CHAPTER 5
APPLICATIONS FOR YOUR ST COMPUTER

Any computer must be programmed in order to run; otherwise, it's simply a box with some microchips—to be sure, a box filled with much potential. When you first switch on your computer, the GEM Desktop comes up on your screen only because TOS (The Operating System), which includes the desktop program, has been permanently encoded into one part of the computer's memory. Permanently encoding the chips inside a computer is one way to make a computer run a program. These encoded chips make up your computer's ROM (Read Only Memory) and are programmed at the factory.

The most common way of running programs—the way you, as a user, will run programs—is to load them from disk into your computer's memory. These sorts of programs are called applications (the computer is "applied" to a certain task). The world of applications programs runs the gamut from word processing to graphics programs, and from spreadsheet and database management to game programs.

Programming languages, on the other hand, allow you to run programs that you have written (or have entered into the computer) using the programming language itself.

The special features and power of the ST Computer are being used to full advantage in hundreds of new applications programs and programming languages.

Programming Languages

ST BASIC

The ST Language disk that came with your computer contains the programming language ST BASIC. ST BASIC is contained in the program file BASIC.PRG. The data file BASIC.RSC is required to run the language.

BASIC was originally designed as an easy-to-learn, yet powerful programming language. Today, it remains the most commonly used programming language among microcomputer users. ST BASIC resembles the mainstream dialects of BASIC (as all BASICs do), yet takes advantage of the unique features of the ST Computer.

ST BASIC contains a full complement of string manipulation functions, advanced math features, and print formatting commands. The ST BASIC editor uses the windows and drop-down menus of the GEM Desktop to full advantage, featuring windows for both text and graphics.

For detailed information on ST BASIC, refer to the manual, ST BASIC Sourcebook and Tutorial.

Note: Always use your backup copy of the ST Language disk when working with ST BASIC.

ST LOGO™

LOGO is a unique and enchanting programming language, best known for its use with students who are beginning programmers. LOGO works with "turtle graphics," a special system where an imaginary turtle draws lines and shapes under the program's control. Unlike other programming languages, you can learn programming through graphics without any understanding of higher math.

ST LOGO is an expanded version of the original language. As such, it takes advantage of the mouse, the drop-down menus and the windows of the GEM Desktop, the speed of the 68000 microprocessor, and incorporates an array of new LOGO commands not found in any other version of the language. All in all, ST LOGO represents a new advance in the LOGO programming language, specially created to take advantage of the versatility and power of the ST Computer.

Commercial Applications Programs

Many commercial applications programs that run on your ST Computer are currently available. Others are under development at both Atari Corporation and a host of independent software developers. Look for these new and exciting products at your ATARI Computer retailer.

Word Processors

Word processing is easily one of the most valuable tasks your ST Computer can help you tackle. Word-processing programs transform your computer into a super typewriter, and allow you to use your computer to write personal letters, term papers, business reports, form letters, and the like.

Note: ST Logo is available from your ATARI ST Computer retailer.

With a word processor, you compose text using your computer keyboard just as you would on a conventional typewriter. The difference is that the computer records the characters you type electronically, so you can correct your mistakes and make any changes you want before printing your work on paper. You can delete words, phrases, or whole chunks of text; you can insert new words or phrases, or move blocks of text from place to place within your text—all with only a few keystrokes or mouse clicks.

In short, word processors afford you the opportunity to experiment and arrange your written work on screen using virtually any text format—then you can send your work directly to an ATARI ST Printer. You can store your work on disk for later reference or revision.

Spreadsheet and Database Programs

Spreadsheet programs allow you to manipulate on screen an entire worksheet of numbers and formulas, which you can design in various ways: to analyze the stock market, figure your income tax, or calculate your business profit.

Database programs allow you to compile, store, and retrieve large pools of information. You can then use the program to search the database for a particular piece of information, for all information meeting some specified criterion, or sort the information you have stored in a particular way.

Business graphics programs enable you to display and print pie charts and line and bar graphs according to the values you supply.

Entertainment Programs

The ST Computer's superb graphics and high-speed animation capabilities combine with the latest in ST game programs to deliver arcade-quality entertainment action. Recreational graphics programs, like the paint program NEOchrome™ from Atari Corporation, allow you to turn your computer into an artist's canvas and exploit the color graphics power of the ST Computer.

Telecommunications Software

You can turn your computer into a telecomputing terminal with ST telecommunications software and an ATARI ST Modem. Once you're "on-line," you'll be able to peruse the hundreds of electronic bulletin boards and subscription information, banking, and shopping services across the country—all the while never leaving your home or office.

Educational Programs

Children and adults alike will benefit from the expanding library of educational programs for the ATARI ST Computer. You'll enjoy self-paced, self-study in math, science, and language arts.

MIDI Software

The ST Computer's built-in, industry-standard Musical Instrument Digital Interface (MIDI) puts you in control of the newest generation of electronic instruments and state-of-the-art sound studio equipment.

APPENDIX A
TROUBLESHOOTING AND PREVENTIVE MAINTENANCE

Troubleshooting

If you run into problems while hooking up or operating your ST Computer, chances are the difficulty is a minor hitch that you can take care of yourself. This section describes some possible problems and suggests simple solutions.

It Just Won't Work

Probably the most common problem is that sometimes the machine just won't work—it just doesn't respond. Usually the remedy is a very simple matter.

If your computer just won't budge (for instance, the screen stays dark), take the following steps:

1. Switch off all parts of your ST Computer system. Now make sure all connections are correct and secure. Check to see that the power cables are connected properly, and that the video cable is plugged in firmly to both the computer and monitor.
2. Switch all components on. Be certain that the computer's front panel power light, the drive's busy light, and the monitor's power light all come on.
3. Check to be sure that the brightness and contrast adjustments on your monitor are turned up. If the display is still not proper, your computer or monitor may need service.

Software Problems

If you are still having difficulty getting the system up and running consistently, it may be that the software application you are using has a few imperfections or that the disk contains garbled data. Try switching your computer off for a few seconds, then on again. If this helps, it may be that the application experienced a momentary failure, probably due to imperfections in the program itself. If switching the computer off and on doesn't help, try switching on the system using another disk. If this works, the problem is probably with the first disk. But if none of your disks work well, your computer or drive may need repair.

Slow Boot/Fast Boot

If you don't have a disk inserted in the drive when you first switch on the computer, the GEM Desktop takes much longer to appear (about 40 seconds). Once it does appear, you won't have any Desk Accessories available under the Desk Menu. The fastest boot is with a disk that does not have the CONTROL.ACC and EMULATOR.ACC files (Desk Accessories) on it. However, again, you won't be able to access any of the Desk Accessories.

The Mouse

You may eventually have problems controlling the mouse pointer: it may move slowly or sporadically. To solve the problem, first make sure the mouse is plugged firmly into Mouse/Joystick port 0. If the problem persists, see the section on **Caring for Your Mouse** later in this chapter.

The Keyboard

Don't be concerned that typing on the keyboard produces nothing on screen from the desktop. The GEM Desktop is not an application that permits typing from the keyboard in most instances. When using the desktop, however, you should be able to control the mouse pointer with the cursor keys (see **Controlling the Mouse Pointer with the Cursor Keys** in **Chapter 2**). When you name files or disks, the desktop will of course permit you to type from the keyboard.

A Final Note

Your ATARI ST Computer system is designed for low maintenance and high reliability. Like anything electronic and mechanical, however, a computer system can break down. If you experience problems that you think may be serious, the best course is to take your computer to your ATARI retailer.

Preventive Maintenance

To ensure top performance from your ST Computer system, follow the simple guidelines below:

Caring for Your ST Computer System

- Avoid dusty or greasy work areas.
- Avoid smoking near your computer system.
- Keep all components away from extreme heat or moisture.
- Keep liquids away from the components.
- Clean the outside of the components with a soft, lint-free cloth only. Do not use cleansers, abrasives, or solvents, which may damage the components' plastic housings.
- Keep all components out of direct sunlight.
- Always have your system securely placed on a firm, level surface.
- Do not move the components more than necessary.
- When you switch off the computer, wait at least two seconds before you switch it on again.
- To ship or store your system, repack it in the original factory packing materials.

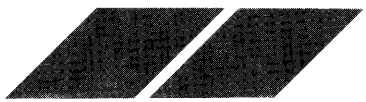
Caring for Your Microfloppy Disks

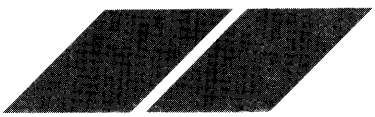
- Do not switch the disk drive off while it is busy. Do not leave disks in the drive when the drive is off.
- Keep disks away from sources of magnetism (monitor, television, electric motor, or telephone).
- Keep disks away from extreme heat or moisture.
- Never leave disks in direct sunlight.
- Never touch or clean a disk's recording surface inside the plastic housing.

Caring for Your Mouse

Your ST Computer Mouse will last through many years of use if you treat it properly. Two general guidelines for proper mouse care are:

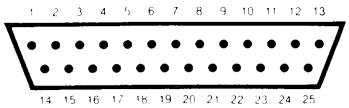
- Don't drop the mouse or allow it to "hang by its tail."
- Make sure the surface on which you use the mouse is as smooth and clean as possible.





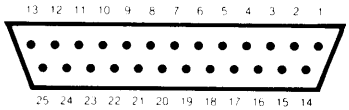
APPENDIX B
CONNECTOR PINOUT SPECIFICATIONS

Modem



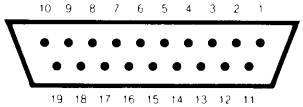
1 — Protective Ground
2 — Transmitted Data
3 — Received Data
4 — Request to Send
5 — Clear to Send
6 — Not Connected
7 — Signal Ground
8 — Data Carrier Repeat
9-19 — Not Connected
20 — Data Terminal Ready
21 — Not Connected
22 — Ring Indicator
23-25 — Not Connected

Printer



1 — Centronics® STROBE
2 — Data 0
3 — Data 1
4 — Data 2
5 — Data 3
6 — Data 4
7 — Data 5
8 — Data 6
9 — Data 7
10 — Not Connected
11 — Centronics BUSY
12-17 — Not Connected
18-25 — Ground

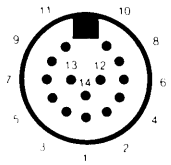
Hard Disk



1 — Data 0
2 — Data 1
3 — Data 2
4 — Data 3
5 — Data 4
6 — Data 5
7 — Data 6
8 — Data 7
9 — Chip Select
10 — Interrupt Request
11 — Ground
12 — Reset
13 — Ground
14 — Acknowledge
15 — Ground
16 — A1
17 — Ground
18 — Read/Write
19 — Data Request

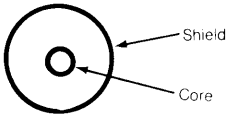
Note: All pinout diagrams are from the external port view.

Floppy Disk



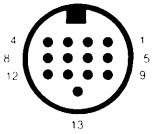
1 — Read Data
2 — Side 0 Select
3 — Logic Ground
4 — Index Pulse
5 — Drive 0 Select
6 — Drive 1 Select
7 — Logic Ground
8 — Motor On
9 — Direction In
10 — Step
11 — Write Data
12 — Write Gate
13 — Track 00
14 — Write Protect

Television (where applicable)



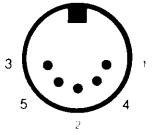
Core — RF Modulated Video
Shield — Ground

Monitor



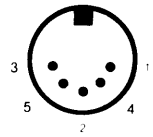
1 — Audio Out
2 — Composite Video (where applicable)
3 — General Purpose Output
4 — Monochrome Detect
5 — Audio In
6 — Green
7 — Red
8 — Plus 12-Volt Pullup
9 — Horizontal Sync
10 — Blue
11 — Monochrome
12 — Vertical Sync
13 — Ground

Midi Out



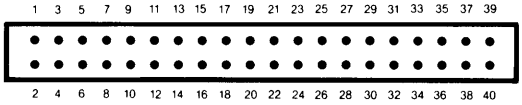
1 — THRU Transmit Data
2 — Shield Ground
3 — THRU Loop Return
4 — OUT Transmit Data
5 — OUT Loop Return

Midi In



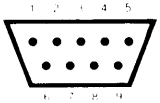
1 — Not Connected
2 — Not Connected
3 — Not Connected
4 — IN Receive Data
5 — IN Loop Return

Cartridge



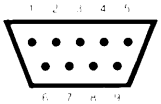
1 — +5 VDC
2 — +5 VDC
3 — Data 14
4 — Data 15
5 — Data 12
6 — Data 13
7 — Data 10
8 — Data 11
9 — Data 8
10 — Data 9
11 — Data 6
12 — Data 7
13 — Data 4
14 — Data 5
15 — Data 2
16 — Data 3
17 — Data 0
18 — Data 1
19 — Address 13
20 — Address 15
21 — Address 8
22 — Address 14
23 — Address 7
24 — Address 9
25 — Address 6
26 — Address 10
27 — Address 5
28 — Address 12
29 — Address 11
30 — Address 4
31 — ROM Select 3
32 — Address 3
33 — ROM Select 4
34 — Address 2
35 — Upper Data Strobe
36 — Address 1
37 — Lower Data Strobe
38-40 — Ground

Mouse / Joystick



1 — Up/XB
2 — Down/XA
3 — Left/YA
4 — Right/YB
5 — Not Connected
6 — Fire/Left Button
7 — + 5VDC
8 — Ground
9 — Joy1 Fire/Right Button

Joystick

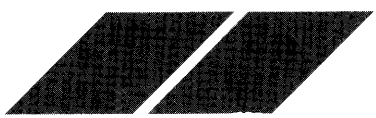


1 — Up
2 — Down
3 — Left
4 — Right
5 — Reserved
6 — Fire Button
7 — + 5VDC
8 — Ground
9 — Not Connected

APPENDIX C
ST COMPUTER SPECIFICATIONS

Computer

Processor	MC68000, 32-bit internal, 16-bit external architecture; 8 MHz clock frequency
Memory:	
4160ST	4,194,304 bytes of RAM; 196,608 bytes of ROM
2080ST	2,097,152 bytes of RAM; 196,608 bytes of ROM
1040ST	1,048,576 bytes of RAM; 196,608 bytes of ROM
520ST	524,288 bytes of RAM; 196,608 bytes of ROM
Graphics Resolution (selectable)	640 x 400 monochrome 320 x 200 x 16 colors 640 x 200 x 4 colors
Color	Palette of 512 colors
Interfaces	RS232 Serial Modem Port Parallel Interface Printer Port Hard Disk Port (10 megabits per second DMA transfer rate) Floppy Disk Port (includes controller) TV Port (not included on some models) Monitor Port (RGB Analog; high-resolution monochrome, composite video, and audio) Midi In and Midi Out Ports ROM Cartridge Port (128 kilobytes capacity) Mouse/Joystick and Joystick Ports
Sound Generator	3 voices from 30 Hz to above audible range
Keyboard	94-key intelligent keyboard using 6301 microprocessor
Power Supply (built-in)	+5V @ 3A +12V @ 1A −12V @ 30mA
Power Consumption	95 Watts (maximum)
Ambient Temperature	41 to 113 °F (5 to 45 °C), operating or idle −4 to 149 °F (−20 to 65 °C), storage −40 to 149 °F (−40 to 65 °C), transport
Relative Humidity (noncondensing)	20 to 80 %, operating or idle up to 95 %, storage or transport



Disk Drive

Track Density	135 tracks per inch
Storage Capacity:	
4160ST, 2080ST, 1040ST	720 kilobytes total per disk (formatted MFM)
520ST	360 kilobytes total per disk (formatted MFM)
Storage Medium:	
4160ST, 2080ST, 1040ST	3½-inch microfloppy disks; double-sided, double-density; 135 tracks per inch
520ST	3½-inch microfloppy disks; single-sided, double-density; 135 tracks per inch
Head Positioning Mechanism	Stepper motor
Data Transfer Speed	250 kilobits per second
Physical Characteristics	
4160ST, 2080ST, 1040ST	Maximum height 2¾″ Width 18¾″ Depth 11½″ Weight 9 lb. 7 oz. Internal power supply
520ST	Maximum height 2½″ Width 18¾″ Depth 9½″ Weight 4 lb. 6 oz. Internal power supply

GLOSSARY

Alert Messages Alert Messages inform you that the operation you want to perform is potentially dangerous, improper, or impossible. Alert Messages are always displayed in a Dialog Box.

BASIC Beginner's All-Purpose Symbolic Instruction Code. The programming language contained on the ST Language disk.

Baud Rate The speed at which characters are transmitted from one source to another. You can transmit information from your computer through a modem over the telephone lines to another computer. Baud is the standard unit measure of transmission speed calculated in bits per second.

Bee Icon Whenever the computer transfers or retrieves information from the disk drive, the screen displays the Bee icon.

Bit The smallest unit of computer memory. Eight bits equal one byte of memory. (See **Byte**.)

Boot To switch on your system. Pressing the Reset button on the back panel of the computer "reboots" the system.

Byte Computer memory is arranged into units of bytes. Each byte consists of eight bits, and is a unique character within the computer (e.g., the letter "a" is stored as one byte in memory). (See **Bit** and **Kilobyte**.)

Cartridge One of four means of entering data and programs into the ST Computer. The other means are: a disk drive, the keyboard, and an external port (e.g., the Modem port). Cartridges connect to the computer's left side panel.

Click To point the mouse pointer at a word or icon on the screen, press the mouse button, then quickly release it.

Close Box The small box at the upper left-hand corner of a window, used to close an active window.

Color Palette A function of the Control Panel that allows you to modify the colors available on the ST Computer. You must use the ATARI RGB Analog Color Monitor, a composite monitor, or a color television for the Color Palette to function fully.

Control Panel A Dialog Box that allows you to control many of the GEM Desktop functions. The Color Palette, Mouse Click Response, Keyboard Response, Clock/Calendar, and Audio Feedback are adjusted with the Control Panel.

Cursor A marker that appears on the screen to indicate the position of the next typed character.

Data File A collection of information used by a program. Data files are not programs. Data file icons look like sheets of paper with one folded corner.

Desk Accessory A menu option under the Desk heading that can be accessed at most times, either directly from the GEM Desktop or while using some other application.

Desktop Disk Among other things, the ST Language disk contains the data your computer needs to provide a full complement of Desk Accessories. Put a copy of the CONTROL.ACC and EMULATOR.ACC files on another disk. Call this your "Desktop" disk. Use it (or another with those files) when you boot the system.

Dialog Box Dialog Boxes are interactive message boxes. To exit a Dialog Box, you must acknowledge the message or choose an option.

Diskcopy A program that makes an exact copy of all of the data on a disk. To make a disk copy, drag the icon of the source disk on top of the icon for the destination disk. The Diskcopy procedure erases all information from the destination disk.

Disk Drive The primary storage device for your ST Computer. The computer uses the disk drive to read information from or write information to a floppy disk. Disk drives are represented by a Floppy Disk icon on the GEM Desktop.

Double-click Two quick clicks on the left mouse button. A double-click opens a file, disk, or folder.

Dragging The technique for moving an item on the desktop, such as an icon, file, or window. Point at the item with the mouse pointer, press the left mouse button, and hold the button down while moving the mouse. While the icon is being dragged, a ghost image of the item you are moving appears on the desktop.

File A collection of information that has been stored or can be stored on a disk or in the computer's memory.

File Copy To copy single files from one disk to another, drag the icons that represent the files you want to copy over to and on top of the new disk's icon. You can also drag files between the opened windows of two disks.

Floppy Disk The medium used to store information. The disk is made of a material similar to audio tape.

Folder A collection of files. Folders provide a way to organize your files on disk. To access a file that has been placed in a folder, double-click on the folder. A folder opens up into its parent window. Folder icons look like file folders.

Format Information is stored on your floppy disks in circular patterns. When you format a disk, you set the patterns so information can then be stored on the disk. Formatting erases all information previously stored on the disk.

Full Box Used to change the size of a window alternately from normal to full-screen.

GEM Graphics Environment Manager. A program used in TOS that creates and manages all the window icons, menus, and graphics features of the ST Computer.

GEM Desktop The main screen for the ST Computer. It includes the Menu Bar, two Floppy Disk icons, and the Trash icon.

Ghost An outline of an icon, filename, or window used to show the current position of the item as it is dragged to a new location on the desktop.

Hard Disk A device used to store data on a magnetic surface. The disk itself is permanent (not removeable). A hard disk drive can store far more data than a floppy disk drive, and can read and write information many times faster.

High-Resolution One of three video display modes available with the ST Computer. In high-resolution mode, the ST Computer's display consists of 640 dots horizontally by 400 dots vertically. In order to use the high-resolution mode, you must have an ATARI High-Resolution Monochrome Monitor. (See **Low-Resolution** and **Medium-Resolution**.)

Icon A picture on the desktop that may represent disks, files, folders, or procedures.

Information Line The line at the top of an active window telling how many bytes are used and in how many items (files).

Input/Output (I/O) The communication process that takes place between the ST Computer and its peripheral devices (i.e., disk drives, printers). Input is information that is sent "in" to the computer; output is information the computer sends "out."

Interface An electronic connection that allows communication between the computer and its peripherals.

Kilobyte (K) 1024 bytes. (See **Bit** and **Byte**.)

LOGO A powerful graphics programming language available for your ST Computer.

Low-Resolution One of three video display modes available with the ST Computer. In low-resolution mode, the ST Computer's display consists of 320 dots horizontally by 200 dots vertically. In this mode, the computer can display up to 16 colors at a time from the total palette of 512 colors. (See **High-Resolution** and **Medium-Resolution**.)

Medium-Resolution One of three video display modes available with the ST Computer. In medium-resolution mode, the ST Computer's display consists of 640 dots horizontally by 200 dots vertically. In this mode, the computer can display up to four colors at a time from the total palette of 512 colors. (See **High-Resolution** and **Low-Resolution**.)

Memory The electronic circuits that the ST Computer uses to store data and programs. There are two kinds of memory: RAM (Random Access Memory) and ROM (Read Only Memory). RAM loses its data if the power is turned off; ROM retains its information whether it has power or not.

Menu Bar A bar at the top of the GEM Desktop. When you first start up the ST Computer system, the headings on the Menu Bar are: Desk, File, View, and Options. Other application programs may have different headings.

MIDI Interface MIDI stands for Musical Instrument Digital Interface. It is a standard interface designed to connect a computer to a number of electronic musical devices.

Modem A device that allows you to connect your computer directly to the telephone lines and establish a communication link with other computers and online information networks.

Mouse The device that controls the movement of the mouse pointer on the desktop. As you slide the mouse across your table or desk, the small rubber ball on the bottom rolls back and forth to track the movements. The mouse has two buttons. The left button is used to select and open files, icons, and programs. The right button is used with some application programs.

Move Bar The bar at the top of an active window. Click on the Move Bar to drag a window to a new location on the desktop.

Parallel Interface An industry-standard interface for high-speed printer connections. On the back of the ST Computer, the parallel interface port is labeled "Printer."

Peripheral Any kind of exterior device that you connect to your computer (i.e., disk drive, monitor, printer).

Pixel The ST Computer video display is made up of tiny dots called "pixels" (picture elements). The pixels are arranged in a grid, and set to either 320 x 200, 640 x 200, or 640 x 400 dots per grid.

Pointer An arrow (also called the "mouse pointer") used to point to objects on the desktop. It follows your movement of the mouse (or cursor keys) forward, backward, left, or right.

Program File A file that contains an applications program. Program file icons are boxes shaded at the top.

RAM Random Access Memory. The part of the computer's memory that is used to "write to" and "read information from." When you work with your computer, the display on the screen is in RAM. The information stored in RAM is lost each time you turn off the computer.

RGB Red, Green, Blue. The color signals that the ST Computer produces to create its special color display. The combination of eight different intensities of red, green, and blue enable you to create 512 colors with the ST Computer.

ROM Read Only Memory. The part of the computer's memory containing the boot (startup) information for the computer. ROM is programmed at the factory and never changes.

RS232 The RS232 connector is an industry-standard connection for peripherals. On the back of the ST Computer, this connector is labeled "Modem." The RS232 port is also referred to as the serial port. Serial printers may also be connected to the ST Computer through this port.

Scroll To move the information in a window left, right, up, or down.

Scroll Bar One of two bars that border an active window on the bottom and right edges. The Scroll Bars contain the scroll arrows, and are shaded if part of the window's contents cannot be seen. The larger the shaded portion, the greater the percentage of the window's contents that is hidden from view.

Sector A section of a track on a hard or floppy disk. Sectors are usually 128, 256, 512, or 1024 bytes long. On an ST floppy disk, the sectors are 512 bytes long. (See Track.)

Size Box A small box at the lower right-hand corner used to change the size of the window.

Sizing The process of changing the size or shape of a window.

ST Language Disk The disk that came with your computer. It contains ST BASIC, a sample program, and the Desk Accessory files (the CONTROL.ACC and EMULATOR.ACC). You should make a copy of this disk immediately; label the copy "Working ST Language."

TOS The (ST) Operating System. TOS controls how the computer operates the GEM Desktop, the mouse, and any peripherals you connect to the computer.

Track One of the circular paths on a disk that contains the data written on the disk. Each track is made up of smaller sections called sectors. (See Sector.)

Trash The GEM Desktop icon used to delete files or folders from the desktop. Once a file or folder is deleted using the Trash icon, it's gone forever.

VT52 (Terminal) Emulator A communications program you can use to turn your ST Computer into a terminal linked to another computer (modem required).

Window The work area that the ST Computer uses to display files and folders or to run programs. The desktop allows up to four windows open at a time.

Working ST Language Disk A copy of your ST Language disk. Make this copy before you do anything else. Always use the copy when you need to access any information contained on the ST Language disk.

Write-Protect To mechanically prevent a disk from being written to. To write-protect a disk, move the write-protect tab so you can see through the write-protect notch, or so the tab is at the bottom position in the notch.

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CUSTOMER SUPPORT

Atari Corporation welcomes questions about your ATARI Computer products. Write to:

Atari Corp (UK) Ltd.
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Atari House
Railway Terrace
Slough, Berkshire SL2 5BZ

Please write the subject of your letter on the outside of the envelope.

ATARI User Groups are outstanding sources of information on how to get the most from your ATARI Computer. To receive a list of ATARI User Groups in your area, send a self-addressed, stamped envelope to:

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