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SPECIAL ISSUE NUMBER THREE

THE ST QUARTERLY
START[®]
The #1 Guide to the Atari ST

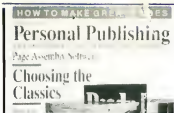
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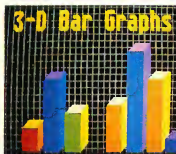
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THE ST QUARTERLY **START** The #1 Guide to the Atari ST

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SUBMISSION INFORMATION

START welcomes submissions. Please include both hard copy printouts of articles and program listings as well as disk files on ST compatible disks. Media will be returned if self-addressed, stamped matter is supplied. START assumes no responsibility for unsolicited editorial material.

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EDITORIAL

Let me introduce myself: I'm the new Editor here at START. For the last seven years, I've owned four Atari computers, been a member of three Atari user groups and read every Atari magazine that I could find. And as a long-time Atari owner myself, I want to make sure that START is the magazine you want. If you see something in START you like, write and tell us. If you see something you don't like, tell us that, too. In other words, write!

This special Business issue has a lot here for you if you already use your Atari in business—or if you think you might. To see how some businesspeople have already put their STs to work, read Gigi Bisson's article, "Getting Down to Business." If you're shopping for business software, "File It" will help you choose the best database manager and "Figure It" will help you select a spreadsheet. Then learn how the ST's graphics power can help your next business presentation in "Show It."

Are you a newsletter editor? Is desktop publishing something you want to learn more about? Then read Helmi Kobler's article "The ABCs of Desktop Publishing" for a truly helpful and understandable tutorial.

And there's so much more in this issue that I can only hit the highlights: On the music scene, Jamie Krutz reviews two new Sonus MIDI products and Mard Naman takes you behind the footlights with the Pointer Sisters and their ST whiz, Greg Welchel. In "The Multipower ST," START Senior Editor Frank Hayes gives you the latest word on ST multitasking and more. And Carol Brimeyer helps you New Owners (and old!) ease the birthing pains of adding a new printer to your ST.

On this issue's START disk, three great disk utilities lead the way: the START Selector, the Director and Lock & Key.

Copy the "START Selector" from your START disk into the AUTO folder on your boot disk and it will replace the GEM Item Selector in almost any program you run after booting up! The Director is a disk librarian with an important difference: you can use your favorite database manager to sort and organize your file list! And with Lock & Key, you can hide your disk files from prying eyes—electronically.

Our main program this issue is Alex Leavens's CardStak, a unique and powerful free-form "card file" database manager. You'll think of a dozen uses for CardStak the first time you try it—it's just that kind of program! Finally, if you're in the mood for a little relaxation, try Wall Street, an extremely accurate (and playable) stock market simulation by Tony Lovell.

Over the years, I've used Atari computers for everything from screenwriting to courtroom computer graphics. I pushed the limits of my computers—and sometimes they pushed me past my limits. That's when I'd stop and take out my back issues of Antic or START and look for help; I usually found it, too. I hope START will do the same for you.

So enjoy this issue—read it, run the programs and then write and tell me what you think. And if you like what you see, pick up that phone or pen and become a START subscriber. Thanks.



Andrew Reese
Editor
START, The ST Quarterly

SST: The Sequencer That Soars Above The Competition.



Expand your musical horizons with the power and technology of the SST 24 Track MIDI sequencer from Sonus. The SST's sophisticated editing commands will enable you to unleash the full power of your MIDI instruments. From the MIDI event level to global commands, the SST Super Sequencer will provide the ultimate in musical performance. Complete and ready to use, the SST comes with detailed documentation, two MIDI cables and appropriate disks. Best of all, you can get the SST's sky high sophistication at a down to earth price. The SST Super Sequencer is available at all fine music stores for a suggested retail of \$149.95.

From Sonus. For the Atari 520/1040 ST.

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WANTS TO PROGRAM GREAT ST GRAPHICS

I've been an ST owner for over two years and have formerly owned an Apple II and Commodore 128. I learned both BASIC and assembly language for those computers from books and magazines, and I'm now learning GFA BASIC and assembly for the ST.

The ST has been out several years now and yet the information available on how to program arcade graphics is coming out too slowly. This is a plea, on behalf of myself and the other hobbyist programmers out there, for a sharing of information. There are some people out there who have mastered the ST's graphics and could teach us a lot, if they were willing. A lot of programming examples in magazines and books have a lot of information about GEM. GEM is fine, but what I think most of us really want is information on how to get

sprites on the screen and move them smoothly and animate them.

What's more, the information must be made understandable to those of us who haven't a lot of time to study. Einstein once said that there is nothing so complicated that it can't be made understandable to someone of average intelligence. An expert programmer, when working with a good writer/teacher, could write a good manual to help us.

When I saw Megaroids I thought C was the answer to fast graphics programming in a high-level language, but I discovered that much of the critical coding for that program was in assembly. I believe that with assembly subroutines, Megaroids could have been executed in GFA BASIC as well. What we need are machine language subroutines that can move sprites and do page flipping that can be incorporated into GFA BASIC programs. I realize there are some trade-offs in speed if BASIC is

used, but with the right subroutines, I believe GFA BASIC can accomplish in software the same speed that C-128 BASIC 7.0 accomplished with its built-in hardware sprites.

“There is nothing so complicated that it can't be made understandable to someone of average intelligence.”

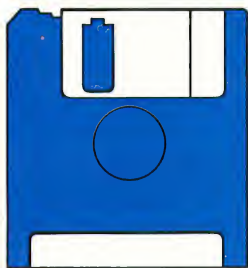
NO START DISK?

Every issue, START features great programs on disk. If you bought this issue of START without the disk, you're missing out!

START is available with the disk for \$14.95, but for those of you who want to read START first, it's available without the disk for \$4.

If you want the full version of START, you can order the companion disk by calling the Disk Desk toll-free at (800) 234-7001. Our Customer Service specialists are on duty from 6:00 a.m. to 6:00 p.m. Pacific time. Or you can order your disk by mail using the order form inserted into this issue. Each disk is \$10.95 plus \$2.00 shipping and handling.

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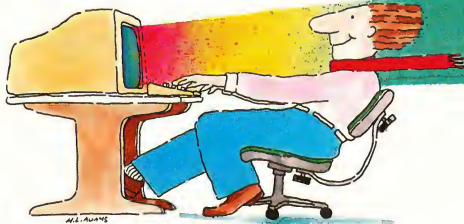


In looking over the ST information available from books and magazines, I feel that too much space is wasted on GEM, windows, ROM routines, the AES, VDI, etc. What we want is a BASIC that will allow easy sprite manipulation, scrolling, sprite priority handling, etc., but with the great resolution and full palette of colors the ST offers.

Any ideas?
Steve Callaway
Anaheim, CA

If you haven't already, check out Special Issue #2 of START, Music and Graphics. There is a program on that issue's disk, The Cartoonist, that lets you define sprites from DEGAS-compatible pictures and move them about the screen. Best of all, on the disk are all the assembly language routines you need to use these sequences in your own programs as well as a text file to explain how the routines work.

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Tired of being restricted to the same old built-in printer fonts? No problem! In WordUp, you can use any size or types of characters on the same line. In fact, we bet you've seen some really nice Macintosh fonts that you'd like to use on your Atari ST and

MEGA. No problem! Now, with our new program FONTZ! (\$34.95), you can use those character sets, and ones created for the Amiga, Degas Elite, and Hippoword with

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AN OPEN LETTER TO INFOCOM

Having read the announcement in the Winter 1987 START that Infocom is abandoning Atari 8-bit computers and severely limiting new releases for the ST series, I just had to write to express my displeasure. I own both of these fine machines and have been a loyal Infocom player for many years. (I own 23 of their games.)

To Infocom: I urge you to reconsider your decision. Many companies which have been hesitant about releasing software for the Atari machines are changing their minds: Broderbund, Electronic Arts, Springboard and your own sister company, Activision.

Please don't make the mistake of abandoning the large Atari audience both in the U.S. and abroad. We have come to expect only the best from Infocom, but now, we are being treated like second-class customers.

Thank you for your attention.

Cody A. Michael
Morton, IL

HOW TO USE ST WRITER

I'm writing this letter under the most difficult conditions with my brand-new 1040 ST, Brother M-1409 printer and ST Writer from your Fall 1987 issue.

It may come as a shock to you, but many computers are purchased today by first-time users, like me. And I demand, for the large amount of money I spent on my system, to be able to use it. And that may mean being led through the program step-by-step. I found the Atari manual barely comprehensible, the printer manual tells you everything about the device except how to use it, and I think ST Writer was designed for an 18-year-old with 30 years of computer experience.

I have managed to get documents to

print out, but I have this feeling that I'm stuck in 1st gear when I was promised five on the floor! And yes, there are instructions, but they scroll down like the wind.

Help!

Tony Scatena
College Point, NY

The ST Writer manuals on the Fall 1987 and Winter 1987 START disks are in ST Writer format. To print out the manual:

- Unarc STWRITER and STWMAN, following the disk instructions.
- Double-click on STWRITER.PRG.
- Turn on your printer and make sure it is connected properly.
- Type L to load the manual. ▶

ALERT BOX

Because of the great length of the files in BATTLE.ARC in the Spring 1988 issue of START, it can't be unarced directly onto a single-sided disk. You will get an error message during unarcing and Battle for the Throne won't run. You *can*, however, unarc BATTLE.ARC onto a double-sided or hard disk.

If you have two disk drives (or a single-sided disk and a RAM disk), put ARCXTTP onto a disk in drive A: and BATTLE.ARC on the second disk. Double-click on ARCXTTP, then type the second drive name, a backslash and the filename (e.g. B:\BATTLE.ARC). Press Return and the files will unarc onto the disk in drive A.

If you have a single-sided single-drive system without a RAMdisk, first run ARCXTTP following the Disk Instructions—be sure you are not in low resolution mode. You will get an error message; disregard it. When you return to the Desktop, click on the file BATTLE.PAS and drag it to the Trashcan. (If you are interested in studying the source code, copy BATTLE.PAS to a new disk before doing this.) A dialog box will ask you if you really want to delete

the file—answer Yes. Now, rename BATTTYPE.PAS as BATTLE.PAS; click on BATTTYPE.PAS and select "Show Info . . ." from the File option on the menu bar. When the dialog box appears, press the Escape key, type in the new name BATTLE.PAS and press Return.

You have now replaced the original 79K file BATTLE.PAS with a smaller file having the same name. Now run ARCXTTP again on the same disk, type in BATTLE.ARC and press Return. As ARCX runs, it will ask you if you want to overwrite each file that appears on the disk. Type N and press Return at the prompt until you reach the two files TERRAIN.NEO and TITLEPAG.NEO. Type Y and press Return to overwrite these. (The first time you ran ARCX it may have cut off one or the other of these files when it ran out of disk space.)

Now, when you get back to the Desktop, you will have a working version of BATTLE.PRG with the picture files intact. If you are not interested in studying the source code, delete all files from the disk except BATTLE.PRG, TITLEPAG.NEO and TERRAIN.NEO. Remember that you must run Battle for the Throne in low resolution.

Drafix 1. Turn your ST into a powerful CAD tool for just \$195.

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- Automatic calculation of areas and perimeters.
- Precise positioning using snap modes.
- Use ortho lock to draw vertical, horizontal or normal lines.
- Keyboard input optional in absolute, relative and polar coordinates allows you to draw to the precision of .0000001 accuracy.

- Powerful editing function that lets you stretch, shorten, trim, bevel, round and fillet, erase, unerase and more.
 - Transform and copy commands allow copying, moving, rotating and alignment of items. Mirror objects about any axis and merge drawings together for true computerized cut and paste.
 - Plus many more features that can usually be found only on sophisticated packages costing \$2,000-\$3,000.
- Yet with all of its power, Drafix is one of the easiest software packages you'll ever use.

A breakthrough in screen design and user interface.

Drafix 1 features a second generation user interface — the Dynamic Screen Menuing System. This means all of the menus are visible at all times — there's no need to memorize menu hierarchies.

A "roll down" menu automatically appears to display all of the available options and a single keystroke or pointer device lets you make your selection "on the fly."

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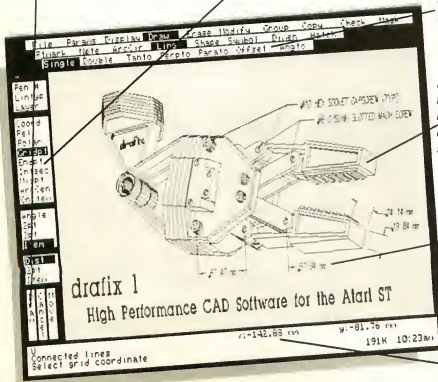
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DIALOG BOX

- Type STWMAN.TXT (if you have the Winter 1987 issue) or STWMAN (if you have the Fall 1987 issue).
- Type P to print the manual.
- Press return at the prompts until the document begins to print.

If you don't have a printer, or if you want to read the printer configuration instructions before printing anything out, you can read the manual on the screen by typing E instead of P. Use the arrow keys to scroll down the document.

Since you said the instructions were "scrolling down like the wind," you probably tried to read the manual by double-clicking on STWMAN.TXT on the desktop and then clicking on Show. This feature is designed to work for ASCII text files; the problem is that ST Writer uses its own file format. You should never try to read ST

Writer files this way; you won't be able to control the scrolling to read what's on the screen, nor will you be able to stop the scrolling before the end of the file without turning off the computer.

Do you have questions about using your ST? Is there something you're not clear about? Every issue, START's editors listen to your comments and answer your questions in Dialog Box. Let us hear from you! Our address is:

**Dialog Box
START
544 Second Street
San Francisco, CA 94107**

Or leave us a message on CompuServe using the Antic Online Mailbox—just log on and type GO ANTIC.

RECORDING MACRO KEYS

On page 61 of START's Winter 1987 issue, you state that STARTKey cannot "record" macros. Could you please explain this shortcoming of your otherwise wonderful program? (By the way, thanks for the inclusion of the Dvorak keyboard layout in STARTKey!)

Edward Lafitte
Staten Island, NY

Some programs that allow macro creation, such as WordPerfect, let you create macros by storing a keystroke sequence as you type it. To use STARTKey, on the other hand, you have to describe each macro in an ASCII file, compile the macro file and then load the compiled macro definitions into STARTKey.

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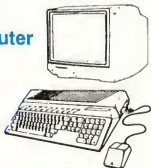
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The Atari Line

These are busy days at Atari. The Atari SLM804 Laser Printer has finally begun to arrive at authorized Atari dealers; at \$1,999, it can print at 300 dots per inch or emulate a Diablo 630 printer, and comes with two full disks of fonts. Microsoft Write is now available, too—it's \$129.95, and though it will work with almost any printer you can connect to an ST, it's specially tuned to work with the SLM804.

Even more exciting is what's coming next. The very long-awaited Atari CD-ROM drive made an appearance at the Microsoft CD-ROM conference this spring—it can store up to 540 megabytes, play standard music CDs (it's got a built-in headphone jack and remote control), and will work with available CD information disks such as the Grolier Encyclopedia, Microsoft's Bookshelf, or any CD-ROM in High Sierra format. There's an interface card



to use it with IBM PC-compatible computers, and of course it works with any ST or Mega—you can even play music CDs using an ST desk accessory! The player should be in the stores by

summer, at a suggested retail price of \$599. That's about half the \$1,200 price of Apple's newly announced CD-ROM drive, which isn't MS-DOS or High Sierra compatible.

And a new version of the transputer-based Abaq workstation should be showing up at the Hannover Fair in West Germany. The current rumors say it uses a 20 MHz 68030, a chip so new it wasn't even available last November, when the Abaq made its debut. But it still has a maximum resolution of 1,280 by 960 pixels—and a "low res" mode that offers 512 by 480 resolution with 16 million different colors!

10 Megs on a Floppy?

Supra's family of 20-, 30- and 60-megabyte hard drives for the ST now has a new member—a 10-megabyte floppy drive, the SupraDrive FD-10—for only \$895.

According to Mark White, the head of technical support for Supra, there are several advantages to the FD-10. "One way of using it is as a fast backup device for a hard disk. Of course, you can also take one disk out and put another disk in, so you can also use it

continued on page 16

Crosstalk

The computing world is becoming ST-compatible.

Item: At this spring's MacWorld Expo in San Francisco, several companies displayed Macs that had been "remanufactured" into laptops and the like. But only one company—Computer Spectrum of Burlingame, CA—was displaying a real Mac clone: an Atari ST running Magic Sac. The Macintosh crowd knew a good thing when they saw it: Computer Spectrum went through their entire supply of flyers on the first day.

Item: IBM recently announced that more than one million PS/2 computers have been shipped. The PS/2s are the IBM computers that use ST-compatible 3½-inch disks. It was just last year that IBM finally shifted to the disk format the ST has used since 1985.

Item: With the addition of a 5¼-inch drive like Supra's FD-10 (see above) or the Microbyte B drive from Paradox, the ST can use all varieties of IBM floppies, including high-density disks. And with the Translator from Data Pacific the ST can also read and write Macintosh disks.

Item: There may soon be a translator for the Mac, too. Code-named "Lumpy," it was designed by The Engineering Department Inc. to let Macs read IBM disks—and ST disks as well. However, it's still in the prototype stage. And though Apple refuses to comment, every Mac SE and Mac II will soon come with the ability to read ST disks built in, in the form of a new disk controller chip called SWIM (for "Sander Woz Integrated Machine").

NEWS, NOTES & QUOTES

Edited by Frank Hayes
START Senior Editor

as a stand-alone device. It reads and writes at about the same speed as a 10 MB hard drive—about 3 to 4 times as fast as an ordinary floppy drive. The other thing about this drive is that it can also read 1.2 meg and 360K floppies for the IBM PC."

How can Supra fit 10 megabytes on a floppy disk? The FD-10 uses specially formatted quad-density disks that cost \$39.95 each. That sounds expensive, but each disk holds the equivalent of about 14 double-sided or 28 single-sided ST disks.

But how safe is your data on a very-high-density floppy disk? "So far, all of our testing indicates that the reliability is very good," says White. "We've been testing for many hours on end for the last six months. We've also been



carrying the drives around to computer shows, and they've taken quite a bit of abuse—they really get knocked around—but we've had no problems."

The SupraDrive FD-10 is \$895 from Supra Corporation, 1133 Commercial Way, Albany, OR 97321; phone (503) 967-9075.

Dot Dot Dot . . .

Titus Software is a new name in the ST world; the company will be importing best-selling ST games from Europe, beginning with **Crazy Cars**, a road-racing game, for \$39.95. . . . ICD will now be publishing and distributing all OSS products. That includes **Personal Pascal**, the most popular version of Pascal for the ST. . . .

Computer:applications' new **II in an ST** will let you run Apple II software on your ST at better than 50 percent of normal Apple II speed. That's fast enough that most Apple games and educational software will work fine. . . . If you're looking for MIDI for the ST, this is the place: **Music Expo '88** is billed as "the world's largest showcase for music and music-related products." It's at the Long Beach Convention Center, near Los Angeles, from April 29 to May 1, 1988. . . . Prospero Fortran for GEM is Prospero's new Fortran compiler for the ST, replacing Pro Fortran-77. The new version is completely GEM-based. . . . Did you know that **WordStar 3.0** and **dBase II** are now available for the ST? The catch is, these popular programs from the IBM world are only available in Germany. . . . The new version of **ST BASIC** is available almost everywhere—it's included with every ST—but it's not compatible with the original version. . . . If you've got a hot tip or an interesting product for the ST, we'd like to hear from you. Let us know at News, Notes & Quotes, **START, 544 Second Street, San Francisco, CA 94107.** ■

Business by Radio

If you live in one of 11 select cities, you can now get news and business information beamed directly to your computer by radio. About 1,000 items per day are available on a new service called **Executive One**, which includes Standard and Poor's Market and Financial Reports, Associated Press Online, Business Week, PR Newswire, and Stock Market Quotes.

It's not an inexpensive investment, though. You need a special FM receiver (\$500) and you may need a satellite dish as well (\$150/month), plus software (\$150) and cables (\$19.50), the basic monthly service fee (\$49.95/month) and installation (up to \$300). And all this is designed for an IBM PC, so you'll also need pc-ditto (\$89.95). Total: about \$1,000 down and \$200 each month. (There are also premium services that can cost up to \$100 more each month.) That sounds like a lot, but with no hourly fees or phone bills it's less than some heavy CompuServe and Dow Jones users spend each month.

For more information, contact McGraw-Hill Information Management Co., 1221 Avenue of the Americas, New York, NY 10020; phone (212) 512-4551.



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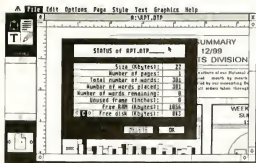
Timeworks Inc., makers of Word Writer ST, Data Manager ST and Swiftcalc, has just released the **Timeworks Desktop Publisher ST**. Completely GEM-based, Publisher ST allows you to do word processing, page layout and graphics, all with amazing speed and ease. The word processor lets you cut, copy, paste and replace text; the page layout functions allow you to load graphics and text and

mix them in an enormous variety of forms. You can load files from Word Writer ST (or any ASCII text file), load pictures from many ST drawing programs (or create simple graphics from within the program), and merge them into beautiful sales reports, brochures, newsletters and more. Publisher ST also includes drivers for 9- and 24-pin printers and laser printers, including ones equipped with Postscript. This may be the one to beat, folks. Desktop Publisher ST, \$129.95. Timeworks, Inc., 444 Lake Cook Rd., Deerfield, IL 60015, (312) 948-9200, (800) 535-9497.

On the other hand, the one to beat it might be **Calamus**, the new desktop publishing program from ISD Marketing (VIP Professional and Masterplan). Calamus boasts a complete GEM interface, and features full text and document processing, layout design, a presentation graphics generator, bitmap graphics editor and font editor. Print your work out on dot matrix printers,

Postscript or non-Postscript laser printers, or photo-typesetter machines such as the Linotronic. Calamus also includes a spelling checker, hyphenation dictionary, multiple chart forms, graphics pad support and 16 different typefaces. Requires one megabyte. Calamus, \$349.95. ISD Marketing, Inc., 2651 John Street, Unit #3, Markham Ontario, Canada, L3R-2W5, (416) 479-1880.

Timeworks' Desktop Publisher ST.



Cyber Upgrade

Cyber Paint, Antic Software's combination paint/animation/post-production program has been upgraded to Version 2.0. Version 2.0 has many new features, including an all-new Color menu that lets you change your animation sequence palette *per frame*, and do color fades, blends and cycling over any range of frames. 2.0 also includes automatic traveling mattes, an enhanced antialiaser, outline (for neon effects), striking pixel effects such as "Crystalize" and "Shatter," and many more features. Registered owners of Cyber Paint 1.0 can get the upgrade by sending in \$25 plus the original disk. Cyber Paint 2.0, \$79.95. Antic Software, 544 Second Street, San Francisco, CA 94107, (415) 957-0886; (800) 234-7001.

Viva!

Here's a late-breaking item: **VIVA**, an icon-based scripting language for making presentation graphics you can show on either your ST or TV (you can also transfer them to videotape). VIVA (Video Interactive Visual Authoring) allows you to create animated presentations, mixing text, graphics and speech (through routines included with the software). You can do charts, storyboards and interactive presentations (setting up icons for users to click on to activate specific displays). VIVA comes with over 200 graphic procedures and 50 video commands; it also can send either RGB or composite video output. VIVA is designed primarily for sales and education. VIVA, \$249.95. Knowledgeware, distributed by MichTron, 576 Telegraph, Pontiac, MI 48053, (313) 334-5700. ▶



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Count the total number of times the word "cyber" appears from cover to cover in the Antic Catalog (issue pictured on this page). Uppercase or lowercase, as part of another word, or separate, whenever the letters cy-ber appear in sequence, they count as one "cyber." Send your total count, along with your name, address, and phone number to: CYBER COUNT,

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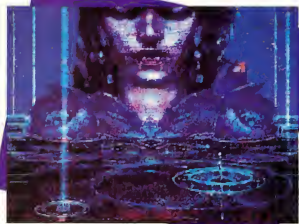
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THE ABC'S OF DESKTOP PUBLISHING

CREATING A NEWSLETTER ON YOUR ST

by **HELMI KOBLER**

So you've just been given the job of publishing a newsletter for your company or user group on your ST. Now what? Where do you start? Just what *is* desktop publishing, anyway? START's Helmi Kobler answers these questions—and others you didn't even know you had—in this journey through the world of ST DTP: desktop publishing without the price.

Desktop publishing is the hottest application in personal computers today. In simple terms, desktop publishing (or *DTP*) lets you use a computer to create your own advertisements, flyers, newsletters—even complete magazines!

With DTP, you can combine words and pictures on a page, moving them around and adjusting them until you've got just the look you want. Each element of your desktop publication is treated as a separate object, whether it's a column of text, a headline, or an illustration. You can add special fonts to text, reposition a headline or resize a picture easily.

But effective use of a DTP program starts well before you sit down at the computer. It begins with an understanding of the publishing process. You'll need to gather or create the text and graphics for your publication; text is produced with a word processor, of course, and graphics with a drawing or paint program. Next, you'll use a DTP program to merge those separate elements into attractive and readable pages. Then you'll output your newsletter to a printer, and finally, use that printed output as a master for photocopying, typesetting, etc.



The stair-stepped patterns of diagonal lines on a bit-mapped screen are referred to as "jaggies."

Step One: The Idea

First, it's important to think about exactly what sort of desktop publication you want to create. Is it going to be a flyer, a newsletter, or a book? What size

will each page be, and how many pages are you planning on? Will you have a single block of text or several shorter articles? What kind of headlines and illustrations will you use?

The more questions you can answer before you sit down at your ST, the faster and easier the rest of the process will be.

Step Two: The Words

When it's time to start putting your ideas into words, you can choose almost any ST word processor. 1st Word, Word Writer, WordPerfect, Microsoft Write and even ST Writer can all do the job.

But when you type in your text, keep it simple. Don't waste time with special formatting. With very few exceptions, none of your special formatting or style information (such as bold-face or italic printing) will survive when you read your text into an ST DTP program.

(You will probably want to print out a copy of your text from your word processor complete with bold and italics, though. Later on, when you're using your DTP program, that will make it easier to remember where the bold and italics are supposed to go. It's also handy for proofreading your text before reading it into your DTP program, where spelling checkers fear to tread.)

Save your text to disk in ASCII format, and it will be ready to read into the DTP program.

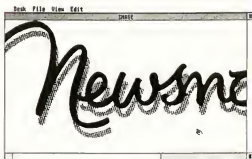
Step Three: The Pictures

Every publication needs pictures—they often communicate concepts better than words. Graphics also brighten a newsletter by breaking up long columns of text, making each page easier to read. Graphics may be line drawings, art from a paint program, digitized photographs or video images, or a combination of these.

However, there's a catch. Many ST

drawing programs, such as DEGAS, are designed to create screen-size pictures. Those pictures look fine on the ST's monochrome screen, which has a resolution of 80 dots per inch (dpi). But a laser printer has a resolution of 300 dpi—almost four times the resolution of your ST's screen. Even a good dot-matrix printer has a resolution of more than 200 dpi. Because the printer's resolution is so much greater than the screen, printing a picture at full size will usually create "jaggies!"

One way to solve that problem is to print your DEGAS pictures smaller than full-screen size. That can improve the resolution to 300 dpi—but it



An .IMG image can be more than one screen in size.

means the picture will be no bigger than about 2 1/4 by 1 1/2 inches. That's a pretty small picture for an 8 1/2-by-11-inch newsletter.

Another solution is to use drawing and DTP programs that use .IMG-format pictures. .IMG pictures aren't limited to screen size—they can be as small or as large as you like (Most ST scanners can save their images as .IMG files.) An .IMG file can easily hold a picture that's 8-by-10 inches at 300 dpi resolution. However, you'll need a hard disk to hold that file—it will be about 900K in size!

Finally, some drawing and DTP programs can use "object-oriented" pictures. With these programs, an image will always look the same—it will always be shown at the maximum possible resolution, whether it's an 80-dpi screen or a 300-dpi laser printer. ▶

ABC's...

Art For Non-Artists

If you're not an artist, pre-drawn illustrations called "clip art" are available to complement almost any kind of publication you can think of. For instance, if you're doing an article on the company softball team, you'll want a collection of sports clip art. Other collections range from vehicles and animals to holidays



Migraph's Supercharger can convert a DEGAS picture into an .IMG file.

and special occasions. Most clip art packages sell for under \$40, and come in standard formats such as DEGAS, NEOchrome and IMG. Migraph and The Font Factory publish some of the best collections of ST clip art. Some DTP programs (most notably Fleet Street Publisher) include clip art. You can also find clip art at your local user group, or on CompuServe or GENie (see Gregg Pearlman's Online With START column in START Special Issue #2 for more information on online graphics).

Scanners And Video Digitizers

If you need a photograph, drawing programs and clip art just won't do—you need a video digitizer or scanner. A video digitizer converts an image from a TV camera or VCR into a computer picture, while a scanner does the same to an image on paper. Depending on the kind of images you use, either a video digitizer or scanner may be right for you.

Three video digitizers for the ST are MichTron's Print-Technik, Digital Vi-

sion's Color ComputerEyes and the Navarone ST Video Digitizer. All three work with many popular video cameras and let you digitize images just by aiming your camera at a stationary object. It takes several seconds to capture a picture with these digitizers, but ComputerEyes recently announced a "flash" digitizer that can capture a picture in 1/30th of a second. (Editor's note: A comparison review of these three digitizers appeared in the August 1987 issue of Antic.)

There are currently three ST scanners. Navarone's ST Scan is a 300 dpi laser scanner, by feeding documents through its rollers you can scan documents at 100, 150 or 300 dpi—full laser-printer resolution. You can scan as big an image as your ST has memory for, and save the pictures in .IMG format (which can be used by Easy-Draw, Fleet Street Publisher, Timeworks Desktop Publisher ST and Publishing Partner Professional). However, ST Scan is also very expensive, with a suggested retail price of \$1,239.95. (Editor's note: A feature review of ST Scan appeared in the February 1988 issue of Antic.)

For just over one-tenth that price you can have Seymour-Radix's IMG-Scan or E. Arthur Brown's ST PictaScan. These are clever devices that attach to your printer and use a photosensor mounted on the printhead to scan a document. Both IMG-Scan and ST PictaScan can save their pictures in several formats. Scanning is much slower with these devices than with ST Scan and the image quality is not as good, but the price is certainly agreeable.

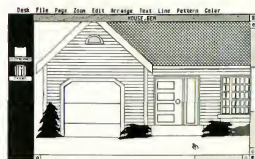
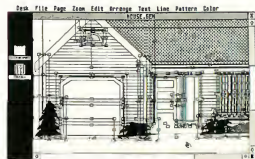
Step Four: Putting It All Together

Once you're ready to bring your words and pictures together, it's time for a DTP program—the most important component in the desktop publishing cycle. Here's where you can see an on-screen electronic version of each page

of your publication. On these "electronic pages" you can easily lay out your text and graphics and change the composition before printing it on paper.

In any DTP program, you begin with a basic layout. For a newsletter, you might choose an 8½-by-11-inch page divided into three columns, with a masthead and headline at the top of page 1 and pictures and other headlines placed throughout. For each layout element (column, headline, etc.), you define a box using one of the built-in tools and then fill that box with the appropriate contents. You can usually type or draw directly in a box or load a text or picture file.

Since each DTP element is contained in its own box, you can "grab" it as a unit and move it around, change its size or add a surrounding border



Two examples of an object-oriented image (from Easy Draw). The top screen shows all the objects (contained within the "boxes") making up the final house image, shown below.

You can also change the typeface, size and style of any text after it is in its box. Want a one-inch banner headline across the front page? Following your DTP program's directions, you can

DTP'S: WHAT'S AVAILABLE

At press time, there were only two desktop publishing programs available for the ST: Fleet Street Publisher and Publishing Partner. Currently, Fleet Street Publisher works only with 9-pin Epson-compatible dot matrix printers, although new printer drivers are reportedly on their way. Publishing Partner is your only choice if you want your work printed at higher resolutions.

Thanks to a custom printing scheme, Publishing Partner can print its fonts at any point size on the relatively inexpensive laser printers from Atari and Hewlett-Packard. Soft Logik includes three fonts with its program, and sells 14 more in its Font Packs. And if none of the existing fonts suit your fancy, you can buy Font Editor Partner from Interactive Microsystems and design your own—something you can't do with GDOS or PostScript fonts.

However, the second generation of ST desktop publishing programs is al-

most here. Timeworks Desktop Publisher ST was demonstrated in START's offices shortly before press time, and looks like a winner with full GEM and GDOS support. Both it and Publishing Partner Professional should be available as you are reading this. Calamus (from ISD Marketing) should also be arriving soon, and MichTron has announced a fall release of their GFA Publisher. We'll have full details of these products as soon as they're available. You may want to try each of these new programs before buying a DTP program.

With this many new releases, ST owners should soon be able to use the best features of desktop publishing software for the Mac or IBM PC, including text and graphics rotation in one-degree increments; hyphenation dictionaries that will automatically insert hyphens into your text; style sheets for quickly changing character and paragraph styles such as typefaces,

sizes, and leading in large documents; and the ability to automatically wrap text around the borders of graphics.

There are also several "almost" DTP programs available. 1st Word Plus is the old standard ST word processor brought up to date. Unlike the original 1st Word, it allows graphics to be combined with text. It has limited page layout capabilities, however, and is best suited to the occasional desktop publisher. It can only be used with .IMG files, but GST Software has included a DEGAS and NEO converter program on the program disk.

For sharper laser printed graphics and more complete DTP functions than 1st Word Plus offers, Migraph's Easy-Draw 2.0 with Supercharger may be the solution. It also uses .IMG graphics files and GDOS output. Easy-Draw can perform basic page makeup functions, such as loading and printing text in different fonts and sizes. Easy-Draw's previous limitation that it could not import bit-mapped graphics has been removed by the addition of Supercharger, Migraph's DEGAS and NEO to .IMG converter. ■

highlight the headline text, choose an 84-point font and click on an "OK" button—and you're done!

You can manipulate pictures as well as text—positioning, reducing, enlarging or cropping (cutting away parts of the picture). Most DTP programs also have tools for creating lines, boxes and circles. You can use these for borders around your illustrations, to separate columns of text or to set off a large headline.

DTP programs use many standard typesetting terms. Type sizes are measured in *points*; one point is about 1/72 of an inch, and type size is measured from the top of capital letters to the bottom of the descenders on letters such as y and p. *Leading* (rhymes with

"bedding") is the distance from one line to another; if you're using 12 points of leading, you'll get about six lines to the inch. *Kerning* means reducing the space between two characters, fitting them tightly together. Spend time with your DTP manual mastering the terms and features. You'll find that a little time invested in learning can return tremendous power when you lay out each page.

When you finally print your newsletter, you should be able to compare the printed version with the screen and see very few differences. The fewer differences, the better—to be really useful, what you see on the DTP screen should be what you get from your printer.

Step Five: The Printed Page

When you've composed your pages, it's time to print them out. Most ST DTP programs can print to a variety of printers, ranging from 9-pin dot-matrix printers to 300-dpi laser printers. A good dot-matrix printer can create a reasonable rendition of your pages—up to 200 dpi or more—as long as you've got a very fresh ribbon. You'll also need lots of time—printing a high-resolution page with a dot-matrix printer is *sloooooow!*

To many people, however, "It ain't desktop publishing if it ain't laser!" Most laser printers have resolutions of 300 dpi, producing "near-typeset-quality" output. As for any printer, ▶

ABC's...

though, you should make sure your DTP program comes with an appropriate printer driver. Some ST DTP programs use GDOS printer drivers (including Timeworks Desktop Publisher ST and Easy-Draw). Currently, there are GDOS drivers available for the Atari Laser Printer and for the Hewlett-Packard LaserJet and compatibles (almost all low-priced laser printers are LaserJet compatible).

But in using one of these printers you'll sacrifice a little flexibility in the way you print your newsletter master. For instance, laser printers driven by GDOS can currently print your text in only three typefaces (Times, Helvetica and Courier) and only four true sizes (10, 12, 18 and 24 points). More fonts should become available, but for now this is a big limitation. And if you use a GDOS printer driver to print a page having multiple typefaces in multiple sizes plus graphics, you'd better have plenty of memory for printing. (If you have a LaserJet-compatible printer, you'll probably also need at least one megabyte of memory in the printer, too.)

Another alternative is a PostScript printer. A PostScript printer is "smart"—it has its own computer built inside. As a result, PostScript printers are more expensive than other lasers. However, a PostScript printer comes with all the memory it needs; most models also include 13 fonts and can print them in virtually any size. Nearly every ST DTP program can print with a PostScript printer.

A Cheaper Alternative

Because of the growing popularity of desktop publishing, some copy centers and Atari dealers now offer laser-printing services for ST owners. For a small fee (typically around \$1 to \$1.50 per page) you can print out your newsletter on their laser printer. This can save you money if you don't need a laser printer on a day-to-day basis.

To find a laser-printing service in your area, check with your local Atari dealer or copy center. If you can't find one, try asking for help from your local Atari users group, or from an online service such as CompuServe or GENie.

If your DTP program can create PostScript output, you may have an even better option. Some typesetting companies will charge you a small fee to print your pages on a Linotronic 100 or 300 typesetter. With these typesetters you can get true typeset quality—as high as 2,540 dpi! Call around to see if



A good desktop publisher lets you mix text and graphics in an almost infinite variety. Here, a paragraph is highlighted in preparation for changing its typeface. (Example shown: Timeworks Desktop Publisher ST.)

any local typesetting companies have a Linotronic and can work with ST disks or modem transmission.

Step Six: Getting It Right

Once the pages have been printed, it's time to take a good hard look at your work. Does it look the way you want? Does it look the way it looked on your ST's screen? Is it easy to read and pleasant to look at? Is it the way you want it to look?

If your printed pages aren't quite right, now's the time to go back and correct any problems. (It's a good time to proofread all your text again, too.) Then print the problem pages again once you think you've got them right. If you're careful, you shouldn't have to go through this correction cycle more than once—and the result will be a much more attractive newsletter.

Step Seven: Rolling The Presses

Now it's time to roll the presses! Unless you have a very small circulation, printing each copy on your ST's printer isn't worth the trouble—it'll take forever and probably wear out your printer. For fewer than 100 copies, you'll probably want to photocopy your newsletter. Most libraries and copy centers can copy up to 11-by-17-inch pages.

For more than 100 copies, you should probably consider a local quick-print shop. Quick-print shops can print, collate, staple and trim your newsletter, magazine or booklet, and in large quantities they're usually more economical than photocopying.

In general, it's a good idea to call both a copy center and a print shop to find out how much the printing job will cost, and if possible get samples to determine the quality of their work. Then choose where to take your printing job on the basis of price, quality and service.

Conclusion

Understanding desktop publishing on your ST can be a trying experience. There's a confusing array of hardware and software, and it's not easy to decide on a publishing setup that will best suit your needs. Before you invest in a DTP program, a laser printer or any other computer product, do your research. Read START for regular coverage of DTP and for reports on new hardware and software as they are introduced. Try software and hardware at a computer store before you buy. Talk to other users. Don't hesitate to call a manufacturer for answers to your questions. Get a feel for whether you can trust the company to provide product updates and technical phone support.

And don't be surprised if your first DTP efforts aren't as polished as a professional magazine or newspaper. Study your work and learn from your

"The VT-100 Emulation alone is worth twice the price!" - James C. Wilson, JGW Associates.

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Desk File Edit Settings ANSI

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80 column text - 80 bit per inch screen refresh speed
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Play The Market

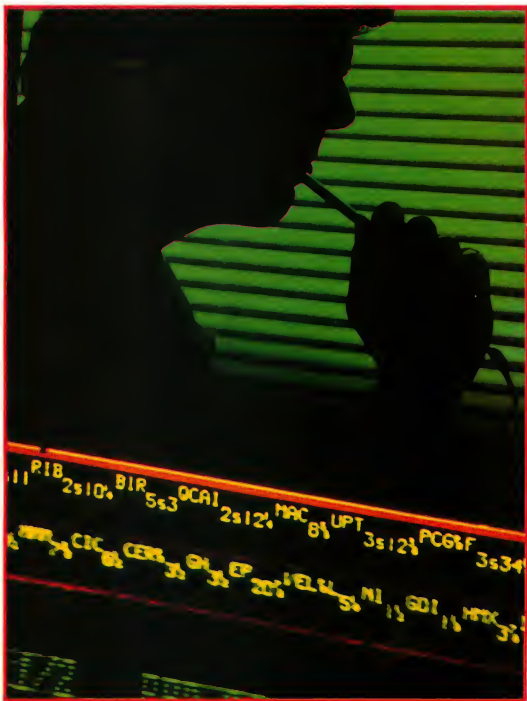
Make a million with Wall Street

BY TONY LOVELL

There's nothing like the high energy of hectic trading on the stock market. To get a feel for financial adventure without endangering your savings account, just run the game *Wall Street* on this issue's *START* disk. Like the real stock exchange, the market in *Wall Street* changes as a result of many different influences: anything from idle rumors to major mergers can send the bears hiding or the bulls charging!



You'll find the program for this article, *WALLST.PRG*, on your *START* disk.



Comstock, Inc./Tom Gill

On Black Monday—October 19, 1987—Wall Street was definitely *not* the place to be. That day the stock market dropped like a rock, fortunes were lost and the pillars of world finance were shaken.

Fortunately, you don't have to risk your life's savings for a taste of the financial fast lane. You can wheel and deal like the best financial wizards when you play Wall Street, the new game on this issue's START Disk.

WALL STREET

Wall Street is a stock market simulation that runs on any ST. However, you must run the game in medium resolution, so you'll need a color monitor. (And if you have a Mega with a blitter chip, some of the screen displays look better if you turn it off before running the game.) To play Wall Street, copy the file WALLST.PRG to a fresh disk and then double-click on the WALLST.PRG icon.

The object of Wall Street is to begin with \$10,000 and turn that into a million dollars in one year by buying and selling stock. The game is broken up into 52 trading weeks; each week you can use the Activity menu to buy and sell shares or consult a broker, or use the Index menu to study the market index to decide on the best investment strategy.

For example, to buy stock use the Activity menu to select Buy Shares. Click on a company name to see how many shares you can buy, then use the calculator to purchase the shares. You can sell shares in the same way using Sell Shares. To check the market index, drop down the Info menu and select Market Index, then click on which stock symbol at the bottom of the screen you want to check.

When you've finished trading for the week, click on Finish Trading on the Activity menu. A graph will show whether each stock price went up or down, and you'll see the current value of your portfolio. A pie chart shows how close you are to your goal of a million dollars. You can refer back to this screen at any point during the trading week by clicking on Present Status under the Info menu.

PLAYING THE MARKET

At the end of each quarter (that is, at weeks 13, 26, 39 and 52), you will receive interest on the amount of cash you have. You may also receive dividends on some of your stock (dividends are a stock's earnings over the latest quarter, and may be awarded as cash or as additional shares of stock). At the end of each year, the high scores over \$50,000 are saved to disk. To view these scores, click on Top Ten Tycoons under the Info menu.

Wall Street will inform you of occasional market flurries. For example, the value of a stock can go sky-high very quickly as a result of a merger, takeover or high profits. In other cases a high-priced stock will be split to make it generally accessible: if a share was selling for \$300, it may be split into 10. It

will now sell for \$30, and if you owned one share, you will now own 10 shares. Industry insiders may try to sway your buying decisions with Hot Tips; remember that these tantalizing pieces of advice can be wrong as often as they're right!

MARKET SAVVY

What influences a stock's price? The laws of supply and demand are the dominant forces, although the market changes according to such influences as business activity, stock performance, market conditions and investor optimism. To make a profit on the stock market, you have to buy your shares at as low a price as possible, and sell the shares later for a higher price.

"Buy low, sell high" works as a general rule, but at times you may want to sell a stock at a loss; if you feel that the stock is going to go lower, you will want to get out before you lose even more money. At other times, you may have your money tied up in a losing stock and be unable to act on a

When
it comes to market
trading, an educated guess
is just that—a
guess.

stock you feel is going to win. By selling one stock at a loss, you may be able to make a large profit on another.

If you're having trouble deciding which stocks to buy or sell, Wall Street offers you a choice of three different stock-brokers: Wildeyed Willy, Cautious Charlie and Nervous Norman. Each consultation costs \$50. For this fee, the broker will examine and analyze all the reports and recommend a course of action on a particular stock. Click on the Consult A Broker option of the Activity menu. Click on the door of the broker you wish to consult, and the broker's advice will flash onto the screen.

If you trust your own judgment better than Wildeyed Willy's or Nervous Norman's, study the Market Index to pick the winners (and to avoid the losers). The Market Index

continued on page 36

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NEWS IN THE SUMMER ISSUE OF START...

New products!

Is there a 68030 in your future? How about a CD-ROM drive or a flatbed scanner? We'll have news from Germany's Hannover Fair and Silicon Valley's West Coast Computer Faire on the latest hardware and software for the ST.

WordPerfect!

A furor erupts when pirated copies appear on three bulletin board systems! Will WordPerfect pull out of the ST market? We'll bring you up to date on the piracy problem and the newest version of WordPerfect for the ST.

Lawsuit!

Atari Corp. sues chipmaker Micron Technology as memory supplies dry up. Can Atari keep the computers coming while many American computer makers have trouble getting chips? START brings you the full story.

**Look for the Summer Issue
of START on sale at
your newsstand in June!**

Play The Market . . .

presents a picture of each stock's performance over the course of the game. By examining each stock's index, you have a clear view of how well each company is performing. But remember that no matter how much you analyze the stock performances, luck can play an important role in your success or failure in the stock market.

THE WHIZ KID OF WALL STREET

Of course you want to make a name for yourself as the great whiz kid of Wall Street. Keep in mind that each stock performs in a unique manner—some will keep going up or down, some won't change too much and others will go through a variety of cycles.

You don't have to buy and sell constantly; sometimes the fastest way to make money on Wall Street is to hold onto the same stock for several weeks. On the other hand, you can lose a bundle by not dropping a lousy stock at the right time.

It would have been very easy to write a stock market program in which all the stocks behaved in a predictable manner. But it wouldn't have been very realistic. The real stock market isn't like that: each stock performs differently because a wholly different set of factors influences it. You can make educated guesses about what's going to happen, based on past experience and the company's track record, but the bottom line is: when it comes to market trading, an educated guess is just that—a guess.

After you've played Wall Street a few times you may feel you're ready to take on the real market. Just pack up your ST and bring it to the trading floor—and if you make your fortune on Wall Street, remember where you heard about it first!

Tony Lovell would like to express his thanks to Ken Shelson for his assistance on Wall Street.

If you'd like to see more articles like this, circle 204 on the Reader Service Card.

Tony Lovell is a professional fundraiser in Toronto. In his spare time he writes computer programs and film scripts.

If you enjoy Wall Street, you'll want to know that author Tony Lovell has created an enhanced version called Wall Street Wizard. Wall Street Wizard has all the fun and features of the START version plus margin trading, company financial reports and three levels of play.

For ordering information, contact Tony Lovell, Lovell Marketing, 699 Eglinton Ave. West, Suite 207, Toronto, Ontario M5N 1C6, Canada.

The reviews are in . . .

"A Best Buy' I'm impressed"

David H. Ahl, Atari Explorer, Nov-Dec 1987

"If you've got an Atari, you probably need this program."

Jerry Pournell, Byte Magazine, October 1987

"pc-ditto is a winner."

Charlie Young, ST World, July 1987

"This is the product we have been looking for."

Donna Wesolowski, ST Informer, August 1987

"This truly incredible software emulator really works."

Mike Gibbons, Current Notes, September 1987

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EasyCAD	DAC Easy Accounting	BPI Accounting	Turbo Pascal
GW Basic	Managing Your Money	Silvia Porter's	pfs:Professional File

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- o supports optional 5.25-inch 40-track drives

System requirements:

- o IBM PC-DOS or Compaq MS-DOS version 3.2 or above recommended
- o optional 5.25-inch drive is required to use 5.25-inch disks
- o 3.5-inch 720K DOS disks require a double-sided drive (Atari SF314 or equivalent)

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GETTING DOWN TO BUSINESS

USING THE ST IN AN IBM WORLD

by GISELLE BISSON

The business world has finally begun embracing the Atari ST for highly specialized tasks—from designing orthopedic shoe inserts to running a dedicated restaurant menu system. But it seems only the most adventurous users are buying Atari computers for traditional office tasks such as database management, word processing and accounting—typically, tasks dominated by IBM or, to a lesser extent, Apple.

However, with its Macintosh-like graphic operating system and color graphic abilities, the ST may actually be overqualified for the job. STs can do things that the MS-DOS establishment can only dream of, and that the Mac community *can* do—but at great cost. And with IBM and Macintosh emulators such as PC-Ditto and the Magic Sac, you can own an ST and have the best of both worlds.

Law Offices

Charles Dorsett is the maverick among the attorneys in the posh suite of law

If you're a personal computer trying to make it in business and your initials aren't IBM, then you've got a tough haul. But even though corporate America has embraced Big Blue, the ST hasn't been entirely left out. STs are being used successfully in more and more businesses, and you can find them standing tall in the three-piece suit arena.

offices he shares in downtown San Francisco—all because of the 1040 ST propped up with a law book on his desk. With the IB 5¼-inch IBM disk drive and PC-Ditto, his Atari documents are compatible with the office's NCR computer system and laser printer. Dorsett enjoys the luxury of using 1st Word or WordPerfect instead of the cumbersome IBM WordStar word processor. He uses the Thunder! real-time spell checker as he prepares legal documents, modifying the margins to fit legal pleading paper. After saving files in ASCII format, his secretary inserts two simple WordStar commands at the top of the file and prints them out.

PC-Ditto was the best solution to the problem of getting two computers to share the same printer. "You can use a

multiplexer switch, but it's tricky, and you can crash the system," Dorsett explains. "Transferring files between IBM and ST computers with two modems is the other possibility, but both computers would be tied up for five minutes every time I sent a file. And in this office, networking wouldn't work," he adds. "We have a system that works now."

Dorsett watches other law offices struggle with their expensive, outdated computer systems. "I'd guess 98% of attorneys probably have computers already and are looking to upgrade their existing systems, but file compatibility problems discourage them," he says. "The most important thing in a law office is time—not money," Dorsett says. "It's too bad attorneys assume they will



Mary Khomberg Pelouquin

Charles Dorsett, San Francisco lawyer, and his ST system.

have fewer problems with a \$1,000 computer than a \$500 ST.”

Retail Inventory

At PC Options, they use what they sell. The San Francisco Atari computer dealer uses Sales Pro, a program from Hi-Tech Advisors to do inventory and stock. “It does everything but wash the sink—customer, vendor, inventory,” says owner Chuck Thorpe. “I know other

retailers who use Multi-Manager, but I found the security on the system was excessive for a store my size. Everything is at my fingertips. I interact with that machine all day long, and I’m surprised how dependent I’ve gotten,” he says. “When my hard disk crashed once, I crashed.”

The speed of a hard disk is essential. “You can’t afford to have customers tapping their feet,” he adds. After orders

are tallied, a fast Epson EX 800 printer spits out a receipt. An inexpensive modem allows him to send information from Sales Pro to another ST dedicated to accounting with Financial Plus, a double-entry, full-featured accounting system that was originally developed for the IBM.

“The ST is as much of a business machine as the IBM,” Thorpe says. “It’s worth buying just for the time you save. ▶

DOWN TO BUSINESS...

When I use EZ-Calc, I can do things in seconds by grabbing cells with the mouse."

Engineering

"Atari is making a big mistake by not advertising in engineering magazines," says John Draper, an engineer with Contel, a Washington, D.C. telecommunications contractor.

Draper and his associate Russ Falzone use the 520 and 1040 ST to design satellite communication systems. With CAD-3D 2.0, they simulate equipment rack elevations. "Russ brought his 520 in one day and I was impressed with the graphics—he rotated a rack so you could see front and back. It was just gorgeous," Draper says. Draper still uses an Atari 8-bit "souped up to 256K" for schematics, drawings and writing equipment documentation, but plans to buy an ST soon, too. "The ST's a damn nice piece of equipment," he says. "For

word processing you can't beat it. I think it's a bigger value than Apple or IBM, and with emulators you can run their programs anyway."

Accounting

"Maybe I'm the first," Bill Beckerman wonders sometimes. "When I go to user group meetings and they ask who does accounting, I'm the only one who raises my hand. I'd certainly like to encourage people to use it," he says as he writes checks with his ST computer.

Beckerman runs his Oakland, California accounting business with a color 520 ST, double-sided drive and Supra 20-megabyte hard disk. Beckerman keeps 12 sets of books on Financial Plus, "a wonderful piece of software" from Equal Plus of Austin, Texas.

"Though it takes a little expertise to set up, it's a simple program to operate," he says. "I'd recommend it for anyone who wants to do books for a small busi-

ness." Once he's prepared a financial statement, Beckerman uses ST Writer to add details and prints it on his Citizen MMP 15, a printer with a wide carriage and "very acceptable" near-letter-quality mode.

His 64K Microstuffer printer buffer is an accounting essential. "It's large, but I fill it fast," he notes. "For one client, I have to print ten financial statements for ten properties at once. I can print each statement three times, back them all up and finish doing all the adjustments on ST Writer while the printer runs." The only other piece of hardware in his office is a photocopier. "And the printer is so fast, I hardly use the copier anymore."

Desktop Publishing & Mail Order Systems

Phil Wright owns the only computer dealership in Fort St. John, British Columbia, population 14,000. On the side, he creates Atari-generated advertisements and flyers for the local suntan salon, dress shop and camera shop. And, if things work out for him, most of Fort St. John's restaurants will soon have STs, too.

Wright sells and customizes dedicated restaurant management systems using the touch screen from View Touch and the Mega 2 computer. (See the related story in the sidebar.) With NEOchrome, he designs colorful menus. Customers select food items by touching the screen, and the computer tallies up the bill.

But Wright mainly uses the ST to create advertisements and flyers with Easy Draw and the Star Micronics 24-pin printer. "By combining digitized graphics with Easy Draw we can do stuff that looks better than what you can do on a Mac," Wright states. Easy Draw utilizes GDOS to get the maximum resolution possible from the Star printer. "It looks almost as good as the Apple laser printer, and you can't produce that kind of graphic output on an IBM," he says. ▶



Music Power

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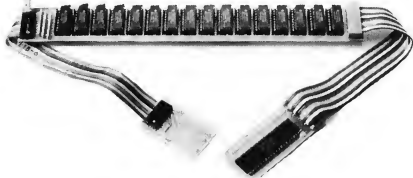
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Z-Time

Battery Backed-up
Clock/Calendar Chip



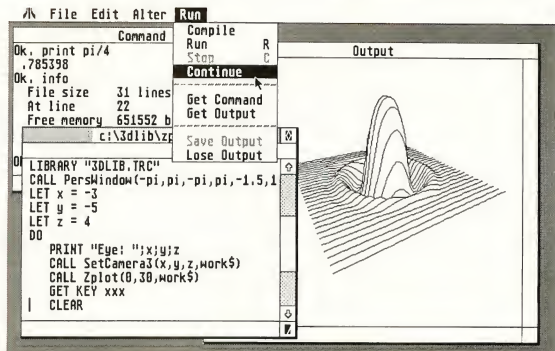
Z-Time internal battery backed-up clock calendar on a chip. Installs quickly under a ROM BIOS chip on the motherboard of your ST. No more manual entry of the time and date. **Z-Time** will do it for you. Files on your disk will now be stamped with the correct time and date every time you boot up. **Z-Time** features: two 10 year lithium batteries, digital clock accessory, 1 min per year accuracy, and a 3 year warranty.

520 ST version: \$49.95
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CIRCLE 062 ON READER SERVICE CARD

LANGUAGE

- multi-line, user-defined functions
- local, global variables
- SELECT CASE, DO/LOOP
- recursion, modules
- GKS graphics, 2D transforms
- access to GEM, AES features

COMPILER

- compiles to fast, compact b-code
- parameter type-checking
- optional LET statement
- optional declared variable names
- Runtime package creates stand-alone file

LIMITS

- strings, program lines to 1 megabyte each
- floating-point 5e-309 to 1.8e+308
- 14-digit floating-point accuracy
- unlimited program size, data space
- variable names up to 31 characters

EDITOR

- full-screen, mouse-based editor
- global search, replace
- block copy, move, delete
- menu, function key, command line interfaces
- keyboard macros, script files

DEBUGGING

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- immediate mode execution
- visual trace, single-step execution
- cross-reference utility

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WORD PERFECT

IS IT PERFECT YET?

By Ian Chadwick

Using WordPerfect 4.1 (WP) for the ST is like driving a Ferrari through rush-hour traffic. The potential for phenomenal performance is there, but unfortunately, WP seems to spend most of its time stalled at the side of the road, rather than leading the pack.

WP brings to the ST features and functionality light years beyond its competitors. The program has so many features that you may not get to many of them until long after you've brought it home. Along with this wealth, however, comes a proportionate level of effort required to master WP. The learning curve isn't steep, but it is long.

WORDPERFECT FEATURES

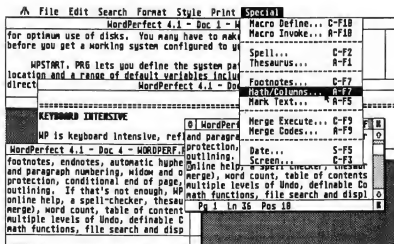
WordPerfect's list of features is impressive. In up to four simultaneous document windows, it offers complete line and page format control, including page centering, binding width print allowance, newspaper and parallel columns, headers, footers, footnotes, endnotes, automatic hyphenation, Roman or Arabic page and paragraph numbering, widow and orphan control, block protection, conditional end of page, redline, strikeouts and outlining. If that's not enough, WP adds comprehensive macros, online help, a spell-checker, thesaurus, flexible merge (and mail merge), word count, table of contents and index generation, multiple levels of Undo, definable Control and Alternate keys, math functions, file search and display, automatic timed backups and search and replace on any character, including carriage returns. Virtually everything is user definable, from the cursor to the underline style. The power in this program is staggering, even intimidating.

With all this power, the question is: are you ready for WordPerfect? More important, given the current state of its development, is WordPerfect ready for you? Perhaps the rest of this article will help you decide.

KEYBOARD INTENSIVE

WP is keyboard intensive, reflecting its non-GEM roots. Each function key pressed alone or with the Shift, Control or Alt keys performs a different task. You can select every WP feature from the keyboard, although the commands are often confusing and rarely mnemonic. Some commands are mouse-selectable in the pull-down menus while others pop up in dialog boxes. Many selections offer still more choices and subsequent dialog boxes. It may take half-a-dozen keystrokes or mouse clicks to accomplish a single task.

WordPerfect Corporation has done its best to rescue the user drowning in choices. The on-line help is excellent and

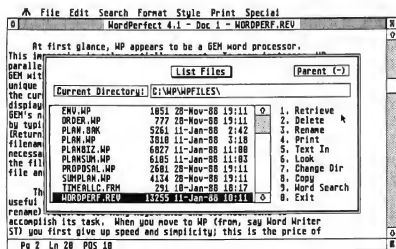


WordPerfect with four open text windows.

the program comes with a keyboard template, key stickers, a quick reference card and a 600-page manual. If you're a new WP user, be sure to keep all the documentation handy. You'll need it.

At first glance, WP appears to be a GEM-based word

processor. This impression is only partially correct. In many instances, WP parallels the IBM PC version and many of its routines circumvent GEM with mixed success. For example, pressing the F5 key brings up a unique List Files menu with a variety of disk functions. Then the current directory is read, sorted alphabetically and displayed complete with names, sizes and dates—far superior to GEM's name-only output. You can then choose a file and function by typing in the filename or by using the mouse or the cursor and Return keys. You can't simply do a GEM double-click on a filename to load it. It's an annoyance at times, but it was necessary to allow mul-



The List Files Menu.

multiple file selection. If you already know the filename and path, you can simply press the Shift and the F10 key to load a file and avoid this menu completely.

The List Files Menu is typical of WP: a good utility with useful options (including text in, disk file search, delete and rename) that requires too many keystrokes and too much time to accomplish its task. When you move to WP (from, say, Word Writer ST) you first give up speed and simplicity; this is the price of WP's power.

WHAT YOU SEE . . .

WP is partially WYSIWYG: boldface, underlining and italics are displayed and text appears on the screen where it will on paper. But headers, footers and foot- and endnotes are hidden until print time, when they appear where you hope they shouldn't. You can edit them in their own windows, but not preview them in the document—to me, a serious failing.

Footnote and endnote references are identified in the text by a number the same size and color of the body of the text. There's no way to distinguish these numbers from other text (italics, bold and underline don't affect them). At print time, the numbers are superscripted (if that's what you chose), but not in the screen display. Also, long footnotes cause unpredictable and unwanted page breaks or can even cause the computer to crash.

Because of WP's flexibility, embedded control codes can

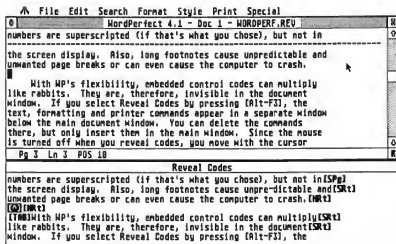
multiply like rabbits. They are, therefore, invisible in the document window. If you select Reveal Codes by pressing the Alt and F3 keys, the text, formatting and printer commands appear in a separate window below the main document window. You can delete the commands there, but you can only insert them in the main window. Since the mouse is turned off when you reveal codes, you move with the cursor keys. The code window scrolls annoyingly with every movement and often codes scroll up out of sight; you cannot resize the code window.

PORTING FILES AND SETTING MACROS

You can port text files—not macros—directly from IBM WP to your ST, but they must be in the WP 4.1 format. ST WP has serious trouble digesting files created in the 4.2 version.

Macros are a major WP feature you can use to customize your own copy. Essentially, a macro is a collection of keystrokes—either commands or text. After you name a macro, you type and press keys in the order you wish everything performed and save it to disk. When you invoke that macro, keystrokes are repeated exactly as entered—provided they are stored in the current directory.

Unfortunately, WP macros on the ST don't always work properly. For example, I created a macro to open a window, sized it to the top half of the screen, loaded a file from disk, opened a second window, sized it to the bottom half, loaded a second file and inserted some text. In IBM version 4.2 this is simple stuff. In ST 4.1, window number one opened, sized itself correctly and loaded the file. Number two opened, but remained at full size. It refused to load the next file and forgo the text.



The Reveal Codes window, showing embedded commands.

Sometimes a redefined macro won't respond—although saved, only the original definition works. Other times, working macros seem to get forgotten and stop working after performing flawlessly earlier in a document.

continued on page 94

SHOW IT

BUSINESS GRAPHICS— PRESENTATIONS, CHARTS AND GRAPHS

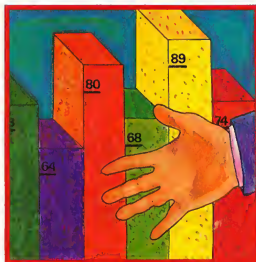
by **BRIAN LEE and GORDON WONG**

Nowhere is the adage “A picture is worth a thousand words” more apt than when you’re doing a business presentation. Bar charts for the boss, pie charts for the managers and slides for your trainees all fall into the category of business graphics. Let Brian Lee and Gordon Wong tell you about ST software that’ll give you a good showing at work.

Like beauty, business graphics are in the eye of the beholder. Corporate managers today have all the tools of the artist, graphic designer and typesetter at their fingertips in the form of drawing, computer-aided design and desktop publishing programs. For business graphics, though, these tools must take a back seat to charting and presentation software. Charting software generates graphs or charts from the information in spreadsheets or databases, while presentation software automates or replaces the traditional slideshow.

Today, personal computers and business graphic software have made charting easy, fast and accurate. To generate a chart, just enter a few numbers and press a key, and a graph appears on screen or printer. Good charting software supports a wide variety of printers and plotters, and imports numeric information from any spreadsheet or database. It’s nice if it includes common database and statistical functions such as field searching, sorting, calculating averages, or record counting.

Beyond traditional pie and bar charts, some charting software can render line, scatter, stacked, clustered, high/low (such as those in stock chart-



Jim Warner

ing), exploded pie, horizontal and vertical graphs, in 2-D and 3-D. And of course, good charting programs allow you to label charts easily.

A-Chart

A-Chart can generate area, horizontal and vertical bar, line, 3D bar, stacked bar and pie charts. The program takes full advantage of the mouse and GEM to help you create your graph. It’s easy to switch to new data, change the graph type or explode a pie slice.



ST paint programs enable you to produce colorful graphs, for either conventional slideshows or computer-generated ones.

A-Chart can show up to four different graphs at a time on the screen, and supports up to 20 sets of data per graph (or up to 80 data sets for all the graphs). It can handle up to 30,000 data points on a 520 ST or 100,000 data points on a

1040 ST. You can type in data or import .DIF files from most databases and spreadsheets. You can also save the finished charts as DEGAS-format im-



A-Chart.

ages, although A-Chart has tools for making graph labels and legends, choosing text font style and size, drawing arrows and creating different line thicknesses and fill patterns. You can place text and arrows anywhere on the screen, and can save and load separately legends, labels, arrows, line and fill patterns.

A-Chart offers statistical functions (including mean, standard deviation, variance, skewness, kurtosis, chi-square and coefficient of correlation), and many mathematical, trigonometric, conditional, logarithmic, and Boolean functions (eg, IF/THEN/ELSE, SIN, ACOS, and LOG).

However, though A-Chart gives you basic statistics, it calculates and displays these values without any graphical representation. A-Chart supports only Epson-compatible printers, but you can use printers supported by DEGAS Elite if you save a graph as a DEGAS image.

A-Chart's user interface, easy data manipulation and internal statistical functions are its strongest suits. Its manual could be improved, with more expansive descriptions of A-Chart's statistical functions and an index. A-Chart runs in medium resolution and is not copy protected.

Chartpak

Chartpak is another GEM-based charting program. It offers 11 chart types: vertical and horizontal line graphs, ver-

tical and horizontal area graphs, vertical and horizontal 2-D or 3-D bar graphs, X-Y or Y-X line graphs, or pie charts (with exploded slices). Chartpak can also create stacked charts for most of these types. Unlike A-Chart, Chartpak's pie charts are limited to 20 or fewer items.

Chartpak works in any ST resolution, and can show up to four graphs at once. It can handle up to ten data sets or a maximum of 1,000 data points in all data sets (each data set has a maximum of 200 points). Since Chartpak's data sets are simple ASCII files, they're easy to generate. Chartpak can also import data from Abacus's PowerLedger ST and DataRetrieve programs.

Chartpak can save chart information, such as chart type, labels or title in a separate file, then use up to four of these chart spec files to display a data set in different ways or display different data sets.

Chartpak can also load or save images in .JFF "clip art" format, and use GEM fonts (although not all GEM fonts work with all printers). Lines and fill patterns are preset within the program. Text size, font, style (bold, italic, outline, etc.) and alignment are adjustable using dialog boxes. Chartpak can also save the whole chart in DEGAS format, and can load DEGAS pictures to use as backgrounds for charts.

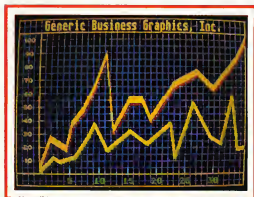
Chartpak supports only basic math functions and a few statistical ones such as average and standard deviation.

However, the statistical functions are very powerful: Chartpak can compute a least squares regression line and then graphically show the average and standard deviation lines, and use exponential smoothing to compute smoothed and trend values for a data set. The manual supplies extensive examples, usage and explanations on these powerful statistical features.

Chartpak supports a number of printers and plotters, providing detailed

information on setting up a plotter command file (although most plotters cannot show clip art, background DEGAS pictures, certain GEM fonts or shadowed pie charts).

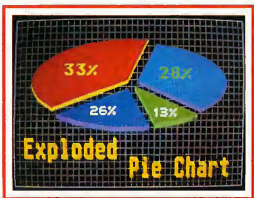
One of Chartpak's major limitations is its maximum of 200 data points per data set, especially the 20 data points for its piechart. A small business spreadsheet import would easily surpass those maximums. Chartpak's data



A simple line graph.

entry and chart setup process is time-consuming. The manual tends to delve deeply into details without getting to the point, and its figures need better labeling. And although it details how to read files from Abacus's PowerLedger ST, it doesn't mention DataRetrieve at all.

Overall, Chartpak will meet most business charting demands. Its printer



A pie chart.

and plotter support is quite extensive, and the advanced statistical functions and ability to alter the aspect ratio of its charts are very attractive, although more trigonometric, logarithmic and Boolean operators, and additional statistical ones ▶

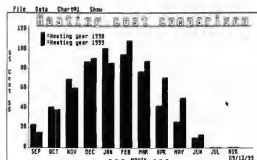
SHOW IT...

such as correlation coefficient or chi-square testing would be nice. Chartpak is not copy protected.

Charting in Spreadsheet and Database Programs

Two ST spreadsheets can do charts. If you use one of these spreadsheets, their graphing capabilities can save you considerable time.

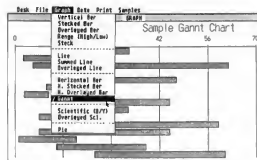
Timeworks' SwiftCalc includes the SuperGraphics charting program. SuperGraphics can generate vertical and



ChartPak.

horizontal bar graphs in stacked and overlaid formats, line charts, pie charts, scatter plots, and even Gantt or HiLo charts. SuperGraphics can import DIF format files as well. (Editor's note: For a complete review of SwiftCalc ST and the SuperGraphics program, see "Timeworks' Powerful Business Trio" in the Summer 1987 issue of START.)

VIP Professional and Masterplan from VIP Technologies include rudimentary



SwiftCalc's SuperGraphics output.

graphing functions and are best suited to quick overviews of your spreadsheet data, with only limited control over the layout and scaling of your charts. In

view of this, if you need greater flexibility or higher quality output, the Timeworks SuperGraphics product is a better bet. (Editor's note: Both VIP Professional and Masterplan are reviewed in "Figure It," elsewhere in this issue.)

Presentation Software

Presentation software lets you create video presentations or slide shows. Good presentations require a variety of free-form drawing tools such as image crop, zoom, scaling, geometric shape drawing and font text sizing. Since most managers are not artists, it's useful to have libraries of art such as business symbols or geographical maps, which you can cut and paste as you like.

Fortunately, many ST paint programs can accomplish these things. And special animated screen effects such as dissolves, wipes, curtains and splits can help to spruce up the visual impact of the many images in any presentation.

Colorful Charts

For creating images, your best bet are ST paint programs such as NEOchrome or DEGAS Elite. These can easily spruce up colorful pie and bar charts, with multiple fonts for labelling images. If your spreadsheet or charting program can save its charts in a compatible format, it's easy to use these paint programs. And some paint programs, such as Animator ST and Cyber Paint, support animation capabilities. That means you can even use animation sequences in video presentations.

The Informer

One unique presentation package that's not a paint program is The Informer, a free-form database manager that can import NEOchrome or DEGAS Elite pictures. You can insert pictures into graphic fields or use them as static background scenery for database records. For example, a personnel file might include a digitized picture of the employee as well as the employee's name, address and phone.

The Informer can use full-sized pictures for backgrounds, and either half- or quarter-size pictures in graphic fields. However, retrieving pictures from the disk tends to be slow. The Informer does not have any graphic tools for touching up pictures except adjustable colors. It also lacks cropping tools that would make it much easier to place the quarter and half sizes.

The Informer's facility for database processes such as searching and sorting makes it very appealing for some presentations. For example, a real-estate agent could keep a database of new home information—complete with pictures of each home.



The Informer.

Conclusion

All these products will help you create business presentations, but none is a true presentation graphics program. Such a program would support a variety of paint formats and have tools solely used to generate and manipulate images.

For charts, A-Chart is best at creating simple charts that you can enhance with a paint program. For maximum flexibility in preparing graphs (or the more specialized HiLo or Gantt charts), SwiftCalc's SuperGraphics program is your best bet. The basic graphing functions in VIP Professional and Masterplan are excellent for quick viewing of data. And all ST paint and animation programs will live up your video presentations.

With a well-done chart or graph, a

picture isn't worth just a thousand words. To a business, it may be worth a thousand numbers—or a thousand dollars.

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Brian Lee is President of Forte Research and Development, a computer software and hardware development company. Gordon Wong is an optometrist and computer enthusiast.

Products Mentioned

- **A-Chart**, \$3995. Antic Software, 544 Second Str., San Francisco, CA 94107, (415) 957-0886; (800) 234-7001.

- **Animator ST**, \$7995. Aegis Development, 2115 Pico Blvd., Santa Monica, CA 90405, (213) 392-9972.
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- **Chartpak**, \$4995. Abacus, P.O. Box 7219, Grand Rapids, MI 49510, (616) 241-5510.
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- **Cyber Paint**, \$7995. Antic Software, 544 Second Street, San Francisco CA 94107, (415) 957-0886; (800) 234-7001.
- **DEGAS Elite**, \$5995. Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404, (415) 571-7171.
CIRCLE 181 ON READER SERVICE CARD
- **The Informer**, Version 1.04, \$9995. Regent Software, 7131 Owensmouth, #45A, Canoga Park, CA 91303, (818) 882-2800.
CIRCLE 182 ON READER SERVICE CARD
- **NEOchrome**, \$2995. Atari Corp., 1196 Borregas Ave., Sunnyvale, CA 94086, (408) 745-2000.
CIRCLE 183 ON READER SERVICE CARD
- **Swiftcalc ST** (contains SuperGraphics), \$7995. Timeworks, 444 Lake Cook Rd., Deerfield, IL 60015, (312) 948-9200.
CIRCLE 184 ON READER SERVICE CARD
- **VIP Professional**, \$14995; **MasterPlan**, \$8995. ISD Marketing, Inc., 2651 John St., Unit 3, Markham, Ontario, Canada L3R 2W5, (416) 479-1880.
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CONNECTION .69 SUPRA MICROSTUFFER (64K) .59 SUPRA/MPP 1150 CALL</p> <p>MONITORS</p> <p>NAP Green W/Audio .85 NAP Amber W/Audio .90 NAP Composite Color CALL</p> <p>ACCESSORIES</p> <p>Disk File (holds 100!) 5% .13 Eggy 600K Joystick .14 6' Atari Serial I/O Cable .8 U.S. DOUBLER w/ DDS .49 U.S. DOUBLER no DDS .29 "Duplexer" for 1050 Disk Drive .89</p>	<p>PRINTER SUPPLIES</p> <p>MAILING LABELS, White, 500 pk 4 PAPER, Micro Perfs 500 shts. 8</p> <p>8-BIT SOFTWARE</p> <table border="0" style="width: 100%; font-size: 0.8em;"> <tr><td>Action</td><td>46</td><td>Karateka</td><td>16</td></tr> <tr><td>Action Tool Kit</td><td>19</td><td>Kickstart</td><td>7</td></tr> <tr><td>Alternate Reality</td><td>25</td><td>Last V-8</td><td>7</td></tr> <tr><td>Azari Writer</td><td>35</td><td>Leader Board</td><td>25</td></tr> <tr><td>Auto Duel</td><td>34</td><td>Leather Goddesses</td><td>22</td></tr> <tr><td>Award Ware</td><td>12</td><td>Loderunner</td><td>23</td></tr> <tr><td>B-Graph</td><td>25</td><td>MAC/65</td><td>46</td></tr> <tr><td>Basic XE</td><td>45</td><td>MAC/65 Tool Kit</td><td>19</td></tr> <tr><td>Basic XL Tool Kit</td><td>19</td><td>Mega Font II</td><td>16</td></tr> <tr><td>Boj n' Wrestle</td><td>21</td><td>Mercenary</td><td>20</td></tr> <tr><td>Champ LodeRunner</td><td>18</td><td>Merc Data Disks</td><td>ea 12</td></tr> <tr><td>Chessmaster 2000</td><td>27</td><td>Millionaire</td><td>27</td></tr> <tr><td>F-15 Strike Eagle</td><td>15</td><td>Moon Mist</td><td>22</td></tr> <tr><td>Fight Night</td><td>20</td><td>Movie Maker</td><td>20</td></tr> <tr><td>Fight Simulator II</td><td>34</td><td>M.U.L.E.</td><td>11</td></tr> <tr><td>Scenery Disks</td><td>ea 15</td><td>Music Const. 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TM

MasterPlan™ is an inexpensive, powerful, easy to use spreadsheet written totally within Digital Research's "GEM" operating system. MasterPlan utilizes extensively the graphics and mouse capabilities of the ATARI ST personal computer. HELP is built right into the program. You will be able to create worksheets and graphs within minutes.

Atari ST™ Special Features.

- Mouse or keystroke operation.
- GEM interface with pull-down menus, icons, dialog boxes, ranging, scroll bars, column grabber, etc.
- Sparse matrix for conserving memory.
- Supports hard drives & printers supported by GEM.
- Supports color or monochrome monitors.
- Ultra-fast floating point math. Multiple windows for viewing graphs and worksheet at the same time.

Spreadsheet Features

Reads/Writes .WKS data files, so MasterPlan will work with both Lotus 1-2-3 or VIP Professional data files. Giant 8192 x 256 spreadsheet grid. Date, Financial, Logical, Mathematical, Special and Statistical Functions. Cell and range operations. Cell and range naming. Cell Pointer expansion. Automatic, manual & natural recalculation. Optional display of formulas in cells. Print formatting options include printing borders, margin control, headers & footers, automatic pagination. Separately formattable windows. Frozen titles horizontally, vertically or both. Copy or move cell or range contents. Delete or insert rows or columns. Undo editing command. Protection of all or portions of the worksheet. Change column-width globally or with mouse. Import data from other business programs.

Graph Features

Line, bar, stacked-bar, pie, and scatter graphs. "Exploded" pie graph. "UNDO" toggle graph. Displayable in color or monochrome. Up to six separate data ranges. Four different graph titles. Automatic or manual scaling. Symbols, line or data-labels for line graphs. Legends for labelling data ranges. Horizontal and/or vertical grids. Multiple graphs can be created and stored for each worksheet. Saves files compatible with DEGAS & Publishing Partner.

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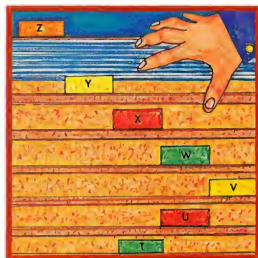
*SUGGESTED RETAIL



FILE IT

AN OVERVIEW OF ST DATABASES

by DAVID PLOTKIN



Jim Werner

A database is really just a collection of information, organized to make it easy to retrieve and process. A *database manager* is the program that lets you make use of that information.

The information in a database is usually arranged into *records*. Each record contains several pieces of related data, each in its own *field*. Don't be confused by the jargon—it's simpler than you think. For example, one of the most familiar non-computerized databases is an address book. Each page of the book has someone's name, street address, city, state, zip code and phone number. In database jargon, each page of the address book is one record. Each individual piece of information on each page—the phone number, for example—has its own field.

What makes a computerized database better than an ordinary address book is the ability to rearrange the information. Want to find all your acquaintances who live in Ohio? With an address book, you'd have to page through the entire book, checking the state where each person lives. With a computerized database, you can get the computer to do the work—automatically selecting just the people who live in

Ohio and then listing them in alphabetical order (or any order you like).

Obviously, to make the best use of your database information you need a good database manager. There are several factors to consider in choosing which program is for you. How easy is it to set up the database? How easy is it to add, delete or change a field or field title? And how easily can you print out lists and reports in the formats you need?

To Relate Or Not To Relate?

Once you get beyond simple considerations of adding information to your databases and printing reports, there are some important basic differences between database managers. The most common type of database manager is sometimes known as a *flat file* system. You can add and manipulate data and run reports, but you can't mix data from two or more files for a single report.

The other major type of database manager is a *relational* system. In this type, you can use information that's spread across several databases, as long as they're all linked together by a common field. For example, say you have one file with the name, address and ID number of each of your customers, and ▶

Information—it's the lifeblood of any business, whether it's lists of customers, inventory statistics or sales details—and keeping track of that information is what database management software is all about. START database maven Dave Plotkin looks at how an ST database manager can help your business work better—and exactly what nine of the top programs can do for you!

FILE IT...

	Field types character	numeric	logical	date	long text	File limits	max field size	fields/record	max record size
DataManager ST	Y	Y	Y	Y	N	256	memory	memory	
Base Two	Y	Y	N	Y	Y	screen	unlimited	screen	
TRIMbase	Y	Y	N	Y	Y	screen	unlimited	screen	
DataRetrieve	Y	Y	Y	Y	Y	32,000	unlimited	64,000	
The Informer	Y	Y	Y	Y	Y	256	38	9728	
Superbase Personal	Y	Y	N	Y	Y	255	1000	disk	
Zoomracks II	free form	free form	free form	free form	free form	20,000	27	519,000	
Regent Base	Y	Y	N	Y	Y	32,000	unlimited	unlimited	
dBMan	Y	Y	Y	Y	N	254	128	4000	

another file containing the ID number and the amount each customer owes you. Because both files contain the "customer ID number" field, you can write reports that get the customer's name and address from the first file and the amount owed from the second file.

Another important consideration is whether you can write applications with your database manager. Seven of the nine ST database managers here let you create databases and reports, but the amount of customizing you can do is limited. However, the other two database managers include full-blown application languages with special commands for storing and manipulating data; you can use them to write completely customized applications. You can even compile your applications so that they'll run as independent programs (in fact, some commercial programs for the ST were created in just this way!). That's tremendous power, but not without a price: the database managers with application languages tend to be the most complex and difficult to use.

Data Manager ST

Data Manager ST is a flat file database manager that offers two views of your data: one shows each record on its own screen, while the other is laid out in columns like a spreadsheet. You can add or reposition fields in either view at any time, though changing the layout in one view won't change it in the other.

Data Manager ST allows you to specify various field types including numeric, text, calculation, Yes/No, Time and Date; you can even design your own. Calculated fields can use the standard four math functions (+, -, * and /), power and root, logical functions (AND and OR), comparison (<, > and =), and IF/THEN/ELSE. You can do multiple sorts in both ascending and descending order.

Reports can be created from either individual record or spreadsheet view. You can add titles, margins and special printer codes to the report format, with subtotals and running totals, and page breaks on any numeric field. Report formats can be saved to disk. You can also use Timeworks' graphing package to create graphs from any Data Manager ST database.

Base Two

Base Two is a highly flexible flat file database manager in two programs: one for setting up a database and one for entering data. It's completely mouse-driven; after a field is created, you can click to enter or change a field title or size, or rearrange the order of fields. Base Two offers multi-line text fields with word wrap, as well as numeric, calculated and date fields. You can also change the text size, color and text attributes (thick, skewed, underline, etc.) of each field.

Base Two's flexible report writer lets you click and drag any field in the database to a position in a report layout window. Once there, you can change the field title or length for the purposes of the report, specify the sort order, select subtotals, ask for a page break on the key field, set margins and specify the number of lines each record will take up on the report. Base Two is careful not to break records across a page break. You can save up to ten reports on disk with each database.

TRIMbase

TRIMbase is a fully mouse-driven data-

record:file	record:database	max open files	File types	ASCII	DIF	DBF	Sorting	max sort fields	ascending	descending	indexing	max index fields	Searching by field	by record	max criteria
memory	memory	1	export	export	N	unlimited	Y	Y	N	0		Y	Y	1	
disk	disk	1	N	export	N	3	Y	Y	N	0		Y	N	1	
32,000	32,000	1	N	N	N	unlimited	Y	Y	N	0		N	N	0	
64,000	64,000	1	Y	N	N	25	Y	Y	Y	20		Y	Y	unlimited	
memory	memory	4	Y	Y	N	38	Y	Y	Y	38		Y	Y	4	
16 million	16 million	unlimited	Y	N	N	128	Y	Y	Y	999		Y	N	unlimited	
10,000	10,000	9	Y	N	N	1	Y	N	Y	unlimited		Y	Y	1	
disk	unlimited	unlimited	Y	N	N	3	Y	Y	Y	unlimited		Y	Y	unlimited	
2 billion	2 billion	10	Y	Y	N	7	Y	Y	Y	unlimited		Y	Y		

base manager with some relational capabilities; it uses the card-file metaphor very effectively. Setting up a database is simply a matter of entering the field names, types and lengths; you can easily adjust the field length or name. Field types include text, date, numeric, class and block (multiple lines with word wrap). There are flexible sorting, searching, and summary commands, and you may completely restructure each record (which can take a while). TRIMbase can create a new database from an old file by selecting only some fields or records, by merging two files with identical fields, by subtracting two files (where records in both files are left out), or by joining two files to create a third file that contains fields from the two files based on matching criteria.

T RIMbase's report facilities are very powerful. You can type in any text and select any field from a menu. You can generate variable-size reports, change text attributes, justify text, cut and paste portions of the report, anchor columns of the report so that they always appear in the same place, put text into a report based

on the value of a particular field and summarize the data from many records in one report, repeating certain information and totaling and averaging any field. Report definitions can be saved to disk. TRIMbase is copy-protected.

**One of
the most familiar
non-computerized
databases is an
address book.**

DataRetrieve

DataRetrieve is a menu and icon-driven flat file database manager. Fields can be designed and placed on the input forms by typing in field data and then clicking and dragging to adjust position and size. Field types include text, numeric and

date, with multiple lines and word wrap. Input fields can be customized using rectangles, circles, lines, fill patterns and styled text; data fields can use different text sizes and attributes. Numeric fields can use trig, log and square-root functions.

You can select records based on the contents of any field (using wildcards if you desire); you can also create a file or subrange of the records that match search criteria, then manipulate the subrange. Indexing is possible on any field and text can be cut, pasted or copied.

The reporting module lets you type any text on the screen and then import a field. You can easily change the position and size or specify text size and attributes for any field. Report forms can be saved to disk. DataRetrieve is copy-protected.

The Informer

The Informer allows two views of your data—an input form (it can have a custom background designed with DEGAS or NEOchrome) and a column format that looks like a spreadsheet. You can change a field's position and size at any ▶

FILE IT...

time, but changing a field view on the input form doesn't affect the column version. Field types are text, Code, Date, Currency, Yes/No and Picture (which loads and shows a picture). The Informer can handle four databases at once, and with the Code type field you can transfer information with a matching key from one database to another. Formatting options include justification and specification of templates; there's also a four-level sort function, and subranges can be created as separate databases.

Reporting is generally limited to printing columnar output (columns can be hidden so they don't print) or doing a screen dump of the input form. You can also customize your report, specifying lines, spaces and data items.

Unfortunately, The Informer has several bugs. Once data has been entered into a field, nothing will change the data until you restart the record. Also, when a small box graphic is removed from the screen, pieces of it remain behind, making a mess of the screen.

Superbase Personal

Superbase Personal offers you three different ways of examining your data: data entry, spreadsheet, or a view in which you can both enter data and modify field locations. Using sophisticated record filtering you can view just selected records or fields.

The controls for moving through a database mimic those on a VCR. Field types include text, numeric, date, external and calculated. You can specify numeric and date format from dialog boxes, and can make a field required or validated. An external field lets you view a picture or ASCII text file. You can specify formulas and filters from well-designed dialog boxes. The Update function can perform actions on the fields of a record based on conditions you set—including what the values of

fields in records of other databases are. The flexible report generator lets you look at only certain records or fields, set headers, position fields, include fields from other databases, sort on multiple keys in any order, add printed headings, subtotal on the report and specified groups of records, and calculate and sum fields. You must link two databases to use data from both of them in your report.

Zoomracks II

Zoomracks II is a database manager based on the card-file metaphor. You can see multiple cards in a rack and

**With a
computerized
database you can
rearrange your
information.**

zoom in on any card, which can contain up to 250 lines of 80 characters. Fields are of variable length, which removes some of the normal database concerns. Zoomracks II uses the mouse, but not drop-down menus; a bewildering number of commands are available from IBM-style menus and submenus (not drop-downs), as well as from key combinations. GEM is not used and the large number of commands can be quite confusing. The card you are currently viewing can be edited at any time, and a new card added. Multiple racks of cards can also be viewed. Basic math features allow for totaling through fields on a card or on multiple cards.

You can set up custom forms

specifying what fields of a card you want printed. A whole series of commands can be typed in to customize the look of the card.

Regent Base

Regent Base is a full-blown relational database manager complete with an application language. You can define input forms by dragging text, buttons and editable fields into position on the screen. You can specify the attributes, color and point size of the text and can redefine the forms later.

Once a form is created, you must use the application language to create a program for manipulating the database. Programs can add and delete records, modify fields, filter unwanted records, index records, create new databases, produce customized reports, and even read the status of editable fields and respond to mouse-clicks. Utilities are included for sorting records and creating a new database by specifying the fields by name and type (text, numeric and date).

Regent Base is a very powerful package, but requires that the user program a custom application before using it. To compile a stand-alone application to sell, you must send it to Regent Software and purchase a license. Regent Base is also hampered by a poorly organized and overly technical manual. A better manual, *The Regent Base Guidebook*, is available from Regent for an extra \$24.95.

dBMan

dBMan is a relational database manager with an application language based on dBase III, the widely used IBM PC database manager. It comes with several utilities that make it easier to create files and report forms. A built-in text editor lets you create and edit application programs, and a program can call any other program for a structured and easily read listing.

dBMan does not use GEM at all; you must enter commands at the prompt. The application language can handle up to ten databases at once, and files can be linked—you can even link one file to many others (dBBase III only allows a file to be linked to one other file). dBMan also supports multiple indexes, simple screen graphics and HMenu (which puts a horizontal menu on the screen and lets you use the arrow keys to highlight your choice).

dBMan also includes "Assistant," a full-screen utility that will prompt you through common tasks such as creating a database, defining fields and printing reports. Many people only use "Assistant," though more complex dBMan applications must be programmed. Programmed applications can also be compiled along with the run-time package for distribution. ■

If you'd like to see more articles like this one, circle 250 on the Reader Service Card.

David Plotkin is a Human Resources Analyst for Chevron, Corp., and a regular contributor to START and Antic.

PRODUCTS MENTIONED

- **Data Manager ST**, \$79.95. Time-works, Inc., 444 Lake Cook Rd., Deerfield, IL 60015, (312) 948-9200. CIRCLE 251 ON READER SERVICE CARD
- **BaseTwo**, \$59.95. The Catalog, Antic Software, 544 Second St., San Francisco, CA 94107, (800) 234-7001. CIRCLE 252 ON READER SERVICE CARD
- **TRIMbase**, \$99.95. MichiTron, 576 South Telegraph Rd., Pontiac, MI 48053, (313) 334-8729. CIRCLE 253 ON READER SERVICE CARD
- **DataRetrieve**, \$44.95. Abacus Software, P.O. Box 7219, Grand Rapids, MI 49510, (616) 698-0330. CIRCLE 254 ON READER SERVICE CARD

- **The Informer**, \$99.95; Trial Pack, \$19.95. Regent Software, 7131 Owensmouth Ave., Suite 45A, Canoga Park, CA 91303, (818) 882-2800. CIRCLE 255 ON READER SERVICE CARD
- **Superbase Personal**, \$149.95. Progressive Peripherals, 464 Kalamath, Denver, CO 80204, (303) 825-4144. CIRCLE 256 ON READER SERVICE CARD
- **Zoomracks II**, \$149.95. Quickview Systems, 146 Main St., Los Altos, CA 94022, (415) 965-0327. CIRCLE 257 ON READER SERVICE CARD
- **Regent Base**, \$125.00; Regent Base Guidebook, \$24.95. Regent Software, 7131 Owensmouth Ave., Suite 45A, Canoga Park, CA 91303, (818) 882-2800. CIRCLE 258 ON READER SERVICE CARD
- **dBMan**, \$249.95. VersaSoft, 4340 Almaden Expressway, Suite 250 San Jose, CA 95118, (408) 723-9044. CIRCLE 259 ON READER SERVICE CARD

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Jim Warner

FIGURE IT

AN OVERVIEW OF ST SPREADSHEETS

by JIM PIERSON-PERRY

Whether you manage a Fortune 500 company or a corner grocery store, you need to keep a tight rein on your money. If you do the latter, then an Atari ST and a spreadsheet program may be all you need—but which one? Here, let Jim Pierson-Perry show you the best programs to keep track of your money—be it coming or going.

Spreadsheets have been one of the major reasons for the acceptance of microcomputers in the business market. Word processing was useful, although a secretary could fulfill that role. Data analysis and financial decision making, however, required a lot of time and computational resources that were not always available. Spreadsheets suddenly put this power into an affordable desktop computer tool. Applications as varied as analyzing sales forecasts to comparing mortgage options could be done speedily by all levels of users—from business managers to home owners.

Spreadsheet Basics

In simple terms, a spreadsheet is a piece of electronic paper, a pencil and a calculator. It is laid out as a grid of rows and columns. Each cell of the grid can contain a number, text or formula for computing a value based on other cells. Changing a cell's value causes all cells dependent on it to be changed. This allows rapid evaluation of "what if" questions—leading to faster and more comprehensive decision making.

Over the past several years, a cottage industry has grown up around spreadsheets for educational support and

predefined models (templates). Most of these are for Lotus 1-2-3, the standard in the business world. Programs compatible with its file format (.WKS) can draw upon these third-party resources, as well as Lotus 1-2-3 forums on various bulletin boards.

The strength of a spreadsheet is in the different kinds of models that you can develop, which depend on the number and type of built-in functions and ways to address cell data. Other features that enhance a spreadsheet's utility are graphics, database access, user definable functions, printed reports and the ability to import and export data files between other application programs.

Another feature to consider is how well the program can detect errors. All report mathematical errors, such as division by zero, but logical errors in setting up a model are another matter. Two of the most common such problems are *circular* and *forward referencing*. A circular reference is when a cell is defined by a formula containing itself (e.g. $A10=10*A10$) and the spreadsheet usually cannot resolve the problem. A forward reference is when a cell value depends on other cells that lie ahead of it in the calculation sequence. The "natural" method of recalculation was de-

vised to take care of this problem. (With this method, if you're moving down in a column and come to a reference that's out of sequence, the spreadsheet jumps to that cell, evaluates it, then jumps back to where you left off.)

Spreadsheets for the ST range from low-cost basic feature programs to full-blown integrated systems for power users.

Below are brief reviews of five spreadsheets, highlighting their major strengths and weaknesses, and a chart for side-by-side comparisons of their features.

VIP Professional

VIP Professional is a full-fledged clone of Lotus 1-2-3 with a GEM shell. It reproduces all of Lotus's features including the ability to read and write .WKS files. This gives you instant access to hundreds of existing models as well as connectivity with office PCs using Lotus 1-2-3, since the ST can directly read or write IBM 3½-inch data files.

However, there are two drawbacks—the program takes up a lot of memory (ideally, you need a megabyte), and its GEM shell is incomplete. You select commands by going through several levels of nested menus. You can select most with either the mouse or keyboard, but mixing is not allowed during a selection sequence. There are also several commands you can access through only the keyboard and a similar set only for the mouse.

The grid design makes good use of the mouse for selecting cells and ranges. Scrolling is slow but acceptable, with a variety of ways to jump more quickly about the grid. An express icon is provided for one-step moves to the grid extremes within a range or to a neighboring range. VIP uses the natural method as its default for recalculation and it flags circular references. The Undo button is supported along with a good on-line Help dialogue, and you can use relative, absolute and mixed cell

addressing freely, making model building a snap.

VIP provides an extensive set of cell formatting commands which can be applied globally, to a cell range or to a single cell. You can set individual column widths by dragging them with the mouse, and can split the grid window into two independent GEM windows.

VIP has a full repertoire of functions from math and finance to date manipulation. Anything you need that doesn't come with the package can be added easily through the powerful macro editor which lets you define your own function subroutines. It's possible to call additional macros within a macro or to create autorun macros that execute when the program is loaded. One warning: the statistical functions for computing standard deviation and variance give biased values which could be misleading.

Finally, for those who want true IBM compatibility, a text-only version (no GEM) of VIP is available. (Editor's note: For an in-depth review of VIP Professional, see the Fall, 1987 issue of START.)

Masterplan

Masterplan is a stripped-down version of VIP Professional, although it may actually be the more useful program for many users. The GEM interface is significantly better and the maximum spreadsheet size has been doubled for 520 ST owners.

The modules taken out were most of the database routines, X-Y graphs and macros. The basic design, editing and calculational features were preserved. This also includes, unfortunately, the problem with the standard deviation and variance functions as noted above. Loss of the X-Y graph option hurts the program for scientific data analysis but does not affect its usefulness for business purposes.

Files created with Masterplan are fully upwardly compatible with both Lotus 1-2-3 and VIP Professional. Con-

versely, Masterplan will accept any .WKS file, although it will ignore macros. Graphs are now printed directly from the menu without requiring a separate output program, with a new option to save them in DEGAS format for subsequent customizing. That combination makes it easy to prepare a series of graphs into a slide show format (using a DEGAS viewer) for presentations or to incorporate them into a prospectus using Publishing Partner. (Editor's note: A review of Masterplan appeared in the November, 1987 issue of Antic.)

SwiftCalc ST

SwiftCalc ST is designed to work with Timeworks' other applications programs—Word Writer ST and Data Manager ST. It is not compatible with .WKS files. In SwiftCalc, you select commands primarily through the keyboard. A limited GEM shell is provided which is best suited only for cell selection, since most commands require follow-up keyboard input.

Entering cell values is straightforward—you select the cell with the mouse and type the entry. Editing, however, is awkward as you must press the F7 key before being allowed to change the cell contents. Range operations over multiple cells are also cumbersome. Rather than intuitively selecting a range by dragging the mouse across the cells, you must explicitly designate the top and bottom of the range via menu commands.

SwiftCalc ST has a large number of math and financial functions but lacks standard deviation (important for science applications), internal rate of return (an advanced financial function) and date functions. Macros are not supported. Only row- and column-oriented recalculation sequencing are supported so any forward references will require multiple recalculations to yield the correct results. SwiftCalc also doesn't detect ▶

FIGURE IT...

Start Spreadsheet Comparison Chart A

	VIP				
	Professional	Masterplan	Swiftcalc ST	A-Calc Prime	Logistix
System Setup					
Program Version	1.2	1.0	1.1	2.09	1.15
Color/Monochrome	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
GEM Utilization	Limited	Good	Limited	Good	None
Copy Protected	No	No	No	No	No
Spreadsheet Design					
Size (according to manual)	8192 x 256	8192 x 256	8192 x 256	8192 x 256	2048 x 1024
Maximum Cells: 520 ST	320 (960) ¹	599	4086	13912	— ²
1040 ST	9638 (12310) ¹	12598	29824	50251	26504
Screen Page Size: Color	13 x 8 (20 x 8) ¹	13 x 8	16 x 7	13 x 6 (18 x 8) ³	20 x 8
Mono	15 x 8 (20 x 8) ¹	15 x 8	16 x 7	15 x 6 (32 x 6) ³	20 x 8
Number of Windows	2	2	2	5	2
Label Overflow	Yes	Yes	No	Yes	Yes
Link Spreadsheets ⁴	No	No	Yes	No	Yes
Max length of text or formula	240	240	69	128	254
Significant Figures	14	14	15	10	13
Macros: Command	Yes	No	No	No	Yes
Function	Yes	No	No	Yes	Yes
Auto execute	Yes	No	No	No	Yes
Undo Last Command	Yes	Yes	No	Yes	No
Online Help	Yes	Yes	Yes	Yes	Yes
Editing					
Select Cell/Range By Mouse	Yes/Yes	Yes/Yes	Yes/No	Yes/Yes	No/No
Name Cell/Range	Yes/Yes	Yes/Yes	Yes/Yes	Partial/No	Yes/Yes
Varied Column Widths	Yes	Yes	Yes	Yes	Yes
Protect Cell/Range	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
Series Generation ⁵	Yes	No	Limited	No	Limited
Freeze Titles	Yes	Yes	Yes	Yes	Yes
Merge Spreadsheets	Yes	Yes	Limited	Yes	Yes
Cell Formats ⁶	9	9	7	7	10
Addressing (Rel/Abs/Mixed)	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/No	Yes/Yes/No	Yes/Yes/No
Calculations					
Math Functions	15	15	8	13	23
Statistical Functions	7	7	5	4	5
Financial Functions	5	5	4	0	5
Logic Functions (IF/THEN, TRUE, etc.)	6	6	7	1	11
String Functions	0	0	0	3	0
Date Functions	5	5	0	4	15
Logical Operators (AND, OR, etc.)	9	9	0	9	6
Manual Recalculation	Yes	Yes	Yes	Yes	Yes
Calc Order (Row/Col/Nat)	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/No	Yes/Yes/No	Yes/Yes/Yes
Check Circular References	Yes	Yes	No	No	Yes

circular reference errors.

SwiftCalc can use either relative or absolute, but not mixed, cell referencing. An advanced feature is its ability to link cells from the current spreadsheet to cells from other spreadsheets stored on disk. These links can be either temporary or permanent and will automatically update should the parent spreadsheets change.

Database operations are covered with a variety of search, sort and look-up options. You can do data series generation, but only with a positive whole number step size, and you can also load tables from Data Manager ST for analysis then send them back to SwiftCalc or to Word Writer ST. SwiftCalc lets you print out your data in various forms with the SuperGraphics program, an auxiliary graphing program included with the program. (Editor's note: For a complete review of SwiftCalc, see the Summer 1987 issue of START. For a closer look at the SuperGraphics program, see "Show It: Business Graphics" elsewhere in this issue.)

A-Calc Prime

Unlike most spreadsheets, A-Calc Prime makes extensive use of icons for its major operations. There are five of these representing disk access, printer output, the spreadsheet grid, clipboard storage and trash. Their uses, however, are not always obvious and require a familiarization period with frequent recourse to the manual. Once mastered, this approach makes for speedier operation than the typical nested command menu structure.

Another difference about A-Calc Prime is its cell edit mode. Most other programs let you change a single cell, then drop back into command mode. In this case, however, once invoked edit mode operates until canceled. Selecting a cell with the mouse while holding down the Alternate key lets you move from cell to cell and do all necessary editing. You can reference cells as the

intersection of a horizontal and a vertical label, although they're not named explicitly.

While A-Calc provides most standard math functions, it has none for finance. It supports a limited form of macros as single line user-definable formulas, each containing up to nine parameters. Natural recalculation is not available, so you must sequentially recalculate the spreadsheet for each forward reference used; it doesn't detect circular references. You can open up to five independent GEM windows onto the spreadsheet. Using these with the built-in trace option lets you follow

A
spreadsheet is
a piece of electronic
paper, a pencil and
a calculator.

changes in target cells which is useful for debugging models. A view command can also be used to increase the size of the grid shown on screen by going to a smaller display font size.

A variety of cell formatting options are available, such as user-definable prefixes and suffixes (up to four characters each) which you can change for different cell ranges. You can also embed printer control codes into individual cells for additional styling of the output.

A-Calc reads and writes .DIF files as well as creates text files of the output; .WKS files are not supported. The program can also print sideways, but only on Epsons and compatibles.

Unfortunately, the A-Calc Prime

manual is only 52 pages long and doesn't have an index. Some of the more complicated features are only given scant mention, and the horizontal and vertical lookup features aren't documented at all. It's a shame that such a powerful program has such sketchy documentation.

While not capable of graphics itself, the program can export data files to the companion program A-Chart for plotting. (Editor's Note: For a full review of A-Chart, see "Show It: Business Graphics" elsewhere in this issue.)

Logistix

Logistix is an extremely powerful package aimed at the business market. It goes beyond even Lotus 1-2-3 by providing an integrated module for time/project management as well as spreadsheet, database and graphing capabilities. Unfortunately, Logistix was ported from the IBM and shows it—there's been no attempt to incorporate any use of GEM, and the manual comes with only a four-page addendum to cover the changes from IBM to ST.

Despite the lack of GEM, Logistix is easy to learn. It uses the familiar series of nested command menus along with arrow keys to move about the grid. Most menu items display a short explanatory note when selected and there is a good context-sensitive Help key available when needed. Mixed cell references are not supported, although about every other advanced feature is, including linking to other spreadsheets stored on disk.

The macro implementation is excellent. With the auto execute mode, you can create templates that run as standalone applications—the program operates solely in the background. Logistix also has the largest number of available functions of those surveyed but comes up short in the statistics group. A large number of new time-based functions are provided to assist in the project management operations. Natural recalculation is the default mode and the ▶

FIGURE IT...

Start Spreadsheet Comparison Chart A *continued* . . .

	VIP				
	Professional	Masterplan	Swiftcalc ST	A-Calc Prime	Logistix
Graphics					
Create Within Program	Yes	Yes	Partial ⁷	No ⁸	Yes
Bar Charts (Hor/Ver/Stacked)	No/Yes/Yes	No/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
Pie Charts	Yes	Yes	Yes	Yes	Yes
Line Charts	Yes	Yes	Yes	Yes	Yes
XY Charts	Yes	No	Yes	No	Yes
Data Sets Per Chart	6	6	No Limit	80	No Limit
View As GEM Window	Yes	Yes	No	Partial	No
Realtime Spreadsheet Link ⁹	Yes	Yes	No	No	Yes
User Scaling	Yes	Yes	Yes	Partial	Yes
Log Axis Scale	No	No	Yes	No	Yes
Save In DEGAS Format	No	Yes	No	Yes	No
Database					
Support Database Functions	Yes	Some	Yes	Some	Yes
Table Lookup (Hor/Ver)	Yes/Yes	Yes/Yes	No/Yes	Yes/Yes	Yes/Yes
Levels of Sorts	2	2	1	1	1
Search for all in group	Yes	No	Yes	Yes	Yes
Search for 1st in group	Yes	No	No	No	Yes
Extract search group to another	Yes	No	No	No	Yes
Delete search group	Yes	No	Yes	No	Yes
Read dBase Format	No	No	No	No	Yes
I/O					
Read/Write WKS Format	Yes/Yes	Yes/Yes	No/No	No/No	Yes/No
Read/Write DIF Format	No/No	No/No	Yes/Yes	Yes/Yes	Yes/Yes
Read/Write Text Format	Yes/Yes	Yes/Yes	No/Yes	No/Yes	Yes/Yes
Format Disk	No	No	No	No	No
Delete Files	Yes	Yes	Yes	Yes	Yes
Select Print Range	Yes	Yes	Yes	Yes	Yes
Send Printer Control Codes	Yes	Yes	Yes	Yes	Yes
Adjustable Margins	Yes	Yes	Yes	Yes	Yes
Header/Footer	Yes	Yes	No	Yes	Yes
Print Sideways	No	No	Yes	Epson FX80	Yes
Print Cell Formulas	Yes	Yes	No	Yes	Yes
Dump Graphs To Plotter	No	No	Yes	No	Yes
Benchmarks¹⁰					
Scroll Data (100 Cells)	89 (71) ¹	89	134	34	27
Copy Value (1000 Cells)	4 (3) ¹	4	104	23	3
Copy Formula (1000 Cells)	16 (14) ¹	16	110	42	7
Template Test	5 (4) ¹	5	7	6	4

Notes For Spreadsheet Charts

¹ Parentheses indicate figures for text-only version.

² Program requires minimum of one megabyte memory.

³ Using View Option.

⁴ Values in current spreadsheet may be dependent upon a spreadsheet on disk.

⁵ Will generate a series of numbers given the first number, last number and step size.

⁶ Numbers and text can be in formats such as currency, number of decimal places, right or left justified, etc.

⁷ Graphing done by auxiliary program included with Swiftcalc ST.

⁸ Creates graph data file to be viewed/printed with A-Graph program (not included with A-Calc Prime).

⁹ Changes are made on graph as they are made on spreadsheet.


¹⁰ All times are in seconds.

program flags circular references.

You can carry out all standard database operations within the spreadsheet, including table look-up, searches and sorting. In addition, Logistix can import files created by dBase, a widely-used IBM database program. Several functions are available for operating directly on the database entries in conjunction with the search commands.

You can do graphing with Logistix by entering code terms in spreadsheet cells to define the type of plot, source of data and custom features desired. It's cumbersome, but it does work, and it can produce excellent bar, line, pie and X-Y graphs, as well as multiple pie and Gantt (timeline) charts. You can direct output either printer or a plotter, and the program includes routines allowing you to configure your files for a particular peripheral.

The project management module lets you define the steps needed to complete a job in terms of the manpower (or other resources) and time requirements for each step. These are kept together under a series of columns that define the time axis for the project (hours, weeks, etc.). Use of the time functions lets you do a critical path analysis on the overall job to maximize resource allocation, create job schedules and predict milestones. Incorporating this optimization within the spreadsheet lets you build cost models for project management that are very valuable for business planning.

 variety of different data file formats can be imported including .WKS, .DIF and text. These are translated, as necessary, with foreign functions stored as text. Output can be to the printer or a text file and a number of print formatting options are available. Only data values can be printed, not their formulas.

The Comparison Chart

The comparison chart shows a variety of possible features and how they're im-

plemented in the different spreadsheets. No single program has all of the desirable features, so look over their various strengths and weaknesses to find the program that best meets your needs.

I determined the maximum cell count by exhaustively copying a value with the largest number of significant figures supported by the program. There is quite a disparity between the ideal maximum grid size and how much of it can actually be used due to memory limitations. The timing benchmarks are an attempt to give relative measures of speed for scrolling and common operations. The template test used a model that produced mortgage amortization schedules for a range of interest rates. Only math functions common to all programs were used.

Summary

There are two broad classes for spreadsheet use: home and business applications. The typical home user wants an easy-to-use program with moderate analysis power; graphics are desirable but not essential. A business user, however, requires more sophisticated functions, integrated modeling with graphics and database management. Other needs of the power user can be communication with other office PCs, presentation graphics and formatted summary reports.

For the home user, I recommend Masterplan. It features an intuitive user interface, built-in graphics, a good library of functions and the ability to use .WKS files. A-Calc Prime can also be satisfactory (if you're willing to master its interface) but has limited analysis capabilities and needs the companion program A-Chart for graphics. The remaining program in this class, Swiftcalc ST, is flawed by an awkward GEM implementation, inability to read .WKS files and extreme slowness.

At the professional level, VIP Professional and Logistix are good workhorse programs. Both feature a full complement of functions, extensive macro

capabilities and .WKS file compatibility. Differences are in the GEM interface and easier graphics access of VIP Professional versus the time management, increased number of available cells and dBase compatibility of Logistix.

As with most software, the best spreadsheet for you is the one that meets your individual needs, not necessarily the one with the most "bells and whistles." Determine your needs, examine the program's features, then make your decision. The money you save may be your own. ■

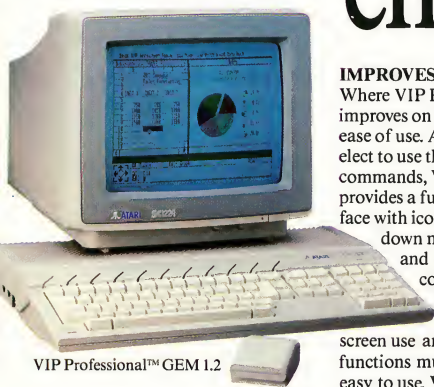
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Jim Pierson-Perry is a research chemist and semiprofessional musician, living in Maryland. He is a frequent contributor to START and Antic.

Products Mentioned

- **A-Calc Prime**, \$59.95, **A-Chart**, \$39.95. Antic Software, 544 Second Street, San Francisco, CA 94107, (415) 957-0886; (800) 234-7001.
- **Logistix**, \$149.95. Progressive Peripherals, 464 Kalamath Street, Denver, CO 80204, (302) 825-4144.
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- **Masterplan**, \$189.95; **VIP Professional**, \$149.95. ISD Marketing, Inc., 2651 John Street, Unit 3, Markham, Ontario, Canada L3R 2W5, (416) 479-1880.
- **Swiftcalc ST**, \$79.95. Timeworks, Inc., 444 North Lake Cook Road, Deerfield, IL 60015, (312) 948-9208.
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VIP ProfessionalTM GEM 1.2

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Where VIP ProfessionalTM really improves on Lotus is its attention to ease of use. Although the user may elect to use the keyboard for all commands, VIP ProfessionalTM also provides a full-featured mouse interface with icons, dialog boxes, pull-down menus, mouse ranging and scroll bars. This makes command selection, movement in the sheet, range selection, split-screen use and a score of other functions much more intuitive and easy to use. What were once complex commands with Lotus are now a mouse-click away.

AtariTM STTM Special Features

GEM interface with pull-down menus, icons, dialog boxes, ranging, scroll bars, column grabber, etc. Sparse matrix for conserving memory. Works with 520ST, 1040ST and beyond. Ultra-fast floating point math. Compatible with printers supported by GEM. Saves graphs compatible with DegasTM and Neo ChromeTM. Totally supports hard drive. Works with color or monochrome monitors. Multiple windows for viewing graphs and worksheet at the same time.

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STACK IT

CARDSTAK,
START'S FREE-FORM DATABASE

by ALEX LEAVENS



Jim Warner

People have been using filing systems a lot longer than computers. Back in the B.C. era—Before Computers—the ubiquitous 3-by-5 index card stored everything from recipes to library information to business inventories, and people got along just fine.

Computers changed all that. With powerful machines and mass storage, filing systems became “databases,” and arcane terms like “relational,” “file manager,” “field” and “record” became buzzwords. Eventually the systems became powerful and highly advanced—but almost too complicated to use.

Fortunately, we’ve started to come full circle. The Winter 1987 START profiled Paul Heckel, who pioneered the idea of mimicking index cards on a computer with Zoomracks II. Last year Apple Computer made headlines with Hypercard, bringing the same idea to the Macintosh.

And now START brings you CardSTak, a free-form database program that matches the power of your ST with the simplicity of a 3-by-5 card.

CardSTak

Before you run CardSTak, copy the files CARDSTAK.PRG and CARDSTAK.RSC

from your START disk to a blank formatted disk, so you will have plenty of room to store your data files. To run the program, double-click on CARDSTAK.PRG. After a few seconds your screen will display a menu bar at the top and a GEM-style window in the top left-hand corner. This window is where you’ll type the first card in your database.

CardSTak is a free-form database. You don’t have to worry about fields or delimiters—simply start typing information into a card. Use the arrow keys to move around inside the card, and use the Delete and Backspace keys to erase mistakes. There is no insert mode. To move through the cards one card at a time, click on the arrows at the bottom of the window; to go forward or backward 10 cards at a time, click on the shaded areas. You can also move using the slider bar, or move through the cards a card at a time by holding down the Shift key while pressing the right or left arrow key.

A line at the top of each card tells ▶



You’ll find the program for this article, CARDSTAK.PRG, on your START disk.

The source code is in the compressed file CARDSTAK.ARC.

A new breed of database manager is appearing on the computer market. These new systems are every bit as powerful as traditional file managers, but they’re much more intuitive because they use a familiar concept—organizing information on stacks of index cards. Now START brings you CardSTak—our own Hypercard-style program. You’ll find on this issue’s START disk!

STACK IT...

you the current card number; you can have a maximum of 500 cards. This status line also tells you whether the card is marked, and the name of the current file (if it's a new file the line says Empty).

Once you have entered all the cards for a database, save it to disk by clicking on Save under the File menu. Give the database a name, but be sure to add the extender .CRD (for example, RECIPE.CRD or ROLODEX.CRD). If you want to start on a new database after you've saved the current one, or simply want to get rid of what you've typed in and start over, click on Clear under the File menu. To load a previously-saved file into memory, click on Load under the File menu.

To make using CardStak easier, most of the menu commands have control-key equivalents, which are indicated on the drop-down menus. For example, to quit you can either click on Quit under the File menu or hold down the Control key and press Q. In addition, many commands also have function key equivalents. For a list of these, click on Show Function Keys under the Options menu.

Mark Your Place

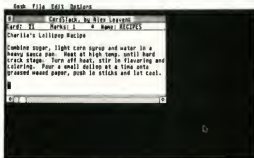
CardStak allows you to "mark" specific cards, the way you might use paperclips or Post-It notes to mark real index cards. For example, if you have a recipe database you might want to put all the desserts, appetizers and so on into separate groups.

CardStak has six different marks you can use. To select which mark is currently active, click on Select Mark under the Options menu and then click on a mark number. To mark the card you're looking at, select Mark under the Edit menu. To remove a mark, select Unmark under the Edit menu. Unmark All will remove all instances of the current mark. A card can have more than one mark, so it can be grouped in more than one category.

Once you have marked all the cards that you want grouped together, click on Get Mark under the Edit menu. Now when you move through the cards, you will only see cards set with the current mark. Click on Get Mark again to continue working with all the cards.

You can also create a new file that contains only the cards set with the current mark (for example, a file called DESSERTS.CRD). Click on Save Marked under the File menu, and CardStak will create a new file which contains only the cards set with the current mark. The new file will preserve the numbering of the marked cards; if your dessert recipes were on cards 3, 6 and 12, only those cards in the new file will contain information—the rest will be blank. To get rid of these blank cards, click on Compress under the Edit menu.

If you want to combine a file on disk with the current file in memory, click on Merge under the File menu. Note that this option will retain the same card numbers of the file on disk, so some cards may be overwritten. Select Merge At to merge the cards beginning at the current card number; if you use this option CardStak will warn you before writing over any cards that aren't blank.



CardStak

Rearranging Cards

To put a copy of a card somewhere else in the stack, click on Cut under the Edit menu. Move to the position where you want to copy the card and click on Paste under the Cut menu. Note that the card is now in two places in the stack. To delete the original card, click on De-

lete under the Edit menu. (This simply empties the contents of the current card.) To get rid of the empty card completely, click on Compress under the Edit menu.



ardStak can sort cards or search through them with the options Rearrange and Search, respectively, under the Edit menu. Before using these options, however, you will need to set up the criteria for the sort or search. For example, under the Options menu you can select Sort A --> Z or Sort Z --> A to set the sort direction. You also need to tell CardStak which information on the card needs to be searched or rearranged.

Even though CardStak doesn't have fields, it's smart enough to tell where words begin and end, and to treat words that are in pretty much the same position on each card as related. To tell the computer which word on the line on which to sort, first put the cursor anywhere on that word in any card. Next, tell CardStak whether to count to that word from the left side of the card or the right. To sort on the first word in a line, put the cursor on that word and then click on Look Right under the Options menu. To sort on the second-to-last word in a line, put the cursor on that word and click on Look Left.

For example, if the first line of each card contains the name of a person, the last word on that line will generally be the person's last name. Put the cursor on that word and click on Look Left, and you can sort by last names even if some cards have middle names on the same line.

If you know exactly where on the card the search or sort criterion begins, put the cursor on the appropriate line and column position and click on Look Absolute under the Options menu. CardStak will begin the search or sort at that word.

Search Me

CardStak offers two ways to search through cards. For either approach, position the cursor on the word on the card you want affected by the search and click on either Look Left, Look Right or Look Absolute—just as for sort-



Search options

ing. If you want to quickly mark all cards which match a particular word, click on Fast Search under the Edit menu. In the dialog box, type in the word you wish to search for and press the Return key. All cards with a word in the cursor position that match the word you entered will be set with the current mark.

If you want to narrow down the search, after positioning the cursor click on Search under the Edit menu. Since you'll be marking cards with the current mark, you have the option to unmark all cards currently set with that mark. Next, since this is a custom dialog box, click on the edit line and type the word you wish to search for and press Return. Click on Ok or Abort; if you change your mind and want to edit the word again, click on the edit line again and start over.

When you click on Ok, CardStak will offer three options. You can mark all cards that match the word you typed ("equal"); you can mark cards with a word earlier in the alphabet ("less than"); or you can mark cards with words later in the alphabet ("greater than"). You can select more than one of these; you may wish to mark all cards

that are equal to or are greater than the word you typed. When you're finished making your selection, click on Done, and CardStak will mark all the cards that match your criteria.

Put It On Real Index Cards

Finally, CardStak can print out your cards for you, either with or without the top status line. To print the cards that are set with the current mark, click on Print under the Options menu; to print all the cards regardless of their setting, click on Print All.

If you want to print out only certain lines in the cards, click on Print Using under the Options menu. Next, click on the line where you want to start printing, then click on the last line to print. Finally, click on Print or Print All as before.

If It Ain't Broke. . .

Rather than creating a new approach to organizing information, I've brought the

power of the Atari ST to an idea that's been around awhile—and made it that much better. Don't be deceived by CardStak's seeming simplicity. Although it's easy to pick up and use, beneath its mild-mannered exterior beats the heart of a very powerful filing system. I hope you enjoy it!

If you'd like more articles like this, circle 200 on the Reader Service card.

Alex Leavens, author of the START Icon Editor (Spring 1987) and STARTCalc (Fall 1987) is an avid GEM programmer. Alex wrote CardStak for the same reason he writes most of his programs: he couldn't find a commercial software product to do what he wanted.

Products Mentioned

- Zoomracks II, \$149.95. Quickview Systems, 146 Main St., Suite 404, Los Altos, CA 94022, (415) 965-0327. CIRCLE 189 ON READER SERVICE CARD

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DISK INSTRUCTIONS

Your START disk has two types of files on it: runnable programs with their companion files and the source code listings for those programs. To fit all of these files onto your START disk, we compressed the source code listings using the ARChive utilities set. This compresses many different files together into a single file, reducing the overall size by 40 percent or more. We have provided the program ARCXTTP on your START Disk so you can expand each file back into its original form.

GETTING STARTED

Your START disk is not copy-protected and you should make a copy of it immediately. Make sure that the write-protect window is open on the START disk at all times.

Format a disk for backup

1 Take a blank disk and make sure that the write-protect window on this disk is closed. Label this disk "START Backup" and place it in Drive A. *Warning: The contents of this disk will be erased, so be sure that there is nothing on it you want to save!*

2 From the desktop, click once on the Drive A icon; it will change color.

3 Select the File option on the menu bar and then select Format from the drop-down menu. An alert box will appear with a warning; click on the OK button.

4 When the Format dialog box appears, select Single-Sided, if it is not already highlighted and click on the Format button.

5 When the disk is formatted, another alert box will tell you how much space is available on that disk. Click on OK and then on the Exit button in the Format dialog box.

Copy your START disk onto your backup disk

1 If you have more than one drive, put your START Backup disk into Drive B.

2 Put your START disk in Drive A.

3 Point the mouse cursor at the Drive A icon and then hold the left mouse button down. The Drive A icon will change color. Drag it to the Drive B icon (only the icon's outline will move). When the Drive B icon is highlighted, let go of the mouse button.

4 A message will ask you if you are sure you want to copy the disk. Click on OK. After a few moments, another dialog box will appear; click on the Copy button. When the copying is finished, you will be returned to the desktop.

(If have only one drive, begin by inserting your START disk. You will have to switch disks several times during the copy operation; simply follow the instructions on the screen. When the computer refers to Disk A, it means your START disk; Disk B is your START Backup disk.)

Now put your START disk in a safe place and use your START Backup disk. You may now put your START Backup disk in Drive A and double-click on the Drive A icon to see the disk's contents. Any program with a .PRG extender may be run directly from your START Backup disk, but please read the companion

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START article for full instructions *before* running any program.

UNARCING THE SOURCE CODE FILES

Copy the ARCD source code file you wish to examine and the program ARCX.TTP onto a blank formatted disk

1 Format a second blank disk just as you did to make your START Backup Disk; label this disk "UnARC."

2 Find the icon of the file "ARCX.TTP" and point to it with the mouse cursor. In the same way that you dragged the Disk A icon when you copied your START disk, hold the left mouse button down and drag the ARCX.TTP file icon to the Disk B icon. When the Disk B icon changes color, let go of the mouse button.

3 When the computer asks you whether you're sure you want to copy the file, click on OK. (Note to single-drive system users: You will have to swap disks several times when copying files, just as you did when copying a disk. Just remember that now your START Backup disk is Disk A and your UnARC Disk is Disk B.)

4 Now repeat steps 2 and 3 to copy the source code file you want to examine onto your UnARC disk. Refer to the companion START article for the correct file name.

Now, unARC the source code file

1 Insert your UnARC disk into Drive A and press the Escape key to see the directory.

2 Double-click on ARCX.TTP.

3 At the prompt, type in the name of the ARC file you just copied over to your UnARC disk and press Return. As the program runs, it will display the names of the new files as it unARCs them.

If ARCX.TTP can't find a file, it may be because you have misspelled the name of the ARC file. Remember, you must type the filename *exactly* as it appears in the directory.

In addition to the source code listings, some ARC files may also contain an ASCII text file (called BREAKDWN.TXT) which shows the program's structure. You can examine this file from the desktop by double-clicking on its icon and then clicking on View (to see it on the monitor) or Print (to print it out). ■

DISK CONTENTS

The five great programs on this issue's START disk should convince you that the sheer computing power of the ST makes it a definite contender in the business market.

CardStak: If you've followed the Hypercard hoopla, you've probably wondered what the fuss is all about. Now see for yourself how convenient a free form database really is. You don't have to be a computer whiz to use this program; just visualize using 3-by-5 cards to maintain your files. Files: CARD-STAK.PRG, CARDSTAK.RSC, CARDSTAK.ARC, CARD-STAK.PRG and CARDSTAK.RSC must be in the same directory to run this program.

Lock & Key: If you share your computer at home or work, use Lock & Key to keep private files *private*. Simply put your sensitive files together in a folder, and Lock & Key will hide the folder from the directory—until you give it the correct password. Files: LOCKKEY.PRG, LOCKKEY.DAT and LOCKKEY.ARC. LOCKKEY.PRG and LOCKKEY.DAT must be in the same directory to run this program.

The Director: If you have so many files on so many disks that you can never find the file you want, then you need The Director. The Director will read your disk directories into a single file that your favorite database can understand; you can even give each disk a unique name to help you remember which file is where. Works on hard disks, too! Files: DIRECTOR.PRG and DIRECTOR.ARC.

Wall Street: Now the excitement of the stock exchange comes to your ST. Wheel and deal, buy low and sell high, gamble your fortune on a hot tip—a tip that may make you a millionaire or a pauper. File: WALLST.PRG.

START Selector: When this gem came into START's offices, we knew we had to get it to you as soon as possible. The START Selector is an easy-to-use, versatile replacement for the GEM file selector box in any program you run. Boot your computer with your START backup disk (see Disk Instructions at left) and you'll never want to be without the START Selector again. Files: STSELECT.PRG and STSELECT.ARC. STSELECT.PRG is in the AUTO folder of the START disk. ■

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Connecting a Printer to Your ST

By Carol Ann Brimeyer

Well, you did it. You went to the computer store, put your money down and came home with a printer for your ST. It's sleek, it's trim, it's powerful—and the only problem now is getting it to work with your computer. Here's how to make your printer investment return big dividends!

One of the first peripherals most ST owners buy is a printer. That makes sense, when you stop to think about it. Whether you use your ST for writing a letter, drawing a picture or calculating the Gross National Product, a printer lets you communicate with the non-computing world.

A good printer will last a long time, so it's worth investing some time in choosing your printer. If it's your first printer, you want it to be fairly uncomplicated and reasonably inexpensive. You want to depend on it for a continual stream of sharp, clean printing. You also hope to avoid the demons of printer frustration—snagged ribbons, chewed paper and flashing trouble lights.

The ST generally uses a *parallel* (or "Centronics-compatible") printer. That refers to the kind of cable that connects your printer and computer. However, the ST can also use a *serial* printer. Be sure to shop for a printer that will connect to your ST. (One easy way to tell: if

it's IBM PC-compatible, it'll work with your ST.)

Next, look at the features of dot-matrix, daisy-wheel and laser printers. A *dot-matrix printer* uses a row of pins that dot the paper individually again and again, very fast. Dot-matrix printers are best for graphics, plotting, mechanical drawing, and fast, draft-quality text printing. The more expensive ones can

This is an example of dot-matrix printed text (9-pin).

This is an example of dot-matrix printed text (24-pin).

This is a daisy-wheel printout done on a Qume LetterPro 20 P.

This is an example of text printed on a Ricoh PC Printer 6000 laser printer.

Figure 1: Dot-matrix, Daisy-wheel and Laser Print Samples

use different type faces and sizes.

The print head on a *daisy-wheel printer* looks like a mutant bicycle wheel. It radiates a crown of spokes ending in tiny, perfectly formed characters that print when struck against the

paper. Daisy wheels are best at producing letter-quality text printing—you can't tell the difference between the output of a daisy-wheel printer and a typewriter. To change the type face or size, you simply change the daisy wheel.

If you're buying a printer for a business, a *laser printer* may be just what you need. A laser printer dots the paper like a dot-matrix printer, but uses a laser instead of a row of mechanical pins, so it's faster and looks as good as a daisy-wheel printer. You can get the best of both worlds: graphics, high-quality text, lots of type faces and high speed. However, laser printers are very expensive compared to other printers. You'll find samples of all three kinds of printers in Figure 1.

OK—you chose a printer and brought it home, carrying it triumphantly over the threshold. Now what do you do?

For starters, unpack your printer. Besides the printer itself, look for a number of smaller items in the carton. There's usually an interface cable, a ribbon cartridge, paper separator and owner's manual. Set out all the items in a clear working space, then check the contents list included in the carton or flip to the unpacking instructions in the owner's manual. Make sure you received everything that's supposed to come with your printer; if anything is missing, your dealer should supply it at no charge. Occasionally the printer won't include an interface cable. If that's the case, make a quick trip back to the store to buy one—you can't connect the printer without it.

Remove all the plastic wrapping and foam packing, and put them back in the carton. Now follow the unpacking instructions in your manual. Don't skip any steps, or you may miss something important. ▶

Be sure to inspect your printer for shipping screws. They hold the larger components of the printer together during the jostle of shipping. Your owner's manual should tell you if your printer has them and where they are. Once you've found them, carefully unpend the printer and remove them.

Also, check around the moving parts of your printer (print head, platen and paper bail). Look for and remove tiny foam pillows or straps of tape (sometimes transparent) that hold the parts in place during shipping. If you don't find any, double-check. If they're not removed, these little packing aids will keep your printer from working and drive you crazy.

With the printer unpacked, don't throw away the carton. Instead, stash it somewhere out of the way, in case you need to store or ship your printer later.

Now decide where you'll set up your printer. Stretch out the interface cable. Its length tells you how far from your ST you can put the printer. If your printer uses pin-feed perforated paper, figure out where to stack the paper. You'll want it to feed easily into the printer and fall freely without landing back on top of itself. A printer stand is a great solution. You can also set the printer on a shelf above the computer or on a low floor stand. (Single-sheet printers don't pose this problem.)

Once your printer's in position, follow the instructions in its owner's manual, step by step, to hook it up. The steps will be in this general order:

1. Turn off your ST, disk drives and monitor. Make sure your printer's on/off switch is in the off position.
2. Prepare the interface cable ends by partially unscrewing the side-screws or moving aside the wire retainer clips.
3. Plug one end of the interface cable into the printer. Look at the manual il-

lustrations, if you need to, to locate the connector. The two cable ends, one going to the printer and one to the ST, are often different sizes. If the cable end doesn't fit easily into the port, don't force it. Turn it over in your hand and try again. If that doesn't work, try the other end.

4. Plug the interface cable into the ST. Check your ST's manual to find the printer port; it's the one that has the printer icon in Figure 2. If you've got a less-common serial printer, connect the cable to the modem port; it has the modem icon in Figure 2.

5. Screw in the side-screws or snap the



Figure 2: Printer and Modem Icons

retainer clips into place. Gently jiggle both cable connections to make sure they're now tight and secure.

6. Plug the printer's power cable into a grounded electrical outlet or a power strip. Test your connections by turning on the printer. If you did everything right so far, the power light will come on.

When you get to the manual's section on loading the ribbon, be sure to turn your printer off first, and keep these hints in mind:

- Move the paper bail out of your way by raising it up off the platen.
- Be sure to slip the ribbon between the print head and the ribbon mask (the metal or plastic part that holds the ribbon off the platen).

- Look for an arrow on the ribbon cartridge that tells you what direction to turn the take-up knob. Turn the knob to make the ribbon taut but not too tight.
- Slip the cartridge guide arms into their slots. Gently press the cartridge down and snap it into place. Don't force it—the cartridge is designed to fit. If it doesn't go into place easily, something's wrong. Take it out, check for obstructions and try again. If you've got a daisy-wheel printer, install the daisy wheel according to the manual's instruction. Once it's in place, jiggle it gently; if you're hardly able to move it, it's secure.

Your manual will have instructions for loading paper into your printer. For best results, follow these step by step. On some printers, the pin-sprocket wheels feed blank paper to the platen; on others, the wheels pull the printed paper away from the platen.

Follow this checklist to avoid paper-threading madness:

- Have a clean, straight edge of paper to insert into the printer. Tears or wrinkles will catch in places you can't get to.
- Line up the pin holes on one side of the paper with the same pin holes on the other side. Then slip them over the pins at the same time. If holes are even one pin off, the paper will tear and jam.
- Set the sprocket wheels at a distance that keeps the paper taut but not tight. Tight paper will tear; loose paper will slip off the pins, wrinkle and jam.
- Make sure the paper separator is in place correctly. Check your manual illustrations to find out how the paper should thread under and over the separator, and always do it that way.

- When you do a long printout, check the paper after the first few sheets are printed. Arrange those sheets so the rest of the printing can fall neatly on top. Otherwise, the first sheet will sometimes curl back around the roller, tangle up and ruin the whole printout.
- If you are using self-adhesive labels, never turn the printer roller backward to remove the labels. That's the easiest way to get a label stuck to the internal rollers of your printer, which can jam or seriously damage your printer.

With everything hooked up and your paper threaded, turn your printer back on. Besides the power light, your printer will probably have on-line and paper-out lights. The on-line light tells you the printer's ready to print. The paper-out light lets you know the printer's out of paper; sometimes there's a buzzer as well.



Figure 3: Print Screen Option

Most printers have at least three function buttons: on-line, linefeed (often labelled LF) and form feed (FF). When you're ready to print, if the on-line light isn't already on, press the on-line button. The on-line light should come on. If it doesn't, check your cable connections and turn the power switch off and on.

When you want to advance your paper without printing, first take your printer off-line by pressing the on-line

button again. Then press the linefeed button to advance the paper one line at a time. This lets you set your paper to where you want printing to start. Press the form feed button to advance the paper by a full sheet. You usually won't be able to put the printer back on-line while the paper is advancing.

It's always a good idea to use the function keys rather than roll the paper by hand. This helps keep the paper from slipping out of adjustment. If you want to roll the paper by hand, it's best to turn the printer off first.

If your printer has a self-test, now's the time to use it; your manual will tell you how. A self-test lets you know that the ribbon is correctly in place and that all characters print cleanly and evenly. If your paper's going to jam, it'll do so during the self-test and not while you're printing something important.

If your printer uses Epson-compatible graphics commands, you can use the ST's Print Screen option. Atari's SMM80+ printer and many of the printers advertised as "IBM-compatible" use Epson-compatible graphics.

From the Desktop, you can print the screen by dropping down the Options menu and clicking on Print Screen (see Figure 3). In the dialog box that pops up, click on OK (see Figure 4). Your printer will remove the dialog box and then print your screen display to paper. To stop the printing, press the Alternate and Help keys at the same time.

For a shortcut, you can press the Alternate and Help keys to start printing the screen display. That's very handy when you want to print the screen but you're not on the Desktop. To stop printing, just press Alternate and Help again.

If your printout doesn't look much like your ST's screen, maybe you need to make some adjustments. Boot from

the system disk that came with your computer, and on the Desk drop-down menu on the Desktop you'll find desk accessories for installing the printer and configuring the serial port. For parallel printers, you'll just want to click on In-



Figure 4: Print Screen Dialog Box

stall Printer; if you have a serial printer, you'll need both. Check your ST's manual for a complete explanation of what each of the options means.

Once your printer is connected and running, you'll start looking at all kinds of software you can print with. Check the software manual for instructions on how to print for each program. Many programs require special "configuration" or "installation" for your printer; before you buy, make sure the software will work with your printer.

Often, computer printers are available at large discounts when they're discontinued. But a printer's not a bargain if it's nonstandard or won't work with your software without custom printer drivers. The easiest solution for an ST owner is to buy an Epson-compatible printer, since virtually all ST software will work with that style of printer.

Happy honeymooning with your new printer. It's just another smart way to use your ST.

If you'd like more articles like this, circle 202 on the Reader Service Card.

Carol Ann Brimeyer is Senior Publications Editor for Epyx.

GFA Draft Plus

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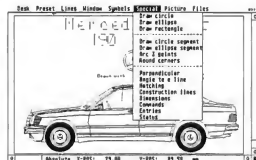


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CIRCLE 030 ON READER SERVICE CARD

THE DIRECTOR

Organize your disk library

by ROBERT PYLE

As the number of programs in your library grows, so does the amount of time you spend shuffling diskettes to and fro, searching through seemingly endless subdirectories. Sometimes you think you've lost forever that elusive little utility that will save your computer from exploding if you can just... find... it... in... BLAM!!! Ah, if only you'd had The Director, START's program for curing your disk library blues.

It seems to be a natural law that whichever program you're looking for will always be on the last disk in your library. If you've looked at the commercial and public domain disk library programs, you've discovered that they are basically simple database managers with the ability to read disk directories. And you probably already have a better database program than any of the ones included in these programs.

To get the best of both worlds, I've written The Director, a program that will read your disk directories and generate a file that can be read by most database programs. In this file you can include just the information you want, custom tailoring the data and using the full power of your database to fit your requirements. If this sounds interesting, read on.

Customize The Director

You must be in medium or high resolution before starting. Copy the file DIRECTOR.PRG from your START Disk



You'll find the program for this article on your START disk; the source code is in the compressed file DIRECTOR.ARC.

to a fresh working disk and double-click on it. Once the control screen is in front of you, your first action should be to configure the program to your specifications and then choose the Save Settings option located on the left side of the screen to record them. If you save the file as SETTINGS.CFG and include it on the program disk, these options will load automatically when you run the program. Or you can have a number of different .CFG files and load them with Load Settings as you need them.

To create a library file, you should first decide which files (if any) you do not want included. For instance, you probably aren't interested in seeing every resource file or every documentation file on your disks. To exclude these, click on the appropriate file extension in the large box on the right of the screen. The highlighted extensions will be ignored when the disk directory is read.

In the center column is a box labeled "Extensions" containing the choices Include All and Exclude All. These provide a way to either clear or highlight all of the extension names, giving you an easier starting point. Also, any of the extensions shown can be changed to the letters of your choice—click both mouse buttons simultaneously while pointing to the extension you want to change ▶

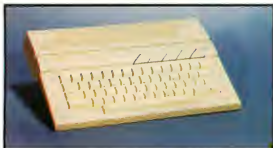
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CIRCLE 006 ON READER SERVICE CARD

THE DIRECTOR...

and you will be asked for the new name. After you enter it, the new name will appear in the box. To retain these changes, use the Save Settings option.

On the left side of the screen you will see a box containing the options File Maximum and Folder Maximum. File Maximum refers to the number of files that can be retained in memory before outputting the information. Folder Maximum refers to the maximum number of folders (subdirectories) that can be in any one directory. These limits

THE DIRECTOR by Robert H. Pyle (C) 1988 Arctic Publishing Inc. Number Of Files In Array: 0 Current Free Memory: 728238 bytes File Maximum Folder Maximum 500 40	
---	--

CONTROL SETTINGS	
Load Settings	Save Settings
Set File Maximum	Set Folder Maximum

OUTPUT OPTIONS	
OUTPUT MODE	*EXCLUDE*
ASCII	Disk Name
Delimited	Alt. Disk Name
BIF	File Size
Hardcopy	File Date
Screen	File Time
SDF	File Path
Zoonrks/CardStak	Folders

The Director

can be changed by choosing the Set File Maximum or Set Folder Maximum items located in the Control Settings box. (Editor's note: Because of a bug in the ST operating system ROMs, opening more than 40 total folders in a session may make system operation erratic. This was corrected in the new Mega ROMs. If you have an ST and a hard disk, we strongly recommend that you obtain one of the public domain programs that increase the 40-folder limit.)

It is important to note that changing the File Maximum will erase any directory data that is currently in memory. Similarly, if you load a new .CFG file with a different File Maximum, you will be warned that changing this maximum will wipe out any data in memory and you will be given a chance to change

your mind. The number of files in memory is shown in Number Of Files In Array, and the approximate free memory remaining is shown to let you know when you need to save this information before reading further directories.

You are now ready to read the directories. Choose the disk drive you want to read by clicking on the desired letter in the Current Drive selector in the center column; then click on Read Directory. You will be prompted to insert the

disk's directory—it is for reference in the disk catalog only. You should record it on the label of the diskette. The Director will read the directory into memory and then ask if you want to read another disk. Continue reading directories until you are finished or want to change settings.

Whistle While You Work

It may take a while to read all of your disk directories into memory, especially if you occasionally change the settings.

Any time there are already files in memory when you click on Read Directory, you will have the option to either replace the old information with the new or add the new information to the old. The Director will let you know if free memory is getting low. If you continue to read directories, The Director will repeat the warning until free memory is almost depleted, at which point it will tell you to save the data in memory; if that happens, the directory currently being read will not be included in the save.

After you have read all the directories for the current session, you are ready to set the Output Options. Select the items you don't want to include in the Output file under the *Exclude* section. The file name and extension are always included, but you can exclude the Disk Name, Alternate Disk Name, File Size, File Date, File Time, File Path and Folders. Any of the items that you select will be highlighted and omitted from the data file. If you entered an Alternate Disk Name, you may want to exclude the Disk Name. File Size is the length of the file in bytes. The File Date and File Time show when the file was created or last modified. The File Path shows the location of the file within the disk's folders; if the file is in the root directory (outside any folder), the path shows as a backslash (\).

The Folders option is a little different. If this is highlighted, none of the folders will be listed separately. How-

HELP							
BEGIN OUTPUT							
READ DIRECTORY							
EXTENSIONS							
Include All							
Exclude All							
CURRENT DRIVE							
B							
A	B	C	D	E	F	G	H
I	J	K	L	M	N	O	P
Exit To Desktop							

ACC	FNT	PAS	SPD
AJR	GRB	PER	STR
ARC	HLB	PC1	STM
BAK	IDX	PC2	SVS
BAS	IFF	PC3	TMY
BIC	IMG	PIC	TN1
BTN	IND	PI1	TN2
C	INF	PI2	TN3
CFG	TNT	PI3	TOS
CHD	JAB	PRE	TPH
CHF	KOA	PAG	TRN
DO	LBL	PRH	TRP
DAS	LST	PRT	TXT
DAY	LOG	RLE	WKS
DBF	HAC	RSC	ZBK
DBH	HAS	S	ZRX
DEL	HSG	SCR	ICZ
DIC	NAT	SDF	?
DIF	NDX	SDR	?
DIR	NEO	SHP	?
DOC	NTB	SID	?
FJH	O	SNG	?

ever, you will still know which folders have which contents if the directory includes the File Path. If you exclude the Folders option, empty folders will not be listed at all. Otherwise they will all be listed, with the File Size shown as FOLDER (except in the DIF file format—in that case the folders are indicated by a value of -1).

Getting Out The Information

You are now ready for the final step—outputting the file. Select a format option under "Output Mode" and then click on Begin Output. If you want to preview the directory information, you can set the Output Mode to Screen or Hardcopy. The files will be displayed in the order they were read. If you prefer browsing through the listing in a word processor, simply select the ASCII option and enter a file name.

Data File Formats

Most databases use their own format for storing information, but most also let you read certain other data storage formats to make transfer between different programs possible. Check your database documentation to see whether it understands Delimited format, DIF (Data Interchange Format) or SDF (Standard Data Format). The last button is Zoomrks/CardSTak, which accommodates two of the card-style databases: Zoomtracks and CardSTak. Each of these uses a unique format. (Editor's Note:

You'll find the "CardsTak" program on this month's START Disk; the companion article is "Stack It". Also, see "File It" in this issue for a review of Zoomrks.)

If you need to give your database field length information before it will read the data, it is as follows: File Name (8 characters, left justified); File Extension (3 characters, left justified); Disk Name (12 characters, left justified); Alternate Disk Name (12 characters, left justified); File Size (7 characters, right justified); File Date (8 characters, left justified); File Time (8 characters, left

justified); File Path (maximum of 64 characters—this field is only as long as the path name except in an SDF file, where it is padded with spaces to 64 characters).

In a DIF file, the File Size will be a numeric value rather than a string, with a value of -1 if this is a folder name. The File Name and File Extension are output in separate fields to facilitate sorting and handling. Because CardSTak is a free form database manager that doesn't use field definitions, you can simply load the cards into CardSTak without worrying about setting up a format.

You now have a file that you can read into your database and manipulate to your heart's content. Add a comment field. Add a program type descriptor. Sort it on anything. Delete what you don't want. Merge it with whatever. Search it for MUGWUMP.PRG. Now you're in charge! And if you get lost, brief descriptions of all the options (as well as a recap of the file structures) are available by clicking on the Help box or pressing the Help key.

If you would like to examine the GFA BASIC listing of this program, unarc the file DIRECTOR.ARC on your START disk (if you are unsure how to unarc a file, refer to the disk instructions page). Then run GFA BASIC, select the Merge option and click on DIRECTOR.LST. Alternately, you can double-click on the file from the desktop and list it or print it out.

I wrote The Director because I didn't like any of the disk catalog programs that I tried. If you feel the same, I hope you find The Director as useful as I do!

If you'd like more articles like this, circle 210 on the Reader Service Card.

Robert Pyle has been programming since 1968, and his ST is his third personal computer. He lives in La Grange, Texas, and enjoys sailing, fishing, reading science fiction, and writing professional and shareware BASIC programs.

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I WANT TO CHANGE MY MIND. . .

Let's say you just clicked on Quit accidentally. And then when the computer asked "Are you sure you want to quit?" you clicked on Ok accidentally. Hold it! If you are still holding down the left mouse key, it's not too late. Carefully move the mouse pointer outside of the Ok button. (Be sure to *keep holding down the mouse key*.) The Ok button will stop being highlighted. Whew. You're now safe to let go of the mouse button and then click on Cancel. (Note that this trick might not work if the program uses unusual dialog boxes.)



. . . I THINK

The GEM desktop offers the convenience of letting you print an ASCII file simply by double-clicking on it and then clicking on Print. If you change your mind and want to cancel the print-out, press Q. If you clicked on Show instead to get a listing to the screen, you can either press Q or hold down the Control key and press C to stop the listing. This will *not* work with ST Writer files.



SLIPPERY WHEN WET

When members of the Antic and START editorial staff complained about static charges around their computer systems, a few people suggested mixing fabric softener with water and spraying it on the floor around the computer stations. (If you try this, be careful not to spray it on the computer itself.) So far, it's been working out great. If you try this, just be sure to use a fabric softener that claims to be anti-static; those brands contain

the same chemical as spray can products specifically designed to reduce static charges. You can use a high proportion of water to fabric softener; the main thing is to get some of the chemical on the floor. *Warning:* This mixture is *very slippery*. Spray it at night, giving it plenty of time to dry before people will be walking around that area.



ST WRITER FILES

After we published a Clipboard tip on how to transfer ASCII files to a format Word Writer ST and 1st Word Plus could work comfortably with, we got a phone call from a reader asking how to convert ASCII files into ST Writer format. The person who called complained that ASCII files load into ST Writer with a carriage return at the end of every line—making it impossible to set margins without manually going through and deleting all the carriage returns. If you are trying to convert from one word processor to ST Writer, here's a quick tip:

First, make sure that there is an *extra carriage return* after every paragraph in the original file, then save it in ASCII format. Load the file into ST Writer and type E to edit it. The first thing is to find out where the paragraphs begin and mark those positions. To do this, press Shift-F7 (global replace), then press the carriage return twice and press the Escape key. At the next prompt, type Control-P; then press the Escape key.

Now, examine the file carefully. You want to get rid of all the carriage returns, but first you need to know whether there is a space before the carriage return at the end of each line. If there is a space, press Shift-F7, Return and then the Escape key. At the next prompt,

press the Escape key again. ST Writer will go through the file and get rid of all the carriage returns (or, more precisely, it will replace all the carriage returns with nulls). If there aren't any spaces before the carriage return at the end of every line, press Shift-F7, Return and then the Escape key. At the next prompt, press the space bar, then the Escape key. This will get rid of the carriage returns and also insert a space to prevent the word at the end of each line from running into the first word on the next line.

Your file looks awful because it has run all together, but don't panic. The final step is to put carriage returns between the paragraphs. Press Shift-F7 and Control-P, then press Escape. Then type two carriage returns, Control-P and then Escape. This will put an extra line between the paragraphs, and also preserve the Control P character.

The only thing you need to do now is add the formatting commands at the top of the file and save it to disk.



MYSTERIOUS MEGA 4 CRASHES

Programs that write past the top of screen memory may be crashing on Atari's new Mega 4 computers. Previously, if a program had a bug which caused it to write above the top of the screen, it probably wouldn't show up—but it wouldn't do an harm, either. However, screen memory on the Mega 4 is at a much higher location than on the 520, 1040 and Mega 2. This means that writing above the screen can mean trying to write above available RAM (that is, above 4 megs). This will trigger an illegal bus error ■

Got an ST trick or tip to share? Send it to the Clipboard, c/o Heidi Brumbaugh, Programs Editor, 544 Second St., San Francisco, CA 94107.

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The Pointer Sisters' MIDI Magician Greg Whelchel

By Mard Naman

The Pointer Sisters have been cranking out Top Ten hits for more than a decade. Their power pop sound has graced everything from TV specials to popular films such as *Beverly Hills Cop*, and they remain a big concert draw around the country. But the next time you hear one of their monster hits like "Jump" or "Automatic," listen very closely. Because to achieve their infectious, good-time sound, the band uses the MIDI capabilities of the Atari 1040 ST.

And the Pointer Sisters—Anita, Ruth and June—can thank one man for making their live band MIDI-friendly: keyboardist Greg Whelchel. He and fellow keyboardist Marc Ritter have become experts on the ST and the uses of MIDI in concert.

FROM XE TO ST

Greg originally did his sequencing with an Atari 130 XE, but when the ST became available, he bought one immediately. He especially likes the fact that, unlike some other genres of software, professional MIDI packages abound for the ST. Whelchel has tried software

from many companies, such as Dr. T's and Steinberg Research, but favors Hybrid Arts' SMPTE Track. "The main reason I use Hybrid is it's the only one that allows you to directly sync to SMPTE time code," Whelchel says. "The timing is much better when you can sync to SMPTE."



Whelchel sequences parts that are "just too boring to play night after night."

Whelchel wouldn't think of trading his 1040 for anything else. In fact, he prefers it to the Macintosh. "The Mac doesn't have a MIDI port," he says, "which means you've got to shell out another \$150 and cart around another box. The other thing I don't like about the Mac is the screen is so tiny. . . I like a bigger screen and the option of color

or monochrome. The Mac II has this option, but it's a \$7,000 computer.

"I started using the Atari, and I liked it a lot so I've stuck with it. I think it's a great computer and I've got a lot of non-music software for it as well. I use it to do all my accounting, bookkeeping and writing."

But Whelchel's main use for it is for making great music. "In concert, about one-third of our songs are sequenced," Whelchel says. "We're always playing on all the songs, of course, but we augment with sequencing on a third of the tunes."

WE ARE NOT DEVO

Greg considered sequencing all his parts completely, but rejected this idea for good reason. "The whole point is to have a live show," he says. "Several performers have tried sequencing everything—Howard Jones tried it and so did Thomas Dolby and Kenny Loggins—and audiences didn't like it. They're going to see a live performance and spontaneous interaction between the performer and the audience. That's part of the fun of it."

According to Whelchel, "The main reason we sequence is either to play real mechanical parts, like a typical repetitive sequence that's supposed to sound robotic, or something that's just too boring to play night after night. If I'm real sick of playing a part, I can put it on the sequencer and let the machine do it.

"Another use for sequencing is to play something Marc and I can't physically play because we already have too many parts. We've only got two hands and the Pointer Sisters' tunes are real synthesizer-intensive. In fact, there are more synthesizer parts than anything else. At times, even between the two of us, we can't possibly cover them. But with the Atari 1040, we can do it all!"

PRESENTING THE ST BACKUP SINGERS

Another (surprising) use for the ST's MIDI system has been to sequence the Pointer Sisters' background vocals. One of the handy things about sequencing the background vocals is that two of the sisters can leave the stage for costume changes while the third takes a solo turn. "For example, Anita does a solo tune called 'More than a Memory' while Ruth and June leave the stage to change

took the 2-inch tape and just sampled the background vocals right off the master. It sounds great!"

LESS IS MORE?

Although he might admit to being a "techno-junkie," Whelchel believes some bands actually overdo it in the equipment department—and more is not necessarily better. "You don't need a lot of synthesizers to have a great show or a great sound," he says. "A variety of

have a devastating sound with a minimal amount of equipment. That's the approach I take."

Whelchel's stage setup is as follows: The Emulator SP-12 drives the Atari 1040 and the 1040 plays synthesizers on both sides of the stage. "We bought six 6-foot MIDI cables, chopped them in half and connected them to standard mike cable connectors," he notes. "Because the MIDI signal only uses three of the five pins in the MIDI plug, two are unused. A standard mike connector has three pins, so we just use those three pins. That way we can run the MIDI cable as long as we want."

Whelchel says a piece of hardware called The Mapper (manufactured by Axxess and distributed by Intelligent Music) "allows me to find all the splits I'm doing, as far as keyboard assignments and note assignments. I can call up all the patches, make all the controller changes, any redefinition of any MIDI code I want to make for each song. I don't even need to hit any buttons anymore. I don't have to set up any digital delays. I don't have to call any patches on any synthesizers. I don't have to load up any samples. All I do is hit one button on the Yamaha DX7II, which calls up the sequence for that song. Then I have a foot switch on the floor to step through all the changes."

This all works very smoothly when there are no mechanical problems. But what happens when something goes wrong in concert? After all, during a live performance you can't exactly call for time out to work on your machines. Whelchel has never had a problem with his Atari, but has found a few bugs in some of his other equipment. "The biggest problem I have," says Whelchel, "is stuck notes on the Yamaha DX7II. The only thing you can do is shut off the synthesizer for a split second and then ▶



From left to right—keyboardist Greg Whelchel, Ruth Pointer, June Pointer, Anita Pointer and keyboardist Marc Ritter on the set of "Top of the Pops." Photo by Dave Sessions, courtesy Hybrid Arts.

costumes, even though there are a lot of background vocals on that tune," says Whelchel.

Sequencing the background vocals was simple enough. Says Whelchel, "We went into the studio and Anita sang all the background vocals. The vocal blend is unbelievably good because she's blending with herself. Marc and I

excellent synthesizers that do different things, yes. But you don't need ten of each. You basically need one. By MIDI-ing things together, by using digital delays and digital reverbs and chorusing, by stacking them and layering them and mapping to change controllers around, you can really get out of one synthesizer what you need to get out of it. You can

CYBERTIP

By Andrew Reese, *START* Editor

If you're interested in using your ST for graphics and animation, then you probably own Antic Publishing's Cyber Studio, containing CAD-3D 2.0. Its companion control language Cyber Control is a simple BASIC-like language that can generate complex animations. However, if you're having trouble debugging new Cyber Control code, you can use your printer to monitor your program:

At the start of the program, make the print monitor optional:

```
@pr:input "Print status?  
No(Ret) Yes(1)?" ,p  
if p<0 | p>1 then  
bell:goto pr
```

(The second line uses the logical or operator in an If/Then statement to limit the allowable input and return the user to the input line in case of error.)

Then, wherever you need to monitor your program's progress, insert a statement using Cyber Control print format:

```
if p then ? "Generating  
spline with",key,  
"keypoints and",ff,  
"segments."
```

Cyber Control uses typical BASIC print statement format. Strings are in quotes and separated from variables by commas, and the question mark is shorthand for *print*.

Watch for *The Cyber Corner* in the next issue of *START* for more hints, tips and how-to's!

Cyber Control, \$59.95, Antic Software, 544 Second Street, San Francisco, CA 94107, (415) 957-0886; (800) 234-7001.

turn it back on. If anyone's really listening, they'll notice there's a DX-7 part suddenly missing. But it doesn't affect the timing, because the SP-12 and the Atari are pretty much handling the timing. If there's nothing on the receiving end, the Atari doesn't really care. It sends out its data anyway."

EXTRACURRICULAR ACTIVITIES

Whelchel does more than play keyboards for the Pointer Sisters. For example, Greg and two other keyboard players put together the music for the Ice Capades last year—the first time they had used sequenced music. "We did the entire prerecorded music for the Ice Capades using the ST," Whelchel says. "It worked great. We used samplers and synthesizers to make the tape, then they augmented the prerecorded sound with a live orchestra during their show. Until last year, they had an orchestra and did the traditional recording tape. What we did was totally MIDI—all sequenced. The only thing we did live was some big band stuff, because that's a style that's really hard to duplicate with the synthesizer."

For the Ice Capades, Whelchel got a good chance to see the ST and the Macintosh working side by side, because both were used on the project. To Whelchel, it was no contest. "The ST worked a lot better," he says. "The Mac was a bit tedious to work with because you have to use an intermediary box in order to convert SMPTE time code into something the Macintosh will understand. On the other hand, the ST just ran it directly with no problem."

IT'S NOT JUST FOR GAMES ANYMORE

When he's not working for the Pointer Sisters or the Ice Capades, Whelchel does TV jingles for companies like Toyota, McDonald's and Nissan. "When

I started doing commercials with this group of musicians, I brought my Atari ST to the studio," Whelchel remembers. "The engineers and the other musicians didn't know anything about it. They thought it was a game computer. They thought we were going to play 'Marble Madness,' not play music!" he laughs. "The unfortunate reality is that the Macintosh had quite a head start on the ST. All the people with money—studios and rich musicians—at first got the Macintosh because that's all there was. Either that or the IBM PC, which is a horrible computer. So there I was with my Atari and we'd lay down tracks to picture into the computer. Then I'd ask for a line with SMPTE code coming out of it. We'd play it and they were just shocked, unbelievably shocked that we could just locate to anywhere instantaneously."

Whelchel enjoyed the impressed looks on the engineers' faces. "I'd say, 'Just roll picture' and they'd ask, 'Don't we have to start from the beginning or do some sort of translation?' I'd say, 'No, just roll.'" Since that time, two of the engineers Whelchel works with have purchased STs and so have two of the keyboard players he does commercials with.

All of which just goes to prove that the ST is winning converts right and left. And it's not doing it on the strength of its name alone. It's doing it on the strength of its performance, both on stage and in the studio. ■

Mard Naman is a freelance writer who specializes in personality profiles. He is a frequent contributor to START.

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Masterpiece And SST

Two MIDI sequencers from Sonus

by Jamie Krutz

Deciding on MIDI sequencing software for the ST these days is like trying to pick your favorite pie at Mom's Corner Cafe. The first one you try will probably seem unbeatable, but the next may taste even better—and there are always more behind the counter.

Two of the juiciest new sequencers come from Sonus. Masterpiece is an expensive, feature-packed professional sequencer. The SST (SuperSequencer ST) offers the same flavor as Masterpiece but with a lower price.

MASTERPIECE

Masterpiece uses a "section chaining" system of composition. That means you could compose a verse, a chorus and a bridge section as separate sequences, then chain them together in any order to create a finished song. You can have up to 99 repetitions each time a section is used.

Masterpiece allows you up to 24 sequences per song, and each sequence can have 32 tracks. There's also a Lead Track option, which lets you do a single continuous performance over the top of the chained song.

SEQUENCES AND SONGS

You can use Masterpiece in either sequence mode or song mode. You do your recording and editing in sequence mode, then combine sequences into songs in song mode.

The main sequence mode screen has a clean, icon-based layout with Sequence, Transport, Tracks and Counters windows. Copying a sequence or track is simple—just drag one icon over another. Clicking on an icon selects that sequence or track for recording, editing or playback; double-clicking calls up information about the sequence or track. There are full record and play controls, and each track can have up to four different MIDI assignments. You can also see memory remaining, current counter position, sequence length, in and out counters (for autopunching and editing) and cue counters (for specifying 25 user-programmable cue points).

The Tracorder feature lets you use a special 25th sequence for storing tracks when moving them between sequences. You can click on the Full Range and All Events icons to select any range of notes, velocity, MIDI channel, aftertouch and MIDI controllers to change over any range of time.

Any editing (including quantizing, transposing, erasing and bouncing) will only act on the data you specify. If you want to transpose every C# with a velocity over 100 in the third and fourth bars up an octave on track 2, you can do it. Masterpiece includes a list editor as a separate program, but the built-in range editor is so powerful you probably won't use the list editor very often.

Recording with Masterpiece is easy—just click on the desired sequence icon in the sequence window, select a track icon, then click on the record icon. A metronome clicks the tempo you've selected as you play your MIDI keyboard.

The main screen in song mode is similar to sequence mode, but with the Track window replaced by a Song Elements window with 32 song element icons. Creating songs is as easy as dragging sequence icons from the sequence window to the song element window in the order desired. You can adjust the amount of time the computer spends doing housekeeping between sequences, and choose whether to automatically reset the MIDI volume and pitch wheel during that time.

NEATNESS COUNTS

Masterpiece is packed with neat features. You can transpose sequences by hitting a note on your MIDI synth—you'll transpose your song the interval of the note you hit from middle C. Quantizing has a tolerance setting, so only notes outside the defined range will be quantized. Real-time controller mapping lets you reassign up to eight MIDI controllers to affect other controllers on slave synths. Note-on velocity 0 (which some synths send for a note off) is stored as note-off velocity 0, so editing of note on/off's can be done independently. Each sequence has a Set-Ups box with MIDI volume and synth patch numbers for each MIDI channel, and the box can store brief notes you may want to make about the sequence.

And the list goes on: The metronome countdown length before recording is programmable. There are computer keyboard commands available for many functions. A "View MIDI" feature lets you look at any incoming MIDI data. The files are compatible with SuperScore, Sonus's music notation software. An easy-to-use step entry mode is available for non-real-time recording. You can format disks without leaving the program. Finally, the documentation is well-written and comes in an easy-to-update three-ring binder.

NOBODY'S PERFECT

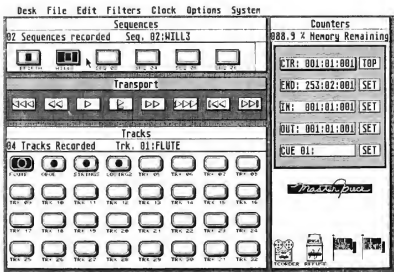
Masterpiece has two different versions of MIDI Through, which could cause some confusion. Play Through will allow MIDI Through only while the sequencer is playing or recording, while Captive allows MIDI Through, but completely disables the sequencer.

Other drawbacks: recording or playing always disables the mouse. If you want to check the editing filters you have to

separately call up seven requester boxes. After some operations, some windows are redrawn unnecessarily. And if you want to write a basic song structure in sections, but then add more than one track over the top of your song, you'll feel limited by the single Lead Track. Finally, Masterpiece uses a cartridge-port "key" for copy protection.

SST

Sonus's SST is set up just like Masterpiece, but with a few features left out. SST allows you only 18 sequences and 24 tracks. It has most of the edit filters, but they can't be assigned to separate data ranges (although they can be applied to specific time ranges). Thus, if you enable the note filter, it will always filter out all the note data within the specified measures, rather than letting you filter, say, only from C2 to A#3; you'll find you need the list editor more.



Masterpiece.

SST also has no Set-Ups window, and it doesn't support control mapping (although it does let you use the Mod wheel to control MIDI volume).

SST shares most of Masterpiece's drawbacks, but it does have one advantage over Masterpiece—it comes with MIDI cables.

COMING ATTRACTIONS

According to Sonus programmer Jim Sproul, the MIDI Through and filter viewing problems in Masterpiece will be corrected in version 2.0. Minor updates are free, and for \$75 Sonus will send you all major upgrades for two years. However, be warned: beginning with version 2, Masterpiece will require a megabyte of memory, so it will no longer run on an unexpanded 520 ST.

Masterpiece supports MIDI clock and song pointer, and should support MIDI time code in the future. Sonus offers a SMPTE-MIDI time code and song pointer converter; for FSK sync you could use a drum machine or a Yamaha FSK to MIDI converter. You can also connect Sonus's MIDI Plus Port ▶

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CONCLUSIONS

Both Masterpiece and SST are easy to get up and running quickly; Masterpiece's editing is especially powerful and flexible. There are some drawbacks, but if you prefer to write music in sections and then assemble sections into songs, Masterpiece and SST may be the sequencers you've been looking for.

If you'd like to see more articles like this one, circle 150 on the Reader Service Card.

Jamie Krutz writes music for film and video productions, and has used an Atari ST since 1986.

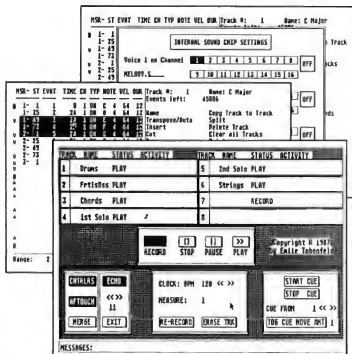
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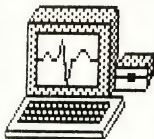


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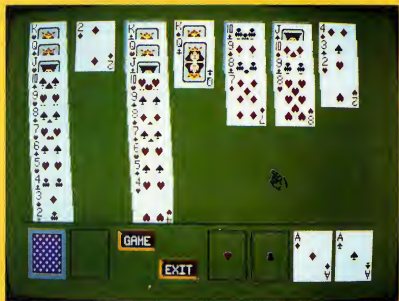
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Next issue, we'll be celebrating two milestones: the third anniversary of the Atari ST and the second anniversary of START! We'll be presenting exciting summer features:

- A history of the ST and START—including an index on disk of the first two years of START!
- Microsoft Write—it's here and Ian Chadwick reviews it!
- BASIC Overview—Dave Plotkin takes a look at the most popular BASIC languages for the ST.
- A Musical Workstation—Let START's MIDI expert Jim Pierson-Perry show you how to take your musical ideas from meandering notes to finished score.
- Small At Large—ST innovator Dave Small returns to the pages of START with a new column!

We'll also have a disk packed with software—Creation, Tom Hudson's fractal landscape generator, The Traveler, a



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In addition, you can look forward to our regular columns and departments, news, new products, your letters and a few special surprises—all on sale in June in the next issue of START!

Test Drive, F-15 Strike Eagle and Vegas Gambler

By David Plotkin

Simulations are an interesting subset of computer entertainment programs. More than mere games, simulations are growing rapidly in popularity for all makes of personal computers. Everyone from businesspeople to grade-school kids are engaging in simulated experiences that would be too dangerous, too expensive or too impractical to perform in real life. With simulations, you can fly a fighter plane, drive a race car, command a submarine, gamble in Vegas and engage in many other activities, all from the comfort and safety of your chair. Want to blow scads of money at the craps tables? Want to buzz the Transamerica Pyramid or (try to) land on the Golden Gate Bridge? Simulations can let you do these without injury to life, limbs, property or pocketbook.

Here I review three simulations—one driving, one flying and one gambling. All of these programs put you in the hot seat and test your mettle—with cars, planes and cards.

TEST DRIVE

If you've ever hankered to put the "pedal to the metal" in a fast car on a twisty mountain road, daring cops, potholes and oncoming traffic, then Test Drive is for you. You can choose from one of five sports cars: a Corvette,

Porsche 911, Lamborghini Countach, Ferrari Testarossa or Lotus Turbo Esprit. The cars can all top 120 mph, and their other vital statistics, such as acceleration, torque, engine displacement and tires, show on an initial screen (your shopping list of high-power fun). After you've studied your car's features, pick the one you want and you're ready to drive.



Test Drive.

You control every aspect of your car with the ST joystick. As in most other car-driving games, pressing the stick forward makes you accelerate, pulling back lets you brake and you steer by moving the stick to the left or right. If you've selected manual transmission, you can shift gears by pressing down the joystick button and moving the stick. (As you do, a small graphic of

your gearshift knob appears on your dashboard, letting you visually guide the stick. Shifting into fifth takes some practice.)

Most simulations are inherently "first-person" programs, and Test Drive is no exception. Your view is out the windshield, with your steering wheel and instrument panel below and the all-important rear-view mirror above. The road, mountain walls, road signs and traffic are visible through the windshield, all rendered in fast-moving graphics. On your "sun visor" is a radar detector to warn you if a police car is approaching.

Playing Test Drive is simple—you drive the car as fast as you can, trying not to rear-end the traffic in front of you, drive off the sheer cliff to your left, hit the vertical rock wall to your right, get creamed by oncoming traffic, or get stopped by Smokey. Your goal is to reach the top of the mountain, stopping for gas periodically. When you do, the program calculates your average speed, awards you points and ranks you ("Sorry, you drive to Isic! slowly to have a sports car" is one example). Controlling these high-performance automobiles takes some getting used to. The game is quite easy if you keep your speed down, but then you don't get many points. At high speeds, it's very easy to overcorrect the steering, especially on the treacherous curves.

There are posted speed limits that you can largely ignore unless your radar detector starts to blink; if all its red lights come on, your speed is being monitored by the police. If you're going too fast, a patrol car will appear in your rearview mirror. You can either stop and take your ticket (which costs points and time) or try to outrun him. If there's not a lot of traffic, then stomp it into warp speed and boogie. It's not hard to get

away, especially in the Lamborghini, with its top speed of 173 mph! If the police catch you, they'll write you up, and if you ram the back of the police car, the game's over. (Just as it is if you pulled this stunt in real life.)

If you make a mistake and run into something, go flying off the cliff, or over-rev your engine, your windshield will sprout cracks, you come to a stop and you must start again. Go through five cars and the game is over.

Test Drive comes on two disks, and two drives are recommended, although you can load and play it on a one-drive ST system. It works in either color or monochrome. Strangely enough, although Test Drive displays a title screen with scores on it, I could never get a figure to appear on this screen, although I got some pretty respectable scores. I wish there were a "vanity board" for this game, but in spite of this omission, it's still a lot of fun.

F-15 STRIKE EAGLE

Microprose has published quite a number of simulations for Atari computers, starting with Hellcat Ace for the Atari 8-bit machines some years ago. F-15 Strike Eagle is their latest offering and plays like the 8-bit version, but has vastly improved graphics and sound.

The F-15 is an "all-weather air superiority and ground attack fighter." It carries long-range fuel tanks, two kinds of missiles, bombs and a 20mm cannon. Your view is out the cockpit window, and below, a magnificent array of high-tech systems guides you. Besides your view of the surrounding terrain, incoming enemy aircraft and missiles, you have your "Heads-Up Display" (HUD), which actually projects a variety of information vital to your survival and success right onto the cockpit window in your field of view (as in a real fighter

plane). The information presented includes your altitude, course heading, cursors showing the location of enemy aircraft (before they are visible) and missiles—both yours and the enemy's.

When your bombs are active, the HUD will display where a bomb will hit the ground. Below the HUD is a radar screen equipped with variable range, an aircraft status window and a navigation window. The aircraft status window shows your remaining fuel tanks, bombs, missiles and cannon ammunition. The navigation window shows



F-15 Strike Eagle.

ground targets, including missile sites, airports, other targets and your base (a carrier in the Mediterranean, for the August 1981 Libyan scenario). (Editor's note: *Some of the scenarios in F-15 Strike Eagle involve it being a carrier-based fighter, an exciting but impossible situation—the F-15 isn't even flown by the Navy, but by the Air Force. F-14 Tomcats from the U.S.S. Nimitz were actually involved in the 1981 Gulf Of Sidra shootout.*)

Using Strike Eagle's navigation window is very simple. You move a cursor in the window using the keyboard arrow keys until the cursor is on top of the target you want to fly towards. By then keeping a "location cursor" centered in your HUD display, you will fly towards the target.

The F-15 also includes a variety of

sophisticated warning and avoidance systems, alerting you to the presence of enemy aircraft, missile launchings and the identity of incoming missiles (whether they are radar- or infrared-guided). Your fighter is equipped with "chaff" to confuse radar-guided missiles and with flares to confuse infrared-guided missiles.

You can fly the F-15 with either the joystick or mouse; I prefer the joystick since that's how you fly the real plane. You also use many of the ST's keys, and it takes some familiarization before you can punch a key without first pausing and referring to the manual. The manual has a two-page display showing what all instruments do. This is less necessary in the Atari ST version than in the 8-bit versions since many of the instruments are labeled on the screen. There is also a keyboard summary. The keys are not especially hard to learn since they are fairly mnemonic; the "G" key, for example, activates the guns.

F-15 Strike Eagle allows selection of levels of difficulty from "Arcade" (almost impossible to crash) to "Ace," at which it's very tough to survive. The simulation includes eight scenarios (missions), in which you have various primary and secondary targets to destroy. Doing so successfully will cause you to advance in rank, provided you save the Mission Roster to a blank formatted disk. Because of the large variation in skill level and missions, F-15 is very playable and a lot of fun. It will take a while before you can survive on a consistent basis, but the program is not too difficult to master.

Strike Eagle's graphics are very good. Enemy aircraft and missiles are well-rendered (the missiles even show flaming tails as they fly along!).

One drawback, though—the manual is the same for every version of the ▶

game, which can be a little confusing. The differences for the ST version of the HUD are shown in a small box in the upper left corner of one page. I wish Microprose had used a full-sized insert to show the screen for the ST separately, since there are some important differences between the ST version and the version for, say, the IBM PC. Other than this minor complaint, though, I like F-15 Strike Eagle a lot.

VEGAS GAMBLER

Vegas Gambler simulates a trip to a Las Vegas casino and includes four of the most popular of gambling pastimes: Slot Machines, Blackjack, Poker and Roulette. It features excellent graphics and sound and is completely mouse-driven, making it very easy to use.

When you first boot Vegas Gambler, you may select a game to play, load a previous gambling session, save the current gambling session or quit. After selection of a game, there is a brief musical interlude (a different tune for every game) and then the game screen appears. You start each new game with \$500.

Slot Machine is the classic version. You select a coin from a stack of \$1 coins, move your cursor to the coin slot and press the mouse button to drop the coin. You may bet up to five coins; after the first bet, the bet remains the same until you change it, so you don't need to keep dropping coins in the slot. Depending on the number of coins dropped, the correct payoff lines light up so that you can see which "lines" will be active. Click on the handle to the right of the machine and the tumblers start to spin, showing brightly colored symbols—fruits, the bar and bells in the windows. If you win, the coins come spilling down into the coin slot. Hit the

jackpot and the "100" or "200" lights flash.

Blackjack is also known as "21." The object is to beat the dealer, with the winner being the one who gets closest to the value of 21 without going over. You are dealt two cards, both face up. The dealer also gets two cards, but only one is face up. The values are added up (face cards count as 10, Aces can be eleven or one). You must then decide whether to get more cards ("hit") or stick with what you have ("stand"). If you go over 21 ("bust") you lose automatically. If you don't go over, then the



Vegas Gambler.

dealer takes cards until he either exceeds 16 ("must stand") or goes bust. Getting "Blackjack" (Ace and any face card) pays three to two unless the dealer also gets Blackjack, in which case a tie ("push") is declared and your bet is returned to you. The game supports splitting, doubling down and insurance.

Poker is actually poker slots. You place a bet just as you did with the slot machine game, above. You then click on the "Deal" button and the five cards appear in their window on the machine. You choose the best poker hand you can from the cards, then click on the "Hold" button to hold the cards you want and click on the "Deal" button again to redeal the cards you don't want to keep. After the redeal, you are paid depending on how good a hand you

have. You get back your original bet for a pair of jacks or better, and payment goes up from there, with a payment of \$500 for a Royal Flush.

Roulette accurately duplicates a real roulette table. You can set the value of each chip you want to bet and bet it on a number, black or red, even or odd, one of the three groups of 12, one of the two groups of 18, one of the three rows of numbers, or the zero or double zero. Click on the "Spin" button and the roulette wheel appears with the ball dancing along. When it comes to rest, you are informed of how much you have won or lost.

Vegas Gambler is very easy to play and the colors and sound are excellent. The only aspect of gambling it *doesn't* simulate is playing with real money, and for me, using real money is part of the thrill of gambling. I prefer live gambling over Vegas Gambler, but the game provides a distinct advantage—you can't lose your shirt to an ST computer. **■**
If you'd like to see more articles like this, circle 205 on the Reader Service Card.

David Plotkin is a chemical engineer for Chevron U.S.A., and is a frequent START and Antic contributor.

PRODUCTS MENTIONED

- **Test Drive**, \$39.95. Accolade Software, 550 Winchester Blvd., San Jose, CA 95128, (408) 446-5757. CIRCLE 206 ON READER SERVICE CARD
- **F-15 Strike Eagle**, \$39.95. Microprose, 180 Lakefront Dr., Hunt Valley, MD 21030, (301) 771-1151. CIRCLE 207 ON READER SERVICE CARD
- **Vegas Gambler**, \$34.95. Logical Design Works, Inc., 780 Montague Expwy., Suite 403, San Jose, CA 95131, (408) 435-1445. CIRCLE 208 ON READER SERVICE CARD

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WordPerfect continued from page 45

IBM vs. ST

Since the release of WordPerfect 1.0 for the IBM PC/MS-DOS market in 1984, WP has cornered 40% of the PC word-processing market. It is currently at version 4.2, but version 5.0 was announced last fall for release about the time you read this. Version 5.0 is to have full font control and integrated graphics—a big step towards desktop publishing. An ST 5.0 could come out a year after that.

The ST and Amiga versions are based on the IBM Version 4.1. IBM Version 4.2, released in late 1986, has enhancements aimed at the legal market, including a table of authorities, an index concordance (for phrases), document summary, line numbering and sorting. These are not, however, the sum of differences between 4.1 and 4.2:

- In 4.2, up to 24 columns per page are available; on the ST, only 5.
- A functional line draw in 4.2 becomes a weak border draw on the ST, the fault of Atari's lack of suitable figures in the character set.
- 4.2 lets you drop into DOS and perform command functions. On the ST, there's no such feature (although GEM does allow you to use desk accessories that will substitute). Again, this is the ST's failing—it has no inherent command line processor below GEM.
- There's no type-through feature in 4.1—a feature that allows you to print what you type directly; an insignificant loss.
- 4.2 has a print preview in which headers, footers, footnotes and endnotes appear. With the ST version, you can't see them in place until you print them out.
- 4.2 is supported by external packages which enhance the program with a macro editor, notebook, calculator and file manager. ST 4.1 has none of these.

On the plus side, the ST version allows up to 4 simultaneous windows, compared to 2 in 4.2. The ST manual has a *much* better layout and is more coherent than the 4.2's. ST 4.1 supports italics; bold, underline and italics are displayed properly, although sub-, super-script and varied font are *not* (there is no GDOS support).

THE SPELL CHECKER AND THESAURUS

With WP's large 115,000-word spell checker, you can skip words, add them to its dictionary and perform phonetic lookup. When it finds a misspelling, it attempts to make an intelligent guess at what you mean, but sometimes it generates bizarre suggestions, e.g., "thru" as a replacement for "thru." I found the spell checker consistently hung on common words ("dictionary," "characters," etc.) in large files. Word count on the latest revision (January 29th) is erratic, on some WP copies it works, while on others it doesn't. Finally, you can't add words with numbers in them (e.g., "2nd") to the dictionary.

The thesaurus is another mixed blessing. It offers both synonyms and antonyms and the ability to replace a word in text with one of the alternate words it lists. However, you can't add to the definitions or search on capitalized or uppercase words (it can find "easy" but not "Easy" or "EASY").

**Using
WordPerfect 4.1
is like driving a Ferrari
through rush-hour
traffic.**

FILE FORMATS AND PRINTER DRIVERS

WP files are in a non-ASCII format, but you can save files in ASCII or print them to disk. CONVERT.PRG, provided with WP, can translate a file from 1ST Word or Word Writer to WP format, but not the other way around. The January 8th revision also offered conversion from ST Writer, but it was buggy and was deleted from the January 29th revision.

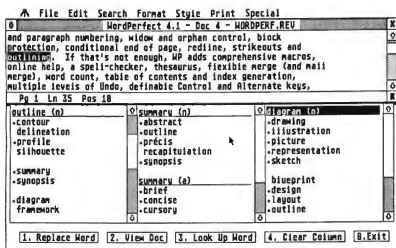
Although many are only partially supported, 259 pre-defined printer drivers are provided. Six printer definitions can be chosen at one time for the system. You can also create or edit printer drivers using the included utility program and your printer manual.

BUT WAIT, THERE'S MORE

Installation of WP is not very clear; nowhere are you told what files should be installed with what programs or given suggestions for optimum use of disks. You may have to make

several attempts before you get a working system configured to your liking.

WPSTART.PRГ lets you define the system paths, directory location and a range of default variables including the directory, justification, hyphenation, tabs, line and page sizes.



The Thesaurus gives both synonyms and antonyms.

When I defined system and virtual paths as C:, WP blithely ignored my setup and used C:\WP instead, but produced error messages to compensate. With everything set to C:\WP, I had no problems. (Editor's note: WPSTART.PRГ also has the annoying habit of locking up for no apparent reason, and the January 29th version is no better.)

I highly recommend a hard disk for using WP. With two double-sided drives, the program, macros and configured printer files should be on the disk in drive A. The spell dictionaries and thesaurus should be on one disk and inserted into drive B when needed. Trying to use WP on a single-disk drive system is almost impossible.

WP uses the disk as virtual memory: files too large to fit into memory are stored in portions on the disk (areas above and below the cursor, in separate files). This permits you to create and edit very large files, but you must have disk space available to handle them. Swapping large files between disks and memory is time consuming, even with a hard disk. Moreover, WP creates a variety of disk files for various purposes, from blocks to deleted text. These can eat up free disk space at an alarming rate.

FROM FIRST WORD TO LAST WORD?

For almost every WordPerfect feature there is some drawback, mostly because the program is, well, unfinished. On one hand, WordPerfect offers a wealth of power and features; on the other hand, WordPerfect is a monstrous program, making inadequate compromises with the operating system and still plagued with bugs.

I'm tempted to dismiss this version as half-hearted and not worth the trouble, but WordPerfect Corporation has a good reputation. They have great customer support and put an

enormous amount of time and effort into their products. I'm convinced that they will continue to improve this program until it lives up to its name—perfect. Ask your local dealer or other users to tell you if the latest version is stable. Also, keep in mind that WordPerfect's \$395 suggested retail price tag is quite misleading; a number of computer dealers are offering it in the low \$200s and members of the educational community (both teachers and students) can purchase it for only \$99. (Contact your local WordPerfect dealer for details.)

But above all, bear with its teething pains. It should get better.
If you'd like to see more articles like this one, circle 157 on the Reader Service Card.

Ian Chadwick is a free-lance writer and the author of the classic Atari 8-bit reference book Mapping the Atari.

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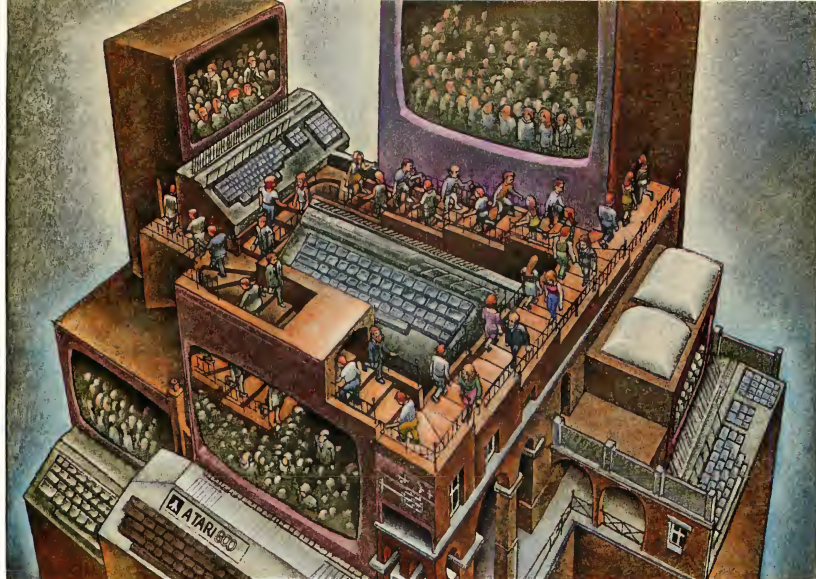
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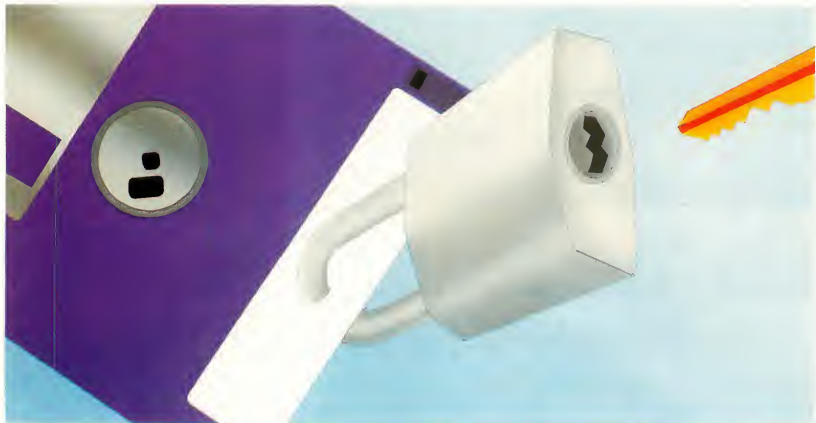
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CIRCLE 007 ON READER SERVICE CARD

LOCK & KEY

FILE SECURITY COMES TO YOUR ST

by **JESSE DEVINE**



Diane Nangle

Ever wonder how you could keep your ST files safe from prying eyes? Concerned that your floppies might fall into the wrong hands? If you share a computer at work or at home, then you need Lock & Key—START's file protection system. The programs you need to keep sensitive information private and your personal files safely hidden away are on your START disk.



You'll find the program for this article, *LOCKKEY.PRG*, on your START disk. The source code is in the compressed file *LOCKKEY.ARC*.

One of the things I always admired about TRSDOS (the operating system for Radio Shack's TRS-80 computers) was its built-in ability to use passwords. If you had a file you wanted to keep secret you simply added a password to the end of the filename. As old as that system is, and as primitive as computers were in those days, you have to give the people at Tandy credit for their built-in file security system.

Over the years, I haven't seen many other computers that have password protection built into their disk operating systems. Nevertheless, the computer users of the world have found convenient ways to protect their most sensitive files from prying eyes. On systems such as the Commodore 64, for instance, you can simply slip a control character into a filename, and no one will ever be the wiser. The file will be there, but virtually inaccessible. Unfortunately, on the Atari ST, things are not so convenient. There is neither built-in password protection nor the ability to sneak a control character into a filename, so up until now there has been no way to keep people from peeking around your personal files.

Enter The Secret Word

As a remedy for the lack of security on the ST, I devised a simple yet efficient system for limiting access to certain files. Lock & Key, when provided with the correct password, will lock a folder in the root directory of a floppy disk by changing the folder's attribute from "folder" to "hidden" status. As a result, the folder does not show up in the directory, and the system no longer recognizes the folder's name. Still, all the information concerning the folder's directory is left intact, and the space occupied by the folder's files is safe from being reused by the system. To unlock the folder, you supply Lock & Key with the correct password again, and the folder's attribute will be changed back to "folder."

The Lock & Key system is made up of two separate programs. The most important program, the key, locks and unlocks a folder if the right password is entered. The program you'll find on your START Disk, LOCKKEY.PRG, creates the key and customizes it. For convenience, you'll probably want to copy both LOCKKEY.PRG and LOCKKEY.DAT to a new disk before using them. (Be sure to copy both LOCKKEY.PRG and LOCKKEY.DAT, and if you put them in a folder make sure it's the same folder. When you double-click on

**Lock & Key
doesn't alter your
files—it simply hides
the folder they're
in.**

LOCKKEY.PRG, it begins by trying to load LOCKKEY.DAT; if it can't find the file, an appropriate alert box will appear and you will return to the Desktop.)

To use Lock & Key, first copy the files you want to protect into a folder on a floppy disk. (The folder must be in the root directory—that is, not a folder-inside-a-folder.) Now run LOCKKEY.PRG. The first thing you should see is the title box, after which the program will ask you for the name of the folder you wish to make a key for. Enter the name and click on OK, and the program will ask for the password you'll use to lock and unlock the folder. Enter your password—and be sure it's one you'll remember later!

After you enter the folder name and password, Lock & Key will ask you which disk drive contains the folder

you wish to make a key for. (You can only choose drive A or B; Lock & Key won't work on a hard disk folder.) Once you click on the appropriate button, Lock & Key will create a file called KEY.TOS on the disk you selected.

(If a file by that name already exists, Lock & Key will ask if you want to write over the previous file. Generally, unless you are changing your password, writing over a previous key is a bad move. There's no telling what you might be permanently locking yourself out of. Cancel the program, return to the desktop and find out what that key goes to. If the key belongs to an important folder, such as one containing your 1040A tax return, you might rename it 1040TOS—any name will work as long as the file extender is TOS. If no previous key exists on the disk, a simple alert box will inform you that everything went smoothly.)

Now, return to the desktop and double-click on KEY.TOS. The screen will go blank, and the key program will ask for your password. When you enter the password, the letters you enter will appear as asterisks, so as to preserve the secrecy of your password from any on-lookers. If the password is valid, the key will search for the correct folder entry, toggle the attribute, and then inform you that the folder has been locked or unlocked.

Caueats

And now, some words of caution. Lock & Key is designed only for use with floppy disks. Do not attempt to make a key for a hard drive. Furthermore, the folder you specify must be in the root directory, or the key you install will do absolutely nothing. You may store the installer program and its data file anywhere you like, but the key program will automatically be put in the root directory of the drive you select. Do not move the key to a hard drive after it has been placed on a floppy.

As with any security system, there's always a way in. Lock & Key is no ex- ▶

LOCK & KEY...

ception to this rule. For instance, someone who is really determined to get at your files and has a sector editor and a good technical understanding of the ST's disk architecture might have a chance at breaking into your hidden folder. Not wanting to say anything that would weaken my own system, the less I say about disk architecture the better.

There's another potential hole in the

fence: an evildoer who knows the name of the hidden folder can make a new key, complete with new password, and then simply unlock the folder. If this nasty soul deletes your key, you could be locked out of your own files! For this reason, I suggest you keep the names of your hidden folders a matter of utmost secrecy.

On the brighter side, the determined

snoop is not likely to find the name of the folder or the password by simply listing or examining the key program. Even though they are contained in the key, both the folder name and password are scrambled.

If you are interested in examining the source code to this program or learning about how it works, read the files BREAKDOWN.TXT, LOCKKEYC and KEY.A68; they're in the archive file

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LOCKKEY.ARC on your START Disk. (Refer to the disk instructions page if you are unsure about how to unarc a file.)

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Jesse Devine is studying Computer Science at the University of Texas at Arlington. He became interested in computers when he was twelve, and turned to Atari after his Commodore 64 was stolen.

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By Gregg Pearlman

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The No-Load Mutual Fund Directory can teach you about mutual funds and help you select them. (A mutual fund is a company that pools the money of many investors—its shareholders—to invest in a diversified portfolio of securities. "No-load" means no broker or salesperson.) This feature searches for funds and firms that distribute them.

In the Business Management area,

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the main features are Mark Stevens' Business Reports, the PR and Marketing Forum and the International Entrepreneurs' Network. Stevens writes a nationally syndicated column, "Small Business," and is the author of several books, including *How to Run Your Own Business Successfully* (Simon & Schuster). The index of recent reports has more than 50 titles ranging from "Settling Business Conflicts" to "After The Crash." The International En-

trepreneurs' Network is a 24-hour "expert resource" providing information, communications and contacts for entrepreneurs and those professionals who serve them.

The PR & Marketing Forum (PRSIG) has more than 2,500 members and sports 16 data libraries and weekly online conferences. This area has a special data library section featuring the Electronic Brain Trust, a public relations and advisory service, and a bulletin board that has had over 27,000 messages posted since the SIG began in January 1984.

ONLINE LAW

To get to CompuServe's Legal Forum, type GO LEGAL. The message base there includes advice for law students and would-be law students, comments on issues such as the censorship of school newspapers and the Baby M case, legal databases, citizens seeking legal advice and problems with clients.

The Legal Forum has nine data libraries containing programs (ST programs, however, are notably absent) and text files including descriptions of medical malpractice consulting firms, time-billing packages, essays and articles, and class outlines.

This forum (and a few others) also offers a service called IQuest, providing access to over 800 publications, databases and indexes relating to business, government, research and news. IQuest searches its databases for over 69 subjects, from civil engineering to anthropology.

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The GENie Quotes Securities Database contains current and historical information relating to over 67,000 security issues of all types (from common stocks to mutual funds). Features include a Specific Issue Query, daily market indicators, including Dow Jones Averages and portfolio management.

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24-hour investment advisor; and Naiconet, the North American Investment Corporation's online brokerage service.

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Gregg Pearlman is Assistant Editor of *Antic*.

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THE MULTIPOWER ST

by FRANK HAYES,
START SENIOR EDITOR

EXPANDING YOUR BUSINESS CONNECTIONS

The low-priced power of the Atari ST makes it the perfect computer for business—and the ST is well-supplied with word processors, spreadsheets and database managers. But a growing business needs more—and the ST is equal to the challenge. Whether the need is for small-business accounting or a complete multiuser network, the ST is still the perfect business solution.

The ST has been getting down to business since the first 520 rolled off the assembly line in 1985. With the tremendous power of the 68000 processor and a price tag that didn't require another bank loan, the ST was the perfect computer for a business that needed to computerize but couldn't afford the cost of joining the IBM world.

Of course, there are ST word processors, database managers and spreadsheets—they're the basic tools of any modern business using desktop computers. But using a computer for a business isn't just a matter of electrifying your typing, filing and planning. Businesses need accounting software, too—programs for order entry, inventory control, billing and payroll—along with

specialized software like point-of-sale systems.

And using more and more desktop computers is not always enough for a business. When business data is spread out among many different computers, you'll find it's critical that the computers can share data—that means connecting them in a *local-area network*, or LAN. And when all the data is on one computer, you need an operating system that will let several people use up-to-date data—a *multiuser* system.

Atari spotted the need for a state-of-the-art network for the ST, and last November at Comdex, the software trade show held each year in Las Vegas, announced a spectacular array of software and hardware to catapult the ST into the multiuser, multitasking, networked business world.

Idris

The centerpiece of Atari's business solution for the ST is **Idris**, a Unix-like operating system. Unix is a popular multiuser operating system for mainframes and minicomputers, and Idris is one of the best microcomputer adaptations of Unix.

Idris was designed from the beginning to bring Unix's abilities to computers like the ST. That means the ability for several people to use the same computer (and its files) at once. It also means letting each user run several different programs at once (multi-tasking), as well as the ability for several computers to communicate in a network.

Sound ambitious? It is. But here's what's already available in the system:

CrystalWriter Plus (Syntactics) is an object-oriented, WYSIWYG ("what you see is what you get") word processor. It offers automatic formatting, on-line help, spell-checking and mail merge, as well as a library of predefined document formats.

Crystal Document Management System (Syntactics) is a much more expansive version of CrystalWriter Plus, including such features as automatic formatting, multiple columns, spelling correction, predefined titles/headers/footers, outlining, indexing, glossaries,

multiple fonts and type sizes, laser printer support, and interfaces to many other databases and spreadsheets.

LEX P*D*Q (Trajectory Software) is a WYSIWYG word processor that includes on-line help, mail merge, a 120,000-word dictionary, automatic hyphenation, an on-line four-function programmable calculator, and the ability to store and recall commonly used phrases.

LEXET (Trajectory) is a desktop publishing system that produces high-quality laser printer output of documents created with **LEX P*D*Q**. It can also be used as a stand-alone electronic typesetting system.

Word Era (Tigera) is a Wang-compatible word processor with voice annotation and recognition, multiple windows, footnoting, math capabilities, indexing, spell-checking, hyphenation, mail merge, redlining and support for all types of printers.

Fusion (Network Research Corporation) is network software that runs with Idris to allow several different computers to share resources. It's compatible with IBM, Apple and minicomputer networks and offers file locking, electronic mail and standard protocol support.

PromiseLAN (Moses Computers) is the physical connection among the computers in the network. Unlike many networking systems, it doesn't require using one computer as a "dedicated server"—all the computers in the network can be used.

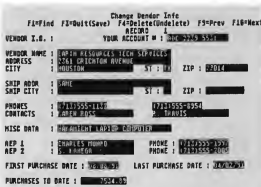
We'll have a complete review of Idris and the business products that currently run under it on the ST in an upcoming issue of **START**.

Micro RTX

Micro RTX, from Beckemeyer Development Tools, is a TOS-compatible multitasking kernel. That means it's very similar to GEM, the regular operating system for your ST, and with a limited amount of work many programs can be converted to multitasking. If your com-

pany writes its own applications, **Micro RTX** can really increase the power of each ST—it's a true multitasking operating system that lets you run several programs at once.

Beckemeyer has also created an **Advanced Business System** that's designed as a multiuser, multitasking system using three 1040 STs. It works as a point-of-sale system (with or without an electronic cash drawer), prints receipts, updates inventory, maintains customer lists, handles accounts receivable, analyzes product movement and salesclerk performance and determines time to reorder. This isn't just a program to run on your ST—it's a complete hard-



Sales-Pro

ware and software solution that's been working successfully in small businesses.

BOS

The **Business Operating System (BOS)** has many versions—it runs on IBM PCs, minicomputers and many different 68000-based computers. What's unique about BOS is that every BOS program will run, without changes, on any BOS system. That means you can run the same programs on your ST that run under BOS on multiuser minicomputers.

Because BOS software must run without changes on many different kinds of computers, they're "plain vanilla" programs that don't take advantage of the ST's special features. And ST BOS is a single-user system, not multi-user. But a wide range of applications software is available under BOS, including **BOS/finder** (database manager),

BOS/Planner (spreadsheet), **BOS/Writer** (word processor), **BOS/AutoClerk** (report generator), **BOS/Accounts Receivable**, **BOS/Accounts Payable**, **BOS/General Ledger**, **BOS/Inventory Control**, **BOS/Invoicing**, **BOS/Sales Order Processing**, **BOS/MicroCOBOL** and special applications for credit unions, construction companies, country clubs, schools, doctors and many other enterprises.

Business Applications

If you're not ready for a new operating system, there are still plenty of business applications that run with the ST's regular single-user operating system. Aside from word processors, spreadsheets and database managers, here are some of the more popular business packages available:

Dac-Easy Accounting (DAC Software) is the ST version of the IBM accounting program. It includes general ledger, accounts payable/receivable, inventory management, purchase ordering, billing and forecasting.

Inventory Manager (Regent) handles detailed part numbers and descriptions, price fields, custom reports, and stock and obsolescence management. It can automatically generate orders based on sales history and user-defined parameters.

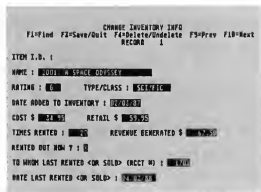
Synsoft General Ledger (Synsoft) features automatic double-entry accounting, automatic check-writing and up to 500 active accounts. Ledgers are automatically posted using keyboard-entered data; continuous error-checking insures database integrity.

STAccounts (Ditek) offers accounting for small and medium-size businesses; it features stock control, sales, batch invoicing, order entry, accounts payable/receivable, customer lists and reports. It also has a full GEM interface and extensive help facilities.

dLedger, **dInvoice**, **dOrder**, **dPurchases**, **dStatements** and **dPayables** (SBT Corporation) are well-tested ac- ▶

MULTI-POWER...

counting programs originally written with dBase III for the IBM PC, brought to the ST using dMan and then compiled: dLedger is for general ledger/finance; dInvoice does billing, inventory control and accounts receivable; dOrder handles sales order processing; dPurchase performs purchase order processing; dStatements handles accounts receivables; and dPayables covers accounts payable and check writing.



Video-Pro

B.E.S.T. Business Management and General Ledger (B.E.S.T.) are a complete package designed to help non-computer-oriented businesspeople become productive quickly. Business Management includes inventory services, accounts payable/receivable, check and order processing, and general ledger. The General Ledger section, a complete double-entry bookkeeping system, is also available separately.

Sales-Pro, Video-Pro and Fuel-Pro (Hi-Tech Advisors) are designed for small businesses. Sales-Pro is a complete point-of-sale and inventory control program for wholesale, retail or mail-order businesses, with perpetual inventory control, cash-drawer support, transaction records, password protection and variable discounts. Video-Pro handles most aspects of video store management, including rentals, returns, sales, accounts receivable, inventory control and tracking, customer records and transaction receipts. Fuel-Pro is designed for managing one or more gas stations, with complete inventory con-

trol, reorder lists, merchandise tags, E.P.A. tank reports and total gas sales reports, with up to 99 locations and up to 9 shifts per day per location. ■

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Products Mentioned

- **Idris Operating System**, \$300. Computer Tools International, Inc., 14900 Interurban Ave., Seattle, WA 98168, (206) 243-7060.
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- **CrystalWriter Plus and Crystal Document Management System**, price unavailable at presstime. Syn-tactics Corporation, 4655 Old Ironsides Drive, Suite 400, Santa Clara, CA 95054, (408) 727-6400.
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- **LEX P*D*Q**, \$325-395 and **LEXET**, \$165-200. Trajectory Software, Inc., 555 Goffle Road, Ridgewood, NJ 07450, (201) 447-5656.
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- **Word Era**, price unavailable at presstime. Tigera Corporation, 350 Bridge Parkway, Redwood City, CA 94065, (415) 594-9981.
CIRCLE 230 ON READER SERVICE CARD
- **Fusion**, available initially only from Atari, Inc. Network Research Corporation, 2380 North Rose Avenue, Oxnard, CA 93030, (805) 485-2700.
CIRCLE 231 ON READER SERVICE CARD
- **PromiseLAN**, price unavailable at presstime. Moses Computer, Inc., 15466 Los Gatos Blvd., Suites 109-137, Los Gatos, CA 95032, (408) 370-7979.
CIRCLE 232 ON READER SERVICE CARD
- **Micro RTX** (developer's kit), \$250 and **Advanced Business Systems**, \$6,950-9,950. Beckemeyer Development Tools, 478 Santa Clara Avenue, Oakland, CA 94610, (415) 452-1129.
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- **Business Operating System (BOS/5)**, \$112.50; **BOS/Finder**, \$112.50; **BOS/Planner**, \$112.50; **BOS/Writer**, \$112.50; **BOS/Auto-**

Clerk, \$112.50; **BOS/Accounts Receivable**, \$137.50; **BOS/Accounts Payable**, \$137.50; **BOS/General Ledger**, \$137.50; **BOS/Inventory Control**, \$137.50; **BOS/Invoicing**, \$75.00; **BOS/Sales Order Processing**, \$225.00; and **BOS/MicroCOBOL**, \$112.50. BOS National, Inc., 2607 Walnut Hill Lane, Dallas, TX 75229, (214) 956-7722.

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- **Dac-Easy Accounting**, \$99.95. DAC Software, Inc., 4801 Spring Valley Rd., Bldg. 110-B, Dallas, TX 75244, (214) 458-0038.

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- **Inventory Manager**, \$79.95. Regent Software, 7131 Owensworth, Suite 45A, Canoga Park, CA 91303, (818) 882-2800.

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- **Synsoft General Ledger**, \$699.95. Synsoft, P.O. Box 561, Allen, TX 75002, (214) 727-2466.

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- **STAccounts**, \$149.95. ISD Marketing, 2651 John St., Unit 3, Markham Industrial Park, Markham, Ontario, L3R 6G4 Canada, (416) 479-1880.

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CIRCLE 239 ON READER SERVICE CARD

- **B.E.S.T. Business Management**, \$395 and **B.E.S.T. General Ledger**, \$79.95. B.E.S.T. (Business Electronics Software and Technology), Inc., P.O. Box 230519, Tigard, OR 97223, (503) 653-2544.

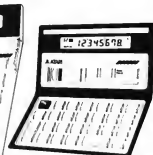
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- **Sales-Pro**, \$99; **Video-Pro**, \$199 and **Fuel-Pro**, \$199. Hi-Tech Advisors, P.O. Box 7524, Winter Haven, FL, (813) 294-1885.

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CIRCLE 018 ON READER SERVICE CARD

THE START SELECTOR

A REVVED-UP REPLACEMENT FOR YOUR FILE SELECTOR

by CHARLES JOHNSON

When I first got my ST, one of the most confusing things about it was the strange "Item Selector" box that kept popping up in every program I used. It was pretty obvious that the Item Selector was used to save and load files, and was some kind of standard GEM object, but many aspects of its operation were extremely mysterious. To complicate matters, the manual that came with my computer made no mention of it at all!

For instance, how could I get the thing to read drive B: in my two-drive system? After a few hundred unnecessary disk swaps, I finally noticed the line labelled "Directory: "; there was a drive letter on that line! I moved the edit cursor to that line with the Up arrow key, typed in a new drive letter, and, indoctrinated by years of computer use, pressed the Return key. Hey, where'd that Item Selector go? After lots of frustration, I realized that I needed to type in the drive letter, and then click the mouse somewhere inside the file window instead of pressing Return. Sheesh.

Giving GEM An Overhaul

The START Selector is a complete replacement for the standard ST file

The ST's file selector is that box that pops up to let you choose a file. It's a lot like the weather—everyone complains, but no one does anything about it. Until *now*, that is. Slip the START Disk into your drive, turn on your ST and trade in that old, tired, worn-out file selector for this year's racier model—the START Selector!



You'll find the program STSELECT.PRG in the AUTO folder and the source code in the file STSELECT.ARC on your START Disk.

selector, maintaining total compatibility with the original while adding many new and useful features. After you install it, any program that calls the dreaded Item Selector box will automatically use the START Selector instead. This includes just about every major program written for the ST—including 1st Word, ST BASIC, GFA BASIC, Flash, DEGAS Elite, CAD-3D, Spectrum 512 and Cyber Paint. Of course, the START Selector won't work with programs that use their own file selector instead of calling the built-in one. But I've tested it with literally hundreds of ST programs,

public domain and commercial, and haven't found one incompatibility.

The START Selector program's name is STSELECT.PRG. You'll find it on your START Disk in the folder named AUTO. To install the Selector, simply slip the disk in Drive A and turn on your ST. The START Selector is now installed, but you will want to copy STSELECT.PRG to the AUTO folder in the boot disk you usually use so that it will be installed every time you power up your computer. Unlike some programs, it doesn't matter whether STSELECT.PRG runs first, last, or somewhere in the middle

of your list of AUTO programs.

You can also run START Selector from the GEM desktop by double-clicking on its program name in a file window. If you use this method, a copy-right notice will appear, and you'll be asked whether you really want to install the START Selector. Click on the button marked "Install" and say goodbye to the Item Selector! The START Selector will remain installed until you press the Reset button or turn your ST off.

The START Selector works on all models of ST computer, including the Megs, in all three resolutions. It's also compatible with GDOS.

What's So Good About It?

The START Selector makes it very easy to look at the files on a different disk drive—no more jumping from mouse to keyboard to mouse. There's a convenient array of buttons labelled A through P, representing the 16 possible logical drives which can be connected to the ST. Changing to another drive is as simple as single-clicking one of the 16 buttons. The START Selector determines how many drives are actually installed, and the inactive drive buttons are greyed-out ("disabled"). To get the current directory after you have swapped disks, click on that drive's letter. If you double-click one of the drive buttons, the START Selector will display the amount of free space left on the disk in that drive.

One of the first things you'll notice about the START Selector is that it's quite a bit larger than the system's selector. The file window now shows up to 16 files at once, instead of the 9 files allowed by the GEM Item Selector. The up and down arrows, slider and scroll bar all work in exactly the same way as before. Selecting files in the window is exactly the same as before. You may either single-click a filename and then click the OK button, or double-click a filename to select it in one step. Subdirectories (folders) are entered with a single click. To back out of folders, click on

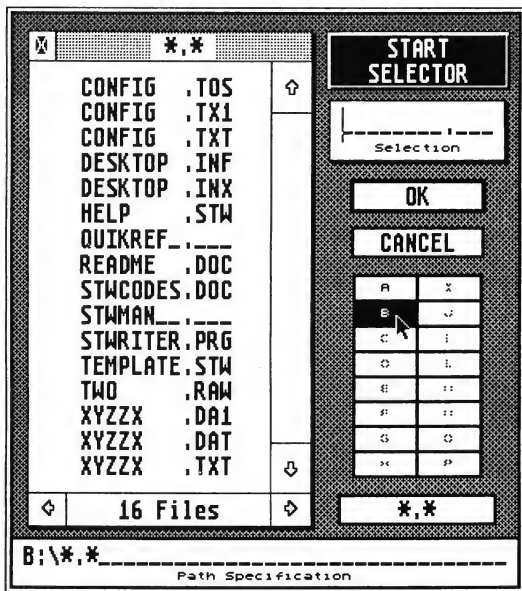


Figure 1: The START Selector

the close box in the upper left of the file window.

There's another shortcut for backing out of nested subdirectories to any level or to the main directory. If you double-click on a folder name on the "Path Specification" line at the bottom of the START Selector, you will instantly back out to that level, without having to step through the folders one at a time. To back out all the way to the main directory, double-click on the drive letter or anywhere before the first backslash ("\") on that line. And, if you prefer, you may still edit the "Path Specification" line directly.

At the bottom of the START Selector's file window, you'll see a box showing the number of files in the current directory, with right and left arrows at either end. Clicking on these arrows will cause the file window to scroll through and

display the size, time of last change (in 24-hour format) and date of last change for each file in the window. The file window is fully active when you're showing the size, time, or date; you can scroll up or down, enter and back out of subdirectories, or select files. Whenever you change drives or re-read a directory, the file window is reset to show filenames again.

Underneath the drive buttons on the right side of the START Selector is a button labelled "*,*". Clicking on this button causes the current search specification (such as "*.DOC" or "*.PRG") to be replaced by "*,*". This is a quick way to show all files in the current directory. The previous search spec is saved in the button, so it can be replaced simply by clicking on it again.

If you try to read a directory in the

START SELECTOR...

GEM Item Selector that contains more than 100 files, you'll only see the first 100. For hard disk users especially, this limit can be frustrating—it's easy to accumulate more than 100 files in a hard disk subdirectory! The START Selector expands this limit to 300 files, which should be more than enough. After all, the desktop itself can only display 256 files in a window.

There is one Item Selector bug that START Selector shares—because it's a bug in the ST's operating system, not in the file selector code. If you type an underscore character on the "Path Specification" line, the system will die a horrible death. Solution? Don't type an underscore on that line! You can type underscores on the "Selection" line all you want, however. This bug is fixed in the version of TOS in the Megs (the "blitter ROMs").

Tricking The Operating System

The START Selector is written entirely in assembly language for maximum speed and compactness. A very fast implementation of the Quick Sort algorithm is used to sort the filenames alphabetically, much faster than the Item Selector does. If you're not a programmer, or you're not interested in how the START Selector performs its prestidigitation, you can stop reading now and experiment with STSELECT.PRG.

To understand how the START Selector works, we have to look at what happens at the lowest level of the system when an ST application calls an AES or VDI function. The application prepares for the call by placing various parameters into a set of arrays (one of the parameters is the number of the call), and putting the address of a table of pointers to these arrays in register D1, and a magic word (\$C8 for AES, \$73 for VDI) in register D0. Then the application executes a TRAP #2 instruction, which is vectored through address \$88. In other words, when the 68000 encounters a TRAP #2, it jumps to the ad-

dress contained in memory location \$88. This address is normally somewhere in the ST's ROM, where the system processes all AES/VDI calls.

This is where the START Selector finds a hook to intercept the calls to the file selector. The ROM address in location \$88 is replaced by the address of the START Selector code. The selector code then checks each AES call as it comes through the TRAP #2 vector, looking in each application's parameter array for the number of the AES fsel_input call and letting any other AES calls and all VDI calls fall through to the ROM routines.

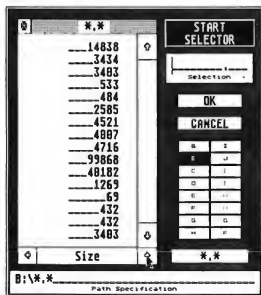


Figure 2: File Sizes

This seemed to be a fairly straightforward procedure, but when I first began programming the START Selector, I couldn't seem to keep it installed. It would work fine for a little while and then suddenly the old Item Selector would return, with no warning, in all its hideous mediocrity. When I checked the TRAP #2 vector, it was indeed pointing at the ROM address again! Obviously GEM was occasionally replacing its address in the TRAP vector for some reason.

So out came the debugger for some very lengthy and tedious tracing through TRAPs and ROM code I finally found (three weeks later) that GEM replaced the TRAP #2 vector immediately before using a Bios call to reset the

critical error vector (at \$404). Therefore I decided to steal the Bios trap as well, and watch for that call to come through (setexec, #5). Now when I detect that call, I check first to make sure it's coming from the ROM (so it's not a program's call), and then replace the address of the START Selector code in \$88, since I know the system has just tried to take the TRAP #2 vector back before making the setexec call. Simple and elegant? Well, no, but it passes my main criterion for evaluating software performance: it works.

If you want to examine the techniques I've used in more depth, the assembly listing for the START Selector is included on this issue's disk in the compressed file STSELECT.ARC. (Refer to the disk instructions page if you are unsure about how to unarc a file.) This code is written for the Atari macro assembler, MAD MAC, but if you wish to re-assemble it with another package it shouldn't be too hard to convert to your assembler's format.

The Wrap-Up

With its speed and convenience, the START Selector may just change the way you use your ST forever. In fact, I predict that after you use the START Selector just once, you'll go back to using the standard file selector only under threat of having your ST replaced with a Commodore 64. Happy selecting!
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Charles Johnson is a professional musician. He became interested in computer programming after buying an Atari 400 back in 1980.

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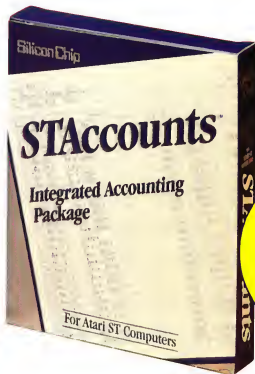
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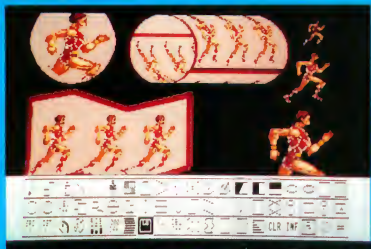
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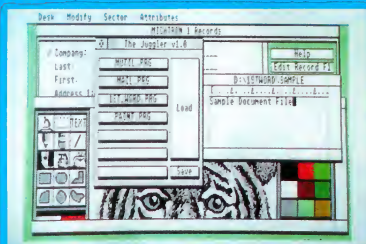
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