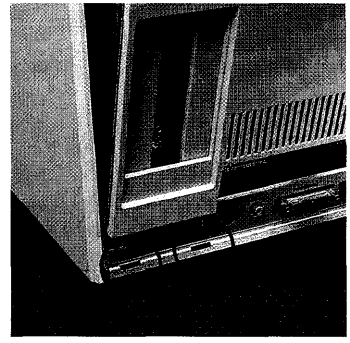


3. Replace the back panel, following this procedure:

   a. Make sure the metal prongs attached to the two screws on the panel are pointed to the left.

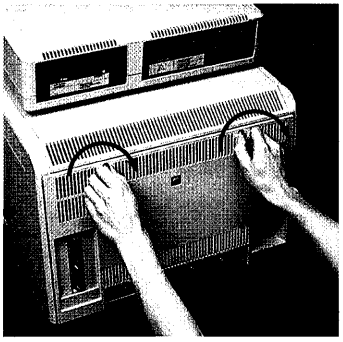


   b. Insert the four tabs along the lower edge of the back panel into the slots at the base of the cabinet.

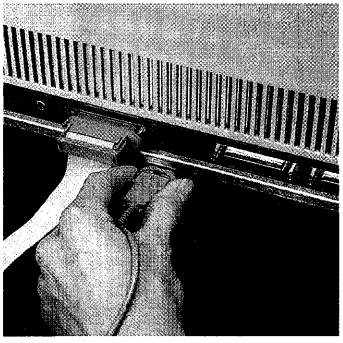


c. Push the panel flat against the back of the cabinet. If you encounter resistance, check to make sure that the card cage is pushed as far into the cabinet as it will go.

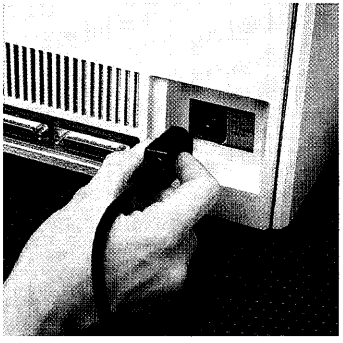
d. Turn the two thumbscrews clockwise until they are snug.



4. Attach the cables to the expansion cards and the bottom edge of the back panel.



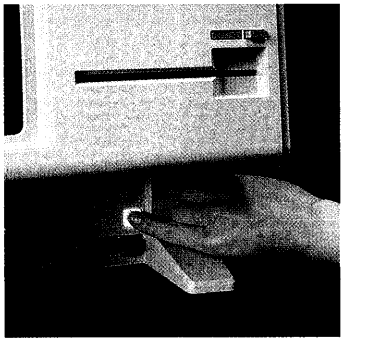
5. Connect the power cord to the back of the Lisa.



Remove and Install Expansion Cards

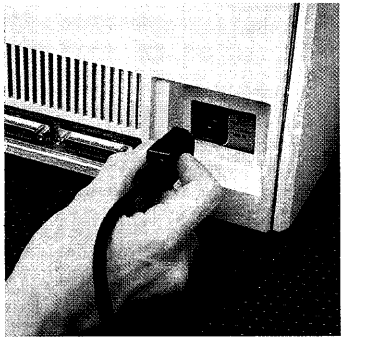
Getting Inside

1. If the Lisa is on, turn it off by pressing the on-off button. Wait until all diskettes are released and the power light is off.

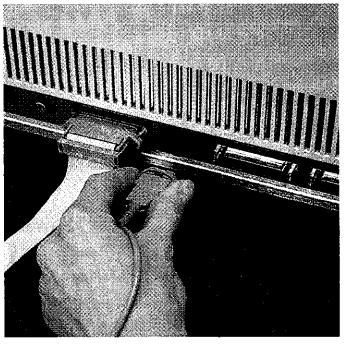


2. Turn off all peripheral devices.

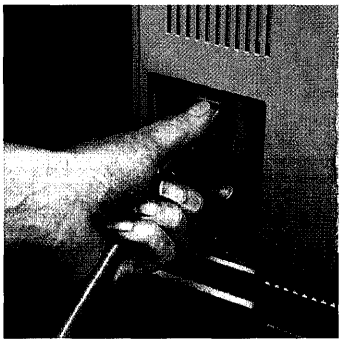
3. Disconnect the power cord from the back of the Lisa. Turn the Lisa so that the back panel is facing you.



If they are in the way, remove any cables that are attached to the connectors along the bottom edge of the back panel.



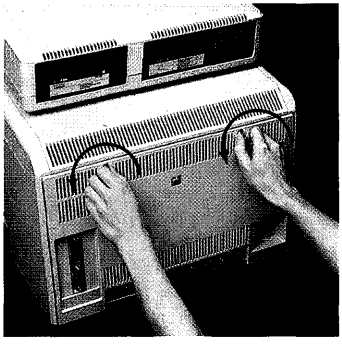
4. Remove any cables extending from the expansion cards on the left side of the back panel.



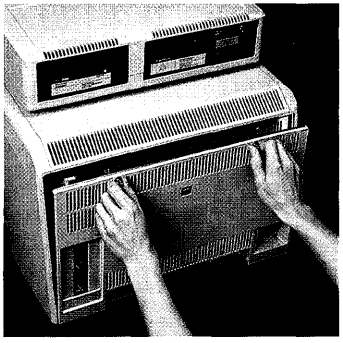
5. Remove the back panel, following this procedure:

   a. Turn the two thumbscrews along the upper edge counterclockwise until they won't turn any further.

      These screws loosen but do not come free from the back panel.



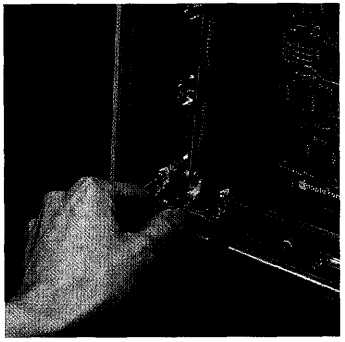
   b. Pull the panel toward you slightly and up.



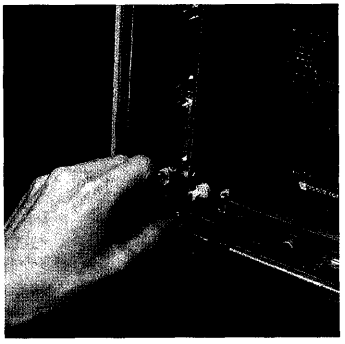
6. If you are simply installing a new expansion card, skip to the section on Installing Expansion Cards.

Removing Expansion Cards

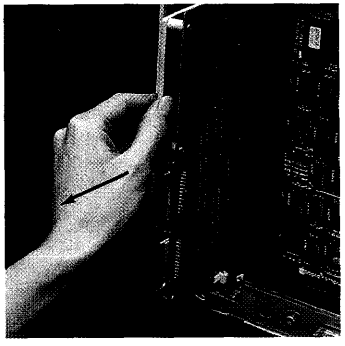
1. Pull out the metal lever extending from the plastic cap below the card you want to remove.



2. Turn the lever clockwise 90 degrees, to the 3 o'clock position.



3. Holding the card by the metal edge, pull it straight out of the slot.

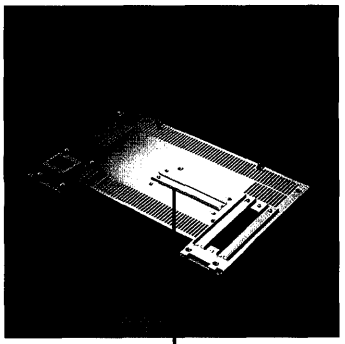


4. If you are replacing the card you just removed with a new card, skip to the section on Installing Expansion Cards.

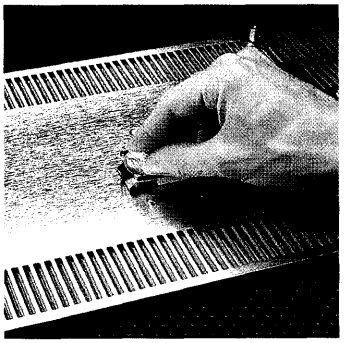
5. Otherwise, follow steps a through e for replacing the slot cover in the back panel of the Lisa.

   The slot covers are designed to block the electromagnetic field generated by the Lisa. Each expansion slot opening in the back panel should be covered by either an expansion card or one of the slot covers.

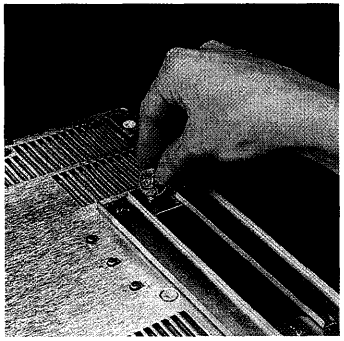
   a. Locate a slot cover, stored on the inside back panel.



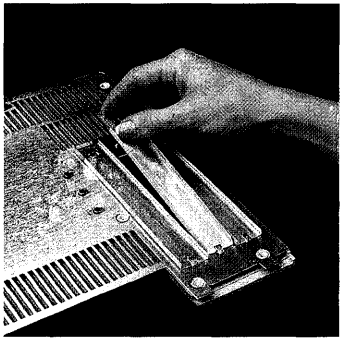
   b. Loosen the screw just enough to let the metal plate slide over the screw head and out of the retaining notch. (If you don't have a screwdriver, a coin will work nicely.) Remove the cover and retighten the screw.



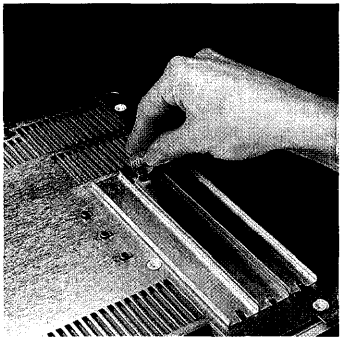
   c. Locate and loosen the screw over the opening in the back panel where your expansion card used to be.



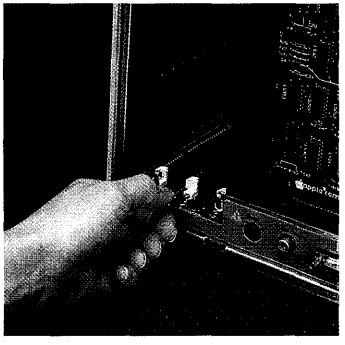
d. Slide the metal plate into the retaining notch and over the screw head.



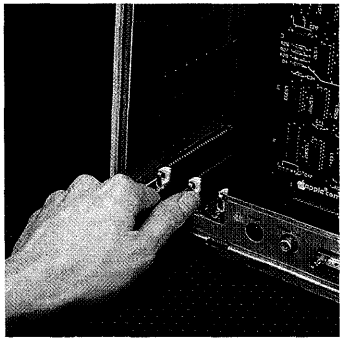
e. Tighten the screw to secure the slot cover.



6. Return to the expansion slot. Turn the metal lever in front of the slot counterclockwise 90 degrees, back to the 12 o'clock position.



7. Push the lever back into the plastic cap.

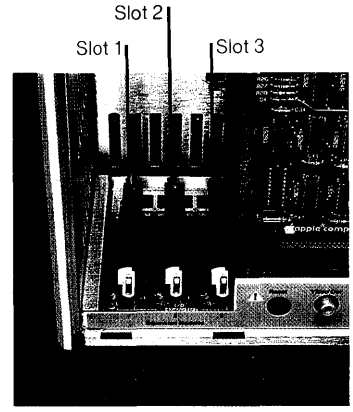


8. Skip to the section on Finishing Up.

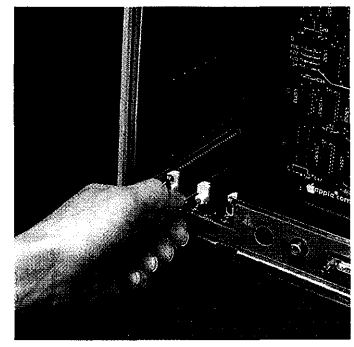
Installing Expansion Cards

1. Determine which of the three expansion slots on the lower left of the card cage will hold the card.

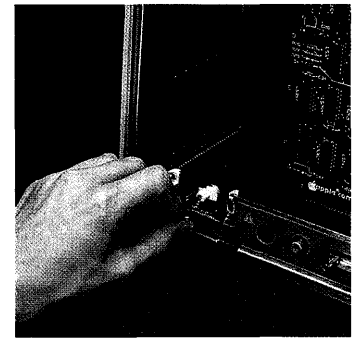
   In general, parallel interface cards should be installed in slot 2 or 3. See the documentation that came with your expansion card.



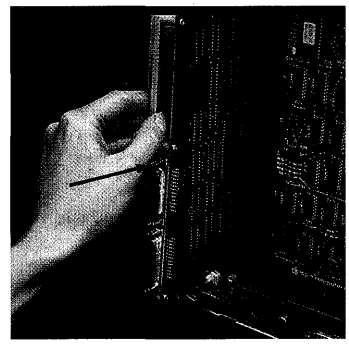
2. Pull out the metal lever extending from the plastic cap in front of the card slot.



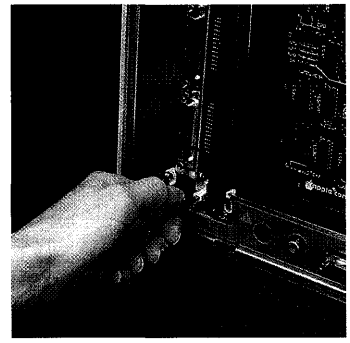
3. Turn the lever clockwise 90 degrees, to the 3 o'clock position.



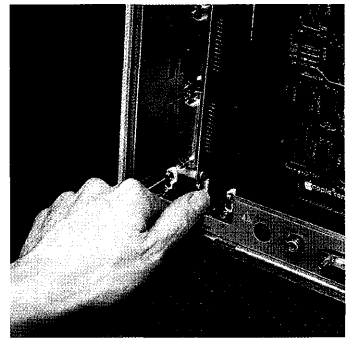
4. Hold the expansion card by the metal edge, with the green plastic card facing right and the white cover facing left. Insert the bottom of the green card into the connector slot and the top of the green card into the plastic slot above the connector. Slide the card evenly into the cage as far as it will go.



5. Turn the metal lever counterclockwise 90 degrees, back to the 12 o'clock position.



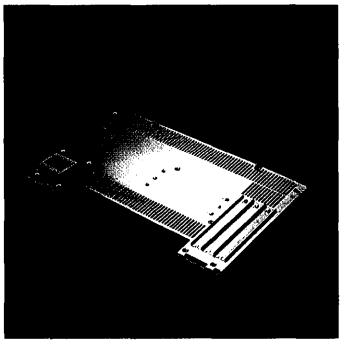
6. Push the lever back into the plastic cap.



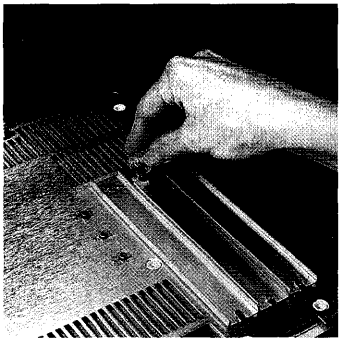
7. A set of slot covers on the Lisa's back panel blocks the electromagnetic emissions from inside the cabinet. If you have just installed a card into a slot that did not previously contain a card, follow steps a through e for removing the cover that protects that slot.

   Otherwise, skip the lettered instructions and go to Finishing Up.

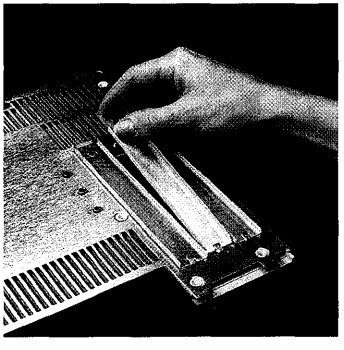
a. On the back panel, locate the slot cover for the slot in which you just installed a card.



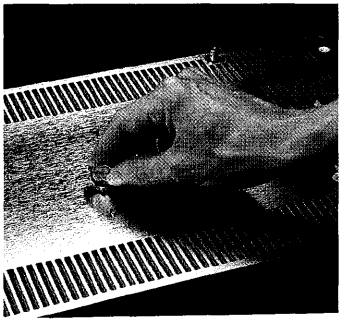
b. Loosen the screw at the top of the metal plate. (If you don't have a screwdriver, a coin will work nicely.)



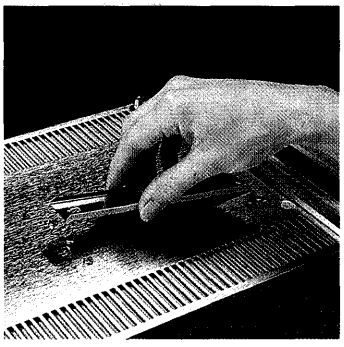
c. Pull the plate over the screw head and out from behind the retaining tab.



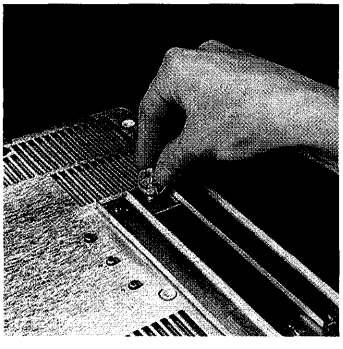
d. Loosen one of the three screws in the middle of the back panel.



e. Slide the metal plate behind the retaining tab and over the screw head.



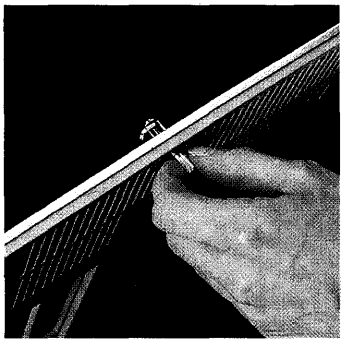
f. Tighten both screws.



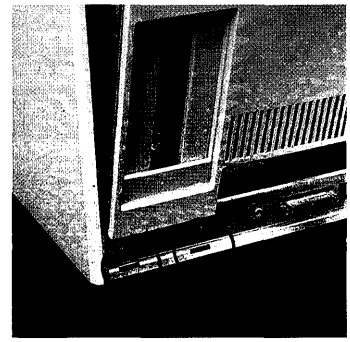
Finishing Up

1. Replace the back panel, following this procedure:

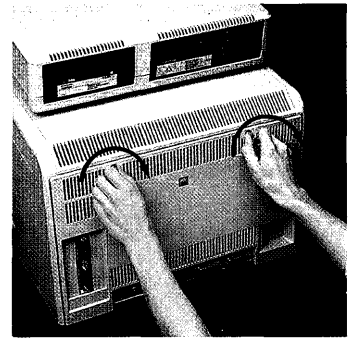
a. Make sure the metal prongs attached to the two screws on the panel are pointed to the left.



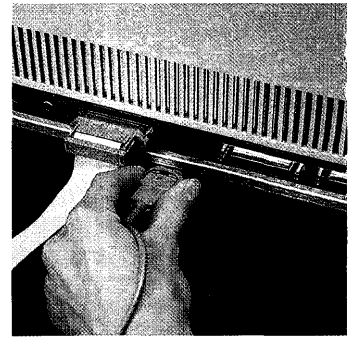
b. Insert the four tabs along the lower edge of the back panel into the slots at the base of the cabinet.



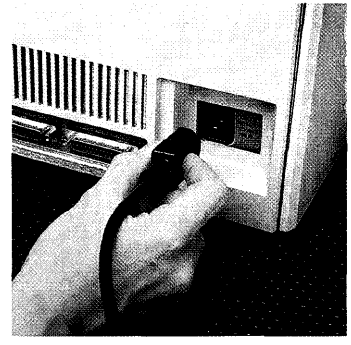
c. Push the panel flat against the back of the cabinet. Turn the two thumbscrews clockwise until they are snug.



2. Reattach any cables that you removed from the expansion cards or from the bottom edge of the back panel.



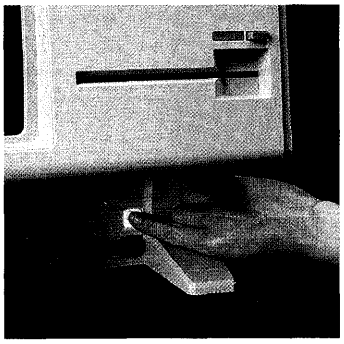
3. Connect the power cord to the back of the Lisa.



Replace Power Supply

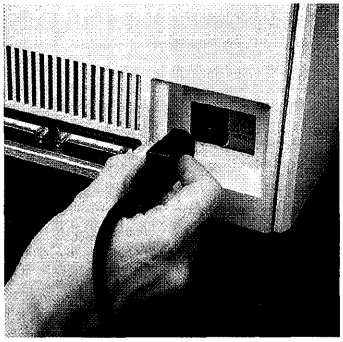
Getting Inside

1. If the Lisa is on, turn it off by pressing the on-off button. Wait until all diskettes are released and the power light is off.

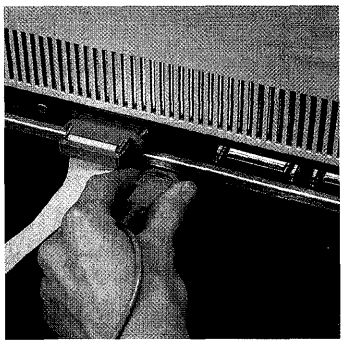


2. Turn off all peripheral devices.

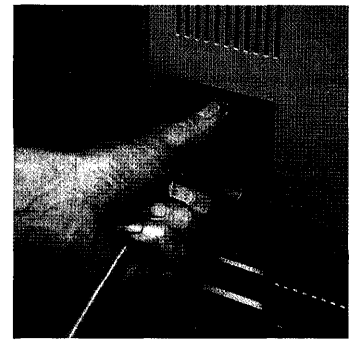
3. Disconnect the power cord from the back of the Lisa. Turn the Lisa so that the back panel is facing you.



If they are in the way, remove any cables that are attached to the connectors along the bottom edge of the back panel.



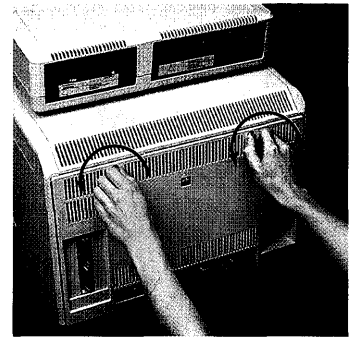
4. Remove any cables extending from the expansion cards on the left side of the back panel.



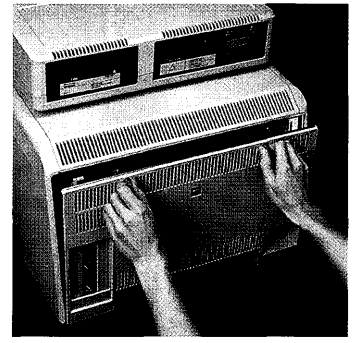
5. Remove the back panel, following this procedure:

   a. Turn the two thumbscrews along the upper edge counterclockwise until they won't turn any further.

      These screws loosen but do not come free from the back panel.



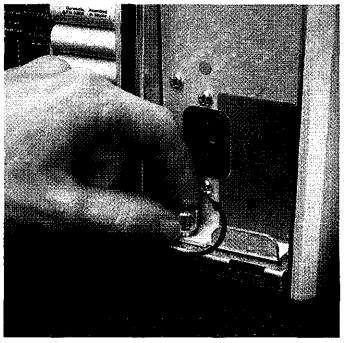
   b. Pull the panel toward you slightly and up.



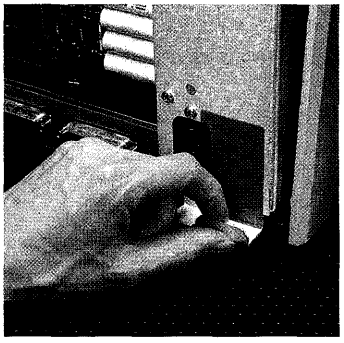
Replacing Power Supply

1. Turn the screw at the base of the power supply counterclockwise. The screw loosens but does not come free from the module.

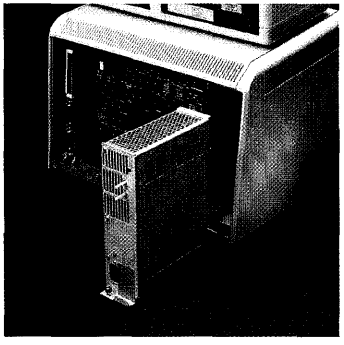
   The screw is loose when you can feel the pressure of the spring behind the screw.



2. Holding the power supply by the metal tab, jiggle the module to loosen it. Pull the module out of the cabinet.



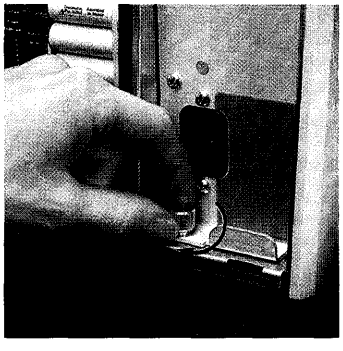
3. Orient the new power supply with the two white prongs pointed toward you and the gold fingers pointed toward the cabinet. Do not touch the gold fingers.



4. Slide the power supply into the cabinet.

5. For the last 1/4-inch, the module will resist insertion. Put one thumb on the bottom and one on the top of the module, and jiggle the power supply into place. It is in place when the top of the power supply is even with the frame and the bottom of the power supply is about 1/4-inch inside the frame.

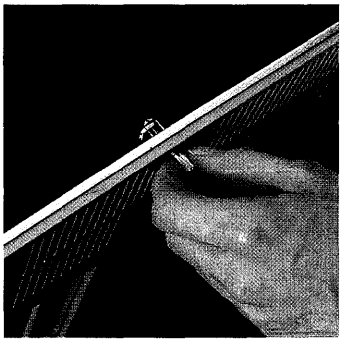
6. Push the screw down, and then turn it clockwise until it is tight.



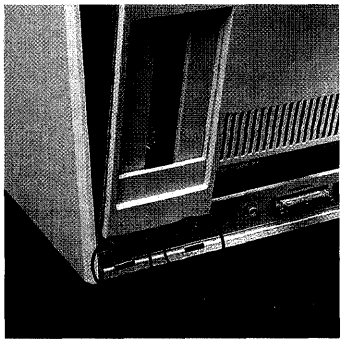
Finishing Up

1. Replace the back panel, following this procedure:

a. Make sure the metal prongs attached to the two screws on the panel are pointed to the left.

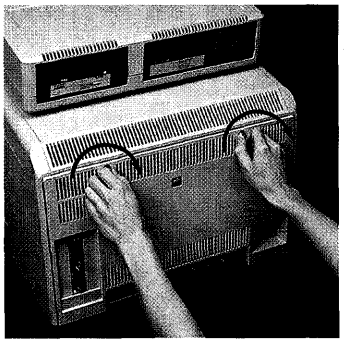


b. Insert the four tabs along the lower edge of the back panel into the slots at the base of the cabinet.

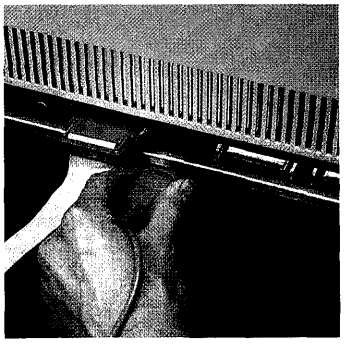


c. Push the panel flat against the back of the cabinet. If you encounter resistance, check to make sure that the power supply is pushed as far into the cabinet as it will go.

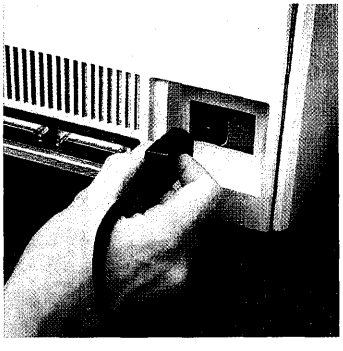
d. Turn the two thumbscrews clockwise until they are snug.



2. Reattach any cables that you removed from the expansion cards or from the bottom edge of the back panel.



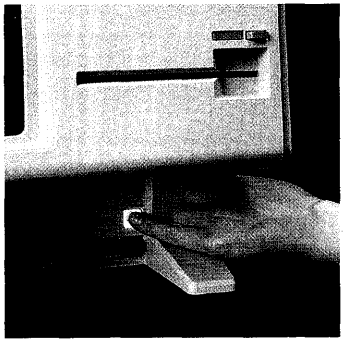
3. Connect the power cord to the back of the Lisa.



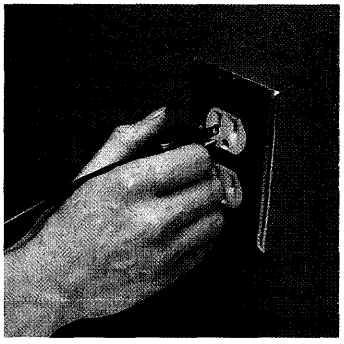
Install Glare Filter

Getting Inside

1. If the Lisa is on, turn it off by pressing the on-off button. Wait until all diskettes are released and the power light is off.

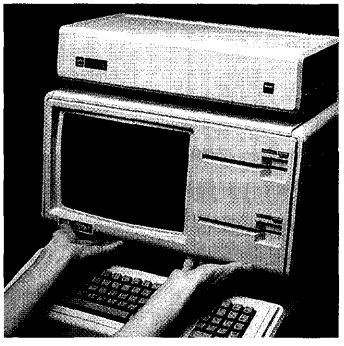


2. Unplug the Lisa at either the back panel or the wall outlet.



3. Remove the front panel, following this procedure:

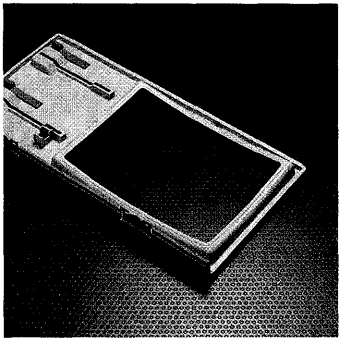
   a. Place one finger on each of the two finger pads beneath the front panel.



   b. Push the pads up to unlatch the panel.

   c. Pull the panel forward and down.

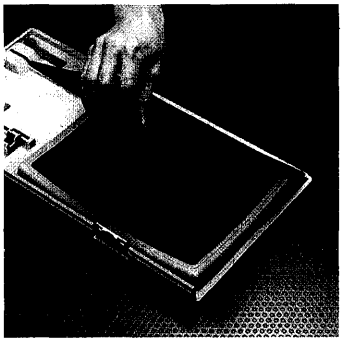
4. Set the panel on a flat surface, face down.



Installing Glare Filter

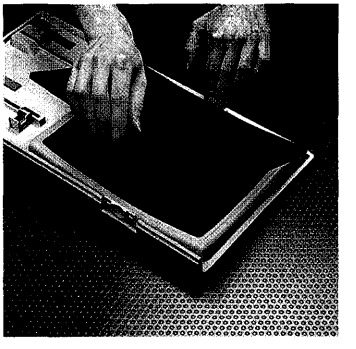
1. Center the glare filter over the opening inside the front panel.

   Hold the glare filter against the clip along the upper edge of the front panel, at a 45 degree angle.



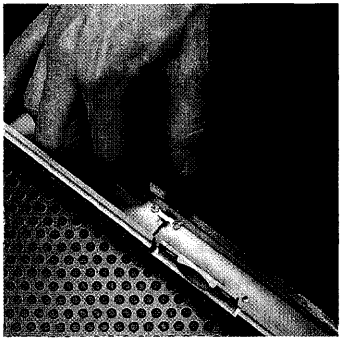
2. While pressing down on the frame at the upper clip, rotate the lower edge until the frame slides under the upper clip.

   Continue rotating the screen until it lies flat against the panel.



3. Push the lower edge of the frame in until it clears the lower clip, and then let it slide into place behind the clip.

   Make sure the filter fits neatly around the frame and under the clips.

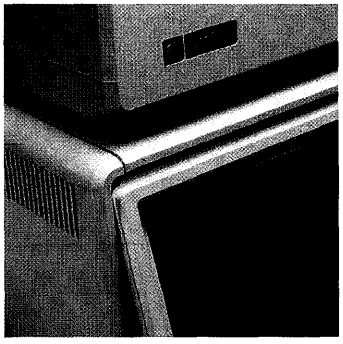


Finishing Up

1. Replace the front panel, following this procedure:

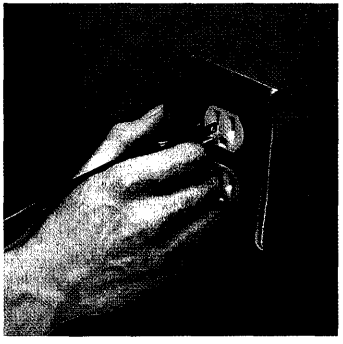
a. Hold the panel with one finger on each finger pad along the bottom edge.

b. Insert the upper edge of the panel behind the lip of the top housing on the cabinet.

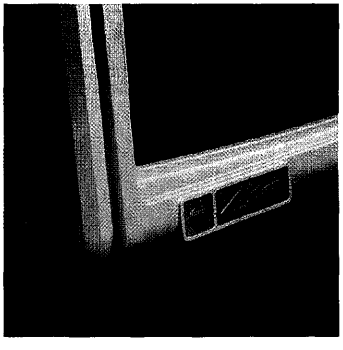


c. Pressing the finger pads up, push the bottom edge of the panel against the cabinet until the panel clicks into place.

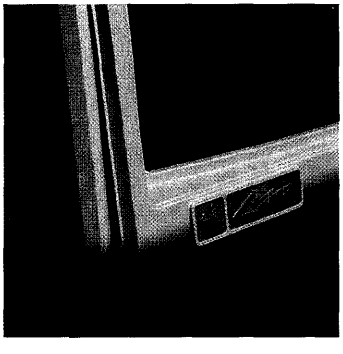
2. Reconnect the power cord.



If the front panel is not securely in place, a safety interlock switch prevents you from turning the Lisa on. If you cannot turn the system back on after reinstalling the front panel, check that the panel is in place.



Correct installation



Incorrect installation

Section I
Appendixes

Contents

I1 Appendix 1. Setup Procedures

I5 Appendix 2. Handling Diskettes

I7 Appendix 3. Automatic Startup Tests

I15 Appendix 4. On-Off Procedures

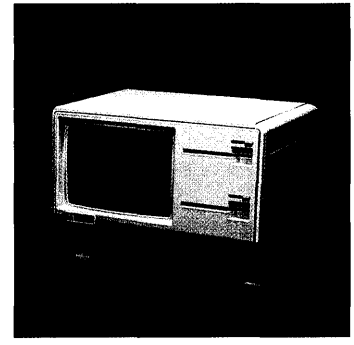
I19 Appendix 5. Hardware Specifications

I25 Appendix 6. Office System Error Messages

Appendix 1
Setup Procedures

1. Find the packing list in the accessories box and check to be sure that you have everything on the list. If you don't, contact your dealer.

2. Unpack the Lisa following the instructions printed on the carton. Set the cabinet on a hard, flat surface, with 2 inches of clearance on all sides.



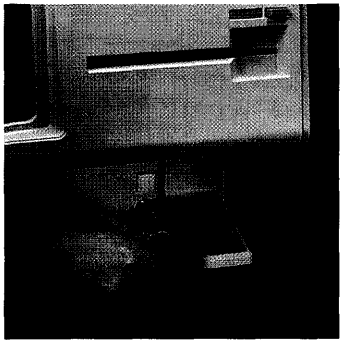
3. Install all peripheral devices:

   a. If you have a dot matrix printer, you need a parallel interface card. If your dealer has not already installed it, install the card following the instructions that came with the card. Then set up the printer following the instructions that came with the printer, and attach it to either connector on the parallel interface card.

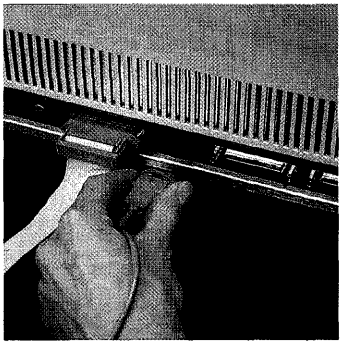
   b. Set up the ProFile following the instructions that came with the ProFile. Attach it to the connector labeled Parallel Device on the back of the Lisa.

   c. If you have a daisy wheel printer, set it up following the directions that came with the printer. Attach it to the connector labeled Serial Device B on the back of the Lisa.

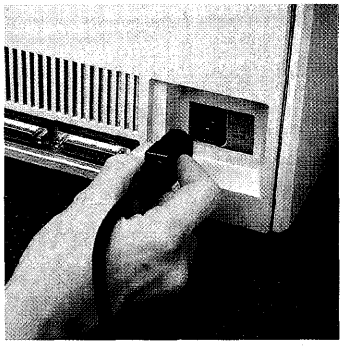
4. Plug the keyboard cord into the front of the cabinet.



5. Plug the mouse cord into the back of the cabinet.

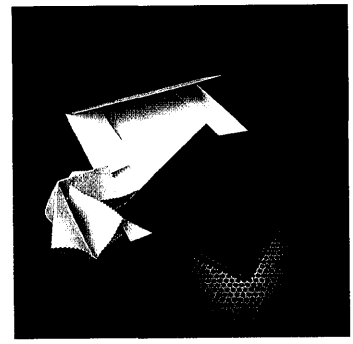


6. Plug the power cord into the back of the Lisa, and then into a grounded, 115-volt electrical outlet.



Warning: This equipment is intended to be electrically grounded. The Lisa is equipped with a 3-wire grounding-type plug, which is a plug having a third (grounding) pin. This pin will fit only into a grounding-type AC outlet. If you are unable to insert the plug into the outlet, contact a licensed electrician to replace the outlet and, if necessary, to install a grounding conductor.

7. Under some lighting conditions, reflections can make the video screen hard to read. If glare is a problem on your Lisa, install the glare filter following the instructions in Section H, Service, in the *Lisa Owner's Guide*.



8. Your dealer should have initialized your ProFile and loaded it with the Office System software and tools, using the diskettes stored in the back of the *Lisa Owner's Guide*. If your ProFile is still blank, initialize it and transfer the Office System software and tools, following the instructions in the *Lisa Owner's Guide*, Section D, Desktop Manager Reference Guide, under Initialize a Startup ProFile and Install the Tools.
9. Go to Section A, LisaGuide, in the *Lisa Owner's Guide*, to begin learning to use the Lisa.
10. Your dealer should have set your system Preferences, so that the Lisa will know what devices are connected. If not, set the device connections, following the instructions in the *Lisa Owner's Guide*, Section D, Desktop Manager Reference Guide, under Set. Section D includes individual instructions for connecting a dot matrix printer and a daisy wheel printer. The device connections for the ProFile are automatically set during the intialization and loading procedures.
11. Read Section A, Getting Started, in any Lisa tool manual to learn the fundamentals of that tool.
12. Read Section B, Lisa Fundamentals, in the *Lisa Owner's Guide*, for the background information you need before beginning long-term work on the Lisa.

Safety Precautions

To ensure safe and reliable operation:

1. Set up the system on a clean, flat surface, with at least 2 inches of clearance on all sides. Do not try to use the machine if it is sitting on a soft surface.

   Do not let papers, books, or anything else block the flow of air to the vents under the display housing.

2. Turn off the Lisa by pressing the on-off button once and unplugging the system before removing the front or back panel. Note that the on-off button by itself does NOT cut all power to the system.

3. Keep jewelry, coins, paper clips, and other small items away from the air vents. Do not insert anything but diskettes into the disk drive slots.

4. Do not try to service the video unit or the power supply. You may replace the entire power supply unit, following the instructions in Section H, Service, in the *Lisa Owner's Guide*, but do not open up the power supply.

5. When unplugging the system for moving or servicing, always turn off the system first, and then wait until the on-off light is out before pulling the plug.

6. If the Lisa starts to smoke or burn, unplug the system immediately.

Appendix 2
Handling Diskettes

Caring for Diskettes

A floppy diskette is a sensitive, magnetic storage medium, encased in a protective plastic jacket. Like an audio tape, it is vulnerable to damage from fingerprints, dust, scratches, and magnetic charges. To protect the information stored on your diskettes, follow these precautions:

- Handle diskettes by the plastic jacket only. Never touch the shiny recording surface.
- Store diskettes in their paper sleeves when not in use. These sleeves are chemically treated to keep out dust. Insert the diskettes into the sleeve so that both openings in the plastic jacket are inside the paper sleeve.
- Keep diskettes away from magnetic fields. Note that a number of articles common in office environments emit electromagnetic fields strong enough to erase a diskette. Avoid leaning diskettes against, for example, high-intensity desk lamps, electric staplers, electric clocks, magnetic paper clip holders, or printers.
- Store diskettes between 10 and 52 degrees Celsius (50 and 125 degrees Fahrenheit). Do not leave diskettes on top of the Lisa or in direct sunlight.
- Do not bend diskettes. Never use paper clips or staples on diskettes.
- When writing on diskette labels, use a felt-tip pen, never a pencil or ballpoint pen. When writing over old labels, prepare the new label while it is still on the paper backing sheet and then transfer the label to the diskette.

Backing Up Diskettes

Because diskettes can be damaged or erased accidentally — and because they eventually wear out with use — you should keep backup copies of all diskettes. For a discussion of backing up diskettes, see Section B, Lisa Fundamentals, in this manual. For instructions for backing up diskettes, see the Copy procedures in Section D, Desktop Manager Reference Guide, in this manual.

Appendix 3
Automatic Startup Tests

Every time you turn the Lisa on, the system itself runs a series of tests to verify that startup can proceed. This appendix describes the tests in the order that they are run and provides a table explaining the error messages generated by the tests. A less detailed table of the most common messages and a discussion of the procedures for responding to startup test error messages appear in Section G, Troubleshooting, of this manual.

Startup Test Sequence

If everything is working correctly during startup, the tests proceed in the following sequence.

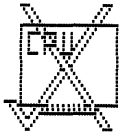
ROM Checksum: This test computes a 16-bit checksum of the entire ROM to check its validity. If the checksum is successful, the system passes on to the next test.

If the system fails the ROM checksum, the system hangs. The screen may be blank, or it may display a random pattern at a very bright contrast level.

MMU Register Test: This is a read/write and address test of the static RAMs in the memory management unit. Successful completion is followed by the next test.

An early failure causes the test to repeat indefinitely, with a blank display on the screen.

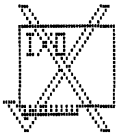
If this test reaches its final stages and then encounters a failure, the screen displays the CPU board icon, with error code 40.

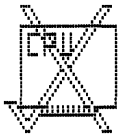


Memory Sizing: This test determines the amount of memory in your system, to facilitate further testing. If an error is found, the error is saved but testing continues. If memory cannot be accessed at all, the speaker beeps once with a low tone and the system hangs with a series of vertical lines on the screen.

Preliminary Memory Test: Next the system tests the first 2048 bytes of memory, to ensure that some memory is available for use by the startup ROM. If an error occurs, the Lisa sounds the speaker twice and then hangs in a test loop, with a random display on the screen.

Parallel Port VIA Test: This test verifies that the I/O board can be accessed, and it does a partial test of the parallel port. Failure results in either the I/O board icon, with error code 58, or the CPU board icon, with error code 41.





If this test proceeds without problems, the Lisa turns the screen contrast all the way down.

Screen Memory Test: This test facilitates the reporting of errors that are found during other tests. Errors do not interrupt the tests but are reported at the end of startup as a memory failure.

I/O Board Tests: The contrast is set to midrange, and the keyboard and mouse connections are checked. If either the keyboard or the mouse is not connected, the Lisa alerts you to the situation at the end of the startup sequence. If those tests proceed normally, a click is emitted from the speaker. This click tells you that all tests up to this point have been executed and that the keyboard is ready to accept alternative startup device commands. The procedure for giving an alternative startup command is described in Section D, Desktop Manager Reference Guide, under Set Startup Device during Startup.

From this point, the screen displays a series of icons showing which test is in progress, as shown in Figure 1. While a board is being tested, its icon is highlighted on the screen. As each board passes the tests, the Lisa displays a check mark over the icon. Usually, the video screen has not had time to warm up at this point, so you will rarely see this display.

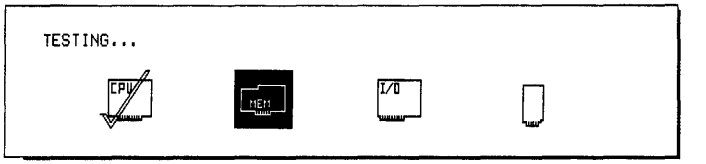
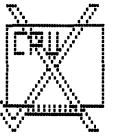


Figure 1. Startup Module Test Display

Errors detected during the following tests are reported both by a screen message and by a two- or three-note error tone. A table of error tones appears in Section G, Troubleshooting, under Startup Symptoms and Error Messages, in this manual.

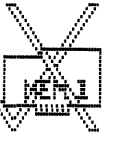
CPU Board Test Completion: The remaining two CPU board tests partially check the video circuitry and record wrong parity circuitry. If either test fails, testing is terminated, and the CPU board icon is displayed with one of two error codes:

42 — Video logic error
43 — Parity logic error

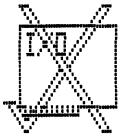


Memory Test: The final memory check is a full read/write and address check of all RAM not yet tested. The brief test takes about 30 seconds for a full megabyte of memory. If you have specified a thorough test in your startup specifications, the test takes about twice as long.

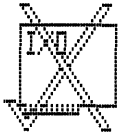
Errors detected in this test are displayed at the end of the startup sequence. The memory board icon with error code 70 indicates read/write errors, and the memory board with error code 71 indicates parity errors.



I/O Board Test Completion: This test verifies that the disk controller is ready, checks shared memory, and then disables the disk interrupts until startup is complete. Errors are displayed as an I/O board icon with error code 57.

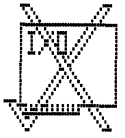


The Lisa then tests the serial port controller. Errors are displayed as an I/O board icon, with error code 55 for port A errors and with error code 56 for port B errors.



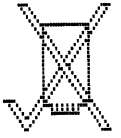
After these tests, the speaker emits a double click and the Lisa scans the keyboard for any keystrokes entered since the first click. The Lisa then reads the clock/calendar and saves the time and date information for later use.

Errors in reading the keyboard or the clock are displayed as an I/O board icon, with error code 52 for the I/O board COPS, which controls the keyboard and mouse interface, or with error code 54 for the clock/calendar.



Expansion Slot Configuration Check: Finally, the system scans each expansion slot to see if a card is present. The results are stored for future use, but are not compared with the information in parameter memory.

If this check uncovers a bootable device in any slot, the Lisa scans the required ROM on the card to ensure that it can be read properly. An error here is displayed as an expansion card icon, with error code 92.



Startup Error Messages and Tones

Each startup error message can consist of three parts:

- An icon representing the module that caused the problem.
- A numeric code indicating what kind of problem it is.
- A one-, two-, or three-note error tone indicating either which module caused the problem or what kind of problem it is.

Some of the error messages indicate a physical problem with the Lisa; others indicate a problem with the system setup. In general, the presence of an icon with or without a numeric code means that the module represented by the icon should be checked or replaced. For recommended troubleshooting procedures, see Section G, Troubleshooting. For module replacement procedures, see Section H, Service.

The meanings of the numeric codes are summarized in Table 1. The meanings of the error tones are summarized in Section G, Troubleshooting, under Startup Symptoms and Error Messages.

Table 1. Startup Error Messages

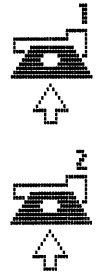
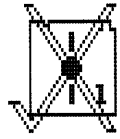
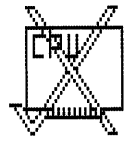
Icon	Code	Meaning
Disk drive 	7	No diskette in startup drive.
Diskette 	22	Unable to clamp diskette.
	23	Unable to read diskette.
	25	Unable to unclamp diskette.
	38	No startup file on diskette.
	39	Disk controller timeout.
CPU board 	40	MMU error.
	41	CPU selection logic error.
	42	Video circuitry error.
	43	Parity circuitry error.
	44	Unexpected NMI interrupt.
	45	Bus error.
	46	Address error.
	47	Other unexpected exception.
	48	Illegal instruction error.
	49	Line 1010 or 1111 trap.

Table 1. Startup Error Messages, continued

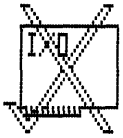
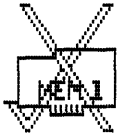
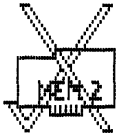
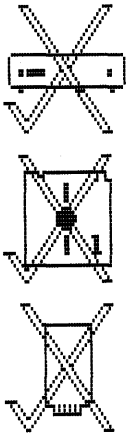
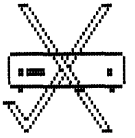
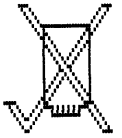
Icon	Code	Meaning
I/O board 	50	COPS VIA error.
	51	Parallel port VIA error.
	52	I/O board COPS error.
	53	Keyboard COPS error.
	54	Clock error.
	55	RS232 port A error.
	56	RS232 port B error.
	57	Diskette controller error.
	58	I/O board access error.
	59	I/O board COPS code error.
	60	I/O or keyboard error.
Memory board  	70	Memory read/write error.
	71	Memory parity error.

Table 1. Startup Error Messages, continued

Icon	Code	Meaning
Startup device 	75	Startup failure; startup file on disk probably bad.
ProFile 	80	ProFile not attached to parallel port.
	81	ProFile not ready.
	82	Bad response from ProFile.
	83	Nonzero status bytes returned from ProFile.
	84	Invalid boot file on ProFile.
	85	ProFile timeout.
Expansion card 	90	No expansion card installed.
	91	Expansion card not bootable.
	92	Bad ROM checksum on expansion card.
	93	Bad status returned from expansion card.

Appendix 4
On-Off Procedures

The single button that turns the Lisa on and off is a "soft" power button. It does not directly control power to the computer. When you press the button to turn the Lisa on, you are bringing the system up from a standby condition to a fully active state. When you press it to turn the Lisa off, you are triggering a series of verification and storage procedures that eventually return the system to standby status. This appendix summarizes the on-off procedures, including the Environments window, which may appear if you occasionally use any software other than the Lisa Office System.

Standby Status

As long as the Lisa is plugged in, it draws a small amount of current, which it uses to keep the clock/calendar up to date and to remember your Preferences. A battery inside the Lisa can power the clock and a small amount of system memory — known as parameter memory — for up to 10 hours so that you can move and service the machine without resetting all system information. When you must unplug the Lisa, push the on-off button and wait for the light to go out before removing the plug from the wall outlet. When you have finished moving or servicing the Lisa, plug the Lisa back in as soon as possible, even if you do not need to turn it on immediately.

Turning On the Lisa

When you press the on-off button to bring the Lisa up from the standby condition to an active state, the computer runs a series of self-tests to verify that startup is possible. These tests and related error messages are described in Appendix 3, Automatic Startup Tests, and in Section G, Troubleshooting, under Startup Symptoms and Error Messages, in this manual.

Each time you turn the Lisa on, the system must read a collection of startup instructions. For a discussion of these startup instructions, see Section B, Lisa Fundamentals, in this manual.

Unless you specify otherwise, the Lisa looks for the startup instructions on a ProFile attached to the built-in parallel connector on the back of the Lisa. Instructions for specifying another startup device appear in Section D, Desktop Manager Reference Guide, under Set Startup Specifications, in this manual, and in the System Manager section of the *Workshop User's Guide* for the Lisa.

You can also specify the startup device while turning the system on. This procedure is described in Section D, Desktop Manager Reference Guide, under Set Startup Device during Startup.

Whenever you turn on a ProFile, the ProFile goes through a series of self-tests for about a minute. During this time, the ready light on the right-hand side of the ProFile is flickering. To ensure that a signal from the Lisa does not interrupt the ProFile self-tests, always wait until the ready light on the ProFile has stabilized before turning on the Lisa.

Environments Window

If your startup ProFile contains any software other than the Lisa Office System, you may encounter a screen something like the one shown in Figure 1 when you start up the Lisa.

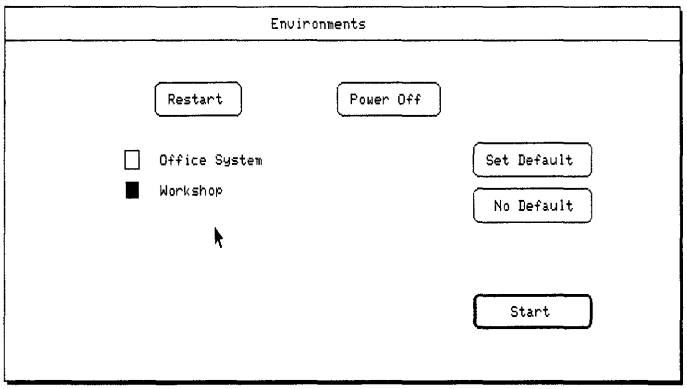
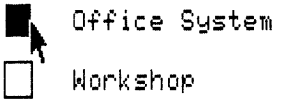


Figure 1. Environments Window

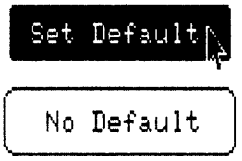
This display, known as the Environments window, allows you to specify which software you want to use. To start up the Lisa Office System, click Office System, and then click Start.

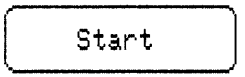
You can specify a default environment, which causes the Lisa to bring up that environment every time you turn on the system. If, for example, you always want to use the Lisa Office System:

▶ Click Office System.

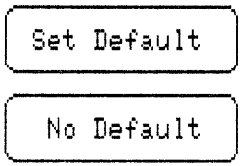


▶ Click Set Default.





▶ Click Start.



If you normally want the Lisa to start up a different software environment, see the manual that came with that software.

Once you have set the default, you will never see the Environments window unless you specifically request it. To call up the Environments window from the Lisa Office System, hold down the ⌘ key while pressing the on-off button. To call up the Environments window during system startup, press any key except Caps Lock after you hear the double click from the cabinet.

Turning Off the Lisa

When you are using the Lisa Office System, pushing the on-off button once to turn the Lisa off does not instantly shut down the machine. Instead, it triggers a series of verification and storage procedures.

The point of this complex power-down procedure is that the next time you turn the Lisa on, the computer can reconstruct the desktop exactly as you left it. During the next startup, the Lisa checks all on-line storage devices and puts all documents that were on the desktop back on the desktop again. The power-down procedure may take several minutes.

First, the Lisa saves the "desktop state" of each document on the desktop. The desktop state includes the size and location of the document display, all changes to the document since it was last saved, and the current selection or insertion point. Except for LisaList and ListWrite documents, the disk copy of the document itself is not updated. As the desktop state of each document is stored, the document disappears from the screen.

If there is not enough room on a disk to record the desktop states for all of the documents pulled from that disk, the Lisa terminates the power-down procedure. You can then make more room on the disk in two ways:

- Put away some of the documents yourself so that the Lisa does not have to keep two versions.
- Remove some old documents from the disk so that there is enough space for all the documents on the desktop.

When the desktop states of all of the resident documents on a diskette are stored, the diskette is released from its disk drive. When the desktop is clear, the screen goes blank, and the power light goes out.

Appendix 5
Hardware Specifications

Size and Shape

Cabinet

Height: 350 mm (13.8 in.)
Depth: 388 mm (15.2 in.)
Width: 475 mm (18.7 in.)
Weight: 22 kg (48 lbs.)
Cord length: 1.8 m (6 ft.)

Keyboard

Height: 68 mm (2.7 in.)
Depth: 165 mm (6.5 in.)
Width: 475 mm (18.7 in.)
Weight: 18 kg (4 lbs.)
Cord length: 1.2 m (4 ft.) safe extension

Mouse

Height: 38 mm (1.5 in.)
Depth: 94 mm (3.7 in.)
Width: 62 mm (2.4 in.)
Cord length: 1.2 m (4 ft)

ProFile

Height: 106 mm (4.2 in.)
Depth: 228 mm (8.6 in.)
Width: 434 mm (17.2 in.)
Cord length: 1.8 m (6 ft.)

Power Levels

European/Asian Systems

Voltage: 180 to 260 V.AC
Cycles: 48 to 68 Hz

United States Systems

Voltage: 90 to 130 V.AC
Cycles: 48 to 68 Hz

Temperature Ranges

Storage: -22° C to 65° C (-8° F to 149° F)
Operation: 5° C to 40° C (40° F to 104° F)

Humidity Ranges

Storage: 5% to 95% noncondensing
Operation: 10% to 80% noncondensing

Capacity

Internal memory sizes: 1/2 Megabyte, 1 Megabyte
Built-in drives: 871 Kilobytes (formatted) each
ProFile: 4.98 Megabytes (formatted)

Video

Screen dimensions: 30 cm diagonal (15 cm by 22 cm active)
12 in. diagonal (6 in. by 8.5 in. active)
Resolution: 364 lines by 720 dots per line
Screen refresh rate: 60 Hz
Horizontal line rate: 22,900 Hz
Dot rate: 20 MHz

Compatibilities

Format: Standard ASCII plus additional Apple characters
Recommended printers: Apple dot matrix and
Apple daisy wheel

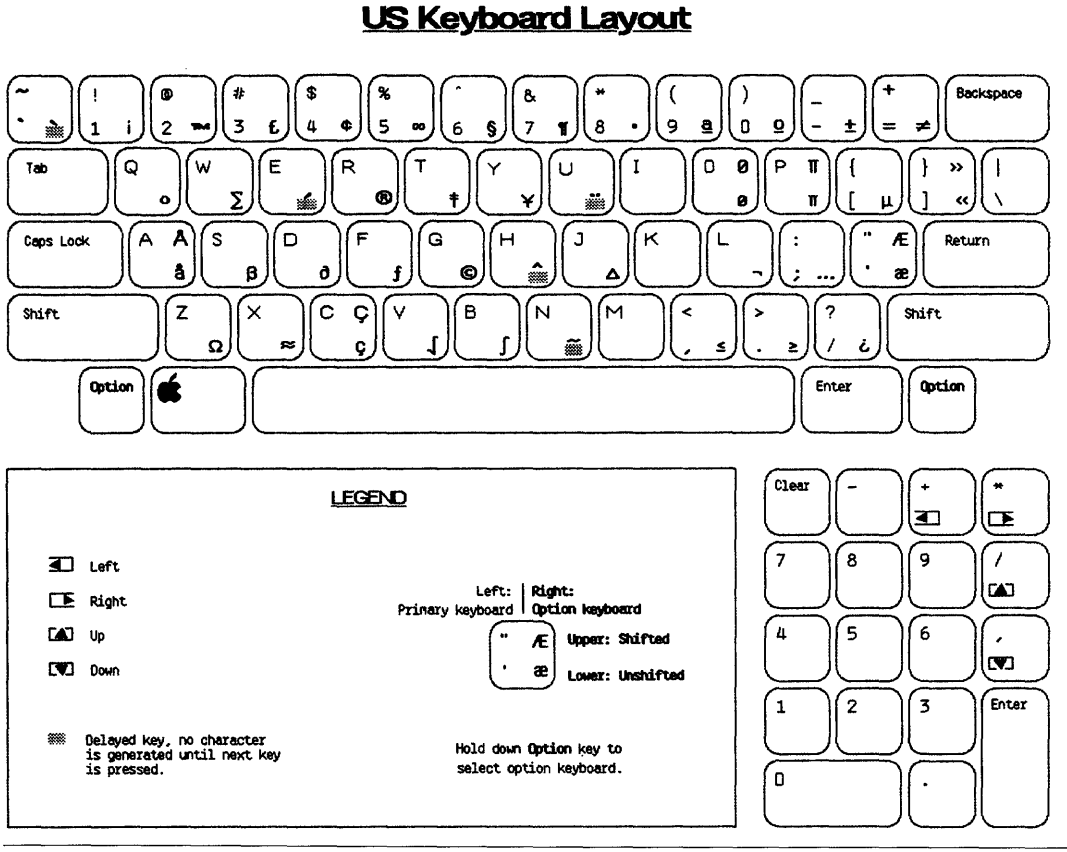


Figure 1. US Keyboard Layout

UK Keyboard Layout

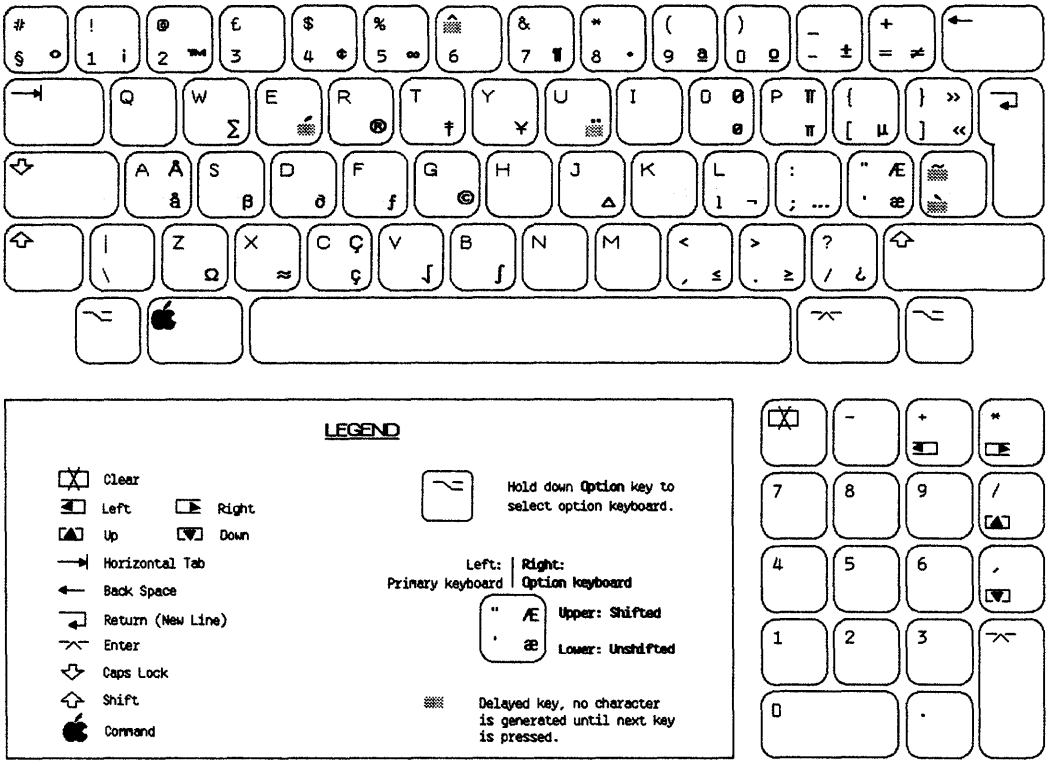


Figure 2. UK Keyboard Layout

Radio and Television Interference

The Lisa generates and uses radio frequency energy. If the Lisa is not installed and used properly (that is, in strict accordance with the instructions in this manual), it may cause interference to radio and television reception.

This equipment has been tested and complies with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules. These rules are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that the interference will not occur in a particular installation, especially if a "rabbit ear" TV antenna is used. (A rabbit ear antenna is the telescoping rod antenna usually contained on TV receivers.)

You can determine whether your computer is causing interference by turning it off. If the interference stops, it was probably caused by the computer or its peripherals. To further isolate the problem:

- Disconnect the peripheral devices and their I/O cables one at a time. If the interference stops, it is caused by either the peripheral or its I/O cable. These devices usually require shielded I/O cables. For Apple peripherals, you can obtain the proper shielded cable from your dealer. For non-Apple peripherals, contact the manufacturer or your dealer for assistance.

If your computer does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures:

- Turn the TV or radio antenna until the interference stops.
- Move the computer to one side or the other of the TV or radio.
- Move the computer farther away from the TV or radio.
- Plug the computer into an outlet that is on a different circuit from the TV or radio. That is, make certain the computer and the TV or radio are on circuits controlled by different circuit breakers or fuses.
- Consider installing a rooftop TV antenna with coaxial cable lead-in between the antenna and the TV.

If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet, prepared by the Federal Communications Commission: *How to Identify and Resolve Radio-TV Interference Problems.* This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock Number 004-000-003454.

Appendix 6
Office System Error Messages

This appendix contains a series of discussions covering the error messages generated by the Lisa Office System. The discussions are grouped into four general categories, with specific entries under each major heading. If you have encountered an error message, go to the specific entry mentioned in that message. If you think you may have a physical problem with your system, refer to Section G, Troubleshooting, in this manual.

Disk Problems

I26 Insufficient Room on Disk
I26 Damaged Disk
I27 Difficulty Accessing Disk
I27 Disk Drive Problems

Document Problems

I28 Damaged Document
I28 Difficulty Opening Document
I29 Difficulty Saving Document

Tool Problems

I29 Tool Failure
I30 Difficulty Starting Tool
I30 Incompatible Version

System Problems

I30 Insufficient Memory
I31 System Restart
I32 Desktop State
I32 Difficulty Printing

Disk Problems

Insufficient Room on Disk

Many common desktop operations — opening or saving documents, for example — require a certain amount of free disk space. When your disks become crowded, you can make more room in several ways:

- Discard obsolete documents by moving their icons to the Wastebasket. The last thing you discard from a disk stays in the Wastebasket — and on the storage disk — until something else from the same disk is also discarded. Sometimes the Lisa will destroy objects in the Wastebasket if it needs the disk space. Usually, however, the space occupied by an object is not actually reclaimed until you have thrown away another object from the same disk. Therefore, if you are discarding a group of documents in order to make more room on the disk, you must discard something else afterward. To reclaim as much room as possible, first discard all obsolete documents, and then discard an empty folder.
- Move some objects to a different storage disk. Do not duplicate the objects and move the duplicates, because that will not remove the copy from the original disk.
- If you are using LisaList, select Show Entire List from the List menu.
- Repair the disk, following the procedures in Section D, Desktop Manager Reference Guide, in this manual, under either Repair a Storage Disk or Repair a Startup ProFile. During the repair process, the Lisa reclaims any disk space that may have been lost during previous software failures or power losses.

Conversely, you can move the document itself to another disk before trying to work with it.

- If, after you have made more space on the disk that holds the document, the Lisa still says there is not enough room on the disk, verify that there is also space available on the startup disk.

Damaged Disk

The Lisa may tell you that one of your disks is "damaged." This could mean either that some of the information stored on the disk has been altered or that the disk itself is physically damaged.

- First, repair the disk following the procedures in Section D, Desktop Manager Reference Guide, under either Repair a Storage Disk or Repair a Startup ProFile. The repair process verifies that all information on the disk is usable and that the record of where things are stored on the disk surface matches the actual contents of the disk. Unreadable information may be altered or removed; the names of some documents may change.
- If the Lisa is unable to repair the disk, there is probably a physical problem with either the disk or the disk drive. If the disk in question is a floppy diskette, try inserting it in another disk drive or another Lisa. If the other drive or other machine has no trouble with the disk, run the LisaTest diagnostic on the first disk drive. Instructions for using the LisaTest diskette appear in Section G, Troubleshooting, under LisaTest, in this manual. If the other drive or machine cannot read the diskette either, then the diskette may have suffered physical damage. Erase the diskette and use a backup copy.

Difficulty Accessing Disk

- First, try restarting the system: put away all open documents, and then turn the Lisa off and back on again. When the desktop returns, try again to access the disk.

  If this procedure works, your system was probably in a temporary error condition caused by the interaction of different tools and documents.
- If restarting the system doesn't solve the problem, the most likely cause is a damaged document, disk, or tool. If you are trying to access a document, see Damaged Document, below. If that discussion does not address your problem, see Damaged Disk, above, and then, as a last resort, Tool Failure and Disk Drive Problems, below.

Disk Drive Problems

Sometimes a mechanical failure in a disk drive results in errors that appear to come from your documents or disks. You can verify that the drive in question is working properly by running the LisaTest diagnostic. Instructions for using the LisaTest diskette, which is stored on the inside front cover of this manual, are in Section G,

Troubleshooting, under LisaTest, in this manual. If the tests indicate that the disk drive is not working properly, you should repair any disks that were used in that drive, following the procedures in Section D, Desktop Manager Reference Guide, under Repair a Storage Disk, in this manual. If your startup device is not working properly, you should have it repaired or replaced before proceeding.

Document Problems

Damaged Document

A document can be damaged in a number of ways. The disk on which the document is stored could be wearing out, for example, or the document may have been damaged during a power failure. Sometimes a software failure leaves a document unreadable.

- First, restart the system if you have not already done so. Put away all documents, and then turn the Lisa off and on again. Try again to open the document.
- If the document still won't open, try to duplicate the document and put the duplicate on a different disk. If this works, the original disk is probably not damaged. Try to open the copy. If the Lisa reports that the copy is also damaged, the document itself probably contains some inconsistent or unreadable information. If you are using LisaList, repair the document with the LisaList repair facility.
- If you cannot make a duplicate of the document, try to make a copy of the entire disk. Whether or not the copy procedure works, repair the original disk, following the instructions in Section D, Desktop Manager Reference Guide, under Repair a Storage Disk or Repair a Startup ProFile, in this manual. If you are using LisaList, you will probably have to repeat the LisaList repair procedure. Be sure to make a new backup of the list first.
- If the document is still damaged after the disk is repaired, discard the document and replace it with a backup copy.

Difficulty Opening Document

- Check the status panel of the document's storage disk to see how much free space is left on the disk. If the number of free blocks is approaching 200 or less, see Insufficient Room on Disk, above.

- If the disk contains adequate free space, your document or the tool used to create it could be damaged. See Damaged Document, above, and Tool Failure, below.

Difficulty Saving Document

- Check the status panel of the document's storage disk to see how much free space is left on the disk. If you have saved an earlier version of the document, change the disk display to an alphabetical view, and see how many blocks the document required in its earlier version. Estimate how much space the document now needs, on the basis of whether you have added or removed information. If there is inadequate space available, see Insufficient Room on Disk, above.
- If disk space is not the problem, or if you do not want to remove anything to make room on the storage disk, you may be able to save the document by setting it aside and then moving it to another disk. You may not be able to use this technique, since some tools will not let you move a document that has not been put away.

Difficulty saving a document could also indicate a damaged document. See Damaged Document, above.

Tool Problems

Tool Failure

- Before you conclude that a tool is actually damaged, restart the system and try to repeat the failure. To restart the system, put away all documents, and then turn the Lisa off and on again. If the procedure works after a restart, the system was probably in a temporary error condition caused by the interaction of various tools and documents.
- If the tool still fails, discard the working copy from your ProFile and replace it with a duplicate of the master tool. If your dealer set up your startup ProFile, the working copies of all tools are stored in the folder labeled Tools on your startup ProFile. A diskette containing the master tool is stored in the manual that comes with each tool.

The calculator, the clock, the Preferences, and some of the printing routines are all part of the system software. If replacing the tool doesn't work, or if the problem was with this software in the first place, reinstall the system software on your startup ProFile. Instructions for reinstalling system software appear in Section D, Desktop Manager Reference Guide, under Reinstall System Software, in this manual.

Difficulty Starting Tool

- Check the status panel in the window of the disk that holds the tool and, if it is different, in the window of your startup device. If the number of free blocks is approaching 200 or less, see Insufficient Room on Disk, above.
- If disk space is not the problem, see Tool Failure, above.

Incompatible Version

From time to time, Apple releases updated versions of the Lisa software. If you buy an additional Lisa system more than six months after you bought your first Lisa system, the computers may come with different versions of the software. (If you have a support agreement, you will always have the most recent updates of all software.)

Old documents are usually compatible with new revisions of the tools. New documents, however, many not be compatible with old versions of the tools; and once you have worked on an old document with a more recent version of the tool, you may no longer be able to work on that document with the old tool. If the Lisa cannot work on a document because the tool and the document are incompatible, take the document to a Lisa that has a more recent revision of the tool. To find out the release date of a tool, display an alphabetical or chronological view of the folder in which the tool is stored.

System Problems

Insufficient Memory

Insufficient room in memory usually means either that too many documents are open on the desktop or that the document you are actually working on has gotten too big.

- First, put away all documents that you are not currently working on, especially if the documents were created with a different tool from the one you are using.
- If the Lisa still can not perform the task, restart the system: put away all documents, and turn the Lisa off and on again. Then open only the document you want to work on, and try the operation again.
- If you are using LisaList, try changing to a larger font or shrinking the document window.
- If none of these techniques works, then your document is probably too big. Split it into two smaller documents, if possible.

System Restart

Sometimes the Lisa Office System encounters an error condition that it cannot handle. In this case, the Lisa shuts down the desktop and starts over. If possible, any open documents are suspended in their current states so that you can continue where you left off after the system restart.

If the problem recurs, either your software or your hardware may be damaged.

- Use the LisaTest diskette to run a complete system check. The diskette is stored on the inside front cover of this manual, and instructions for using it appear in Section G, Troubleshooting, under LisaTest, in this manual.
- If you have no hardware problems, try reinstalling your system software and replacing the working copies of the tools you were using when the restart occurred. Instructions for reinstalling system software appear in Section D, Desktop Manager Reference Guide, under Reinstall System Software. If your dealer loaded your startup ProFile, the working copies of all tools are stored in the folder labeled Tools. A diskette containing the master copy of the tool is stored in the manual that comes with each tool.

Desktop State

When you are using the Lisa Office System, pressing one of the disk-release buttons triggers a series of storage procedures. Before ejecting the diskette, the computer records the "desktop state" of the diskette. The desktop state includes a list of all documents from that disk that are currently on the desktop, the size and location of any open windows, all changes to the documents since they were last saved, and the current selection or insertion point in each open document.

When you turn off the Lisa, the computer goes through the same set of storage procedures for all disks.

- If the Lisa is unable to save the desktop state for a disk, check the status panel of the disk to see how much space is available. If you have several open documents and not much disk space left, see Insufficient Room on Disk, above, for suggestions for making more room on the disk. Alternatively, you can put away some of the documents yourself, so that the Lisa has less desktop state information to record.
- If disk space is not the problem, you may have a faulty disk drive. See Disk Drive Problems, above.

During a sudden power loss or an unexpected software failure, the normal power-down and disk-release procedures described above do not occur. The disks are left in an in-between state, which requires repair. See Section D, Desktop Manager Reference Guide, under Repair, in this manual.

Usually, losing the desktop state is not a problem. Simply open the disks yourself, and then open any documents you want to work on. However, you may have lost any work you have done since last saving your documents.

Difficulty Printing

The Lisa can have difficulty printing a document for a number of reasons, from simple mechanical problems to software failures.

- First, verify that the printer is turned on and that all connections are secure. See Section G, Troubleshooting, in this manual, for a checklist of possible mechanical problems.

- If your system setup checks out, the Lisa may have insufficient room in memory or insufficient free space on the startup disk. See Insufficient Memory and Insufficient Room on Disk, above.
- If none of these strategies solves the problem, either the tool you were using or your system software may have failed. See Tool Failure, above.

Section J Index

Index

A

Active and inactive windows, B20
Adding machine, E13
Alphabetical view, D43
Alternative keyboard, C3
Apple key, D9, D11
Automatic startup tests, I7

B

Back up, B4
  Diskette, D8
  Document, D12
  LisaTest, G28
  ProFile, D14
Backup, incremental, D16
Blocks, D44
Boot, see Start up
Boot ROM, G18, I7
Brightness, C14, D77
Burn-in, C8

C

Cabinet, C7
  Cleaning, F10
  Interlock switches, G6
  Opening front of, H3
  Opening back of, H10
Calculator, B18, E2
  Adding machine, E13
  Four function calculator, E3
  Icon on desktop, B12
  Menus, E20
  Reverse Polish calculator, E8
  Transaction tape, E2
  With other tools, B24

Cancel changes, D29
Caps lock key, C3
Card, installing or removing expansion, H28
Change
  Name, D46
  Storage location, D26
Changes-only backup, D16
Check disk, D57
Choose menu item, B21
Chronological view, D43
Clean
  Cabinet, F10
  Glare filter, F2
  Mouse, F7
  Screen, F2
Click mouse button, B20, B23
Clipboard, B17
  Icon on desktop, B13
Clock/calendar, B6, B17
  Icon on desktop, B12
  Setting, D64
Configuration, system, B6, D69
Connectors, C12, D70, D72
Contrast, C8, C14, D77
Convenience settings, D65
  Screen brightness and contrast, D77
Controls, screen, C13
Copy
  Contents of disk, D6
  Diskette, D8
  Document, folder, stationery pad, or tool, D11
  LisaTest diskette, G28
  ProFile, D14
  Tool, D7, D38
CPU board, replacing, H10
Crash, repairing disks after, D57
Create new document or folder, D18
Customize stationery, D20
Cut and paste between documents, B24

D

Daisy wheel printer
  Attaching, D71
  Paper, D73
  Troubleshooting, G11
Damaged disk, I26

Damaged document, I28
Damaged startup device, D53
Dark screen, C8, D78
  Troubleshooting, G8
Date, setting, D64
Delete file, see Discard
Deselect icon, B20
Desktop, B10, B25, D43
Desktop management, B9
Desktop state, B8, I18, I32
Device connections, D69
  Daisy wheel printer, D71
  Dot matrix printer, D74
Different documents, cutting and pasting between, B24
Difficulty accessing disk, I27
Difficulty printing, I32
Difficulty starting tool, I30
Dim screen, C8, D78, G8
Discard
  Document, folder, stationery pad, or tool, D24
  Object, B16
Disk, see also Diskette and ProFile
  Backing up, B4, D8, D14
  Changing display of, D42
  Damaged, I26
  Difficulty accessing, I27
  Displaying contents of, D44
  Erasing, D32
  Initializing, B3
  Initializing diskette, D33
  Initializing startup ProFile, D34
  Initializing storage ProFile, D39
  Organizing, B15
  Reinitializing, D32
  Repairing, D53, D56, D57
  Status panel, B14
  Troubleshooting, I26
Disk drive, B3
  Built-in, C9
  ProFile, C6
  Retrieving trapped diskettes, G18
  Troubleshooting, I27
Disk initialization, B3
Disk problems, I26
Disk-release button, C10

Diskette, B3, C9, see also Disk
Caring for, I5
Copying, D6, D8
Icon on desktop, B11, B14
Initializing, D33
Inserting and removing, C9
Retrieving, G18
Display
Contents of disk or folder, D44
Document, D27
Document, B15
Backing up, B5
Damaged, I28
Difficulty opening or saving, I28
Discarding, B16, D24
Filing, B23, D26
Icon on desktop, B12
Naming, D46
Opening, D27
Refiling, D28
Retrieving, D27
Saving, B22, D30
Starting, D18
Documents, cutting and pasting between, B24
Dot matrix printer
Attaching, D74
Paper, D75, D76
Troubleshooting, G12
Double-click delay, D67
Duplicate
Diskette, D8
Document, folder, stationery pad, or tool, D11
LisaTest diskette, G28

E

Environments window, B3, G25, I16
Erase disk, D32
Error codes, table, G19, I12
Error messages
Office System, I25
Recovering from, G22
Startup, G2, G19, I7, I12
Error tones, table, G19
Expansion card, removing and installing, H28
Expansion slots, C13
External devices, B6, C12
Attaching, D70

F

Fanfold paper, D73, D75
File object, B23, D26
Floppy disk, see Diskette
Focus, C14
Folder, B15
  Changing display of, D42
  Displaying contents of, D44
  Icon on desktop, B11
  Refiling, D28
  Starting, D18
Four function calculator, E3
Full backup of ProFile, D16

G

Glare filter, C8
  Cleaning, F2
  Installing, H43

H

Hard disk, see ProFile
Hardware specifications, I19

I

I/O board, replacing, H10
Icon, B10
  Closing icon, B23
  Desktop icon table, B11
  Error icon table, G19, I12
  Opening icon, B22, B23
  Selecting icon, B20
  Startup error icon table, I12
  Title bar icon, B23
Incompatible version of tool, I30
Incremental backup of ProFile, D16
Initialize, B3
  Diskette, D33
  Startup ProFile, D34
  Storage ProFile, D39
Install
  Expansion card, H28
  Glare filter, H43
  Software update, D50
  Tools during initialization, D34
  Tools on initialized ProFile, D6

Insufficient memory, I30
Insufficient room on disk, I26
Interface card, installing or removing, H28
Interference, C15, I23

K

Keys
  Apple, D9, D11
  Option, C4, D48
  Repeating, C4, D67
Keyboard, C3
  Layout, I21
  Option, C4
  Troubleshooting, G11
Keypad, numeric, C5

L

Lisa tools, compatibility, B24
LisaTest, G1, G26
  Backing up, B5, G28

M

Maintenance schedule, F1
Make stationery pad, D20
Mechanical feed, D73
Memory boards, replacing, H10
Memory, parameter, B6, C11
Memory test, D83
Menu item, choosing, B21
Mouse, C6
  Cleaning, F7
  Clicking button, B20, B23
  Double-click delay, D67
  Replacing ball, F7
  Troubleshooting, G10
Move
  Icon, B22, D26
  Window, B25

N

Name object, D46
New document or folder, D18
Numeric keypad, C5

O

Office System software, B2
  Office System 1, D53, D59
  Office System 1 and 2, B2, D34, D50
On-off button, B7, C10, I15
On-off procedures, B7, I15
  Troubleshooting, G2
  Turning off the Lisa, I18
Open
  Document, D27
  Icon, B22, B23
Option keyboard, C4
Option keys, C3, D48

P

Paper size
  Daisy wheel printer, D73
  Dot matrix printer, D76
Paper type
  Daisy wheel printer, D73
  Dot matrix printer, D75
Parallel connector, C12, D70
Parallel interface card, installing or removing, H28
Parameter memory, B6, C11
Paste between documents, B24
Peripherals, B6, C12
  Attaching, D70
  Installing parallel interface card, H28
  Printers, D71
  ProFile, see ProFile
Pictorial view, D43
Ports, C12
Power, C10
  Soft power button, I15
  Specifications, I20
  Troubleshooting, G2
Power cord, C11
Power interruption, B8, C7
  Repairing disks after, D57
Power supply, C7
  Replacing, H38
  Troubleshooting, G6

Preferences, B6, B18
Convenience settings, D65, D77
Device connections, D69
For daisy wheel printer, D71
For dot matrix printer, D74
Icon on desktop, B13
Startup specifications, D82
Print screen display, D48, D75
Print wheel, D73
Printer
Connecting, D70
Daisy wheel, D71
Dot matrix, D74
Paper, D73, D75
Troubleshooting, G11, G12
ProFile, B3, C6
Backing up, B5, D14
Icon on desktop, B11, B14
Incremental backup, D16
Initializing as startup device, B2, D34
Initializing as storage device, D39
Installing tools, D6, D34
Repairing as startup device, D53
Repairing as storage disk, D56
Restoring from backup diskettes, D59
Updating system software, D50

Q

Quick reference, C5

R

Radio and television interference, C15, I23
Recycle disk, D32
Reference cards, C5
Refile document of folder, D28
Reinitialize disk, D32
Reinstall system software, D50, D55
Remove expansion card, H28
Rename object, D46
Repair
Disk after system failure, D57
Startup ProFile, D53
Storage disk, D56
System software, D50
Repeating keys, C4, D67

Replace
Card cage, H20
Disk drives, H3
I/O, CPU, or memory board, H10
Mouse ball, F7
Power supply, H38
Reset, C11, G9
Restart, I31
Restore ProFile from backup diskettes, D59, D62
Retrieve
Discarded object, D24
Filed document, D27
Trapped diskette, G18
Reverse Polish calculator, E8
Revert to previous version, D29
RFI, I23

S

Safety precautions, I3
Save and continue, B22, D30
Save and put away, B22, D28
Save document, B22, D30
Screen, C7, C13
Brightness, C14, D77
Cleaning, F2
Contrast, C8, C14, D77
Dimming, C8, D78, G8
Focus, C14
Glare, C8
Installing glare filter, H43
Printing screen display, D48, D75
Specifications, I20
Troubleshooting, G7, G8 G21
Screen controls, C13
Select icon, B20
Serial connectors, C12, D70, D72
Service
Installing or removing expansion cards, H28
Installing glare filter, H43
Replacing I/O, CPU, or memory boards, H10
Replacing card cage, H20
Replacing disk drives, H3
Replacing or cleaning mouse ball, F7
Replacing power supply, H38

Set
  Clock/calendar, D64
  Convenience settings, D65
  Device connections, D69
  Screen brightness and contrast, D77
  Startup specifications, D82
Set aside, B22
Set aside everything, B26
Setup procedures, I1
Shadow, B18
  Icon on desktop, B13
Shortcuts, B23
Show tape, E2
Single sheet, D73, D75
Software, definition, B2
Space available on disk, D44
Speaker volume, D66
Specifications
  Hardware, I19
  Startup, B7, D82
  Video, I20
Stack, E9
Start new document or folder, D18
Start up, B2
  Automatic startup tests, G18, I7
  Environments window, I16
  Error message table, G19, I12
  Error tones, G18
  On-off button, I15
  Startup menu, D80, G23
  Troubleshooting, G13, G14, G16
Startup device, B2
  Default, D81
  Initializing, D34
  Repairing, D53
  Setting, D82
  Specifying during startup, D80
  Troubleshooting, G13, G14, G16
  Updating, D50
Startup error messages, G2, I7
  Responding to, G22
  Table, G19, I12
Startup from, G23
Startup instructions, B2, B5
Startup menu, D80, G23
Startup specifications, B7, D82
Startup tests, G18, I7

Stationery, tearing off, B23, D18
Stationery pad, B16
  Copying, D11
  Creating, D20
  Discarding, D24
  Icon on desktop, B12
  Using, D18
Status panel, B14, D44
Storage location, D26
Straighten up icons, B26, D43
Support agreement, C5
System configuration, B6, D69
System failure, repairing disks after, D57
System parts, C2
System reset, G9
System restart, I31
System setup, I1
System software, B2
  Errors, G24
  Reinstalling, D50, D55
  Repairing or updating, D50

T

Tear off stationery, B23, D18
Tests
  LisaTest, G1, G26
  Memory test, D82
Throw away object, D24
Time, setting, D64
Title bar icon, B23
Tones
  Error tone table, G19
  Setting volume, D66
Tool, B4, B15
  Backing up, B5
  Compatibility, B24
  Copies of, D7, D38
  Failure of, I29
  Icon on desktop, B12
  Incompatible version of, I30
  Installing, B4
  Installing during initialization, D34
  Installing on previously initialized ProFile, D6
Transaction tape, E2

Troubleshooting, G1
Daisy wheel printer, G11
Dark screen, G8
Disk drives, I27
Disks, I26
Dot matrix printer, G12
Environments window, G25
Insufficient memory, I30
Keyboard, G11
Mouse, G10
Power problems, G6
Printing, G11, G12, I32
Retrieving diskettes, G18
Startup error messages, G18, I12
Startup problems, G2
System hangs, G9
Video problems, G7
With LisaTest, G26

U

Update system software, D50

V

Ventilation, G6
Video out, C13
Video screen, see Screen
Video specifications, I20
Volume, speaker, D66

W

Wastebasket, B16, D24
Icon on desktop, B13
Window, B10, B23, B25
Active/inactive, B20
Sizing, B25
Work flow, B9

Lisa Owner's Guide Update Notes and Errata

General

Whistle or Musical Sound While Printing

If you hear a whistle or musical sound while using your Lisa, choose Monitor the Printer from the File/Print menu for more information.

Backing Up LisaGuide

When you make a backup copy of the LisaGuide diskette, you see an alert message warning you not to store any documents on this diskette. In the alert message, you are given a choice between Eject and Continue. You should always click Continue, and not perform any other action on the Lisa at this time. If more alert messages appear, you should click Continue until no more alert messages appear and both the original and the duplicated diskette icon are on the desktop. At this point, you can eject both diskettes by pressing the disk-release button for each disk drive.

Desktop Becomes Inactive

Sometimes, after the pointer has changed into an hourglass, it doesn't change back again even after the operation is complete. Also, when you click in a window to activate it, sometimes it doesn't become active. In either of these cases, you should try the following remedies in the order shown:

1. Activate a different window by clicking in it, and then click in the first window again.

2. Close the window with the problem by clicking twice on the document icon in the title bar.

3. Turn your Lisa off, using the on/off switch at the front of the machine, and then turn it on again.

Keeping the Clock Set

Even if you never refer to the Clock/Calendar, you should make sure that it stays accurate, because the time and date are recorded by the Lisa whenever a document is created or backed up.

Accumulating Mouse Clicks

You can continue to click the mouse button while the Lisa is still at work in response to a previous command. However, if you do so, the results can be different from those you expect. The Lisa remembers where the pointer was when you clicked the button. When it is ready to process an accumulated click, it does so based on the object currently at that location. This object might not be the one that was in that location when you clicked the button.

Repairing Disks

If you get an alert message telling you to repair a diskette, you can try using the diskette in the other disk drive. If you get the same message, you should repair the diskette. If you get the alert message for your ProFile, you should always repair it.

Crowded Disk

You should not try to add documents to a disk that has fewer than 2ØØ blocks free. See the Lisa Owner's Guide, page I26, for instructions about what do with a disk that is filling up. If you get an alert message saying that there is no space left on your disk, and more than 2ØØ blocks are free, it is probably because you have too many documents on the disk.

Dated Duplicates

When you make a duplicate copy of a document, the date of the duplicate is the date on which the duplicate was made, not the date on which the original document was created.

Space Left on ProFile

When the ProFile window is active, the line below the title bar shows the amount of space that is left on the ProFile. This figure includes the space used by all the documents on the ProFile, plus an allowance that the Lisa makes for temporary space that it needs. When you save a document, the amount of available space might decrease by more than the size of the document. This temporary space is available again when the Lisa is turned off and then on.

Deteriorating Diskette

If you get an alert message telling you that a diskette has deteriorated, this means that the physical condition of the diskette is so bad that you shouldn't use it any more. In this case, you should immediately back up the diskette. You can use the diskette as a spare after reinitializing, but if you get the same message again, you should back up the diskette again and then just throw it away.

Discarding Tools, Clock, or Calculator

The Lisa will not prevent you from discarding a tool, the Clock, or the Calculator. If you have done this inadvertently, you can retrieve the discarded icon from the Wastebasket if you have not discarded anything else in the meantime. If the icon is no longer in the Wastebasket, you can duplicate a copy from the Office System or tool diskettes.

Preferences before Disconnecting

If you have to disconnect and connect your printer, ProFile, or Parallel Interface Card frequently, you should always reconfigure your Preferences before you disconnect rather than after you reconnect.

Power and the Apple Daisy Wheel Printer

Be sure the Apple Daisy Wheel Printer is turned off when you turn on the Lisa's power.

Inserting a Diskette

If you insert a diskette, and no alert message or icon appears on the screen, try turning the Lisa off and then

on, and then inserting the diskette again. Note: Sometimes the diskette icon is actually on the desktop but is hidden by an open window.

Unclear Window Display

If the contents of your window looks garbled, move the window so that part of it is off the desktop and release the mouse button. When you move the window back onto the desktop again the contents of the window will be clear.

Printing

Printing Alerts

If you get an alert saying that you should check such things as your printer cables, you may need to check Preferences also.

Disconnecting Your Printer

Never disconnect your printer cables or cords without turning off the printer first. To do so can cause a fuse to blow.

Fast Printing of Drafts

To achieve maximum printing speed when doing draft printing, use normal resolution.

Underlining

You may sometimes get irregular underlining with hollow and shadow text when printing in high resolution.

Landscape Printing

Landscape printing with normal resolution automatically shrinks everything by one-third. This allows more information to fit on a single page.

Printwheel Notes

The Modern PS plus Italics printwheel for the Apple Daisy Wheel Printer does not include all the primary domestic keyboard characters, the characters printed on the keycaps. It does not include " @ % { } < > [ ] or \. All other available print wheels print all the primary domestic keyboard characters.

LisaTest

ProFile during LisaTest

When you run LisaTest, leave your ProFile on.

Running LisaTest with an Apple Daisy Wheel Printer

If you are testing an Apple Daisy Wheel Printer with LisaTest, one of the following print wheels must be mounted on the printer:

- Courier 1Ø
- Prestige Elite 12
- Gothic 15
- Executive PS

Keyboard Test

While you are running the LisaTest keyboard test, unplug the keyboard only when you are directed to do so.

Ending Tests Prematurely

Since the keyboard test takes quite a while to run, you might want to end it prematurely. To do so, press the on/off button once. Ignore any message you see to the effect that the test has failed.

To end the Apple Dot Matrix Printer test or the mouse test prematurely, hold down the Apple key and type a period. Ignore any message you see to the effect that the test has failed.

Blank Screen

While you are running LisaTest, if the desktop goes blank except for a group of numbers, press the reset button on the back of the Lisa to restart LisaTest.

I/O Test

If you move the mouse or enter anything on the keyboard during the LisaTest I/O test, the results of the I/O test may be invalid.