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SPECIAL ISSUE NUMBER ONE

THE ST QUARTERLY
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The #1 Guide to the Atari ST

ATARI ST BUYER'S GUIDE

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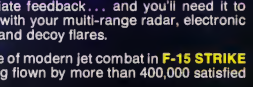

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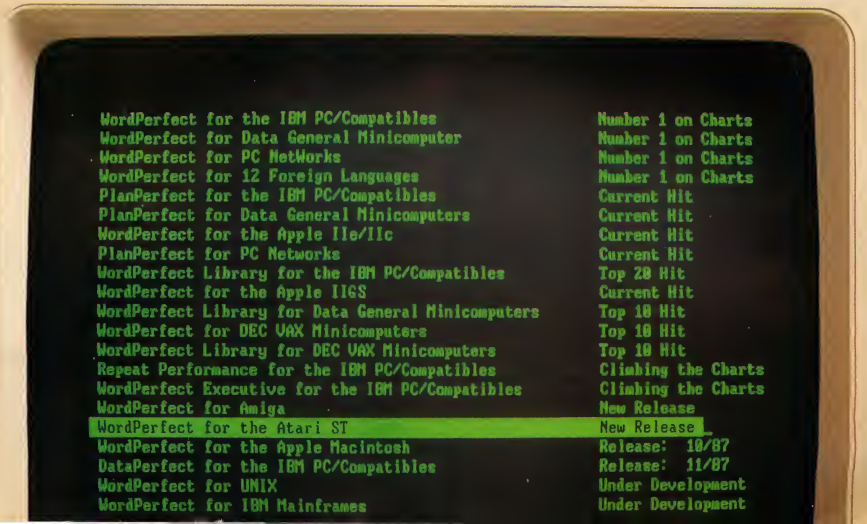

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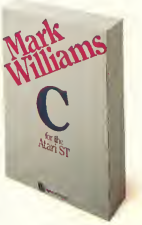

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THE ST QUARTERLY

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EDITORIAL

What is this special Buyer's Guide issue of START about, anyway? Products, that's what. Lots and lots of products for your Atari ST.

It's hard to believe how many ST products there really are. Two years ago, the "First Annual ST Shopper's Guide" in the December 1985 Antic was less than three pages long. Last year's "ST Buyer's Guide" took up 26 pages in the Winter 1986 issue of START. This year, the Buyer's Guide gets its own special issue of START. The ST world just keeps growing by leaps and bounds.

If you've owned your Atari ST for a while, you know why that's happened. You've seen Atari rise from its own ashes with the ST computers, and once again become a major force in the personal computer business. The ST is now the best-selling computer in much of Europe, where it's *the* machine for developing hot software. Here in the U.S., Atari is coming on strong with new machines like the Mega ST computers and the Atari Laser Printer.

If you're a new ST owner, none of that matters to you. What matters is that you now have an exceptionally wide range of software and hardware available to choose from. There's a product for the ST that can handle practically any job you can think of—and a few you haven't thought of, either.

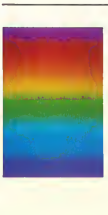
Of course, we can't cover everything. Even taking up an entire magazine, we don't have room to describe every ST program and peripheral. We tried to list the best of the best. If you know about a dynamite product that we missed, let us know—we'll tell our readers about it in the pages of START, the ST Quarterly, and we'll try to include it in next year's special Buyer's Guide issue. In addition, you can read reviews of many of these products in the ST Resource section of our sister magazine Antic.

If you want to get the most out of your ST throughout the year, START is the place to turn. It's the #1 guide to the Atari ST, and each issue is packed with product news, reviews, columns, tricks, tips, and techniques for getting the most out of your ST. Each quarterly issue also offers the START Disk—full of ready-to-run programs, from games and graphics programs to word processors and number crunchers.

A one-year subscription—four quarterly issues including START Disks, *plus* next year's special Buyer's Guide issue—is only $39.95. That saves you $20 off the newsstand price! Just mail the subscription card you find bound into this magazine, or call toll-free (800) 234-7001, and we'll start your subscription on its way to you.

In the meantime, sit back and explore the world of software and hardware for your ST in the 1987 START ST Buyer's Guide!

—The editors of START



About the cover: *The rainbow background was created with the gradient fill and airbrush functions of Spectrum 512.* *See page 30 for a description of the product and manufacturing information.*

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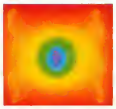
GETTING STARTED

By Frank Hayes



ST—the final frontier.

Maybe that's how you felt the first time you turned on your Atari ST. Here's one of the most amazing personal computers money can buy, fast and powerful, with lots of memory and spectacular graphics. But what can it do? How can you play with all that power—or put it to work for you?

It all depends on what you want your ST to do. There's a whole universe of software and hardware out there, just waiting to unleash the potential of your ST.

That's what this special ***START Buyer's Guide*** is all about. We've collected the best programs and peripherals we could find for the ST, and organized them all so it's easy for you to find exactly what you need.

WHAT *DO* YOU WANT TO DO?

Want to write a letter? Just pop a word processor in the disk drive, click on the program icon, and you're ready to go. You'll find a comparison of ST word processors—along with desktop publishing programs that can let you run a publishing empire from your desktop—starting on page 20.

Of course, to print that letter, you'll need a printer—and with the number of printers available for computers, it may not be easy to find one that will work with your ST. Relax—to find out everything you need to know, turn to page 83.

Or maybe you'd like to draw a picture, or create an animated cartoon. Graphic arts software starts on page 28. (Don't forget that some graphics programs specifically require either a color or monochrome monitor. You'll find monitors on page 78.)

If music is your life, the ST is the perfect computer for you—it has a built-in MIDI port to connect synthesizers, drum machines, and other MIDI-compatible music machines. For music software and hardware for the ST, turn to page 65.

If business is your game, turn to page 43 for our survey of business software. And if *games* are your game, try page 12, where you'll find ST entertainment software of all kinds.

Want to communicate with other computers? Then telecommunications is what you need. Modems, telecom programs, and online services start on page 53. Want to let your ST teach you? Education is your goal, and those programs begin on page 58.

Maybe you've already decided you need another disk drive, or a hard disk. You'll find them beginning on page 77, along with many other peripherals to connect to your ST.

Do you want to program—to get all the ST's power under your own control? Turn to our Programming Tools section on page 35. And if you just want to find out more about the ST, check out Books on page 89.

THE ST, INSIDE AND OUT

Or maybe you're still trying to decide whether the ST is the computer for you—and *which* ST is the one for you. What does the ST have to offer? And what exactly does "Power Without the Price" really mean?

There are really three different STs. All three run the same software, of course, and come in the same basic configuration: a computer with one disk drive, a monitor, a mouse, and all the connections you need to add a printer, a second disk drive, a modem, a hard disk, and even a music synthesizer.

That's important for two reasons. First, because the standard ST comes complete—with a monitor, disk drive, and mouse included—it's ready to use for many things as soon as you set it up. You can play games, draw pictures, or start calculating your business's future with a spreadsheet for your ST right out of the box—all you need is the software that can make it happen.

Second, since the ST has all the connections built in, you won't have any trouble—or unpleasant surprises—when you want to add peripherals such as a printer, disk drive, hard disk, modem, or MIDI synthesizer. Unlike some computers, the ST doesn't require you to add special interfaces that add to the cost.

All three STs come with the same electronic "brain" – a 68000 processor, far more powerful than earlier generations of CPUs. And all three come with the same astonishing graphics—320 by 200 in low resolution, 640 by 200 in medium, and 640 by 400 in monochrome—with up to 512 colors. Best of all, every ST comes with a low price that brings that power to people who could never have afforded it before.

The **520 ST** comes with 512 K of memory and a single-sided disk ▶

drive—that's enough to run most software with plenty of room to spare. A 520 ST with a monochrome monitor has a suggested retail price of $799.95; with a color monitor, it's $999.95. (Remember, these are list prices; many dealers offer special deals at lower prices.)

A **1040 ST** has twice as much memory as a 520 ST, and it comes with a double-sided disk drive—with that much room inside, a 1040 ST can run virtually any software published for the ST. A monochrome system is $899.95; a color system is $1099.95.

Finally, there are the new **Mega ST** computers, with up to four megabytes of memory—that's 4,096 K, or eight times the memory in a 520 ST. The final price for the Mega ST 4 wasn't set at press time; it's expected to be substantially more expensive than a 520 and 1040 ST, but far less expensive than any other four-meg computer available today.

For more information on Atari's ST line of computers, circle 102 on the Reader Service Card.

GETTING A GOOD START

Tapping the power of the ST is easier than with almost any other computer. But getting the most from your machine takes something special—it takes START. START, The ST Quarterly, is the #1 guide to the Atari ST. Every issue has news and reviews, tricks and tips, columns and—most of all—programs that will help you use your ST to the fullest.

Each quarterly issue also features a START Disk. It's filled with ready-to-run programs—everything from games, demonstrations and utilities to regular updates for ST Writer (the popular public-domain word processor for the ST).

START is available at newsstands, bookstores, and computer stores, but the best way to get every issue is to subscribe. A year of START—four quarterly issues including START Disks, *plus* next year's special Buyer's Guide issue—is only $39.95. That saves you more than $20 off what you'd pay at the newsstand.

Or you can subscribe to both START and Antic, The Atari Resource—with its monthly coverage of the ST—for just $59.95, and save $50 off the newsstand price!

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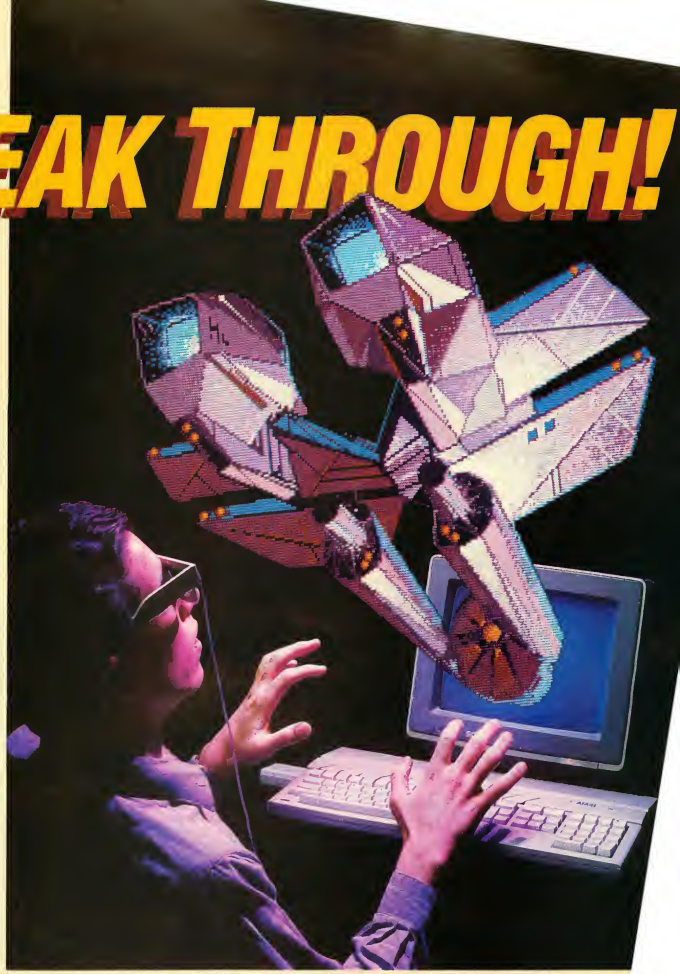

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Put on the STEREOTEK glasses and jump into a new universe. Discover a magical world that you always knew existed. That *extra* dimension—DEPTH. Now you can add depth to your computer graphics with the STEREOTEK Liquid Crystal glasses. Solid, realistic, 3D images you want to reach out and touch. STEREOTEK glasses plug into your ATARI ST cartridge port to provide absolutely realistic 3D graphics in full color or hi-res monochrome.

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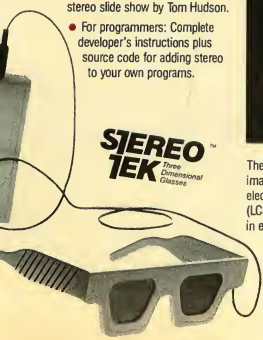
- ST cartridge interface unit—supports two sets of glasses (second set optional).
- DEGAS Elite Stereo Desk Accessory.
- Stereo CAD-3D animation and stereo slide show by Tom Hudson.
- For programmers: Complete developer's instructions plus source code for adding stereo to your own programs.



The secret to full-color stereo images on a computer screen is electronic Liquid Crystal Shutter (LCS) glasses. Two optical shutters in eyeglass frames are connected electronically to the ST. Every-time the ST screen refreshes (60hz/color, 70hz/mono), one shutter closes and the other opens. The monitor displays alternating right and left eye views synchronized with the shutters. The alternating views appear faster than the eye can see, and your brain translates the normally flat monitor image into one of startlingly realistic depth. Because of the ST's speed, RAM size and cartridge port, this advanced graphics technology is only available on the Atari ST. (One megabyte RAM recommended).

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ENTERTAINMENT

By Harvey Bernstein

Strategy, adventure, shoot-em-ups, chess and simulations

With its superior graphics, increased memory, and faster processor, the ST has been a boon to creative game writers, some of whom are taking the concept of computer games into an area never before explored.

What makes for a good ST game? Naturally, we expect to take full advantage of the new generation of computing power, "pushing the envelope" of graphics, animation, sound, and artificial intelligence. However, one factor is critical: you have to have good game play. One leading game company used to ask if a computer game can make you cry. Maybe not, but the best can transport you to another world and allow you to experience things you wouldn't otherwise.

Many ST games are conversions of older games or new games released in other formats, but with improved graphics, or the addition of the mouse/window interface. Most of the games that have been written specifically for the ST were developed in Europe, where the new Atari had a head-start in gaining popularity—that's where many of the games from MichTron and Firebird come from. In addition, there aren't many ST games that have been converted from video arcade machines, while some other game categories are top-heavy (there are five martial-arts games on the market, with a sixth just announced).

Here are some of the best games available for the ST, broken down by category.

ARCADE

Star Raiders ($29.95) This is a classic, and deserves a place in your game library. Its scenario of using maps, computer, shields and torpedoes has been often imitated but never duplicated. The graphics on the ST version are first-rate, although the sound is a little shaky. *Atari Corp., 1196 Borregas Ave., Sunnyvale, CA 94088. (408) 745-2367*
CIRCLE 102 ON READER SERVICE CARD

Time Bandits ($39.95) One of the first original ST releases still holds up to the test of time. The game actually consists of 16 games within it, each having 16 levels! Looking very much like the arcade hit Gauntlet, Time Bandits never ceases to be challenging and amusing, as the wide variety of creatures waiting to be blasted offers many surprises. *MichTron, 576 S. Telegraph, Pontiac, MI 48053. (313) 334-5700*
CIRCLE 101 ON READER SERVICE CARD

Starglider ($44.95) This is the shoot-em-up all others should aspire to! You control a single AGAV (Airborne Ground Attack Vehicle) against hundreds of enemy targets. At first glance the simulated vector graphics (they look a lot like Star Wars in the arcades) are nothing spectacular. But once play begins and the action get hot and heavy, this is a minor complaint. Add

Flight Simulator

some of the most exciting sound (digitized speech and music) in any game, and you have a real winner. A must! *Firebird Licensees, P.O. Box 49, Ramsey, NJ 07446. (201) 444-5700*

CIRCLE 116 ON READER SERVICE CARD

Wanderer (39.95) is an ST game with a difference—it's in 3-D, and comes with a pair of anaglyphic (red and green) 3-D glasses! It's an odd combination of Star Raiders and intergalactic poker. Zip through space destroying the bad guys, then pull over to a nearby asteroid for a game of space cards.

ST Karate ($29.95) is the ultimate karate game for the ST. Play either against the computer or another player. Includes multiple opponents, digitized sound and splashy graphics. The joystick controls give you over 18 possible fast movements. *Eidersoft USA Inc., P.O. Box 88, Burgettstown, PA 15021. (412) 947-3739*

CIRCLE 148 ON READER SERVICE CARD

ST Wars ($39.95) A fast-action, space arcade game that uses digitized sound, graphics and multiple scenarios for an exciting gaming experience. You pilot a space fighter and must destroy the Starbase. *Miles Computing, 7741 Alabama Ave., Suite 2, Canoga Park, CA 91304. (818) 341-1411*

CIRCLE 149 ON READER SERVICE CARD

Airball ($39.95) Imagine a wizard turning you into a ball and sending you into a mansion with over 250 rooms. Worse yet, the ball has a slow leak. You have to get to the end of the maze, where a spell book will return your human form.

Gold Runner ($39.95) The Earth is dying. You must lead the survivors to a new world through a hostile section of the universe—the Ring Worlds of Triton. Goldrunner is one of most popular shoot-em-ups for the ST. *Microdeal software distributed by MichTron, 576 S. Telegraph, Pontiac, MI 48053. (313) 334-5700*

CIRCLE 101 ON READER SERVICE CARD

Karate Kid

SIMULATIONS

Sub Battle Simulator ($39.95) A recreation of World War II submarine warfare in either the Atlantic or Pacific. You can choose to command either an American or German submarine, the year of the action, and whether you will fight a single battle or an entire campaign. Sonar, radar, torpedoes and anti-aircraft guns are all at your disposal. Excellent graphics and great sound add to the enjoyment. *Epyx, 600 Galveston Dr., Redwood City, CA 94063. (415) 366-0606*

CIRCLE 117 ON READER SERVICE CARD

Silent Service ($39.95) A highly detailed WW II submarine warfare simulation. Sink enemy ships while keeping your sub from being destroyed. All aspects of game control are mouse-driven. *Microprose, 120 Lakefront Dr., Hunt Valley, MD 21030. (301) 771-1151*

CIRCLE 141 ON READER SERVICE CARD

Gato ($39.95) A real-time submarine warfare simulator that puts you in the role of captain of a WW II attack submarine. Can be run through the mouse or the keyboard.

Spectrum HoloByte, Inc., 2061 Challenger Drive, Alameda, CA 94501. (415) 522-3584
CIRCLE 147 ON READER SERVICE CARD

Flight Simulator II ($49.95) The classic! Zoom under the Golden Gate Bridge or past the Statue of Liberty in your own twin-engine Cessna. Possibly the most sophisticated simulation ever released, this may not be the same as having a Link trainer in your living room, but it is as close as you are going to come. Additional scenery disks are available for $24.95 each. *SubLogic, 713 Edgebrook Dr., Champaign, IL 61820. (217) 359-8482*
CIRCLE 118 ON READER SERVICE CARD

Time Bandit

FANTASY ROLE-PLAYING

Rogue ($39.95) This is an excellent beginner's game and a good introduction to the genre. Your character has no real attributes other than strength, constitution, and the worthiness of his armor. Your goal to to make it through a 26-level dungeon and back again. A wide variety of monsters, weapons, scrolls, potions, rings, plus the fact that the dungeon is different every time you play makes the game timeless. *Epyx, 600 Galveston Dr., Redwood City, CA 94063. (415) 366-0606*
CIRCLE 119 ON READER SERVICE CARD

Phantasie I, II, III ($39.95 each) In this exciting trilogy you assemble a hearty band of up to six characters of different races (Human, Elf, etc.) and classes (Wizard, Fighter, so on) in order to defeat the evil Nikademus. Lots of challenging puzzles here, but be prepared to spend a lot of time on each game (30 to 50 hours). Graphics and sound just get better from one volume to the next, and the mouse interface is perfectly integrated into play. Any one of the three games can be played separately, but if you proceed in order you can pass your characters from one volume to the next—a real plus! *Strategic Simulations, 1046 N. Rengstorff Ave., Mountain View, CA 94043. (415) 964-1353*
CIRCLE 120 ON READER SERVICE CARD

Alternate Reality: The City ($44.95) The first of a seven-part series of interrelated role-playing fantasy adventure games. In The City, you create your player character and go through various adventures in the enclosed city, and build up your character for the next adventure. *Datasoft, 19808 Nordhoff Place, Chatsworth, CA 91311-9969. (818) 886-5922*
CIRCLE 150 ON READER SERVICE CARD

Pirates of the Barbary Coast ($24.95) A graphic adventure game for one person aged 10 through adult. You are the captain of a sailing frigate and must earn enough money to ransom your daughter. . . or fight Bloodthroat hand-to-hand and rescue her. *StarSoft Software distributed by TDC Distributors, Inc., 3331 Bartlett Blvd., Orlando, FL 32811. (305) 423-1987*
CIRCLE 151 ON READER SERVICE CARD

SPORTS SIMULATIONS

Karate Kid II ($39.95) Imported from England and adopted from the popular film of the same name, this is by far the best of the glut of karate-inspired games available to the ST owner. Sixteen basic karate moves are available to you based on eight joystick positions and whether or not the trigger is pressed. While this is not unique unto itself, what makes KK II stand out is it's seamless animation as you face a series of adversaries more and more powerful. The characters are finely detailed, and the sound is MIDI-compatible. *MichTron, 576 S. Telegraph, Pontiac, MI 48053. (313) 334-5700*
CIRCLE 101 ON READER SERVICE CARD

World Games ($39.95) It's actually eight games in one. Whether cliff-diving in Mexico, weight lifting in the U.S.S.R., or bronco-busting in the good old U.S.A., the best challenge comes from playing against a human opponent rather than the computer. Animation is OK, and while the joystick control can be clumsy at times, most players will enjoy the range of the games presented here. *Epyx, 600 Galveston Dr., Redwood City, CA 94063. (415) 366-0606*
CIRCLE 121 ON READER SERVICE CARD

Micro League Baseball II ($59.95) A must for anybody who played statistic-based baseball games as a kid! Manage any one of over 20 classic teams, from American League All-Stars to the 1961 N.Y. Yankees. How would Mickey Mantle fare against Nolan Ryan? Playing against either a human opponent or the computer, Micro-League Baseball give you the opportunity to create your own classic confrontations. Additional features such as rain delays, injured players, and arguments with the

Microleague Baseball

King's Quest

umpire add to the realism of this strategy simulation. *Micro League Sports Association, 2201 Drummond Plaza, Newark, DE 19711. (302) 368-9990*
CIRCLE 125 ON READER SERVICE CARD

Leader Board ($39.95) is an excellent 3-D golf game. It allows up to four players with novice, amateur and professional skill levels, and each level brings in more factors, such as wind and ball control. Additional course disks are available for $19.95. *Access Software, 2561 South 1560 West, Suite A, Woods Cross, UT 84087. (801) 298-9077*
CIRCLE 144 ON READER SERVICE CARD

Mean 18 ($44.95) Simulation of professional golf that lets you choose from easy courses all the way up to courses like Pebble Beach or Augusta. Includes a course construction option. Plays one to four players. Additional course disks available. *Accolade, 20833 Stevens Creek Blvd., Cupertino, CA 95014. (408) 446-5757*
CIRCLE 142 ON READER SERVICE CARD

TEXT ADVENTURES

Planetfall, Stationfall, Moonmist, Zork, Leather Goddesses of Phobos, A Mind Forever Voyaging, Trinity, Bureaucracy ($39.95 each) Infocom is the Rolls-Royce of interactive fiction, with something to please every age group or level of ability. Whether your taste runs to science fiction (Planetfall, Stationfall), Gothic mystery (Moonmist), fantasy (the Zork series), or R-rated comedy (Leather Goddesses of Phobos), Infocom will never let you down. All the games are attractively packaged, well-written, and come with a host of extra tchochkas to add to the enjoyment of the game. Every game collection should have at least one Infocom title. *Infocom, 125 Cambridge Park Dr., Cambridge MA 02140. (617) 576-3190*
CIRCLE 126 ON READER SERVICE CARD

The Pawn, Guild of Thieves (Firebird, $44.95 each) Firebird created quite a splash with the release of The Pawn last year, and now follows it up with Guild. Yes, these games do contain graphics, but they are designed to play as text adventures, as the graphics are accessible only by scrolling the menu bar and are not necessary to completion of the games. While a little more stiffly written than Infocom's titles, these games boast the most advanced command structure in the genre and provide a promise of better things to come. *Firebird Licensees, P.O. Box 49, Ramsey, N.J. 07446. (201) 444-5700*
CIRCLE 127 ON READER SERVICE CARD

GRAPHIC ADVENTURES

Kings Quest I, II, III ($49.95 each). When KQ I debuted several years ago, it broke all the rules for graphic adventures. Instead of static screens with a two-word parser, it offers a three-dimensional universe. Your character, controlled by joystick or keyboard, walks around the screen and passes in front of or behind other objects. In fact, you can't manipulate an object unless you're close enough! Combined with a story line and parser almost as sophisticated as a good text adventure and a wicked sense of humor (particularly in KQ III), these games make for a great play. *Sierra On-Line, P.O. Box 485, Coarsegold, CA 93614. (209) 683-6858*
CIRCLE 131 ON READER SERVICE CARD

STRATEGY GAMES

Ogre ($39.95) Originally a board game, Ogre lets two players play head to head and design their own battlefields with the built-in game editor. The game pits the Ogre, a Cybertank, against a more conventional force of infantry, armor units and command posts. In the one-player mode, the player can control either the Ogre or the armed forces, and the two-player mode pits two human players against each other as each attempts to outmaneuver, outlast and outblast his or her opponent. *Origin Systems. Distributed by Electronic Arts, 180 Gateway Drive, San Mateo, CA 94404. (415) 571-7171*
CIRCLE 143 ON READER SERVICE CARD

World Games

Universe II ($69.95) is a space-based strategy game. You have been retired from the Federated World Special Forces for years, but now you're on a spy mission. Engage in nefarious pursuits, such as stealing from enemy ships, or the more mundane, such as shuttling ore and passengers between planets. The game is played on three disks. *Omnitrend Software, P.O. Box 3, West Simsbury, CT 06092. (203) 658-6917*
CIRCLE 145 ON READER SERVICE CARD

▶

ENTERTAINMENT

CHESS GAMES

Chessmaster 2000 ($44.95) Chessmaster 2000 provides 12 levels of play, teach and hint modes, and the option to retract moves. It also has a library of 100 famous games, including the 1986 Chessmaster 2000 vs. Sargon III game. *Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404. (415) 571-7171.*
CIRCLE 146 ON READER SERVICE CARD

Techmate ($49.95) An easy-to-play, mouse-driven chess game. Just click on the piece and the square to move to. . . Bang! It's done. Szabo Software also offers incredible support which includes free newsletters and updates. *MichTron Inc., 576 S. Telegraph, Pontiac, MI 48053. (313) 334-5700; or Szabo Software, P.O. Box 623, Borrego Springs, CA 92004*
CIRCLE 101 ON READER SERVICE CARD

CARD GAMES AND GAMBLING

Bridge 4.0 ($29.95) A contract bridge game which allows you and your computer partner to play against two computer players. The program reviews bidding, keeps track of score and even tells you when someone is cheating. *Artworx, 1844 Penfield Road, Penfield, NY 14526. (800) 828-6573*
CIRCLE 152 ON READER SERVICE CARD

Strip Poker ($39.95) Here's your chance to try to "beat the pants off" Suzy and Melissa. The more you win, the more they take off. Be careful, though—they're capable of doing the same to you! *Artworx, 1844 Penfield Road, Penfield, NY 14526. (800) 828-6573*
CIRCLE 153 ON READER SERVICE CARD

Home Casino Poker ($34.95) Features video draw poker and a lightning-fast stud poker game from one to four players each. In stud, choose from any of six computer-controlled opponents. Home Casino Poker works with keyboard and/or joystick. *Dubl Dubl Funware, P.O. 06401, Portland, OR 97206.*
CIRCLE 154 ON READER SERVICE CARD

BEST OF THE BEST

Barbarian ($39.95) Part graphic adventure, part arcade game, part animated cartoon. You control Hegor the Barbarian, out to avenge the death of his father at the hands of the evil Necron. Using sword, shield, and bow, you fight your way through countless animated creatures and hidden booby traps. Hegor is controlled via a series of icons at the bottom of the screen. What makes this game unique is the graphics, done in the style of the finest animators. The backgrounds are richly detailed, and the variety of characters you encounter is truly amazing. Sound effects are digitized, and Barbarian has a wicked sense of humor that makes it a joy to play. *Psygnosis, distributed by CSS, 495-A Busse Rd., Elk Grove Village, IL 60007. (800) 422-4912*
CIRCLE 132 ON READER SERVICE CARD

Balance of Power ($49.95) Billed as the world's first computer peace game, this is the brainchild of game-design whiz Chris Crawford. As President of the U.S. or Premier of the U.S.S.R., your goal is to attain as much political prestige for your superpower as possible, at the same time thwarting your opponent, all the while trying to avoid a nuclear confrontation. The graphic display is nothing more than a world map, yet Crawford manages to supply all the needed information via a series of menus. This computer game, the best of all available for the ST, will not make you cry—it will make you think! *Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. (312) 480-7667*
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WORD PROCESSING

By Heidi Brumbaugh
START Junior Editor

Writing The Great American Novel or home to Mom? Here's how

Word processors have become so commonplace both at home and in business that they are used for everything from drafting a memo to writing a dissertation. Selecting which one is right for you will depend on a careful evaluation of your needs. Although many of these features are time-saving conveniences, you may not want to decide which word processor to buy simply because it has a wide array of features. Indeed, almost all work here at START—from writing and editing to transmitting articles to be typeset—is done on the word processor with the fewest features in this survey.

ST Writer Ver. 1.75 (public domain). Originally developed by Atari as an AtariWriter lookalike for distribution with the new machines, this public domain word processor has maintained a loyal following throughout the ST's history. Although Atari no longer supports it, assembly language programmer Bruce Noonan has spent hours laboring over the code, fixing bugs and adding features to ST Writer for the benefit of the ST community. Although ST Writer isn't GEM-based, it does have the advantage of being one of the fastest word processors available. Newer versions are available in French, Spanish and German and let you switch to the international character set in a keystroke. Because this is a free program which is easy to use, START promises to put the updates on your START disks as Dr. Noonan sends them to us. The newest version, 2.0, will let you switch from mouse to keyboard interface with the press of a button.

First Word Plus ($99.50). One of the first word processors for the ST has recently been upgraded. First Word Plus has some excellent features which make it an extremely powerful tool. It allows you to integrate pictures with your text, from drawing programs such as DEGAS Elite and Neochrome, has footnote, hyphenation and justification options, and lets you switch between parallel and serial ports with the click of the mouse. It not only allows multiple rulers in a document, but will let you save rulers to disk for future use. First Word Plus comes with two disks to hold an assortment of accessory programs and data like mail merge, a 40,000 word dictionary that you can personalize, a set of standard printer drivers and a selection of sample files.

The First Word Plus interface is mouse-driven with a few of the commands having corresponding function keys; however, unlike Word Writer ST, most menu bar commands aren't available from the keyboard. This forces you to switch from keyboard to mouse any time you wish to use a feature.

One thing to keep in mind before you purchase this program is that it is only being supported out of England, so if you're on this side of the Atlantic help may not be a phone call away. However, the registration card assures that owners will be given free technical support in response to written queries. *Electric Dis-*

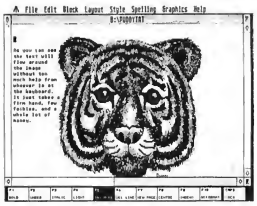
tribution. 8 Green Street, Willingham, Cambridge, CB4 5JA, England. 09-54-6158
CIRCLE 174 ON READER SERVICE CARD

Word Writer ST V. 2.0 ($79.95; updates are $19.70). Word Writer is a fully GEM-based word processor which uses menu bar commands as well as a three-line First Word-style command table. Most mouse commands have corresponding keyboard or function key commands, which is convenient. Features include on-screen formatting, an 85,000 word dictionary that you can personalize, a convenient outliner and text shown in bold, italics, underlined, light face and sub/superscripts, so you can see exactly how your document will look when it is printed out. Version 2.0 has the same look and feel as version 1 but it has some significant extras, such as a thesaurus and mail merge. It will also let you set separate default path settings for your documents and dictionary, thesaurus and help files. (START review 6/97.) *Timeworks, Inc. 444 Lake Cook Road, Deerfield, IL 60015. (312) 948-9200*
CIRCLE 237 ON READER SERVICE CARD

Regent Word II ($79.95) Regent Word II from Regent Software is fully GEM-based with all the advantages of a drop-down menu interface. It also has some convenient extras such as a one-line calculator, a 30,000 word spell checker, an option to alphabetize text items, microdot justification and the ability to insert multiple rulers in documents. It's main limitation is that it's slow—if you have moderately fast typing skills you can probably outtype it.

Regent Word II has a mail merge option; however, it must be used in conjunction with either Regent Base or the Mail Merge Database program, both sold separately. *Regent Software. 7131 Owensmouth, #45A, Canoga Park, CA 91303. (818) 882-2800*
CIRCLE 222 ON READER SERVICE CARD

TextPro ($49.95). TextPro is the only word processor in this survey that allows you to redefine the function keys and save the definitions to disk. It has a built-in option to insert the date or time into the text, and allows you to switch from document to non-document or C-Source code editing mode. Control codes allow a wide variety of cursor movement—zip through your text by letter, word, sentence, line or paragraph. When you are ready to print the document, you can either output it to the printer directly from the word processor or save the file to disk and print it using TextPro's separate output program, which is included with the package. The output program allows a great deal of flexibility. You can specify horizontal or vertical output, make a list of files to be output together, merge form letters, create headers, footers, indexes or even a table of contents. (Antic review 4/87.) *Abacus Software, P.O. Box 7219, Dept. A, Grand Rapids, MI 49510. (616) 241-5510*
CIRCLE 243 ON READER SERVICE CARD



Tiger image from First Word Plus

Word Perfect (Price not set). All of the word processors on the chart are currently on the market. Although Word Perfect is not commercially available at this writing, it does deserve a postscript mention (no pun intended). At the West Coast Computer Faire, programmer Jeff Wilson showed a beta version to the START staff—and we've been eagerly awaiting its release ever since. The ST version will have all the features of the more familiar IBM version, but will have the added convenience of a GEM interface. As well as having all the standard features word processor users have come to expect, Word Perfect will have extras like an outliner, thesaurus and spelling checker. It will allow you to redefine keys, edit up to four documents at once, and, like its IBM counterpart, use virtual memory. This means that your files are not limited by available RAM— if Word Perfect runs out of room, it will automatically spill out onto the disk drive.

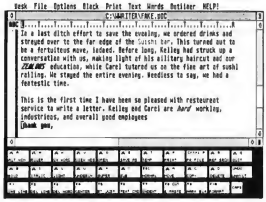
As of the middle of August Word Perfect is still being beta tested, and is scheduled for release in September. By the time you read this, we hope, Word Perfect should be on your computer dealer shelves. *Word Perfect Corporation. 288 West Center Street, Orem, UT 84057. (801) 227-4010*
CIRCLE 245 ON READER SERVICE CARD

THE CHART

The features chosen for this chart are designed to give you hard information on the strengths and weaknesses of each program, as well as giving you an idea of what kind of feel you can expect from each word processor. These features are by no means exhaustive; however, major topics such as print formatting, disk I/O, ease of use and search/replace are covered. I have also included options such as mail merge and spell checkers which, depending on your needs, will either be a tremendous waste of space or make your ST an indespensible part of your work.

Some of the features were not readily

available as options *per se*, but the same goal could be accomplished in a roundabout way. For example, although Word Writer does not allow you to merge two files, you can open two files and cut and paste one to another. In these cases, I have either given an explanatory note or said that a feature is not present if it is unreasonable to assume a beginner could easily accomplish the same task. Some of the features are either redundant or mutually exclusive; if formatting is automatic (display is updated as it goes along), a global reformat option is unnecessary. On the other hand, word processors that do not have a "What



Word Writer ST

You See Is What You Get" display would have neither formatting option. Similarly, the feature on the chart labeled margin control (which simply means that you use more than one margin settings in a document) is available in Word Writer because that program doesn't have automatic formating, but in order to achieve this you must forgo using the global reformat option.

Keep in mind that in some cases items on the chart could be called either bugs or a features, depending on which manufacturer you talk to. For example, print spooling (which means that you can continue to work while your document is being printed) is certainly a convenience, but it does limit you by requiring a certain amount of free disk space in order to print. ■

Word Processing Chart

	1st Word Plus Electric Distribution 8 Green Street Willingham, Cambridge CB4 5JA Telephone: 0954 6125B $99.50	Regent Word II Regent Software 7131 Owensmauth, #45A Canoga Park, CA 91303 (818) 882-2800 $79.95 Mail Merge Database $24.95	Word Writer ST ver. 2.0 Timeworks, Inc. 444 Lake Cook Rd. Deerfield, IL 60015 (312) 948-9200 $79.95 updates are $19.70	ST Writer ver. 1.75 Public Domain	TextPro Abacus Software P.O. Box 7219 Grand Rapids, MI 49510 (616) 241-5510 $49.95
Ease of use					
Copy protected	no	yes	no	no	yes
GEM-based	yes	yes	yes	no	yes
On-screen help	yes	yes	yes	no	no
Keyboard commands	no	yes	yes	yes	yes
Uses function keys	yes	yes	yes	yes	yes
What You See Is What You Get	yes	See notes[4]	yes	no	no
Search/Replace					
Search forward or backward	yes	forward only	yes	yes	no
Search for bare carriage return	no	no	no	yes	yes
Ignore case in search	yes	yes	yes	no	no
Save/Load					
Can read ASCII files	yes	yes	yes	yes	yes
Save ASCII file	yes	yes	yes	yes	yes
Save block to disk	yes	no	no	yes	no

Word Processing Chart

	1st Word Plus Electric Distribution 8 Green Street Willinghom, Combridge CB4 5JA Telephone: 0954 61258 $99.50	Regent Word II Regent Software 7131 Owensmouth, #45A Conoga Park, CA 91303 (818) 882-2800 $79.95 Mail Merge Dotobose $24.95	Word Writer ST ver. 2.0 Timeworks, Inc. 444 Lake Cook Rd. Deerfield, IL 60015 (312) 948-9200 $79.95 updotes ore $19.70	ST Writer ver. 1.75 Public Domain	TextPro Abacus Software P.O. Box 7219 Grond Ropids, MI 49510 (616) 241-5510 $49.95
Extras					
Mail-merge	See notes[1]	sold separately	yes	no	yes
Spelling checker	yes	yes	yes	no	no
Thesaurus	no	no	yes	no	no
Outliner	no	no	yes	no	no
Advanced formatting features					
Headers/Footers	yes	yes	yes	yes	yes
Multiline auto header/footer	no	2	no	2	2
Footnotes	yes	no	no	no	no
Index	no	no	no	no	yes
Disk I/O					
Format disk	no	no	no	yes	no
Merge files from disk	yes	See notes[5]	See notes[5]	yes	yes
Delete file from disk	yes	no	yes	yes	yes
Print Options					
Page wait command	See notes[2]	yes	no	no	no
Print selected pages	yes	yes	yes	yes	yes
Double column printing	9	no	no	2	5
Include or chain external files	no	no	no	yes	yes
Auto page numbering	yes	yes	yes	yes	yes
Forced page breaks	yes	yes	yes	yes	no
Sub/superscript commands	yes	yes	yes	yes	yes
Print preview	no	no	no	yes	yes
Print spooling	yes	no	yes	no	no
Send special printing codes	no	yes	no	no	yes
Print block	no	no	no	no	no

Notes:
[1]separate program included in package
[2]in configuration file
[3]using scroll bar only
[4]no justification or line spacing on screen
[5]only by cutting and pasting from another window
[6]only same delete functions

Word Processing Chart

	1st Word Plus Electric Distribution 8 Green Street Willinghom, Cambridge CB4 5JA Telephone: 0954 61258 $99.50	Regent Word II Regent Software 7131 Owensmouth, #45A Conogo Park, CA 91303 (818) 882-2800 $79.95 Mail Merge Database $24.95	Word Writer ST ver. 2.0 Timeworks, Inc. 444 Lake Cook Rd. Deerfield, IL 60015 (312) 948-9200 $79.95 updates are $19.70	ST Writer ver. 1.75 Public Domain	TextPro Abacus Software P.O. Box 7219 Grond Rapids, MI 49510 (616) 241-5510 $49.95
Onscreen formatting					
Global reformat	yes	n/a	yes	n/a	n/a
Hyphenation	yes	no	no	no	yes
Display page breaks	yes	yes	yes	no	yes
Variable line spacing	yes	yes	2	yes	no
Auto paragraph indents	no	yes	no	yes	yes
Auto reformatting	no	yes	no	n/a	yes
Margin control	yes	yes	indirectly	yes	some
Cursor movement/deletion					
Screen up & down	See notes[3]	yes	yes	yes	See notes[3]
Cursor to line end	yes	yes	yes	yes	yes
Delete by word	yes	no	yes	no	yes
Delete line	no	yes	yes	yes	no
Advanced features					
Word count	yes	yes	yes	no	no
Line count	yes	yes	yes	no	yes
Available RAM count	yes	yes	yes	yes	no
Redefinable keys	no	no	no	no	yes
Macros	no	no	no	no	yes
Number of documents in memory	4	1	4	1	1
Undo last delete (not cut)	no	See notes[6]	no	yes	no
Put date in document	yes	no	no	no	yes
Upper/lower case conversion	no	no	no	yes	yes
Transpose characters/words	no	no	no	no	no
Number of markers	4	0	0	0	0

Notes:
[1]separate program included in package
[2]in configuration file
[3]using scroll bar only
[4]no justification or line spacing on screen
[5]only by cutting and pasting from another window
[6]only some delete functions

DESKTOP PUBLISHING

By Nat Friedland

Coming on strong: The ST as printing press

Overnight, you could tell that desktop publishing had come to the ST. Suddenly it seemed as if every Atari users group newsletter was being designed and typeset with SoftLogik's Publishing Partner on standard dot-matrix printers—producing an instantly recognizable blocky-letter look.

But once they had tasted the artistic euphoria of desktop publishing, the speed at which these users group publishers upgraded the look of their newsletters was truly amazing. Often, within three or four issues, the newsletters went from 9-pin to 24-pin dot-matrix to some sort of laser printer—perhaps even a laser using the advanced Postscript page description language which allows extra-large headlines and a huge variety of typestyle treatments.

It's true that some major pieces are not yet in place on the chessboard of ST desktop publishing. The most significant example of this is Atari's own laser printer, coming soon for around $1,500. The latest word from Atari is that the interface boxes for these printers have just entered production. (The printers themselves are being provided by an independent Far East manufacturer.)

Currently ST users must resort to makeshift measures in order to achieve true state-of-the-art desktop publishing. Right now the choice is either to use impressive but not quite fully-polished programs written for the ST, or apply the brute power of the ST to emulate other computers that run today's state-of-the-art page design software.

However, a similar catch-up situation faced IBM users for two years until Ventura Publisher software brought it even with the Macintosh. So it's safe to say that the near-future potential of desktop publishing on the ST couldn't be brighter.

As we go to press, **Publishing Partner** ($149.95) is the only desktop publishing software written for the Atari ST that works on laser printers. It has a driver for the top-line Apple Laserwriter or any other other Postscript-capable printer. It will also run on the popular Hewlett-Packard Laserjets. As new drivers are written—for either lasers or dot-matrix printers—SoftLogik releases them into public domain and makes them widely available online. (Reviewed in START, Summer 1987.)

In general, SoftLogik has proven itself deeply committed to supporting Publishing Partner. This is an especially good thing because versions of the software released so far are not bug-free. A warning often heard from users of Publishing Partner is, "Save your documents often, so you won't lose much in a program crash." The other most commonly-heard complaint about Partner is its slowness when using the four-pass printing mode to squeeze maximum quality out of a standard 9-pin dot-matrix printer—perhaps as long as 20-30 minutes to print a single page containing graphics. ▶

Still, even the quibblers usually agree that Publishing Partner is one of the most impressive programs yet released for the ST. The GEM-based user interface is comparatively easy, considering all the features that the program has to offer. You get the full WYSIWYG display (What You See Is What You Get) that is an accepted requisite of desktop publishing software.

Want to place text in a column? Start a box with the mouse and drag it to the desired size. Arrange columns and select "text routing" to make your words flow automatically from one column to the next. It's just as easy to import DEGAS or NEOchrome pictures, place them on your page in different sizes and flow your text around them. And you can set your page size to anything your printer will support.

Publishing Partner is a real desktop publishing program, made even more impressive by the fact that it's the work of one man, Deron Kazmaier, and is written entirely in 68000 assembly language. Considering the care that has already been lavished on this software, future low-cost upgrades of Publishing Partner can be expected to smooth out any rough spots remaining from earlier versions. Minimum requirement: 520ST with TOS in ROM. Monochrome monitor preferred. *SoftLogik Corp., 4129 Old Baumgartner, St. Louis, MO 63129. (314) 894-8608*

CIRCLE 76 ON READER SERVICE CARD

From England's Mirrorsoft comes **Fleet Street Publisher** ($119), a polished program with many powerful features, some of them not available in other ST software. Distributed in the U.S. by Spectrum Holobyte, Fleet Street is completely GEM-based and elegantly performs virtually all the operations you would expect from a desktop publishing program.

Like Publishing Partner, Fleet Street contains a fairly bare-bones word processor, or lets you import ASCII text files from more powerful ST word processors. Both programs allow you to import and manipulate pictures from DEGAS or NEOchrome (MirrorSoft's new Art Director is also compatible with Fleet Street). You can do a bit of

FLEET STREET NEWS

Bill Beret Returns After Fraud Scandal

By Otto Blunt

Legendary pop star and self-proclaimed Rhodesian monk Bill Beret returned to Britain yesterday from a long vacation that took him to the Bahamas. But the holiday sun evidently failed to relieve him of his past troubles when he was arrested on fraud charges in South America.

Bill (real name Joe Raphacuitti), aged 36, is best known for his one and only highly successful pop album, "Large Lapels" which topped all known records. His jet-setting lifestyle also landed him everywhere trying to catch a glimpse of the famous hat from which he got his stage name, following him are reports of bodyguards and police.

On this particular trip the police were not there to protect him but to keep him from leaving the UK as his creditors from catching up with him. Apparently, he was accused of siphoning off thousands of pounds from sales in the UK of his last hit, "Clothes I have loved", recorded on his Cost Hanger record label.

The truth was only revealed when he was over a week and finally arrested at a high society function at Elvedi hall in his honour.

The pop star would have been imprisoned for years, had it not been for the fact that everyone in the courtroom appeared to be a member of his family.

Bill now returns to his bachelor mansion in fashionable Peckham.

More pictures Page 4

Twenty Years Without a Bite!

By our Angling Writer

Fisherman Bob Jordan, 60, celebrates the twentieth anniversary of his last catch this week. Bob, who lives in Kent, says that Bob last netted a fish at his local river, the River Perched. To celebrate the occasion, Bob has invited a host of local fishermen to the Plimmin Town Hall in Dedchester.

Tins of Beans

When asked about the absence of fish, he replied "Well, it's a mystery to me. Every week I would go to exactly the same spot under a lonely tree and cast my line into the pool, after a long day's wait, I would trudge back home empty handed and open a tin of beans."

Fleet Street

drawing with Fleet Street, but Publishing Partner gives you a full range of built-in shapes and fill patterns.

Fleet Street presently has two main advantages over Publishing Partner. For one thing, Fleet Street is currently a more reliable and bug-free program that's not as prone to crashes as Publishing Partner.

Fleet Street comes with six different typefaces (which could also be substituted with other GDOS fonts) while Publishing Partner is only being shipped with two typefaces right now. However, Fleet Street's six typefaces have fewer type styles than Publishing Partner—only normal, bold, italic and underline.

Both programs essentially support the same type size range—Fleet Street goes from 4 to 72 points. But Fleet Street offers eight different units of measurement, while Publishing Partner only uses points. (A point is a printing measurement equal to 1/72 of an inch.)

On the other hand, some users may find that Fleet Street also has several significant limitations as compared to Publishing Partner. Perhaps the biggest stumbling block is that Fleet Street does not yet offer any laser printer drivers. However, Spectrum Holobyte has promised to create a $50 Postscript driver and a $30 driver for Atari's still-unavailable laser printer.

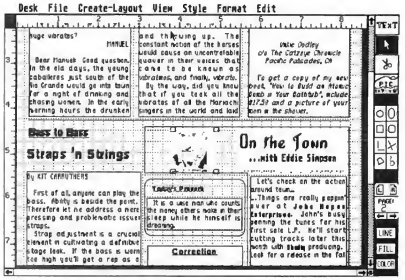
Primarily designed for Epson FX-80 compatibles, Fleet Street does allow limited customizing of dot-matrix command sequences. It would be best to phone Spectrum Holobyte if you have any doubts about compatibility with your own printer. And our original review in the Fall 1987 START pointed out that Fleet Street's large-size dot-matrix type has a noticeably jagged and blocky appearance.

Fleet Street is heavily copy protected, unlike Publishing Partner. To run Fleet Street from your hard disk, you must always insert your original master disk into drive A when loading the program. Also there are no warning prompts to help prevent you from mistakenly deleting or overwriting files.

However, Fleet Street boasts fine documentation with a really excellent tutorial about creating a newsletter. The software also lets your documents use as much memory as your ST has available. And you can also conveniently create as many as 20 text or style macros for assignment to the ST's function keys.

Fleet Street comes with a whole disk full of pictures arranged into categories.

Publishing Partner: The "Show Multiple Pages" option



Publishing Partner: "Show Rulers" with "Show Full Width"

It is priced $30 dollars lower than Publishing Partner (although you will need to pay extra if you want laser printer drivers.) Depending on your immediate and future needs, either Fleet Street or Publishing Partner could be your best choice for getting started in desktop publishing on your ST. Minimum requirement: 520ST with TOS in ROM. Monochrome monitor preferred. *Spectrum HoloByte, Inc., 2061 Challenger Drive, Alameda, CA 94501. (415) 522-3584*

CIRCLE 77 ON READER SERVICE CARD

DESKTOP PUBLISHING SOFTWARE, NON-ATARI PROGRAMS AND THE ST

Never has an affordable computer like the Atari ST been powerful enough to give the user such a range of software translation choices. Although not all the ST's bridges to the Macintosh and the IBM PC are fully in place yet, even now there is no reason why you cannot run the best desktop publishing programs of these other computers on your ST.

Among the programs that work successfully on the ST with version 4.5 of the Magic Sac Macintosh emulator cartridge are Ready Set Go by Manhattan Graphics and Pagemaker 2.0 from Aldus. These two programs have set the standard for Mac desktop publishing. An ST conversion of Ready Set Go has been announced, but there is no firm release date yet.

At this writing, you still need to transfer programs into your ST from a genuine Macintosh and then convert them to ST disk format. But Magic Sac inventor David Small says that his customized disk drive interface which translates Macintosh programs directly to the ST is just about to be shipped. This means that effectively the Atari ST will be able to do everything that the Mac can—but faster, on a bigger screen, and for just about one-third the list price of a Macintosh.

As for IBM emulation on the ST, affordable PC Ditto software seems to work just fine. START has used it to run a number of MS-DOS programs including Flight Simulator II and Word Perfect on our STs. The only catch is that PC Ditto slows down the ST to make it even more pokey than a standard IBM XT.

However, Ventura Xerox Publisher has been widely reviewed as the best IBM desktop publishing software on the market. Admittedly, START has not yet tested the 11-disk Ventura package on our STs because we don't yet have a direct-connect 5¼ inch ST disk drive. But since Ventura is not copy-protected, there is no reason why it shouldn't run perfectly well on the ST with PC Ditto.

LASER CHOICES

With its built-in parallel and serial ports, your ST should be able to run just about any laser printer on the market today. Laser printing is one of the fastest-growing computer peripheral categories. New models are coming into the stores all the time and prices are steadily dropping.

The current resolution standard for laser printers is 300 dots per inch. Although traditional photo typesetting has a considerably higher resolution, the difference between laser and photo type is almost impossible to see with an untrained eye.

The main factor you must keep in mind when choosing a laser printer is its compatibility with the software you plan to use—plus of course the ever-present about how much you are willing to pay.

Your laser choices range all the way from printers running Postscript to printers that emulate popular standard formats—daisywheel letter-quality such as Diablo or Qume, or even Epson dot-matrix. If you do not need graphics capability, the letter-quality emulation

continued on page 62 ▶

GRAPHIC ARTS

By Jon A. Bell

Drawing, animation and computer-aided design software

The name Atari has always been synonymous with video games. But video games are the result of another notable Atari synonym—graphics.

Graphics have always been Atari's strong suit. Since video games depend on sparkling explosions, pulsing laser bolts and zooming spaceships, they've served as strong examples for showcasing flashy computer graphics, and the ST continues that tradition.

With three different graphics resolutions (two color, one black and white) and a Motorola 68000 CPU sitting under the hood, the ST is an inexpensive but very powerful computer graphics machine. Today, STs are used for everything from business graphics slides to video titling, cartoon-type animation to stereoscopic spectaculars.

The list of ST software for these applications is growing daily, but it all falls into three main categories: paint, computer-aided design (CAD) and animation programs. There's some overlap between categories—a drawing or painting program might have some animation capability, for example. But the most important similarity between these programs is their usefulness to the graphics-hungry ST owner. Whether you're interested in painting a colorful pastoral scene, drawing a black and white graphic for a newsletter or animating your own pixelized space epic, you'll find an ST program that helps you realize your computerized visions.

DRAWING/PAINTING PROGRAMS

DEGAS Elite ($59.95) is an enhanced version of the original DEGAS (the first full-featured drawing program available for the ST) and consequently, the ST paint program standard. DEGAS supports all three ST graphics modes and includes features such as zoom, airbrush, stipple, mirror, block move and copy, user-definable fills and brushes, and color-cycling animation. It includes printer drivers and a custom font editor, and works in all resolutions. *Batteries Included, distributed by Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171*

CIRCLE 216 ON READER SERVICE CARD

Easy-Draw 2.0 ($99.95) is an object-oriented drawing program with standard drawing features: lines, boxes, circles, polygons. You can also select parts of a drawing and draw with them as objects. Its main strength lies in creating technical images such as machinery cutaways, and architectural floor plans and newsletter illustrations (you can mix text and graphics). Although Easy-Draw is not designed as a desktop publishing system, many owners have been using this program to do page layouts. Works in medium and high res. *Migraph*

Cyber Paint

Inc., 333rd Street, Suite 201, Federal Way, WA 98003. (206) 838-4677
CIRCLE 217 ON READER SERVICE CARD

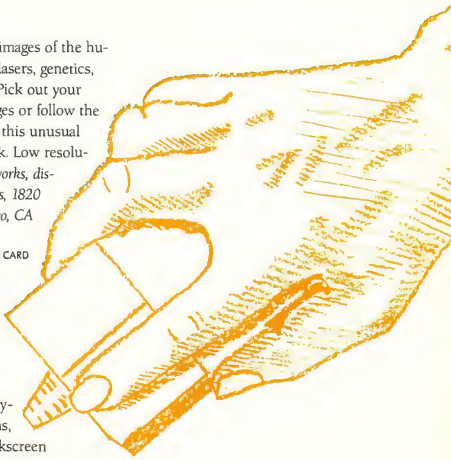
Font Pack #1 ($39.95) is a package of two different font styles to use with Easy-Draw: Rocky (a serif, Roman-style face) and Hi-Tech (a futuristic sans serif face). For use with Easy-Draw versions 2.0 and higher. *Migraph Inc., 333rd Street, Suite 201, Federal Way, WA 98003. (206) 838-4677*
CIRCLE 218 ON READER SERVICE CARD

Personal Draw Art #1 ($29.95) is a clip-art disk containing over 150 pieces of artwork—everything from decorative borders and symbols to vehicles, such as airplanes and trucks. For use with Easy-Draw versions 2.0 and higher. *Migraph Inc., 333rd Street, Suite 201, Federal Way, WA 98003. (206) 838-4677*
CIRCLE 219 ON READER SERVICE CARD

Technical Draw Art #1 ($29.95) is a library of technical symbols for both electronics and mechanical use. It features symbols for electrical circuitry and wiring schematics, piping, flow charts, architectural floor plans and more. For use with Easy-Draw versions 2.0 and higher. *Migraph Inc., 333rd Street, Suite 201, Federal Way, WA 98003. (206) 838-4677*
CIRCLE 220 ON READER SERVICE CARD

NEOchrome 1.0 ($39.95) is the commercial version of Atari's ST paint program. (A stripped-down version was included with all STs sold until late 1986.) NEOchrome includes many drawing features, including multiple brushes, color cycling animation and block moves. You can also cut out a piece of your screen picture and place it behind another piece by using the Jackknife function. Low resolution only. *Atari Corp., 1196 Borregas Avenue, P.O. Box 3427, Sunnyvale, CA 94088. (408) 745-2367*
CIRCLE 221 ON READER SERVICE CARD

New Technology Coloring Book ($19.95) is an educational paint-by-numbers graphics program that teaches ST users about modern technology. The disk contains outlined images of the human body, computers, lasers, genetics, outer space and more. Pick out your own colors for the images or follow the program's guidelines in this unusual electronic coloring book. Low resolution only. *Software Toolworks, distributed by Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171*
CIRCLE 222 ON READER SERVICE CARD



Paint Pro ($49.95) is an icon-based paint program with many of the same features as DEGAS Elite and NEOchrome. It includes zoom, mirror, spray, varying lines and fill patterns, and user-definable workscreen areas. You can also rotate picture elements and invert colors. Disk includes printer drivers. Works in all resolutions. *Abacus Software, P.O. Box 7219, Grand Rapids, MI 49510. (616) 241-5510*
CIRCLE 223 ON READER SERVICE CARD

Paint Pro Library ($29.95) is a collection of clip art and fonts to be used with Paint Pro. Includes decorative borders, electronic and drafting symbols ▶

Spectrum

and over 100 clip art pieces. DEGAS-compatible. *Abacus Software, P.O. Box 7219, Grand Rapids, MI 49510. (616) 241-5510*

CIRCLE 224 ON READER SERVICE CARD

Paintworks ($39.95) is an icon-based paint program with many features: lines, controlled fills, text, boxes, circles and zoom. You can alter your color palette, reverse, invert and cycle colors, and create your own fill patterns. Includes a slideshow program on disk that's compatible with Audio Light's Music Studio. Works in all resolutions. *Audio Light, distributed by Activision, P.O. Box 7287, Mountain View, CA 94039. (415) 940-6044*

CIRCLE 225 ON READER SERVICE CARD

Spectrum 512 ($69.95) is unlike any other paint program for the Atari ST: It allows you to draw, in low resolution, with the entire 512-color ST palette. It features block move and copy, scaling, zoom, circle, box and fill, and a multiple-screen buffer. It has anti-aliasing that works on drawing functions, user-defined screen areas or even the entire screen. It can load picture files from DEGAS and NEOchrome, and can even load 4,096-color "hold and modify" pictures from the Commodore Amiga. Note: Spectrum will not work in most STs manufactured before December 1986, due to their older MMU chips. *The Catalog, Antic Software, 544 Second Street, San Francisco, CA 94107. (800) 234-7001*

Printmaster Plus ($39.95) is a graphic design package that allows you to produce printed borders, icons, designs for t-shirt decals, bulletins, handbills, calendars and more. Mix type fonts and styles. Comes with over 100 pieces of original artwork. *Unison World, 2150 Shattuck Ave., Suite 902, Berkeley, CA 94704. (415) 848-6670*

CIRCLE 136 ON READER SERVICE CARD

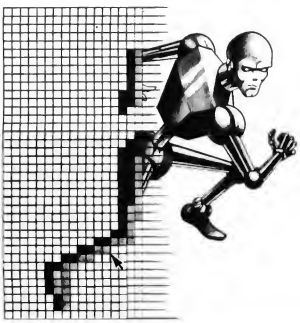
Fonts (Six disks, $29.95 per disk) Each disk contains printer and screen fonts for medium & high resolution. Disk #6 even has a complete set of 11 Laser Writer fonts.

Clip Art (Five disks, $19.95 per disk) Each Clip Art disk has different graphic designs for different needs and cover a wide variety of topics. *The Font Factory, P.O. Box 17422, Phoenix, AZ 85011. (602) 265-7849*

CIRCLE 135 ON READER SERVICE CARD

Video Title Shop ($29.95) Allows you to combine a computer and a VCR ▶

ST
SPRITE FACTORY



J. DeSpain

from: FUTURE SOFTWARE SYSTEMS

21125 Chatsworth Street Chatsworth, California 91311
(818) 341-8681

ATTENTION PROGRAMMERS!

Announcing the arrival of a new programming package. . .the ST SPRITE FACTORY from FUTURE SOFTWARE SYSTEMS. The ST SPRITE FACTORY is the first full featured professional sprite editing system of its kind. It includes an on-board animation routine, with joystick simulator. The ST SPRITE FACTORY helps you to create your own arcade-style games quickly & easily. The package allows you to:

- *Use standard "DEGAS" * file format to save up to 60 sprites per file.*
- *Use simple mouse/menu driven commands to create sprites with advanced graphics features like: mirror, shrink, rotate, cut, paste, copy, insert, flip, fill, distort, and others.*
- *Use animation program to see what your sprites will look like animated and moving in any direction. (User defined at the click of a mouse button--up to 1000 frames!)*
- *Use the "mapmaker" to create a scrolling play field or maze for your sprites to run on.*
- *Choose any of 80 masking options to pass sprites in front of, behind, or through other objects.*
- *Includes source code and tutorials on how to move sprites, detect collisions, set object priorities, and more!*

The ST SPRITE FACTORY from FUTURE SOFTWARE SYSTEMS is also compatible with the ANIMATOR from MICHTRON. *Suggested Retail Price $39.95*

Stop dreaming and start programming an arcade game of your own today!

Also Available:

***THE CHAMELEON** - a utility that creates source code (Assembly "C," Basic) from Neochrome, Degas, and IFF Block File format. Allows you to cut out entire pictures or any part of a picture (including irregular shapes). Also allows you to convert files between Degas, Neochrome, IFF, and Sprite Factory file formats.*
Suggested Retail Price $29.95

~ Future Software Systems is always looking for good products. ~
If you have a program you would like to submit please call
(818) 341-8681

**Degas is a product of Electronic Arts.*

CIRCLE 016 ON READER SERVICE CARD

Navarone Introduces the

ST SCAN Image Scanner™

for Your ATARI ST System!

The flexibility to introduce art into desktop publishing.

With the *ST SCAN Image Scanner* you can transfer your line art, photographs, logos, diagrams, text, and other graphics into your computer.

Capture your *image* sharp and clear with resolutions up to 300 dots per inch and with 32 shades of grey.

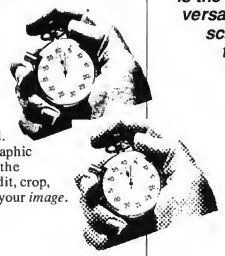
Navarone's high speed interface.

Navarone combines the Canon IX-12 Image Scanner with it's own High Speed Interface that plugs into the cartridge port of the Atari ST.

Sophisticated software is provided to allow scanning in both line art mode and halftone mode. The *ST SCAN Image Scanner* program is very easy to use and operates under GEM with simple click-on menu selections.

It takes less than 15 seconds

to scan in your *image*. Once digitized. you can use graphic programs like the DEGAS™ to edit, crop, size, or shape your *image*.



You can put your *image* into final documents with Publishing Partner™ or save in PostScript™ to allow direct printing on postscript devices, such as, the Apple LaserWriter™ or QMS PS 800™.

Compatibility with graphic programs:

Fleet Street Publisher™
by Mirror Soft,
Publishing Partner™
by Softlogik,
Easy Draw™
by MiGraph,
or DEGAS™
by Batteries Included.

The ST SCAN Image Scanner Services are now available at your local Atari Dealer.

Some Atari Dealers now offer Image Scanning Services. Contact the dealer nearest you for details about this Service.

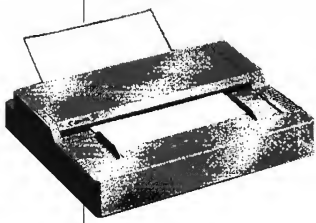
ST SCAN Image Scanner is the most powerful and versatile, high resolution scanner available for the Atari ST Computer!

The *ST SCAN Image Scanner* comes complete with scanner, interface, cable, and software for only:

$1239.00

IX-12 Specifications

Readable Image Area
8 1/4" X 16 1/2"
Image Resolution
300, 200, 150, or 75 dpi
Scanning Speed
12 sec./page(when 300 dpi density)
6 sec./page(when 150 dpi density)
Gray Scale
32 gray shades/2 shades
Interface
Cartridge Port
4 foot Cable



Size
347mm(W) X 295mm(D) X 89mm(H)
(13 5/8" X 11 5/8" X 3 1/2")
Weight
7kg (15.4 lbs.)
Power Source
120V AC 60Hz 0.7A
230V AC 50Hz 70W
240V AC 50Hz 70W
System Requirements (minium)
Atari 520 ST, mono or color monitor, disk drive
Output File Format
DEGAS, PostScript, .IMG(standard GEM)

For more information please call:
1-800-654-2821 (in California)
1-800-624-6545 (nationwide).

NAVARONE

Prices and availability are subject to change without prior notice. PostScript is a trademark of Adobe; DEGAS is a registered trademark of Batteries Included Inc.; Softlogik and Publishing Partner are trademarks of Softlogik Corp.; Canon IX-12 is a registered trademark of Canon Inc.; Atari ST is a registered trademark of Atari Corp.; Apple LaserWriter is a registered trademark of Apple Computer; QMS PS 800 is a registered trademark of Quality Micro Systems.

Navarone Industries, Inc. • 1043 Stierlin Rd. • Suite 201 • Mountain View, CA 94040

CIRCLE 055 ON READER SERVICE CARD

GRAPHIC ARTS

Paintworks

to create title animations and graphics effects for any video recording. Video Title Shop has design and editing options and facilities to import graphics. *Datasoft, 19808 Nordhoff Place, Chatsworth, CA 91311. (818) 886-5922*

CIRCLE 137 ON READER SERVICE CARD

ANIMATION PROGRAMS

Aegis Animator ST ($79.95) is an object-oriented animation program. Create a key (beginning) frame, move an object several times, then drag it to its final position. Animator ST will interpolate every movement on whatever range of frames you've picked (a process called tweening). It can also cut and paste between animations, cycle colors and save individual frames as cels. Includes an animation player program. Low resolution only. *Aegis Development, 2115 Pico Boulevard, Santa Monica, CA 90405. (213) 392-9972*

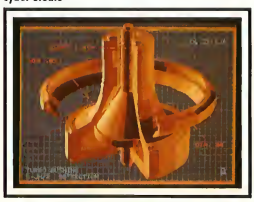
CIRCLE 227 ON READER SERVICE CARD

Art Pak ST ($29.95) is a collection of predrawn cels, backdrops and NEOchrome screens for use with Animator ST. It contains a variety of images, such as animals (cheetahs, elephants), buildings (houses, office buildings) and vehicles (ships, planes, cars). *Aegis Development, 2115 Pico Boulevard, Santa Monica, CA 90405. (213) 392-9972*

CIRCLE 228 ON READER SERVICE CARD

Cyber Paint ($69.95) is a combination paint/animation program that's compatible with the Cyber Studio. Create your own 2-D animation sequences, rotate, tween, shrink and expand objects, copy to individual frames or to an entire sequence. Cyber Paint includes

Cyber Studio



multiple brushes, airbrush, stipple, circle, box and zoom. It allows you to load CAD-3D 2.0 animations, make precise changes on every frame, then save the files back out to disk. You can also load in multiple layers of animation and still images on top of or behind one another. Low resolution only. *The Catalog, Antic Software, 544 Second Street, San Francisco, CA 94107. (800) 234-7001*

Make it Move 2.0 ($69.95) is a simple graphics presentation and animation program. Create your own graphics scripts, and define objects to move, either in front of or behind existing objects. Includes zoom, scan (fast play), wipes and fades. Low resolution only. *MichTron, 576 S. Telegraph, Pontiac, MI 48053. (313) 334-5700*

CIRCLE 101 ON READER SERVICE CARD

The ST Director ($79.95) consists of two programs: Art Director and Film Director. Art Director is a full-featured paint program that includes zoom, multiple brushes (16 different calligraphy pens), and the ability to bend, stretch and compress objects on your screen. Film Director is an icon-based cel animation program that allows you to copy multiple frames of artwork, or pieces of frames, as a strip of animation. You can define different parts of a figure (a cartoon character, for example) and make them move independently of the main body. There's even a library of music and sound effects for you to add to your animations. You can use either Art Director and Film Director separately, although they are designed to work as an integrated package. *Broderbund, 17 Paul Drive, San Rafael, CA 94903. (415) 492-3200*

CIRCLE 231 ON READER SERVICE CARD

Aegis Animator

CAD PROGRAMS

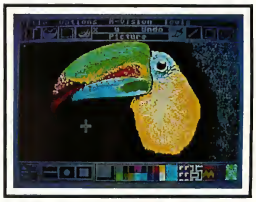
The Cyber Studio ($89.95) is actually two programs in one—Tom Hudson's CAD-3D 2.0 and Mark Kimball's CyberMate. CAD-3D 2.0 is a full-featured computer-aided design system for creating 3-D pictures. You can spin an object, extrude it, use custom color palettes and multiple camera views. Objects may be wireframe (hidden lines showing or removed) or solid (with or without outlines) and may be saved to disk as CAD-3D files or as DEGAS or NEOchrome pictures. Includes a 3-D animation program allowing you to create computer animation with CAD-3D objects. CyberMate is an animation editing language that allows you to edit your animation sequences and add dissolves, wipes, titles and sound effects. Works in low-res and monochrome. *The Catalog, Antic Software, 544 Second St., San Francisco, CA 94107. (800) 234-7001*

Future Design Disk

Cyber Control ($59.95) is an animation control language developed by Tom Hudson. With it, you can write your own CAD-3D animation scripts using simple programming commands. Envision elaborate CAD-3D movies, write the code to handle all object movements, then walk away and let your ST record the frames. Cyber Control also allows you to create extremely complicated CAD objects, with compound curves and multiple facets. For use with the Cyber Studio. *The Catalog, Antic Software, 544 Second St., San Francisco, CA 94107. (800) 234-7001*

Architectural Design Disk and **Human Design Disk** ($29.95 each) are collections of CAD-3D objects. The Architectural Design disk contains objects such as doors, windows, arches, walls and stairways. Both packages contain blueprints and completed models on disk. The Human Design disk contains male and female skeletal forms and finely-detailed body parts, such as heads and hands. For use with the Cyber Studio. *The Catalog, Antic Software, 544 Second St., San Francisco, CA 94107. (800) 234-7001*

Future Design Disk ($29.95) is a collection of sleek modular shapes, allowing you to create futuristic hardware, such as spaceships, space stations, robots and 21st-century tanks. The package contains blueprints and completed models on disk. For use with the Cyber Studio. *The Catalog, Antic Software, 544 Second St., San Francisco, CA 94107. (800) 234-7001*



N-Vision

3D-Font Package ($24.95) is a combination font editor/super extruder tool for CAD-3D. Create multicolored CAD objects with the extruder, and create your own CAD-3D fonts. Includes two fonts—serif and sans serif, both upper and lower case. For use with the Cyber Studio. *The Catalog, Antic Software, 544 Second St., San Francisco, CA 94107. (800) 234-7001*

GFA Vector ($49.95) is a CAD graphics program that lets you create 3-D wire-frame graphics through programming commands, defining points and lines by entering their coordinates into your keyboard. The program creates picture files written in machine language, allowing for fast generation and real-time animation. You can also ▶

import the pictures into your own GFA BASIC programs. *MichTron, 576 S. Telegraph, Pontiac, MI 48053. (313) 334-5700*
CIRCLE 101 ON READER SERVICE CARD

Graphic Artist 1.51 ($199.95) is a business-oriented CAD package. It includes standard line drawing features, curves, angles and symbols, and lets you store and recall portions of a drawing from a spreadsheet-style interface. You can edit your designs from the spreadsheet, mathematically editing the coordinate points of a design. You can also put text into your graphics. *Progressive Computer Applications, Inc., 2002 McAuliffe Drive, Rockville, MD 20851. (301) 340-8398*
CIRCLE 238 ON READER SERVICE CARD ■

Graphics Hardware and Services

ARTablets (6×9 inches, $395; 12×12 inches, $539; 12×18, $877). EI/O's new graphics tablets are actually electronic drawing boards used with an electronic stylus—so you can draw in the normal manner instead of trying to etch fine images with your mouse. However, you can still use the mouse and keyboard. The two larger tablets come with a four-button "puck" for precision tracing and drafting. ARTablets are compatible with NEOchrome, the DEGAS programs, Publishing Partner, CAD-3D, First CADD, Aegis Animator and others. *EI/O Products, 1559 Rockville Pike, Rockville, MD 20852. (301) 869-5984*
CIRCLE 111 ON READER SERVICE CARD

Computereyes Video Digitizer ($249.95). One of the highest-rated video digitizers available for the Atari ST. Accepts color or B&W video input. Digitizes pictures in all three ST resolutions, and saves them in either NEO- or DEGAS-compatible formats. (Antic review 3/87) *Digital Vision. 66 Eastern Avenue, Dedham, MA 02026. (617) 329-5400*
CIRCLE 112 ON READER SERVICE CARD

Navarone Video Digitizer ($139.95). The original ST video digitizer. Works in all three resolutions, and can capture and display images at up to five frames per second. (Antic review 3/87) *Navarone Industries. 1043 Sterling Rd., #201, Mountain View, CA 94040. (415) 964-2660*
CIRCLE 113 ON READER SERVICE CARD

Print Technik Video Digitizer ($199.95). Capture stunning color pictures with your Atari ST using a black and white video camera? It's easy with the P-T Video Digitizer, from Print-Technik. Allows the capture of images in all three ST video resolutions. (Antic review 3/87). *MichTron Software. 576 South Telegraph, Pontiac, MI 48053. (313) 334-5700*
CIRCLE 101 ON READER SERVICE CARD

Navarone Audio Digitizer ($139.95). A good 8-bit audio digitizer for those of you who want to make your own M-M-Max Headroom tapes. Originally known as the Hippo Audio Digitizer. (Antic review 3/87). *Navarone Industries. 1043 Sterling Rd., #201, Mountain View, CA 94040. (415) 964-2660*
CIRCLE 113 ON READER SERVICE CARD

Navarone ST Scan ($1239.95). In addition to using a video digitizer, this may be the best way to import pictures and graphics into your application. This document scanner is based on the Canon IX-12, and will digitize documents at 75, 150, 200, and 300 dots per inch. *Navarone Industries. 1043 Sterling Rd., #201, Mountain View, CA 94040. (415) 964-2660*
CIRCLE 113 ON READER SERVICE CARD

ST PictaScan ($149.95). PictaScan is a Thunderscan-type device which attaches to your printer and allows you to digitize photographs at up to 400+ dots per inch. It's not that fast, but the price is right. *E. Arthur Brown Company. 3404 Pawnee Drive, Alexandria, MN 56308. (612) 762-8847*
CIRCLE 114 ON READER SERVICE CARD

IMG SCAN ($59.95). IMG SCAN turns your ST and any graphics-capable printer into a high-resolution image scanner. A small light pipe attached to the print head captures 256 gray levels, works in all screen resolutions and allows nine levels of magnification or reduction. Scan any page, photo, copy, etc. that will fit into your printer. *Seymor-Radix, P.O. Box 166055, Irving, TX 75016.*
CIRCLE 115 ON READER SERVICE CARD

GRAPHICS SERVICES

Image Set (Price varies) Image Set Corporation will take any computer image on disk and convert it into a 35mm slide. They also do digital color separations, which you can see on the cover of the Fall 1987 START, The ST Quarterly. *Image Set Corp., 555 19th St., San Francisco, CA 94107. (415) 626-8366*
CIRCLE 130 ON READER SERVICE CARD ■

PROGRAMMING TOOLS

By David Plotkin

A programmer's guide to languages and utilities

In the first two years of the Atari ST's life, an impressive number of programming languages have been released. In fact, there were more languages available for the ST after eight months than there were for the 8-bit Ataris after eight *years!*

There are basically four categories of languages for the ST. First are the BASICs, mostly interpreted but with some compiled versions available. This group has two standouts—GFA, which has a compiler available and makes GEM access fairly easy, and a relatively new entry, True BASIC, which is one of the most powerful and extensible languages I have ever seen. It has the ability to add many external modules, so that if you have lots of memory, you can perform many tasks heretofore impossible with the BASIC language.

The second category consists of C compilers. C is a "medium level" language; the programmer has far more work to do than with BASIC, but far less than with an assembler.

The third category are the assemblers. Due both to the power of the 68000 microprocessor and the large amount of memory available in the ST, most ST assemblers for 68000 code are powerful packages with extensive libraries of macros, which ease a programmer's job.

Finally, there is a host of high-level languages such as Pascal, Modula-2 and Fortran. These languages are more difficult to use and learn than BASIC, but easier (and slower) than C.

BASIC

Fast ST BASIC ($139.95) is the only cartridge-based BASIC. It includes more commands than any other BASIC. Virtually all of GEM and DOS is supported through keywords, and you have access to many advanced commands. The built-in editor allows for cut and paste from a clipboard and multiple programs in memory at the same time. Also included is an in-line assembler. Double precision arithmetic is supported. Some bugs have been cleaned up in the current version, but it still crashes frequently and there is nowhere to turn for support. *Computer Concepts, Gaddesden Place, Hemel Hempstead, Hertfordshire HP2 6EX England. 0442 63937*
CIRCLE 239 ON READER SERVICE CARD

GFA BASIC ($79.95), a German import supported by MichTron, has taken the ST world by storm. It supports many GEM functions by keyword, and support products have been arriving in a steady stream. This is a structured programming language, supporting procedures (including variable passing) and user-defined functions. Line numbers are not used, and a good editor makes it easy to compose programs. It supports all standard features of BASIC and some advanced loop commands. The new manual is much better and more usable than the original. This BASIC is very fast and small, and a compiler for stand-alone code is available. ▶

MichTron, 576 S. Telegraph, Pontiac, MI 48053. (313) 334-5700
CIRCLE 101 ON READER SERVICE CARD

LDW BASIC Compiler ($69.95) compiles ST BASIC programs into machine code, enabling stand-alone .PRG files. Compiling takes a while, but the new version can do the job without disk swapping on a two-disk system and is not copy protected, so you can install it on a hard drive. Extensions to ST BASIC include optional line numbers, better accuracy and extensive BASIC subroutines (which can also be used in ST BASIC) to support GEM functions. This BASIC also includes some extended commands not found in ST BASIC. *Logical Design Works, 780 Montague Expressway #205, San Jose, CA 95131. (408) 435-1445*
CIRCLE 241 ON READER SERVICE CARD

Softworks BASIC ($79.95). Advanced data structures and superior string manipulation are trademarks of this language. Compatible with programs written in this language on other computers. Extensive GEM and DOS support through the TOOLBOX command, but you must be quite familiar with GEM in order to use it. Compiled to P-Code, it must have the runtime package on the disk to run without the BASIC package itself. Some advanced loop commands are not supported. *Softworks Limited, 607 W. Wellington, Chicago, IL 60657. (312) 975-4030*
CIRCLE 242 ON READER SERVICE CARD

Mary Lavery Peloquin

Fast ST

ST BASIC (free) is the BASIC included with the ST. It's slow and clumsy, but it is free. Line numbers are required and numeric accuracy is limited. All GEM support is via generic calls to the operating system. It does support labels, but cannot use any tools of structured programming. *Atari Corporation, 1196 Borregas Ave., Sunnyvale, CA 94086. (408) 745-2000*
CIRCLE 102 ON READER SERVICE CARD

True BASIC ($99.95) is a very large language produced by the inventors of BASIC. It allows for just about every command imaginable, although some of the commands have strange names. The ST version is compatible with versions of True BASIC running on other computers. The language is highly structured; it can use line numbers if you desire, although they are not necessary. Procedures, functions, external libraries, a GEM toolkit and a runtime package are all available. The advanced math, sorting/searching, and string libraries make this a very powerful technical language. True BASIC is compiled, and modular compilation is supported. *True BASIC, Inc., 39 South Main St., Hanover, NH 03755. (603) 643-3882*
CIRCLE 244 ON READER SERVICE CARD

C

Alcyon C ($300) is the C that is bundled with the Atari developer's kit. Included are a compiler and assembler from Alcyon, linker, debugger and various utilities from DRI, an editor (EMACS) and telecommunications package (KERMIT) and various utilities from Atari. The documentation is 2000 photocopied pages, many of which have nothing to do with the ST. Several "skeleton" programs are also included to show how desk accessories must be set up. Batch files are a must to drive the many pieces of this package. The immense size and large amounts of irrelevant material make this a difficult package to use. All GEM and DOS functions are supported. *Atari Corp., 1196 Borregas Ave., Sunnyvale, CA 94086. (408) 745-2000*
CIRCLE 102 ON READER SERVICE CARD

GST C ($79.95) has a smooth interface that's a pleasure to work with, but there are restrictions that make program development difficult. Certain fundamental constructions are not supported, there is no floating point package, and GEM documentation is very limited. The package includes a shell, an excellent editor, one-pass compiler, assembler and linker. Standard C libraries are supplied. Relocatable code can be generated. The size of intermediate code is a problem; you will have problems compiling even moderate sized programs on double-sided 2 floppy systems unless you delete some

of these files. *The Catalog, Antic Software, 544 Second St., San Francisco, CA 94107. (800) 234-7001*

Lattice C ($149.95) includes ANSI extensions which help reduce compiler errors. The documentation is good, although the section on GEM and DOS is very weak. It includes the compiler, linker, and a non-mouse driven editor. Lattice C does not come with an assembler or disassembler, so you cannot inspect code generated by the compiler, nor can you optimize code by hand. Integers are 32 bits, so code generated is larger and slower. *Metacomco, distributed by The Catalog, 544 Second St., San Francisco, CA 94107. (800) 234-7001*

Mark Williams C ($179.95) is a large, complex version of C that runs in a Unix-like environment. It includes a compiler, linker, debugger, the Micro-EMACS editor and shell. Batch files can be used to implement the conversion from C source code to machine code and there are numerous options available to customize the results. ANSI extensions are supported. *Mark Williams Company, 1430 W. Wrightwood, Chicago, IL 60614. (312) 472-6659*

CIRCLE 248 ON READER SERVICE CARD

Megamax C ($199.95) is the language many commercial developers have turned to. It is very fast, uses a one-pass compiler, and includes an editor, linker, code optimizer, disassember and a shell to perform all of Megamax's functions easily. Batch files are not needed due to the straight-foward nature of the language. No assembler is included, so you cannot hand-optimize the assembler source code. Program segments are limited to 32K in size, so compiler directives are required to break up the code. The documentation is very thorough, and every imaginable DOS and GEM function is supported and documented. The package also includes a complete Resource Construction Set, and supports dialog box options not available in standard GEM dialog boxes. Megamax C can also handle program files which are in a different drive than the linker, etc. *Megamax, Box 851521, Richardson, TX 75085. (214) 987-4931*

CIRCLE 249 ON READER SERVICE CARD

ASSEMBLERS

GST-ASM ($59.95) is a self-contained development system for the ST. It includes an excellent GEM-based editor, similar to the 1st Word word processor, which allows for up to four simultaneous files open in windows, and supports cut-and-paste. Also included is the assembler and linker. Batch files can be used to automate the process of producing a file. A shell program ties the whole thing together. The assembler has many powerful options, including macros, include files, support for high-level languages, and conditional assembly. The package does not include a debugger or any documentation on the GEM calls. *The Catalog, Antic Software, 544 Second St., San Francisco, CA 94107. (800) 234-7001*

Metacomco Macroassembler ($79.95) provides a TOS full-screen editor similar to EMACS, an assembler and linker. The macro facility is not as powerful as others available and no library of macros is provided. The documentation is for the LINK68 linker, which is not provided, although GST-LINK and its manual is part of the package. The assembler includes macros, local labels, conditional assembly, include files and high level language support. *The Catalog, Antic Software, 544 Second St., San Francisco, CA 94107. (800) 234-7001*

PASCAL

Alice—The Personal Pascal ($79.95) is an interpreted Pascal; you can debug programs written in this language much more easily than in a compiled language. You can even single-step through a program. The editor lays out templates for you to fill in, making syntax mistakes much less common. Some GEM support is built-in, and a variety of included libraries make access to GEM not too difficult, although there is not as much built-in support as with some other languages. GEM support for windowing and redrawing is excellent because ALICE takes care of the gritty details for you. It also includes five different graphics systems, some of which are consistent with Borland's Turbo Pascal. There is currently no compiler to produce stand-alone programs. *Looking Glass Software, 124 King Street, N. Waterloo, Ontario, Canada N2J 2X8. (519) 884-7473*

CIRCLE 252 ON READER SERVICE CARD

Mark Williams C

Personal Pascal ($74.95) is a structured, compiled language. It supports functions and procedures with full parameter passing. The package includes a non-GEM editor, compiler, linker and extensive libraries that not only provide access to most GEM functions, but document that access well enough to use the libraries. A shell program makes it possible to effortlessly ▶

switch from one option to another, and you can save, compile and link with the press of one key. *Optimized Systems Software, 1221 B Kentwood Ave., San Jose, CA 95129. (408) 446-3451*
CIRCLE 253 ON READER SERVICE CARD

UCSD PASCAL ($99.95) This is an implementation of the famous UCSD PASCAL compiler. Contains a complete library of programming tools. Uses p-system files, and features extensions for the GEM interface. Runs in monochrome or color. *Pecan Software Systems, Inc. 1410 39th Street, Brooklyn, NY 11218. (718) 851-3100*
CIRCLE 123 ON READER SERVICE CARD

MODULA-2

Modula-2 ($149.95) is a block-structured, compiled programming language. Similar to Pascal, programs are arranged to modules to make them easier to program and understand. All standard Modula-2 calls are supported, including IMPORT and EXPORT, along with messages between modules. The package includes a GEM based program editor, fast compiler and linker. The editor does not support many "standard" GEM conventions, making it somewhat cumbersome to use. Extensive libraries provide access to GEM and DOS functions, but the documentation is inadequate to use them. The developer's version of this language includes toolkit disk, symbolic debugger, and a Resource Construction Set. *TDI Software, 10410 Markison Road, Dallas, TX 75238. (214) 340-4942*
CIRCLE 254 ON READER SERVICE CARD

FORTH

Multi-Forth ($149) comes with the EMACS editor, which doesn't support the mouse or GEM, and an assembler that has such niceties as loop structures and Reverse Polish Notation. GEM and DOS support for the language seems to be thorough but is hard to use because a complete listing of all supported words is not provided. A large number of demonstration programs are provided on the disk. *Creative Solutions Inc., 4701 Randolph Road, Rockville, MD 20852. (301) 984-0262*
CIRCLE 258 ON READER SERVICE CARD

APL

APL.68000 ($275.00) is full-featured and very fast, with extremely high numerical accuracy. The editor uses GEM to make entering and editing programs easier. It includes an Auxiliary Processor for those who wish to extend the language. It does not allow for direct memory access, so the GEM features that are not directly supported are very hard to access. Most GEM functions (including the mouse, menus and dialog boxes) are supported. *Spencer Organization, P.O. Box 248, Westwood, NJ 07675. (201) 666-6011*
CIRCLE 259 ON READER SERVICE CARD

LISP

Cambridge LISP ($199.95). The first of the AI (artificial intelligence) languages for the ST. This comprehensive package includes an interpreter and compiler, editor and a shell program with extensive manual (but no tutorial section). It has an excellent math package, macros, debugging tools, and a large library of GEM interface functions. However, BIOS, XBIOS and GEMDOS are only available by their function number. *Metacomco, 26 Portland Square, Bristol BS2 8RZ England*
CIRCLE 260 ON READER SERVICE CARD

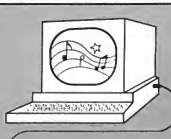
FORTRAN

Pro Fortran-77 ($149) is a full implementation of the ANSI standard Fortran and includes a two-pass compiler and linker, but lacks an editor. There is full GEM and DOS support (using C names), and all types and sizes of variable are available. The package does not produce a stand-alone application; a memory-resident portion of code must be present before an application will run. *Prospero Software, 190 Castlenau, London, England SW13 9DH. 01 741 8531*
CIRCLE 261 ON READER SERVICE CARD

AC/FORTRAN ($195.00) Here is a full-featured ANSI 77 professional FORTRAN, which accepts source code written by any large main-frame FORTRAN compiler. Fully compatible with the GEM desktop, this package includes many extensions for GEM access. Uses IEEE math. Completely compatible with MicroSoft FORTRAN. Runs in monochrome or color. *Absoft Corporation, 4268 N. Woodward Avenue, Royal Oak, MI 48072. (313) 549-7111*
CIRCLE 122 ON READER SERVICE CARD

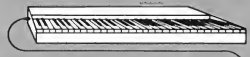
THE OS-9 OPERATING SYSTEM

Personal OS-9/ST ($150.00) Here's a true, full featured multi-tasking operating system for your ST. Comes complete with a structured BASIC, full documentation, and a UNIX-style environment. Comes with a free copy of The OS-9 Software Sourcebook. Runs in monochrome or color. *Microware Systems Corp. 1900 NW 114th Street, Des Moines, Iowa, 50322. (515) 224-1929*
CIRCLE 124 ON READER SERVICE CARD ■



SERIOUS SOFTWARE FOR THE THINKING MUSICIAN

Dr. T's ™ MUSIC SOFTWARE



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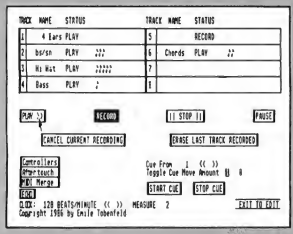

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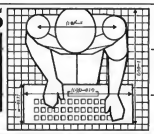

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CIRCLE 028 ON READER SERVICE CARD

Stone Knives & Bearskins

By Patrick Bass
START Technical Editor

What's the world's oldest profession?

No, it's toolmaking. And ever since the dawn of humanity, we've been looking for ways to make the jobs we do go faster and be more pleasant.

Working with computers is no different. People create and use software tools for exactly the same purpose. However, instead of chipping stone or scraping bearskins, we type in a collection of letters and spaces which, we hope, makes sense to our personal computer and will use our instructions to perform a useful task.

How are tools and utilities different from actual application programs, like word processors or painting programs? Well, in a very real sense, both of those examples actually are tools, and can be treated as such. But here we shall treat them as extremely complex tools, and as they are covered elsewhere in this issue, we'll focus our attention on the less complex, smaller tools essential for everyday ST computer problem solving.

ALT ($39.95). One feature everybody likes when they discover word processing is "search and replace", but ALT goes one step further, performing the replace function as you type. ALT lets you store redundant phrases and recall them with a simple keystroke. *MichTron, 576 South Telegraph, Pontiac, MI 48053. (313) 334-5700*
CIRCLE 101 ON READER SERVICE CARD

Backup ($39.95). This program helps you back up your hard disk data to floppy disks. It allows you to choose which files are saved by specifying modification dates and image orientation. It features a variable buffer size, so you may configure it for your own machine. Runs on monochrome or color systems. *MichTron, 576 South Telegraph, Pontiac, MI 48053. (313) 334-5700*
CIRCLE 101 ON READER SERVICE CARD

C.O.L.R. Object Editor ($29.95) Here's one of the original programs used to create objects, like sprites, for inclusion into your own programs. One big feature of this package is it allows you to create a source code file describing your objects, in a variety of formats. Sprite sizes range from a single pixel to full screen. Color only. *The Catalog, 544 Second Street, San Francisco, CA 94107. (800) 234-7001*

CP/M Z-80 Emulator (Free from Atari) This is a complete, chip-level CP/M Z-80 emulator which transforms your ST into a full CP/M 2.2 system. Delivers full Z80 code emulation over the complete 64K range. This program will operate on monochrome or color systems. *Atari Corp., 1196 Borregas Ave., P.O. Box 3427, Sunnyvale, CA 94088. (408) 745-2000*
CIRCLE 102 ON READER SERVICE CARD

Crystal ($24.95) Crystal is a desk accessory which provides desktop icons for simple TOS related disk activities. Works with any GEM compatible program. Crystal will also print ASCII files with full formatting, including headers and footers. Crystal runs on color or monochrome systems. *The Catalog, 544 Second Street, San Francisco, CA 94107. (800) 234-7001*

Disk Doctor ($29.95) If you ever need to UNdelete a file, or simply want to go snooping around on a disk to see what's there, you need Disk Doctor. You may examine or change data on disks, and may view the information as Hex numbers or ASCII letters. You may also repair disks, recover deleted files, and trace broken FATs. Monochrome or color systems only! *The Catalog, 544 Second Street, San Francisco, CA 94107. (800) 234-7001*

DOS Shell ($39.95) As nice as the desktop metaphor is, some people still like the command line interface. MichTron has one of the more popular ones, which mimics the entire MS-DOS command structure. This package includes the ability to create and execute batch files. Runs in monochrome or color. *MichTron, 576 South Telegraph, Pontiac, MI 48053. (313) 334-5700*
CIRCLE 101 ON READER SERVICE CARD

Hard Disk Accelerator ($39.95) Even though hard disks are already super-fast, here's a tool that will speed them up even more. It relies on "disk-caching" which means it reads in a lot, and when you need to read some more off the disk it first checks to see if it already has the information you want. Often it does, so no disk access is performed, and your disk access times are speeded up. Runs in monochrome or color. *Beckemeyer Development Tools, 478 Santa Clara Ave., Suite 300, Oakland, CA 94610.*
CIRCLE 79 ON READER SERVICE CARD

Julian ($19.95). This is an example of utilities at their best. Julian is a set of routines you include in your program for fast conversion from ASCII dates to Julian dates, and vice-versa. This utility is for use with the Atari Developers Kit. Runs in monochrome or color. *Mountain Magic Software, Route 1, Box 653, Boone, NC 28607. (704) 264-3021*
CIRCLE 80 ON READER SERVICE CARD

A-RAM ($19.95) Faster than a speeding bullet! A RAMdisk fools the computer into thinking it has another disk drive, but this one exists only in memory, using memory normally ignored. Since there are no moving parts, the disk operation is extremely fast and quiet. You may specify exactly how much memory is used for your RAM-

disk. Runs in monochrome or color. *The Catalog, 544 Second Street, San Francisco, CA 94107. (800) 234-7001*

K-Resource ($39.95) When you program using GEM, you'll soon need KUMA's Resource Construction Set, which allows you to graphically build the Dialog Boxes and Menus GEM is famous for. When you're finished, the complete .RSC resource file is created on disk, ready for the program to pick up and use. You may even modify existing resources. Runs in monochrome or color. *The Catalog, 544 Second Street, San Francisco, CA 94107. (800) 234-7001*

Kissed ($39.95) When you start programming in earnest, make sure you have the tools to help you discover what the machine is trying to do. This package contains more than 40 commands, ranging from a 68000 disassembler, to a mini-assembler, to a full debugger including breakpointing and dynamic relocation. Runs in monochrome or color. *MichTron, 576 South Telegraph, Pontiac, MI 48053. (313) 334-5700*
CIRCLE 101 ON READER SERVICE CARD

Menu+ ($49.95) So you have all these tools, and use each one during the process of putting your program together. Menu+ will allow you to automate the use of those tools, by writing a script which describes where to find and how to use each tool. Runs in monochrome or color. *MetaComCo, 26 Portland Square, Bristol BS2 8RZ UK.*
CIRCLE 81 ON READER SERVICE CARD

MT C-Shell ($129.95) Here is a fully multitasking, multiuser, Unix compatible operating system. While one user operates the ST in a GEM environment, another user may operate a UNIX-like environment from a standard ASCII terminal connected to the RS-232 port. Comes with a true print spooler. Runs in monochrome or color. *Beckemeyer Development Tools, 478 Santa Clara Ave., Suite 300, Oakland, CA 94610. (415) 658-5318*
CIRCLE 82 ON READER SERVICE CARD

Soft Spool ($39.95) Tired of waiting for an immense document to print out on your printer? With this print spooler, you may print and compute at the same time. The ST prints your file while allowing you to go on with your normal work. Runs in monochrome or color. *MichTron, 576 South Telegraph, Pontiac, MI 48053. (313) 334-5700*
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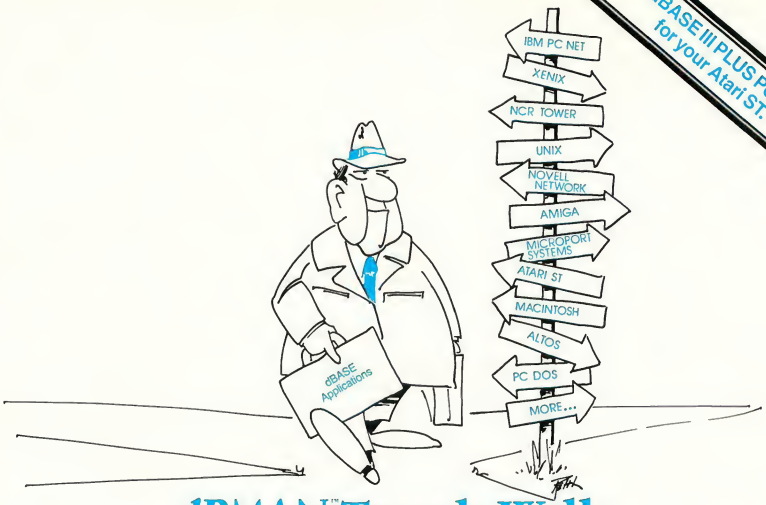

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BUSINESS

By Matthew G. Loveless
START Consulting Editor

Spreadsheets, Databases and Personal Financial Management

When the Atari ST first debuted, many of us wondered whether the business world would ever sing a tune other than "Old Big Blue"; whether Atari's game machine stigma would hinder their success in entering the high-rise offices and cottage industries of both the US and Europe. We wondered if we would be forever cursed to run crippled, first-generation spreadsheets and archaic checkbook managers on our stylish new machines.

Good news.

With the price of a fully configured 520 ST hovering around the $500 mark, and the release of the more powerful Mega STs, Atari is making inroads into some of the largest (and the smallest!) segments of corporate America. Just how far will it go? That depends a lot on the software. Judging from the sampling presented here, Atari is well on its way to becoming a realistic and low-cost alternative to Apple and IBM.

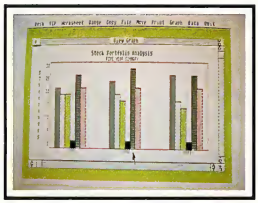
DATABASE PRODUCTS

Database applications can turn your computer into an electronic filing cabinet, Rolodex, or card catalog. They allow you to store large amounts of information, such as a customer list, and access that information quickly and easily. Databases range in complexity: some are as simple as mailing lists, while others support basic mathematical functions, and still others implement full-blown procedural command languages. What unites them is their ability to manage and manipulate data.

The Manager ($149) is a text-based, menu-driven, non-relational database. The Manager offers a complex procedural language, Manager Math, which allows data manipulation, calculations, custom reports, and custom data entry screens, with up to 21 simultaneously open files. It also includes a thorough, well-written manual. *BMB Compuscience Canada, Ltd., 500 Steeles Ave., Milton, Ontario L9T 3P7 Canada; (416) 826-2516*
CIRCLE 160 ON READER SERVICE CARD

Data Manager ST ($79.95) is a well-designed, carefully-polished, non-relational database, which includes a healthy assortment of fields (text, numeric, and calculated) and is suitable for keeping track of anything from a Christmas mailing list to a small company's invoices. Not a data-cruncher, but friendly and very-easy to use. Interfaces with WordWriter ST and SwiftCalc ST. *TimeWorks, Inc. 444 Lake Cook Rd., Deerfield, IL 60015. (312) 948-9200*
CIRCLE 161 ON READER SERVICE CARD

DataTrieve ($49.95). Flashy, powerful, and fully GEM-based, DataTrieve sports a comfortable price tag and an easy-to-learn interface. The icon interface offers a gearshift for changing modes, an eraser for deleting, and a plus and minus sign for roaming through your data. You can also access common functions through the keyboard. Math functions are expected in a ▶



VIP Professional

future version. Interfaces with PowerLedger ST. *Abacus Software, P. O. Box 7219, Grand Rapids, MI 49510. (616) 241-5510*
CIRCLE 110 ON READER SERVICE CARD

dbMaster One ($49.95). This relatively simple, first-generation ST database, primarily designed for home and business mailing lists, is easy to use and still a favorite. *Atari Corp., 1196 Borregas Ave., P.O. Box 3427, Sunnyvale, CA 94086. (408) 745-2000*
CIRCLE 102 ON READER SERVICE CARD

Zoomracks II ($149.95). Designed by user-interface expert Paul Heckel, Zoomracks II uses a card-rack metaphor to insulate the user from the usual hassles of field types, field lengths, and file handling. It also allows records to be tied to DEGAS pictures. First-time database users are likely to find the rack metaphor intuitive. Also available: Zoomracks kits, which include templates, printer output forms, and macros. *Quickview Systems, 146 Main Street, Suite 404, Los Altos, CA 94022. (415) 965-0327*
CIRCLE 164 ON READER SERVICE CARD

Trimbase ($99.95). This semi-relational database allows the unitiated user access to some relational data retrieval without learning a procedural language. Not well-suited for turnkey systems, but can open the window to relational processing with only a small time investment. *MichTron, 576 South Telegraph, Pontiac, MI 48053. (313) 334-5700*
CIRCLE 101 ON READER SERVICE CARD

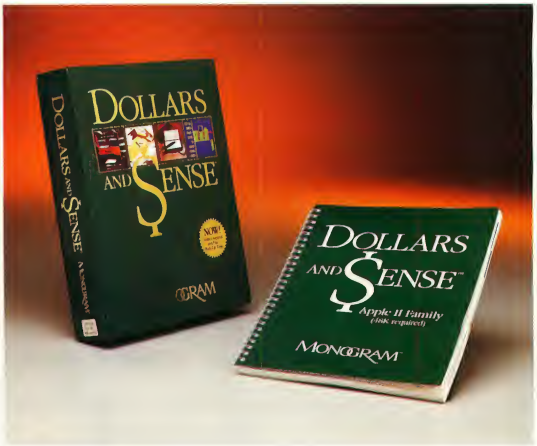
dBMan 3.01 ($189.95). dBASE III is the industry-standard development environment for fully-relational databases and turnkey systems. This is a large-scale tool for the experienced dBASE programmer, bringing the power of that system to the Atari ST. Not GEM-based. *Versasoft, 4340 Almaden Expressway, Suite 250, San Jose, CA 95118. (408) 723-9044*
CIRCLE 166 ON READER SERVICE CARD

Regent Base ($99.95). Regent Base offers a blend between an easy-to-use GEM-based database and a fully-relational dBASE-like environment. Regent Base is designed specifically for the Atari ST, and its procedural language allows the programmer to access the GEM interface. Like dBMan, Regent Base is suitable for custom database applications and turnkey systems. *Regent Software, 7131 Owensworth, Suite 45A, Canoga Park, CA 91303. (818) 882-2800*
CIRCLE 167 ON READER SERVICE CARD

SuperBase Personal ($149.95). One of the newest databases on the market, SuperBase Personal is also one of the best. This relational, GEM-based database sports VCR (tape player) controls for skimming through your data, B+ tree indexing, import and export facilities, reports and queries across multiple files and multiple sort levels. It will even tie database records to graphic images: NEOchrome, DEGAS, and GEM . IMG files are all supported (in all resolutions, even). START's editorial staff uses this product in-house. *Progressive Peripherals & Software, 464 Kalamath Street, Denver, CO 80204. (303) 825-4144*
CIRCLE 168 ON READER SERVICE CARD

BASE TWO ($59.95) A solid, easy-to-use (and powerful) GEM-based successor to DB Master One. Authors Stanley Crane and Dan Matejka have built a quick-to-learn database ideal for home use. Totally RAM-based (limited by RAM, but searching, sorting, and retrieval are almost instantaneous). Bridges the gap between the too simple and the overly complex. *The Catalog, Antic Software. 544 Second St., San Francisco, CA 94107. (800) 234-7001*

K-DATA ($49.95) K-DATA is the latest addition to the Kuma lineup of GEM-based products (most notably A-Chart and A-Calc Prime). K-DATA is a



Dollars & Sense

Mary Lavery Peloquin

full-featured non-relational database with mathematical and report-generating capabilities. The most notable features of K-DATA include its intuitive, fun to use, icon-based GEM interface, common in Kuma's products, and its compatability with A-Calc Prime and A-Chart, which are available from The Catalog (Antic Software). *Kuma Computers, Ltd., 12 Horseshoe Park, Pangbourne, Berkshire RG8 7JW, England. International number: 44-7357-4335*

SPREADSHEETS

Whether you're a senior accountant or a numerical whiz-kid, spreadsheets—giant computerized sheets of accounting paper—can make your job easier and more fun. Spreadsheets are built up from cells, and each cell can hold either text, a number, or a formula. The formulas allow you to relate cells together, making the "profit" cell equal to the "sales" cell minus the "cost" cell.

VIP Professional, GEM version ($249.95) In the world of high-caliber spreadsheets, Lotus 1-2-3 is the name of the game. VIP professional is the only spreadsheet available for the Atari ST which is fully Lotus compatible. Professional GEM offers Lotus 1-2-3 power, flexibility, and file compatibility, as well as a fairly smooth GEM interface. Two-dimensional graphing capability built-in.

CIRCLE 171 ON READER SERVICE CARD

Masterplan ($129.95) This scaled-down version of VIP Professional, sacrifices full Lotus 1-2-3 compatibility and macros for a better user-interface and a smaller price-tag. Masterplan features the same math and graphics as VIP Professional. (Antic review 11/87.)

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

CIRCLE 172 ON READER SERVICE CARD

PowerLedger ST ($79.95). Featuring a whopping spreadsheet maximum size of 65,536 x 65,536, PowerLedger offers up to three windows open simultaneously, seven types of graphs (including

Timeworks

Mary Lavery Pelaquin

the ability to add to the graphs with freehand sketching and graphic primitives like circles, boxes, and ellipses). Interfaces with DataTrieve. *Abacus Software, P.O. Box 7219, Grand Rapids, MI 49510. (616) 241-5510*

CIRCLE 110 ON READER SERVICE CARD

A-Calc Prime ($59.95). This long-awaited successor to Kuma's original A-Calc spreadsheet offers an entirely new icon and menu-based GEM interface. In addition to all the features in the original, A-Calc Prime supports macros, conditional expressions, color coding of cells, five simultaneous windows, and ten clipboards. Interfaces with A-Chart graphing software. *The Catalog, Antic Software, 544 Second St., San Francisco, CA 94107. (800) 234-7001*

CIRCLE 174 ON READER SERVICE CARD

LOGiSTiX, Senior version ($149.98). LOGiSTix is an innovative and powerful product, recently converted to the Atari ST. On the surface it is a spreadsheet, but go deeper and it becomes a combination database, spreadsheet, time-planner, and graphing program. In one part of the worksheet you can keep your database—customers, prices, employees; in another part of the worksheet you can develop a timesheet, using the information stored in the database to allocate resource to jobs over periods of time; in other areas of your worksheet, you can perform complex spreadsheet-like calculations on your data; and, finally, you can add graph commands to your worksheet to visually display your data. Requires one megabyte or more of RAM; Junior version ($99. 98) without graphics is also available. *Progressive Peripherals & Software, 464 Kalamath Street, Denver, CO 80204. (303) 825-4144*

CIRCLE 175 ON READER SERVICE CARD

SwiftCalc ST ($79.95). SwiftCalc ST, TimeWorks' entry into the ST spreadsheet market, is a solid and reliable spreadsheet, earmarked for home use. It supports a full range of arithmetic and financial functions as well as a keyboard- and GEM-based interface. Includes Sideways, a graphics program for printing your spreadsheets vertically, and SuperGraphics, a sophisticated graphing program. Interfaces with WordWriter ST and Data Manager ST. *TimeWorks, Inc., 444 Lake Cook Rd. , Deerfield, IL 60015. (312) 948-9200*

CIRCLE 176 ON READER SERVICE CARD

BUSINESS MANAGEMENT AND ACCOUNTING

Dac-Easy Accounting ($69.95). In 1985, Dac-Easy Accounting won the InfoWorld "Best Software Value" of the year award for the IBM PC version of this program. Dac-Easy Accounting for ▶

the Atari ST is a full conversion of this popular accounting package, which includes facilities for general ledger, accounts payable/receivable, inventory management, purchase ordering, billing, and forecasting. This sophisticated package is suitable for maintaining the accounts of any small business. Not GEM-based.

Dac-Easy Payroll ($49.95). Designed as either a stand-alone program, or for integrating with its sister product, Dac-Easy Accounting, Dac-Easy Payroll provides complete payroll management for a small business. It supports an unlimited number of employees in up to 99 different departments, automatically handling deductions, raises, reviews, sick times, FICA, FUTA, SUTA, and State Disability Insurance Fund deductions. It will even manage tips, piece-rate, and after-the-fact payroll, as well as check printing, employee lists, and summary reporting. Not GEM-based. *Dac Software, Inc., 4801 Spring Valley Rd., Bldg. 110-B, Dallas, TX 75244. (214) 458-0038*

CIRCLE 177 ON READER SERVICE CARD

Inventory Manager ($79.95). A simple, yet powerful, inventory management program from the people who brought you Regent-Base and Regent-Word. Inventory Manager will handle detailed part numbers and part descriptions, price fields, custom reports, as well as stock and obsolescence management. It will also automatically generate orders based on sales history and user-defined paramaters. Not GEM-based. *Regent Software, 7131 Owensworth, Suite 45A, Canoga Park, CA 91303. (818) 882-2800*

CIRCLE 178 ON READER SERVICE CARD

Synsoft General Ledger ($69.95). The first module in Synsoft's Integrated Accounting system, General Ledger 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 ensures database integrity. Not GEM-based. *Synsoft, P. O. Box 561, Allen, TX 75002. (214) 727-2466*

CIRCLE 179 ON READER SERVICE CARD

STAccounts ($249.95). From the makers of VIP GEM and MasterPlan, STAccounts is Ditek International's entry

Base Two

into accounting packages for small- to medium-sized businesses. STAccounts features a complete GEM-based interface and extensive help facilities. The program includes stock control, sales, batch invoicing, order entry, accounts receivable and payable, as well as customer lists and reports. The program does not yet support a hard disk and is only recommended for use with a monochrome monitor. *ISD Marketing, 2651 John St. , Unit 3, Markham Industrial Park, Markham, Ontario, L3R 6G4 Canada. (416) 479-1880*

CIRCLE 180 ON READER SERVICE CARD

Financial Plus ($295) An accounting package that combines accounting power with convenience – you don't need to store entries on separate diskettes or run transfer programs. *Equal Plus, 1406 Camp Craft Road, Suite 106, Austin, TX 78746. (512) 327-5484*

CIRCLE 128 ON READER SERVICE CARD

Personal Finance for Atari ST ($29.95) An easy-to-use package for managing finances at home. Can keep track of eight checkbooks and credit cards, balance checkbooks and keep track of tax deductibles. *Sparry Software Labs, P.O. Box 632, Milford, MA 01757. (617) 478-8752*

CIRCLE 129 ON READER SERVICE CARD

COMPILED dBMan TURNKEY SYSTEMS

dBMan, the dBASE III clone, is used to develop turnkey systems – custom database-oriented programs for business use. The following products were developed under dBMan and then compiled. You need not actually own dBMan to run them.

SBT Database Accounting Library

SBT Corporation has converted their more popular IBM PC DBASE III applications to the Atari ST. All the SBT programs can share data and are designed to work together. Available at this time are: **dLedger ($295)**, general ledger/finance; **dInvoice ($210)**, billing, inventory control, accounts receivable; **dOrder ($145)**, sales order processing; **dPurchases ($145)**, purchase order processing; and **dPayables ($195)**, accounts payable/check writing.

CIRCLE 181 ON READER SERVICE CARD

Source code is available for approximately 35 percent more.

SBT (Small Business Technology) Corporation, One Harbor Drive, Sausalito, CA 94965. (415) 331-9900

Hi-Tech Advisors Small Business Library

Video pro – handles most aspects of video store management, including rentals, returns, sales, accounts receivable, inventory control and tracking, customer records, professional transaction receipts. $199

Mail-Pro – personal and business file manager and mail-merge which uses ▶

"Don't even think about another C compiler"

- Mike Fleischman, ANTIC: The Atari Resource, Sept. 1986

Megamax Professional C Development System For The Atari ST
Rated #1 C compiler by ANTIC, Compute!'s Atari ST, and Start: The ST Quarterly

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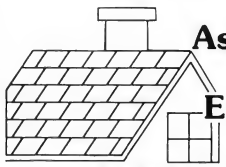

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CIRCLE 003 ON READER SERVICE CARD

Who's the BOS?

One of the most potent lines of business software for the ST comes from England's BOS Software.

BOS is an acronym for Business Operating System. There are versions of BOS for many different computers besides the ST– including the IBM PC and compatibles, the PDP-11, and even minicomputers like the DEC VAX. What's unique about BOS is that every BOS program will run, without changes, on any BOS system.

That means your ST can run the same programs that run under BOS on multiuser minicomputers. If you're a business user, it means you can use high-powered accounting and business software that wouldn't otherwise be available for the ST.

There are some disadvantages, of course. Because BOS software must run on many kinds of computers without any changes, they're "plain vanilla" programs that don't take advantage of any of the ST's special features. None of the programs use a mouse, graphics, or sound, for example.

But though the programs may not have flashy features, they let the ST do the kind of work that small and medium-sized businesses need on a day-to-day basis. Here are a few BOS programs for the ST; other systems include software for credit union membership accounting, construction accounting and management, country club management, doctor's office management, and school accounting, and many more.

BOS/5 Operating System ($112.50)

BOS/Finder ($112.50) Database/inquiry.

BOS/Planner ($112.50) Spreadsheet.

BOS/Writer ($112.50) Word processor.

BOS/AutoClerk ($112.50) Report generator.

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)

BOS/MicroCOBOL ($112.50) Programming language.

BOS/MicroCOBOL Advanced Programming Facilities ($112.50)

BOS National, Inc., 2607 Walnut Hill Lane, Dallas, TX 75229. (214) 956-7722.

CIRCLE 121 ON READER SERVICE CARD ■

Atari's public domain ST-Writer. Allows customized form letters and mass mailings. $69

Sales-Pro– complete point-of-sale and inventory control program. Contains features necessary for wholesale, retail, or mail order. Perpetual inventory control, cash-drawer support, transaction records, password protection, variable discounts, etc. Coming modules for customer files and back-order capability as well as module #2 for accounts receivable. $99, or $59 (mod 1), $59 (mod 2). Hard disk recommended. *Hi-Tech Advisors, P.O. Box 7524, Winter Haven, FL 33883-7524. (813) 294-1885*

CIRCLE 182 ON READER SERVICE CARD

HOME FINANCE

Now that you've finally talked your spouse into buying a computer, you have to prove how much money it will save you. Home finance packages do everything from writing checks to offering financial advice.

PHASAR ($89.95) A recent conversion to the Atari ST environment, PHA$AR has been well-received by its IBM PC and Commodore Amiga users. It is a powerful and friendly, GEM-based, single-entry accounting system suited for home or small-business accounting. It supports 130 expense and income categories, 40 accounts (checking, VISA, etc.), easy setup and maintainence, integrated calendar and scheduler, and automatic reports, including tax calculations, account summaries, and net worth. Prints checks, also. User-interface is mouse- and keyboard-based. *The Catalog, Antic Software, 544 Second St., San Francisco, CA 94107. (800) 234-7001*

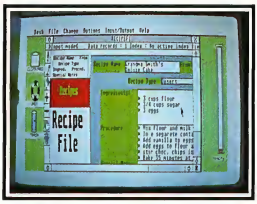
Dollars and Sense ($99.95). A GEM-based conversion from the IBM PC, Dollars and $ense bills itself as a complete home finance package. It handles all aspects of home finance, including check writing, forecasting, reports, even graphs. It will also keep track of

your total assests and liabilities. (Antic review 9/87.) *Monogram Software, 367 Van Ness Way, Torrance, CA 90501. (213) 533-5120*

CIRCLE 184 ON READER SERVICE CARD

Personal Money Manager ($49.95.) Personal Money Manager is a well-designed application program for maintaining personal financial records and preparing summary reports. Completely GEM-based, Personal Money Manager allows you to maintain up to 999 accounts of standard double-entry transactions with up to a year's worth of data at a time. It does not print checks, nor does it handle automatic tax records or graphs. (Antic review 4/87). *MichTron, Inc., 576 South Telegraph, Pontiac, MI 48053. (303) 334-5700*

CIRCLE 185 ON READER SERVICE CARD



Datatrieve

Isgur Portfolio ($199.95). Designed by financial expert Lee Isgur, Vice President of Finance at Payne-Webber, The Isgur Portfolio is designed to manage and automate an individual's portfolio. Handles different currencies, multiple portfolios, stocks, bonds, options, and commodities, profit and loss totals, net value after commissions, auto updating, reporting, and graphics and charting. GEM-based. *Batteries Included, distributed by Electronic Arts, 2755 Campus Drive, San Mateo, CA 94403. (415) 571-7171*

CIRCLE 186 ON READER SERVICE CARD

Financial Cookbook ($49.95). This program gives you an overall perspective and advice for managing your personal finances. It consists of 32 forms, which you fill in with your own information. Each form is designed to cover a different aspect of your finances. You can even do What-if? forecasting by changing certain parameters. GEM-based. *Electronic Arts, 2755 Campus Drive, San Mateo, CA 94403. (415) 571-7171*

CIRCLE 187 ON READER SERVICE CARD

THE ST AT WORK

By Frank Hayes

Now what can the Atari ST *really* do?

Of course it's one of the fastest, most powerful personal computers you can buy. With its 68000 processor and up to four megabytes of memory, it's the perfect machine for word processing, spreadsheets, high-powered graphics, and many other general business and scientific applications.

But the ST is also the place to turn for specific solutions to complicated business problems. Let's suppose a regular drawing program won't do for you—you need a full-scale computerized drafting program. Can the ST do the job?

Certainly.

Suppose you need a computerized cash register that will automatically keep track of inventory. That means you'll need a cash drawer attached to your computer. Can the ST handle *that?* No problem. The ST can also do estimates for construction and insurance, and almost anything a small or medium-sized business needs a computer for.

In fact, the ST can even handle real mainframe jobs like running a medical records system, complete with tape drives, marked cards, and real-time patient monitoring.

The ST is rapidly becoming a preferred machine for *vertical applications.* That means using the computer for specific business solutions—and with its high power and low price, the ST is perfect for many vertical markets. Here are just a few samples.

CAD (Computer-Assisted Drafting)

First CADD ($49.95) turns your ST into a computerized drafting board. It operates entirely in terms of drawing objects—straight lines, rectangles, circles, arcs, etc.—so it's easy for an architect to draw a basic floor plan, then add plumbing, electrical lines and heating ducts to the draw- ▶

ing. Individual drawing components such as windows, sinks or electrical outlets can be part of a component library that speeds drawing. With enough memory, a complete set of floor plans can be created, then printed out on a dot-matrix printer. First CADD is also useful to anyone who needs to draw up plans—cabinet makers, sheet metal shops, farmers, office managers, even programmers who want to create detailed flow charts. First CADD drawings can be converted to work with the IBM PC version of First CADD and Generic CADD. *Generic Software, 8763 148th Avenue N.E., Redmond, WA 98052. (800) 228-3601*
CIRCLE 246 ON READER SERVICE CARD

GFA Draft ($99.50) is another computer-assisted drafting program—it makes it easy to create circuits, scaled drawings and detailed plans. You can draw on 255 different levels and display up to ten levels at once; there are two styles of lettering, and you can print the result in different colors and densities on a plotter or dot-matrix printer. *MichTron, 576 South Telegraph, Pontiac, MI 48053. (313) 334-5700*
CIRCLE 101 ON READER SERVICE CARD

Drafix 1 ($149.50) is a full-featured CAD program that features automatic dimensioning, snap modes, layering, and transform/copy commands. Drafix also offers a "second-generation" user interface—all the menus are visible all the time. *Foresight Resources Corp., 932 Massachusetts, Lawrence, KS 66044. (913) 841-1121*
CIRCLE 250 ON READER SERVICE CARD

PCBoard Designer ($395) is specifically designed for creating printed circuit boards. A designer can put integrated circuits, resistors, capacitors, and other components on a PC board layout and specify connections. The program will automatically route the connections, calculating the best circuit traces to use for a single- or double-sided PC board. PCBoard Designer can also print out the layout that the program has created on an Epson-compatible printer, suitable for photo-etching. It can also print the component layout (for silkscreening), the component list and the list of connections. *Abacus Software, P.O. Box 7219, Grand Rapids, MI 49510. (616) 241-5510*
CIRCLE 110 ON READER SERVICE CARD

Point-of-Sale Systems

Sales-Pro Software System ($299.00 for basic system, $149.00 for each module, $499.00 as a complete package) is a point-of-sale and inventory control system—it turns an ST into an electronic cash register that remembers what merchandise is still in stock. The basic system allows up to two billion records and handles end-of-day summaries, deposits and password security. An additional module adds customer files and backup capabilities; another module includes accounts receivable and layaways. *Hi-Tech Advisers, P.O. Box 7524, Winter Haven, FL 33883. (813) 294-1885*
CIRCLE 255 ON READER SERVICE CARD

Beckemeyer Advanced Business System ($6,950 for basic system; $9,950 for expanded system) is a more elaborate point-of-sale system; it links up to three 1040 STs in a multi-user, multitasking system. The system works with or without a cash drawer, prints receipts, updates inventory, maintains a list of customers, handles accounts receivable, and analyzes product movement, salesman performance, and when it's time to reorder. This isn't just a program to run on your ST—the basic system includes two 1040 STs, a 20 megabyte hard disk, a printer, cables, and the software. The expanded system includes three STs and a hardware multiplexer. *Beckemeyer Development Tools, 478 Santa Clara Ave., Suite 300, Oakland, CA 94610. (415) 452-1129*
CIRCLE 257 ON READER SERVICE CARD

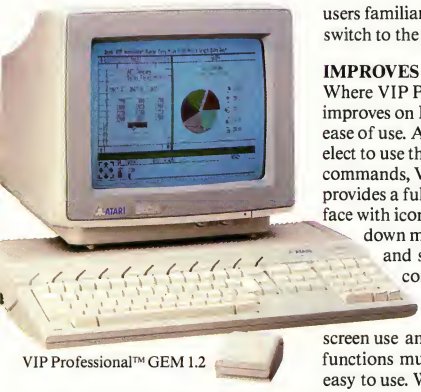
Construction

Ashment's House Estimator ($49.95) automatically performs 70 different kinds of estimates for home construction. If features sequential or random estimating modes, spreadsheet-like costing, graphic status boards, two distinct cost code sets, full mouse and menu operation and complete onscreen help. *Michael Ashment Building & Software, 5809 Bennion Drive, Salt Lake City, UT 84118. (801) 966-5187*
CIRCLE 163 ON READER SERVICE CARD

Medical Data Management

MDA Medical Survey Data Management System allows a medical clinic or small hospital to collect and process research information on its patients, using marked forms and nine-track tape drives—the kind used on large mainframes. You can also connect analog-to-digital converters for medical monitoring. The system is designed especially for research and survey work, and is customized for each installation—it's expensive, but the cost is still well below that of a comparably equipped minicomputer or mainframe. *Medical Data Acquisition, Inc., 9300 East Artesia Blvd., Suite 323, Bellflower, CA 90706. (213) 803-5604*
CIRCLE 165 ON READER SERVICE CARD ■

Make the PROFESSIONAL™ choice.



VIP Professional™ GEM 1.2

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LOTUS COMMANDS

VIP Professional™ uses commands identical to Lotus 1-2-3 allowing users familiar with Lotus to easily switch to the Atari ST.

IMPROVES 1-2-3

Where VIP Professional™ really improves on Lotus is its attention to ease of use. Although the user may elect to use the keyboard for all commands, VIP Professional™ 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.

CIRCLE 021 ON READER SERVICE CARD

VIP Professional™ is a trademark of DITEK INT'L; Atari and ST are trademarks of Atari Corp.; GEM is a trademark of Digital Research Inc.; Lotus and 1-2-3 are trademarks of Lotus Development Corp.

Atari™ ST™ 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 Degas™ and Neo Chrome™. 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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FLEXIBILITY

VIP Professional™ gives the user, no matter the computer, a uniform, powerful program that conforms to the Lotus standard and which can exchange data with any other program using the 1-2-3 file format. VIP Professional™ is available for the Atari ST, Apple IIe, IIc, IIGS and Commodore Amiga.

Available at your local Atari dealer.

ISD Marketing, Inc., 2651 John Street, Unit 3, Markham, Ontario, Canada L3R 2W5. (416) 479-1880. Fax # 1-416-479-1882.

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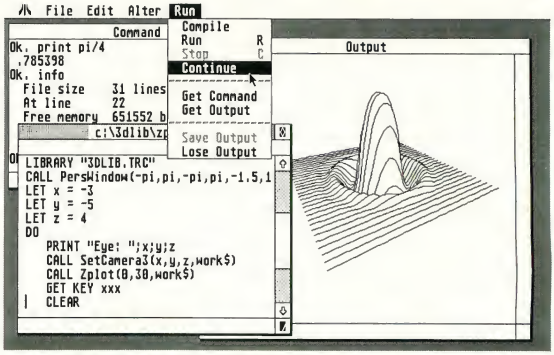

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It's a structured language that's easy to use. A compiler, editor and debugging tools rolled into one. It's the latest from Kemeny and Kurtz, the inventors of BASIC.

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Language System	$ 79.95*
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Both	149.95
Libraries	49.95 each

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CIRCLE 047 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

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

DEBUGGING

- set breakpoints and continue
- immediate mode execution
- visual trace, single-step execution
- cross-reference utility

True BASIC™ inc.
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All these and more are yours with your ST computer—and a modem. Your online adventure is only a phone call or a keypress away.

ONLINE

By Charles Jackson

Telecommunications services, hardware and software

ONLINE SERVICES

ATARI BASE (free)

(408) 745-5308 (modem)
(408) 745-5970 (modem)
(408) 745-2642 (modem)
(408) 745-4758 (modem)
(408) 745-5664 (modem)

Atari Base consists of five totally independent BBS's (passwords and user numbers are not shared.) You can log-in to any of these BBS's using any of the above numbers. When you log-in, your call will be switched to the first available BBS system. If you're lucky, you'll get through to the BBS you need. Otherwise, hang up and try, try again.

There are nine SIGs (or Special Interest Groups) scattered among the five BBS's. These include an 8-bit section, two ST sections, a private software developers section, a private section for user group officers, one for computer faire listings, and a private SysOp section. BBS Line 5, for example, is home to the user group and the developers SIGs. Since both SIGs are private, you won't be able to do too much here. *Atari Corporation, 1196 Borregas Ave., P.O. Box 3427, Sunnyvale, CA 94088. (408) 745-2000*

CIRCLE 102 ON READER SERVICE CARD

BIX (BYTE Information eXchange) (Available on Tymnet. $9/hr. off-peak, $12/hr. prime (off-peak is 6 p.m.–7 a.m. weekdays). Does not include communications surcharges).

BIX has been described as a "living database" of microcomputer knowledge. Most of BIX's 17,000+ subscribers are high-level programmers and engineers who work on the leading edge of the microcomputer industry. BIX went online in 1985, and offers conferencing areas (sometimes called "Message Bases") for more than 150 types of computers, operating systems and languages. To subscribe, log-in to BIX and make sure you have your credit card information handy. *Byte Information Exchange, 1 Phoenix Mill Lane, Peterborough, NH 03458. (800) 227-BYTE (United States except NH); (603) 924-7681 (NH and Canada)*

CIRCLE 195 ON READER SERVICE CARD

CitiNet (Free) CitiNet has been called "The Videotex Marketing Future." CitiNet is a metropolitan online service that serves Boston. It went online in 1984, and has more than 40,000 members.

CitiNet contains movie and restaurant listings, current events calendars, ▶

special interest groups (including an Atari group) and three online stores. The service is subsidized through online advertisements. All of the information is a free and available to all users. (The electronic mail system, however, carries a one-time $50 registration fee.) Similar CitiNet services are being designed for Houston and Atlanta.

To subscribe, log-in to CitiNet at (617) 439-5699 and enter "NEW" at the "username" prompt. *Applied Videotex Systems, The World Trade Center, Suite 717, Boston, MA 02210. (617) 439-5678 (voice)*
CIRCLE 196 ON READER SERVICE CARD

CompuServe, Inc. (Available through Tymnet, Telenet, Datapac and CompuServe networks. 300 Baud $6 per hour; 1200, 2400 Baud $12.50 per hour. (No surcharge for prime time access. Does not include communications surcharges.)

CompuServe is one of the oldest and most popular online services. It is intended for the casual-to-advanced computer user, however there is treasure trove of Atari information to be found here. There are three Atari SIGs (Special Interest Groups), each one having several searchable databases and several large software libraries. Antic Online, the electronic edition of Antic Magazine, is also available through CompuServe (type GO ANTIC at any prompt).

CIS offers many business, educational and shopping services, including The Electronic Mall, SUPERSITE demographics reports, electronic airline guides, private electronic mail, two online encyclopedias, company histories and current stock quotes. To subscribe, get a CompuServe "IntroPak" from your computer dealer, or call CompuServe. *CompuServe, Inc., 5000 Arlington Centre Blvd., P.O. Box 20212, Columbus, OH 43220. (614) 457-0802; (800) 848-8190*
CIRCLE 166 ON READER SERVICE CARD

Delphi (Available through Tymnet and Telenet. $7.20 per hour off-peak, $17.40 per hour prime time, 7 a.m.–6 p.m. Does not include communications surcharges.)

Delphi will appeal to your check-

Modems and Telecommunications Software

By Frank Hayes

How do you get on-line with your ST? With a modem and telecommunications software, that's how.

A MODEM? WHAT'S THAT?

A modem converts your ST's electronic pulses into sounds that can travel over regular telephone lines. That way you can call another computer and chat over the phone.

Modems generally come in three speeds: 300 baud, 1200 baud, or 2400 baud (about 30 characters, 120 characters, or 240 characters per second, respectively). It should be no surprise that a faster 2400 baud modem is more expensive than a 300 or 1200 baud modem.

Something else to consider is whether a modem is *Hayes compatible*. That means it uses the same control codes as Hayes modems–the most popular command set in modems, and one that many telecom programs depend on.

Other features to look for are the ability to automatically dial or answer your phone, volume control on the speaker, indicator lights on the front of the modem, and an extra phone jack on the modem to connect your phone.

Almost any standard external modem that connects to an IBM PC will also work with an ST. Here are a few of the best:

Hayes 1200 Smartmodem (1200 baud, $399.00) and **2400 Smartmodem** (2400 baud, $599.00) Hayes modems are the standard–solidly built and, naturally enough, Hayes compatible. They have indicator lights, speaker volume controls, autodial and auto answer, but no extra phone jack. *Hayes Microcomputer Products, 5835 Peachtree Corners East, Norcross, GA 30092. (404) 449-8791*
CIRCLE 105 ON READER SERVICE CARD

Anchor Volksmodem VM520 ($199.00) The Volksmodem is a compact 1200-baud modem that's specifically designed for the ST. It supports most of the Hayes command set and has an extra phone jack, but no indicator lights or vol-

book. It offers many of the same features as the higher-priced services, but at a substantially reduced price. A Delphi subscription gives you online banking and securities transactions, AP Videotex, Special Interest Groups (SIGs), Public Domain software libraries, and an electronic mail system. This system lets Delphi users send electronic mail to users of CompuServe and The Source. This is a one-way system, however. Delphi users are unable to receive electronic mail from The Source or CompuServe subscribers. Delphi also hosts an active Atari section.

File transfers (uploading and downloading) are a bit sluggish on Delphi, but this seems to be a tiny annoyance to the many Delphi subscribers who measure their online activity in dollars and cents.

To subscribe, log-in to Tymnet or Telenet. Type JOINDELPHI at the "username" prompt, and SIGNUP at the "Password" prompt. Be sure to have your credit card information handy. *Delphi, General Videotex Corp., 3 Blackstone Street, Cambridge, MA 02139. (800) 544-4005; (617) 491-3393*
CIRCLE 197 ON READER SERVICE CARD

DIALOG Information Services, Inc. (Available on Tymnet, Telenet, Dialnet [DIALOG-owned] networks. Each DIALOG database has its own access charge. These fees range from $15 per hour to $300 per hour. Does not include communications surcharges.)

DIALOG, formerly the information retrieval system for Lockheed Missile & Space Corporation, has more than 500,000 subscribers.

The service can best be used by businessmen, particularly those involved in advertising and market research. DIALOG databases contain disclosure statements, Dun & Bradstreet market identifiers, INVESTEX economic forecasts, a career placement registry, the Official Airline Guide, and much more. To subscribe, call DIALOG and request an InfoPack. *DIALOG Information Services, Inc., 3460 Hillview Ave., Palo Alto, CA 94304. (800) 3-DIALOG (voice)*
CIRCLE 169 ON READER SERVICE CARD ▶

ume controls. *Anchor Automation, 20675 Bahama Street, Chatsworth, CA 91311. (818) 998-6100*
CIRCLE 106 ON READER SERVICE CARD

Avatex 1200 ($159.00) and **1200HC** ($199.00) are similar, but the 1200HC is completely Hayes compatible. Both have indicator lights and switches on the front of the modem, including the power switch, but no speaker or extra phone jack (each comes with its own phone cord). *E+ E DataComm, 1230 Oakmead Parkway, Suite 310, Sunnyvale, CA 94086. (408) 732-1181*
CIRCLE 107 ON READER SERVICE CARD

TELECOM PROGRAMS

A telecommunications program is the software that connects your keyboard to the modem. A very simple telecom program comes with your ST—the VT-52 terminal emulation program that's a desk accessory on the ST system disk. But a full-fledged telecom program will let you transfer files, log on to online services automatically, and put the full power of your ST behind your modem.

Flash ($39.95) is the most popular ST telecom program. It emulates the VT-52 and VT-100 terminals and handles CompuServe Vidtex graphics, and offers automatic logons with 70 commands and a built-in word processor. *The Catalog, Antic Software, 544 Second Street, San Francisco, CA 94107. (800) 234-7001*

PC/Intercomm ($124.00) offers VT-52 and VT-100 emulation, up to 19,200 baud, Xmodem and Kermit file transfers, an autodial phone directory and a macrobell. It's compatible with the IBM PC version of the program. *Mark of the Unicorn, 1222 Third Street, Cambridge, MA 02142. (617) 576-2760*
CIRCLE 108 ON READER SERVICE CARD

BULLETIN-BOARD SYSTEMS

If you'd like to start your own online service, you just need a few things besides your ST: A modem that can answer and hang up the phone, and a BBS program. The ST's large memory and fast processor makes it a perfect machine for running a computerized bulletin-board, and here's software that will let you do it.

ST-CBBS ($129.95) offers VT-52 color sequences for users with color monitors, three baud rates (300, 1200 and 2400) and Xmodem CRC file transfers. *Orpheus Systems, PO. Box 10095, Stockton, CA 95210. BBS (209) 951-9000; voice (209) 952-4518*
CIRCLE 215 ON READER SERVICE CARD ■

ONLINE

Dow Jones News/Retrieval (Available through Tymnet, Telenet, & Datapac. $12 annual service fee after the first year, plus:

Baud	Prime	Off-Peak
300 Baud	$36-$72/hr	$12-$48/hr
1200, 2400 Baud	$79.20-$158.40/hr	$26.40-$105.60 /hr

Connect charges vary according to the services used.)

Dow Jones is available 22 hours a day. Prime time: 6 a.m.–6 p.m. Eastern time. Off-Peak: 6 p.m.–4 a.m. Eastern time. Does not include communications surcharges.

This $100,000 division of Dow Jones & Co., Inc. has more than 200,000 subscribers. It is famous for its up-to-the-minute and consistently error-free stock quotes. It also offers disclosure reports, a comprehensive news-clipping service, economic forecasts, an electronic encyclopedia, access to CompuStore, MCI-Mail electronic mail, and the complete text of every Wall Street Journal published since January, 1984.

To subscribe, call Dow Jones and order a Startup Kit ($29.95). *Dow Jones News/Retrieval, P.O. Box 300, Princeton, NJ 08543. (609) 452-1511*

CIRCLE 198 ON READER SERVICE CARD

GEnie ($5 per hour off-peak; $35 per hour prime-time [8 a.m.–6 p.m., weekdays.] $10 surcharge for 2400 baud. Does not include communications surcharges.)

GEnie is another online information network for home computer users on a budget. It offers "Roundtable" special interest groups, including two Atari groups, public domain software libraries, an online encyclopedia and several news services. This 65,000-subscriber system also supports private electronic mail and multi-player games.

To subscribe, log-in to GEnie at 1-800-638-8369. When connected, type HHH [RETURN]. At the U# prompt, type XJM11999, GEnie [Return]. Be sure you have your Visa or Mastercard number handy. *GEnie, General Electric Network for Information Exchange, General Electric Information Services Co., 401 N. Washington Street, Rockville, MD 20850. (800) 638-9636*

NewsNet Inc. ($15 per month maintenance charge, plus:

Baud	Prime	Off-Peak
300	$24/hr	$18/hr
1200	$48/hr	$36/hr
2400	$72/hr	$54/hr

(Prime time: 8 a.m.–8 p.m. Eastern time. Does not include communications surcharges.)

NewsNet is for the "power user." Although it offers all the features found in other services, NewsNet's forte is its in-depth news databases. More than 30 industries and professions are covered. You'll find more than 300 of the best newsletters and wire services contained and indexed here, including the "Defense Industry Report," "Japan Computer Industry Scan," TRW Credit Reports, the AP DataStream, Reuters and UPI. As a rule, these databases are updated before the newsletters are mailed to subscribers. One drawback–each database has its own validation procedure. For example, if you do not subscribe to the print version of a particular newsletter, the publishers of this newsletter may not let you access the electronic version. Contact a NewsNet representative for complete details.

To subscribe, call NewsNet and order a subscription. You'll be issued a password over the phone. *NewsNet Inc., 945 Haverford Road, Bryn Mawr, PA 19010. (215) 527-8030; (800) 345-1301*

CIRCLE 199 ON READER SERVICE CARD

PC Pursuit (Available on Telenet. $25 per month, plus:

Prime time	Off Peak
$10.50-$14/hr	No extra Charge

(Prime time: 7 a.m.–6 p.m. weekdays.)

PC Pursuit is a low-cost long distance telephone network for your modem. By routing your calls through the Telenet Public Data Network (instead of AT&T or other carriers) PC Pursuit can cut your long distance phone bills by as much as 75%.

You can access PC Pursuit through any one of the 18,000 Telenet nodes throughout the US, and use it to access online services located in 25 major cities. These cities include: Atlanta, Chicago, Cleveland, Dallas, Denver, Detroit, Glendale, Houston, Los Angeles, Miami, Milwaukee, Minneapolis, Newark, New York, Phoenix, Philadelphia, Portland, Salt Lake City, San Francisco, San Jose, Seattle, Tampa, and Washington, DC.

If your favorite online service is not in one of these areas, however, you won't be able to use PC Pursuit to access it.

For more information on TELENET, call 1-800-TELENET (voice). To learn more about PC Pursuit, or to request a subscription, log-in to the PC Pursuit BBS at (800) 835-3001.

The Source (Available through Tymnet and SourceNet.)

The Source, founded in 1979, caters to an upscale, well-to-do, white collar audience. The Source provides easy access to the Washington Post, AP Videotex, UPI, the Official Airline Guide, current stock quotes, and online trading. Business databases include economic forecasts from INVESTEX and the CareerNet, which is a searchable job opening and resume database. The

continued on page 87 ▶

Iliad Software Presents Athena II

Athena II is a professional, full color, two dimensional Computer Aided Design program, incorporating an ease of use seldom seen in CAD programs. You will find Athena II suitable for a home-maker moving the living room furniture around, a student just learning about drafting, or a seasoned professional. It's easy-to-use menu's will allow anyone to begin using Athena II in just a few minutes, and Athena II's wealth of commands makes any drafting job a breeze!!

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CircuitMaker

By Ozzie Boeshans

CircuitMaker is a professional full featured program that enables you to design, construct and test an unlimited variety of digital circuits. Using CircuitMaker, you eliminate the need to purchase breadboards, integrated circuits, wire and power supplies, by allowing you to design and test your digital circuits with just a few clicks of the mouse!

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At last there is a convenient way for teachers to track their students' grades on the Atari ST computer system. Teachers Pet gives you the power of a spread-sheet without the complications of having to learn a new language! Teachers Pet is completely GEM menu driven. Never again will you have to recalculate a students grade after finding a mistake, or staying up late graphing students progress for a parent-teachers meeting the next day. Let Teachers Pet do the work for you!!!

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By Eyring Research

PDOS is a real-time operating system for the Atari ST computer system. It is the same system which has been in use on VME systems for years and it's power is now available on the ST. PDOS is a full multi-tasking, multi-user operating system. PDOS allows you to develop programs using a variety of languages including C, Pascal, FORTRAN and BASIC. The power of the 68000 microprocessor comes alive with PDOS!!!!

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EDUCATION

By Anita Malnig

The electronic schoolroom—The three R's and your ST

Perhaps you're wondering how your children can benefit from your ST. Do you teach them programming or how to use a word processor? What if your child is five or six years old? What's good for such a young child?

Word processing is always a good skill, and you can teach the basics to young children. Programming can be appropriate for older children who have the interest. Additionally, you'll be glad to know there's a varied (not voluminous, however) selection of ST software for young people, so that children ranging from pre-school age through high school will have the opportunity to experience some "computer-age" learning.

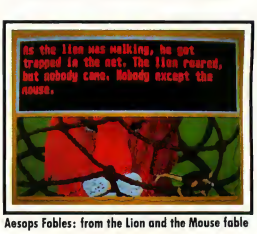
Listed below are descriptions of software packages from several companies producing educational software for the ST.

Mythology, Aesop's Fables and **The Word Master** ($49.95 each). **Animal Kingdom** ($39.95). (Primary grades.) This series from Unicorn offers some original subject matter in the educational software area, particularly Mythology and Aesop's Fables. Both programs follow a similar pattern, although Aesop's Fables is aimed at slightly younger children. The child chooses a story (The myths are "The Greek Gods," "Pandora's Box," and "King Midas"; there are about ten fables to choose from) which the child reads (or has read to) on a series of screens.

I was impressed by the programs' vibrant colors, but the pictures themselves leave something to be desired. As you read the story, half the screen is words, the other half an illustration. The story advances when you press the Return key at the end of a paragraph, but sometimes the accompanying picture never changes. So a picture of the Cyclops remained on the screen even when the words described creatures with 50 heads. On the more positive side, the questions that follow each story and test vocabulary and spelling seem educationally sound. Also, each program allows the child, parent or teacher to have some input. In Mythology, the child can actually create his or her own myth with accompanying questions. Aesop's Fables lets you make up your own spelling lists. Children enjoy myths and fables, and they're part of our literary heritage. These programs offer a pleasant introduction to some of them.

CIRCLE 85 ON READER SERVICE CARD

Word Master is a spelling program for children in grades 3 through 8. In "Placement Test," the first activity, you choose a grade level and are given lists of words with definitions to choose from. By assessing the amount of correct answers, you decide if you are at the proper level. Once that's determined, you go on the "Master's Review" in which you are given word lists with definitions. This is where you learn the



Aesops Fables: from the Lion and the Mouse fable

Aesops Fables Menu

words and prepare yourself for "Vocabulary Challenge." Here you select the correct definition for a word displayed at the top of the screen. The final activity is "Master Maze": A sentence with a word missing appears at the top of the screen. You must move a man to the correct word in the maze to complete the sentence. (The mouse doesn't work with the maze and the arrow keys weren't much fun to manipulate. Use a joystick.)

CIRCLE 86 ON READER SERVICE CARD

As with the first two programs, the illustrations are weak. Throughout the Master Review the only picture is that of some mountains, a nice graphic, but it has very little to do with the program. The "Vocabulary Challenge" shows someone who looks like a Zen Master who smiles at you. I would have preferred to see the illustrations contribute more to the exercises.

Animal Kingdom teaches young children about all sorts of animals and does it quite well. The first part of the program is "All About Animals" in which you choose from ten categories to read information about specific species such as animals of the plains, prehistoric, fish, and so on. You get a picture and descriptive paragraph of the particular animal. You're then given a variety of activities based on the information, such as seeing a picture of an animal and writing its name, unscrambling names of animals, determining which one is different, and so on. There's a lot of information here and it is quite sound educationally.

CIRCLE 87 ON READER SERVICE CARD

Overall, Unicorn has done some nice work with a good mix of subject matters. My main criticism is that they don't have enough use of the ST's sophisticated capabilities. These programs are not much more than animated workbooks and that animation is limited. Educationally, they're on the right track; computer-wise they need to go the next step. *Unicorn Educational Software, 2950 Flamingo Rd., #B, Las Vegas, NV 89121. (702) 737-8862*

First Shapes, Speller Bee, Math-Talk Fractions and **KidTalk** ($49.95 each) (Pre-school through approximately third grade.) First Byte takes the ST technology a step farther by offering four programs that use speech synthesis. Even though the speech is robot-like and makes pronunciation for spelling words rather difficult, it is exciting for a child to have a computer *talk*.

First Shapes is good for a parent to use with a pre-school child. The program asks the child questions, and he or she gets to do things like identify shapes and build their own toy creations out of all sorts of shapes. What's nice about building the toys is that there was no right or wrong. A child could choose to build a truck and no matter what shapes he or she chose to build it, the computer would make sure it came out looking somewhat "truckish." Nice positive reinforcement for a young child. On the down side, the program is quite slow and some of the graphics were clunky-looking, not state-of-the-art.

CIRCLE 88 ON READER SERVICE CARD

KidTalk also works for preschool children; the company states that the program can also be used with junior high students, but I think the overall look will appear too babyish for adolescents. Kidtalk lets you write and save stories, hear them spoken, and print them out.

CIRCLE 89 ON READER SERVICE CARD

Speller Bee, for the child learning to read and spell, offers some charming and useful activities. You can use the spelling lists provided or create your own (always a useful addition to a children's program), listen to a word (you must listen carefully) and then spell it. In "Scramble Bee" the child must unscramble words but gets to look at the spelling list as they try to figure out the word. "Detective Bee" asks you to find missing letters in words; the alphabet is pictured at the bottom of the screen. These are fun games and sure to make the spelling process more fun.

CIRCLE 90 ON READER SERVICE CARD

Math Talk Fractions offers some useful, engaging ways to learn all about fractions through four different exercises. In "Problem Factory" you see a screen that looks like moving gears from factory machines. You enter and solve your own problems (useful for doing homework); the computer whirrs and sputters and tells you if you're right or not. This game is also very slow, with almost *too* much useless activity for what is really happening. However, it's a helpful activity for a child learning fractions.

Donold Duck's Ployground

In "Fraction Shuffle" you choose a card to get a fraction and then must solve the problem. The principle is quite similar to the previous game. (I must point out a grammatical error: The ▶

program said "Your right," instead of "You're right. . .)

"Fun House" offers several quick games such as "Laser" in which you get a bright, flashing set of boxes and must determine which fraction of them are colored. "Team Challenge" has you choose a team of characters to oppose you in a fraction quiz show. Again, this activity is a variation on a theme. The key is to get you, the user, to correctly answer the question before it goes over to the opposing team.

CIRCLE 91 ON READER SERVICE CARD

Overall, these First Byte products can teach young children some important skills in an entertaining manner. *First Byte, 2845 Temple Ave., Long Beach, CA 90806. (213) 595-7006*

Typing Tutor Plus Word Invaders ($34.95) (Approximately fourth grade through adult.) One of the great breakthroughs with word processing is that you don't have to hit the Return key at the end of the line. This speeds up the typing process tremendously. So, why in a typing program on disk must you hit the Return key at the end of every line? I guess if you ever go back to a typewriter, you'll know what to do.

That complaint aside, this is a well-thought-out, no-nonsense typing program that can teach you the basics and get you up to speed fairly quickly. Each level takes you to a new height of typing complexity and all along the way you get your typing speed and advice on what you're doing wrong. Anyone who uses the keyboard on their computer a lot will benefit from knowing how to touch type. Typing Tutor can help you out.

Word Invaders lets you practice your typing by letting you blast invading words out of the sky before they destroy your base. To win this game, you must be able to touch-type! *Academy Software, P. O. Box 6277, San Rafael, CA 94903. (415) 499-0850*

CIRCLE 92 ON READER SERVICE CARD

Atari ST Scholastic Series (17 volumes, $19.95 each) (Junior high and high school) This is a very well-designed, classroom-oriented learning series. The subjects covered are math and the sciences including algebra, geometry, statistics, trigonometry, biology, chemistry and physics. Certainly appropriate for classroom use, the Arrakis Advantage can be used at home as well for a young person needing help or having a special interest in one of the subjects.

In each program you get an overview of what will be covered (for instance,

First Shapes

Algebra 1, Vol. I covers subsets, supersets, disjoint sets, and so forth), tutorial screens that teach concepts, examples, experiments, definitions, reviews and questions.

The screens are nicely laid-out, easy-to-read and offer just the right amount of information at one time. You're neither spoon-fed nor overwhelmed. This series bears teachers taking seriously. *Arrakis Software. Distributed by Atari Corp., 1196 Borregas Ave., P.O. Box 3427, Sunnyvale, CA 94088. (408) 745-2367*

CIRCLE 102 ON READER SERVICE CARD

Linkword Languages: French, German, Italian, Spanish, Russian, Portugese, Greek and **Dutch** ($29.95 each) "Imagine yourself having a drunken argument about whether trout is spelt with FOUR L'S."

'Huh?" I said. But when the question "What is the English word for FORELLE?" popped up on the screen a few minutes later, I knew at once that the answer was "trout." Using images that link foreign words to acoustically similar English words is a technique called imagery.

Linkword uses this technique, and it's quite successful. After having memorized 20 animal names *and* their genders after 10 minutes with the German version of Gruneberg's **Linkword Language Series**, I had to tear myself from the computer when it was time to stop.

As indicated, the Linkword series is also available in French, Italian, Spanish, Russian, Portugese, Greek and Dutch versions. Words are introduced one at a time, with the computer giving the English word, foreign equivalent, phonetic spelling and quick image to keep in mind for each. As with the trout example, the images are often bizarre but usually effective. After 10 words, the program quizzes you. Then you use the same technique to learn the genders, and take another quiz.

The course covers such topics as dining out and going to the doctor, and teaches vocabulary ranging from clothes and furniture to business and travel. Parts of speech such as verbs and adjectives are interspersed, as is the grammar, throughout the 10 lessons.

At the end of each lesson, you must translate complete sentences. The program comes with an audio cassette featuring a native speaker pronouncing

the words you've just learned. The audio section is optional, but I found it a very good supplement.

My main complaints with the program concern the drills. The sentence translations at the end of each lesson were good practice, but at times I thought there should have been more of them. You can't repeat these drills without going through the entire lesson again.

The program is geared toward home use, and constant interaction with the computer makes it more active than the book-and-cassette home language courses available. Although I thought the grammar lessons weren't very well presented, the speed with which vocabulary can be memorized made up for it. The package boasts that you will learn a vocabulary of 400 words in 10 hours—and if you're serious about learning a foreign language, don't balk at the claim. With Gruneberg's Linkword method and a little dedication, you'll be ready for that European vacation in no time. *Artworx Software Co., Inc., 1844 Penfield Road, Penfield, NY 14526. (716) 385-6120*

CIRCLE 93 ON READER SERVICE CARD

Donald Duck's Playground ($24.95) **Donald Duck's Playground** teaches you about money and how to make change. It's well-done and lots of fun to play.

The game uses animated graphics. The first screen shows a street with three different arches representing levels of difficulty that Donald has to walk under. Once you have walked under the appropriate arch, you are on a main street housing four work establishments. You move Donald to each of the stores by using either the mouse, joystick or the arrow keys.

There are four jobs where Donald can earn money, one of which is the Amquack railroad. At the station is a map with the train path, indicating the train's movement. You have to deliver packages from one city to another city, while the train keeps moving. You change junction switches (moving amongst six) so that the train moves from one track to another track. This may sound easy, but it's not—sometimes you have to change as many as three switches to move the train to the right city. This job is fast and you really have to use logic to find the right path. You earn the most money at this particular job.

After each job, you go to the pay window and receive the money that you've earned. Now you can go to any of the stores and buy equipment for the playground where Donald's nephews play.

This is a colorful game with many things to do. You choose how long to work at any of the jobs, and if you don't like the produce job, you don't have to work at it. You also get to choose what to buy.

Donald Duck's Playground is animated and very well-done. The ST mouse isn't especially effective for some of the movements, but the keyboard function keys work well and are more convenient to use. It teaches you logic and helps make you read faster. You learn about time and quality control. It also teaches that you have to *work* to earn money to buy things. All in all, though, this is an excellent game for children. *Sierra On-Line, Coarsegold, CA 93614. (209) 683-6858*

CIRCLE 94 ON READER SERVICE CARD

Buzzword ($42.95) **Buzzword** is a word-guessing game suitable for both adults and children which uses a subtle sense of humor to give clues for each set of words.

The game is quite simple. The upper right section of the screen contains the nine boxes that stand for the words you will be guessing. At the simplest level, each box will contain the first letter of the word and how many letters make up the word. At the bottom of the screen is a list of all the letters used in the nine words, as well as their frequency of usage. In the upper right corner is the score. As you guess each word correctly, the number of letters available is decreased accordingly.

The object of the game is to guess the word and type it correctly. If you make five mistakes, or determine all the words correctly, your turn is over. There are 200 hundred different categories and between 30 and 50 members in each category, so it is very difficult to remember all of the answers in any one category. Each category is also divided into three difficulty levels.

The contents of the sets of words range in difficulty. There is only one screen in the game, but the colors are bright and the "typewriter" action is good.

While not billed as an educational game, **Buzzword** is quite educational. It is also lots of fun to play in groups and is as sophisticated as some trivia games. This is a well-designed word game for the whole family. *Buzzword Game Company, 5582 S. Zeno Court, Aurora, CO 80044. (303) 693-4263*

CIRCLE 95 ON READER SERVICE CARD

1st Math, Memory Master and **My Letters, Numbers and Words** ($39.95 each) **1st Math, Memory Master** and **My Letters, Numbers and Words** are three excellent children's programs for the Atari ST. These programs teach mathematics, memory and visual skills, and letters and numbers.

All three programs use large letters, bright colors, animation and a mouse- ▶

based input system, several teaching sections which you can adjust to your child's skill.

1st Math teaches addition and subtraction skills to children ages five through eight. In the first section the program presents a simple equation, for which you must type in the correct answer. Answer correctly and a new problem is given; answer incorrectly and nothing happens. After three wrong answers, the correct answer is shown in outlined form. After completing ten questions, you see a short congratulatory animation sequence.

In the section "Construction Set," you must solve a number of equations to generate a screen picture (a bird sitting on a clothesline, for example). After you've solved the proper number of problems, the picture becomes animated. The last game is called "Freight Depot." Here, you use a crane to pick the correct answer of an equation and drop it into a trap door, where a forklift loads the number on a truck. After five answers, the truck drives off.

CIRCLE 96 ON READER SERVICE CARD

Memory Master contains four games to develop memory skills, sharpen shape recognition and expand a child's basic vocabulary. It's written for children ages two to six but older children can also profit. The first game is called Same, in which you must pick out the most similar items out of four choices.

In the game Words, you must pick the object corresponding to the word. This teaches word recognition skills. The third game is called Belong. An object (say, a hand) is shown on your screen, and you must pick a similar object (a glove).

CIRCLE 97 ON READER SERVICE CARD

My Letters, Numbers and Words is designed for children ages two to six and contains three games. The first teaches typing skills. The second game shows a number on the screen, and requires you to spell out the name of that number. Although these games are interesting, both seem overly complicated for the suggested age group.

CIRCLE 98 ON READER SERVICE CARD

Overall, these are fine programs for young children. They're easy for children to use, and with their cute rewards and animation, children will enjoy playing with them even after they've solved all the program puzzles. *Stone & Associates, 7910 Ivanhoe Avenue, Suite 319, La Jolla, CA 92037. 1-800-621-0852*

ONE FROM THE HEART

Cardiac Arrest! ($69) This is certainly a different piece of ST software—a resucitation simulator! The patient has just died. Are you good enough to "bring him back?" In Cardiac Arrest! you interpret EKG's, history, vital signs, and lab data while you order drugs and procedures for your patient. *Mad Scientist Software, 2063 N. 820 W., Pleasant Grove, UT 84062. (801) 785-3028*

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DESKTOP PUBLISHING *continued from page 27*

lasers can produce impressive near-typeset quality text pages from just about any ST word processing software.

For example, a number of the best-looking Atari users newsletters used plain ST Writer for laser printing, because of this word processor's easy two-column page layout.

The forthcoming ST version of Word Perfect, which was shown at Atari Fairs throughout 1987, features flexible WYSIWYG multi-column printing and a complete roster of laser printer drivers. It also supports mixed type fonts on the same page and effortless box or line drawing. Just draw a box where you want to paste in your illustration and the text automatically flows around it.

As in the Mac and IBM worlds, top-line ST word processors can deliver many of the essential functions of desktop publishing software—and it may be all you need for your own uses. By the way, prototypes of the Atari laser printer shown at 1987 Atari Fairs were running the still-unreleased Microsoft ST Write word processor which produced many features offered by Word Perfect.

One final suggestion. You may be able to rent a laser printer and pay only a few cents per page, rather than buying your own laser printer right away. A number of high-tech photocopy centers have branched out into laser printing. This sort of service is often available in the vicinity of college campuses.

The only catch to this is that laser rental centers will probably just have Macintosh computers and maybe an IBM clone on-site. You'll have to decide whether it's worth it to you to lug down your own ST and monitor.

COMING SOON TO A DESKTOP NEAR YOU. . .

Timeworks Desktop Publisher (Price not set) Coming soon from Timeworks, Inc., makers of Swiftcalc, WordWriter ST and Data Manager ST—their own desktop publishing package—a typesetter, designer and paste-up artist all in one. Features a complete word processor, a variety of font styles, built-in text editor, high resolution graphics and more! *Timeworks, Inc., 444 Lake Cook Road, Deerfield, IL 60015. (312) 948-9200*

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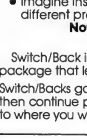

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The book includes topics such as Phreaking, Logic Bombs, Hardwore data keys, the legal aspects of piracy and software protection, Custom disk formats, Pirate Bulletin boards and much more.

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CIRCLE 002 ON READER SERVICE CARD

MIDI AND MUSIC

By Jim Pierson-Perry

MIDI software—patch editors, librarians, sequencers and more

With its built-in MIDI ports and low cost, the ST is widely regarded as the new "musicians' computer." ST MIDI programs range from a player-piano simulation (based on real piano rolls) to a professional 64-track sequencer system. Atari Corp. is helping to spearhead this MIDI invasion by encouraging music stores to sell ST computers.

To use most of this flood of MIDI software, you need only your ST and a MIDI-equipped synthesizer, such as the Yamaha DX-7 or the Casio CZ-101. Of course, the more MIDI equipment you have (samplers, drum boxes and expanders, for example) the more involved your music can be—and the more you'll appreciate having the ST to hold it all together!

Here we'll cover five types of MIDI software: music players, sequencers, scoring programs, librarians, and patch/sample editors. Each category has programs with various levels of features, and there is some overlap between them. Unless stated otherwise, you can run all of these programs on any ST.

MUSIC PLAYER PROGRAMS

A player program uses a data file to reproduce music on a MIDI instrument (typically a synthesizer)—sort of a digital jukebox. Some player programs let you enter musical data in step-time along with non-music control events, such as changing the synthesizer voice or the tempo. These programs also may offer song playback through the ST's internal monitor speaker as well as external MIDI instruments. For a player program, availability of prerecorded music on ST disks or as BBS files is important, unless you only want to hear your own playing.

Music Studio ($59.95) The definitive home music program. Step-time music entry for four independent music tracks with complete score printout. Playback can be through MIDI and/or a programmable internal three-voice synthesizer that plays through the monitor speaker. Over 200 song data files are available on bulletin board systems. Designed with the Casio CZ synths in mind. *Activision, Inc., 2350 Bayshore Parkway, Mountain View, CA 94039. (415) 960-0410*

CIRCLE 262 ON READER SERVICE CARD

Bach Songbook, **Dr. Keys**, and **Dr. Drums** ($29.00 each) Prerecorded music files in the Dr. T sequencer format for selections from J. S. Bach, chord progressions/sample riffs, and drum patterns. *Dr. T's Music Software, 220 Boylston St.,·Suite 306, Chestnut Hill, MA 02167. (617) 244-6954*

CIRCLE 263 ON READER SERVICE CARD

Midi Magic

MIDIplay ($49.00) Combination player and one-track sequencer. Works with prerecorded **Musicdisks** (12 songs per disk at $19.95 each). Real-time se- ▶

quencer can playback through MIDI or programmable internal synthesizer through the monitor speaker. No editing functions. *Electronic Music Publishing House, Inc., 2210 Wilshire Blvd., Suite 488, Santa Monica, CA 90403. (213) 455-2025*
CIRCLE 264 ON READER SERVICE CARD

MIDI Magic ($39.95) This MIDI player piano uses prerecorded music disks (six songs per disk at $19.95 each). You can't create your own song files, but there are currently more than 100 music disks available—digital encodings of piano rolls, some originally cut by Scott Joplin, George Gershwin and Liberace. Color systems only. *Micro-W Distributing, Inc., 1342B Route 23, Butler, NJ 07405. (201) 838-9027*
CIRCLE 265 ON READER SERVICE CARD

ST Music Box ($49.95) Create your own music by step-time entry of music and MIDI control data for up to eight voices across four MIDI channels. You can change tempo or MIDI instrument patches every measure with playback through MIDI or the monitor speaker. Limited score printout provided via a separate program. Separate versions sold for color or monochrome systems. *Xlent Software, P. O. Box 5228, Springfield, VA 22150. (703) 644-8881*
CIRCLE 266 ON READER SERVICE CARD

SEQUENCER PROGRAMS

A sequencer records real-time or step-time input of MIDI music and controller data. Some versions allow sophisticated editing and music manipulation functions. Sequencers are like multi-track tape recorders and many such programs use a tape recorder-style user interface. The more powerful sequencers allow editing and chaining of individual music passages (sequences) to build a song.

A good sequencer program lets you edit music data much the same as you would edit text with a word processor—you insert or delete passages, and cut and paste repeated sections. You also need external syncing if the song is to be tied to a drum machine or tape deck. Other useful features are note timing correction, a metronome to keep steady time while playing, punch-in and punch-out to overdub and correct bad notes, and the ability to address system-exclusive functions of your MIDI equipment.

Transform-Xtrack ($149.95) The primary sequencer module for TRANSFORM MIDI software. Co-resident under GEM with other modules. Real or step-time music entry with graphical MIDI event editing under mouse control. Song pointer for SMPTE. *Beam Team, 6100 Adeline Street, Oakland, CA 94608. (415) 658-3208*
CIRCLE 267 ON READER SERVICE CARD

MIDI Recording Studio ($59.00) Entry level eight-track sequencer built around a MIDI event table that holds all notes and controller values from recording. Edit single events or apply an operation (such as velocity scaling) to a selected range of events. Files are upwardly compatible with other Dr. T programs. *Dr. T's Music Software, 220 Boylston St., Suite 306, Chestnut Hill, MA 02167. (617) 244-6954*
CIRCLE 268 ON READER SERVICE CARD

Keyboard Controlled Sequencer ($225.00) Professional level 48-track sequencer using nonstandard GEM interface. Extremely powerful control of music via editing of MIDI event table. Record or edit sequences then combine them in various ways to build songs. Foundation for series of add-on programs including **Model S** ($199.00), a hardware interface box to give SMPTE compatibility. *Dr. T's Music Software, 220 Boylston St., Suite 306, Chestnut Hill, MA 02167. (617) 244-6954*
CIRCLE 269 ON READER SERVICE CARD

Programmable Variations Generator ($75.00) Add-on software for the **KCS** provides extensive editing and musical manipulation functions. A "patch editor" for sequences. *Dr. T's Music Software, 220 Boylston St., Suite 306, Chestnut Hill, MA 02167. (617) 244-6954*
CIRCLE 270 ON READER SERVICE CARD

Fingers ($50.00 entry level, $129.00 pro level) Real-time series generator similar to **Jam Factory** for the Mac. Start up to four independent sequences with different loopings, then vary notes and control parameters while playing in real-time to create new sequences. Compatible with **KCS**. *Dr. T's Music Software, 220 Boylston St., Suite 306, Chestnut Hill, MA 02167. (617) 244-6954*
CIRCLE 271 ON READER SERVICE CARD

EZ-Track Plus ($65.00) Upgrade of the first commercial ST MIDI sequencer. 20-track tape recorder emulator, one MIDI channel assignable per track. Features transposing, MIDI sync, punch in/out, change the time signature, and cut/paste editing. Good starter program with many BBS music files. Upwardly compatible with other Hybrid Arts programs. *Hybrid Arts, Inc., 11920 West Olympic Blvd., Los Angeles, CA 90064. (213) 826-3777*
CIRCLE 272 ON READER SERVICE CARD

Synch Track ST ($375.95) Professional level 60-track sequencer using tape deck format. Numerous overall and regional editing features, graphical editing, time signature changes, simultaneous looping and linear tracks, punch in/out, song chaining, and 191 programmable quantization levels. Multiple sync capabilities (MIDI, FSK, drum

Music Studio Title Screen

Music Studio Composing Screen

machine) through included hardware interface box. *Hybrid Arts, Inc., 11920 West Olympic Blvd., Los Angeles, CA 90064. (213) 826-3777*
CIRCLE 273 ON READER SERVICE CARD

SMPTE Track ST ($575.95) Advanced version of **Synch Track ST** includes all its capabilities and now supports SMPTE. Comes with SMPTE Mate hardware interface box. *Hybrid Arts, Inc., 11920 West Olympic Blvd., Los Angeles, CA 90064. (213) 826-3777*
CIRCLE 274 ON READER SERVICE CARD

Super Conductor ($79.95) Record music passages as blocks, then arrange them in any order across the 16 MIDI channels with graphical song construction. Copy and duplicate blocks, edit them to include variations in tone and dynamics and play the song back simultaneously across multiple MIDI channels. The three internal monitor voices are provided as additional MIDI channels. Sends and receives system-exclusive data files. *MichTron, 576 S. Telegraph, Pontiac, MI 48053. (313) 334-5700*
CIRCLE 101 ON READER SERVICE CARD

Fast Tracks ST ($129.95) Powerful, easy-to-use 16-track sequencer. Real-time music entry. Step-time only used to include sys-ex data. Punch in/out, song pointer, controller data filtering, variable tempo, and track editing. *MIDIMouse Music, Box 272-B, Rhododendron, OR 97049. (503) 622-5451*
CIRCLE 276 ON READER SERVICE CARD

MIDIsoft Studio ($99.00) 32-track sequencer with many editing options. It allows MIDI thru with filtering of after-touch data, synch to external devices, punch in/out, regional track editing, and transposition. (Antic review 7/87.) *MIDIsoft Corporation, P. O. Box 1000, Bellevue, WA 98009. (206) 827-0750*
CIRCLE 277 ON READER SERVICE CARD

Master Tracks Pro ($349.95) Professional level 64-track sequencer ported from the Mac. Core modules support real or step-time entry, editing of MIDI data and overall sequences, sys-ex librarian, and keyboard mapper. Strong graphical emphasis with powerful editing control. *Passport Designs, 625 Miramontes Street, Half Moon Bay, CA 94019. (415) 726-0280*
CIRCLE 278 ON READER SERVICE CARD

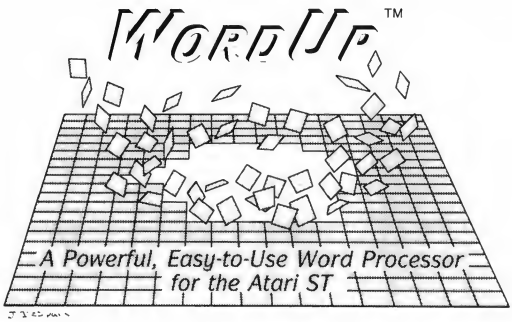
Personal Musician ($129.95) Entry level starter kit for sequencing includes software and MIDI cables. *Sonus Corp., 21430 Strathern Street, Suite H, Canoga Park, CA 91304. (818) 702-0992*
CIRCLE 279 ON READER SERVICE CARD

MasterPiece ($475.00) Professional level 32-track sequencer. Supports real or step-time entry, keyboard mapping, punch in/out, extensive editing and filtering options, chain up to 24 sequences in song mode, and song pointer. *Sonus Corp., 21430 Strathern Street, Suite H, Canoga Park, CA 91304. (818) 702-0992*
CIRCLE 280 ON READER SERVICE CARD

SST SuperSequencer ($195.95) Starter sequencer at the professional level. Similar to **MasterPiece** but without as many options. *Sonus Corp., 21430 Strathern Street, Suite H, Canoga Park, CA 91304. (818) 702-0992*
CIRCLE 281 ON READER SERVICE CARD

Pro-24 ($295.00) Professional level 24-track sequencer using a tape deck format. Tracks are made up of multiple independent patterns which can be copied or edited and used to build loops. Variable meter and tempo throughout song. Real or step-time entry, filtering, punch in/out, and graphical editing provided. *Steinberg Research, distributed by the Russ Jones Marketing Group, 17700 Raymer St., Suite 1001, Northridge, CA 91325. (818) 993-4091*
CIRCLE 282 ON READER SERVICE CARD

▶



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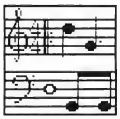
CIRCLE 036 ON READER SERVICE CARD

MIDI Studio ($99.95) A musical sequencer that allows recording of music in real time from your synthesizer. Also allows you to create and edit patch data. *Audio Light, 20 N. Santa Cruz, Suite B, Los Gatos, CA 95030. (408) 395-0838*
CIRCLE 138 ON READER SERVICE CARD

Mu-Script I ($99.95) is a 16-track sequencer with MIDI event editor and multi-stave notation. You can enter a track entirely from your ST keyboard, then overdub live tracks with it. Includes quantizing and individual event editing. Assign individual tracks to any MIDI channel; split single tracks into two tracks, treble and bass. *Quiet Lion, P.O. Box 219, Sun Valley, CA 91353 (818) 765-6224.*
CIRCLE 139 ON READER SERVICE CARD

SCORING PROGRAMS



Ideally, a scoring program takes a music data file and converts it into printed sheet music. In practice, automating this transcription process is very difficult because of music's many rules and exceptions. Options to consider include the scoring style (solo voice up to full orchestra with drum parts); addition of lyrics, chord, musical or even user-definable symbols; notation editing; and what printers are supported. Scoring programs generally are only valid with sequencer programs from the same company due to variations in file formats.

Transform-Xnote ($199.95) Music transcription module for the TRANSFORM MIDI software series. Can be co-resident under GEM with the sequencer and patch editor modules. *Beam Team, 6100 Adeline Street, Oakland, CA 94608. (415) 658-3208*
CIRCLE 283 ON READER SERVICE CARD

The Copyist ($225.00) Provides music transcription for all Dr. T sequencer programs. Extends scoring to included drum parts in real percussion notation. On-line help function. *Dr. T's Music Software, 220 Boylston St., Suite 306, Chestnut Hill, MA 02167. (617) 244-6954*
CIRCLE 284 ON READER SERVICE CARD

EZ-Score Plus ($99.00) Entry level scoring program for all Hybrid Arts sequencers. Supports up to three staves, chord symbols and lyrics all under mouse control. *Hybrid Arts Inc., 11920 West Olympic Blvd., Los Angeles, CA 90064. (213) 826-3777*
CIRCLE 285 ON READER SERVICE CARD

SuperScore ($425.00) Transcription of music files for all Sonus sequencers. Includes built-in sequencer. Numerous page layout (up to 40 polyphonic staves) and editing options (music and text). *Sonus Corp., 2143 Strathern Street, Suite H, Canoga Park, CA 91304. (818) 702-0992*
CIRCLE 286 ON READER SERVICE CARD

LIBRARIAN PROGRAMS

Library management programs are caretakers of such MIDI data files as synthesizer patches, drum machine patterns, and controller effects. Librarians can build composite files of system-exclusive data for all instruments in your setup. At the touch of a button, a file can load all parameters for a particular song. A good librarian is indispensable for MIDI-based systems in live performance.

Equipment meeting the MIDI 1.0 specification usually can be accessed by a generic librarian, rather than requiring a separate program for each instrument. Two exceptions are the Casio synthesizer line and Roland drum machines, which use nonstandard system exclusive data transfer specifications and need specialized software.

ESQ-1, **D-50**, and **TX814Z Librarians** ($69.00 each) Patch file librarians for the respective synthesizers. *Beaverton Digital Systems, P.O. Box 1626, Beaverton, OR 97075. (503) 641-6260*
CIRCLE 287 ON READER SERVICE CARD

GenPatch ST ($149.00) Generic librarian for all MIDI instruments. Disk contains over 60 command files, regular updates for new configurations via BBS, and command file builder for those not yet supported. Includes real-time MIDI data stream display utility and desk accessory for sending MIDI data files. Works with Casio and Roland equipment. *Hybrid Arts, Inc., 11920 West Olympic Blvd., Los Angeles, CA 90064. (213) 826-3777*
CIRCLE 288 ON READER SERVICE CARD

SYS/EX ($100.00) Designed especially for use by performing musicians and uses keyboard menus rather than mouse-based input. You create a command file to obtain parameter data for each MIDI instrument in your setup. The command file dumps each instrument's data into a composite MIDI file. Calling up the composite file resets all instruments to their previous states. Does not work with Casio synthesizers. *Key Clique, Inc., 3960 Laurel Canyon Blvd., Suite 374, Studio City, CA 91604. (818) 905-9136*
CIRCLE 289 ON READER SERVICE CARD

Matrix 12/Xpander Librarian ($49.95) Librarian for the Oberheim Matrix 12/Xpander synths. View, rearrange, and get hardcopy of patch data and bank names. *MIDIMouse Music, Box 272-B, Rhododendron, OR 97049. (503) 622-5451*
CIRCLE 290 ON READER SERVICE CARD ▶

CZ Sounds Vol. 1-4 ($19.95 each) and **FB-01 Sounds** ($24.95) Disks of patches (40 per volume for CZ, 96 for FB-01) with boot driver program to load direct to synthesizer. *MIDIMouse Music, Box 272-B, Rhododendron, OR 97049. (503) 622-5451*
CIRCLE 291 ON READER SERVICE CARD

Data Dumpstor ST ($89.95) Holds up to 20 separate composite MIDI data files in memory and comes with command files on disk; you can create and store additional command files as needed. Includes desk accessory for sending MIDI data files for instrument setup. Does not work with Casio synthesizers. *Music Service Software, 801 Wheeler Road, Madison, WI 53704. (608) 241-5615*
CIRCLE 292 ON READER SERVICE CARD

TR707 Dumpstor ST ($64.95) Provides drum pattern storage for the nonstandard protocol used by the Roland TR707 drum machines. Holds 20 full dumps (four tracks each) from the TR707 in memory along with names for each individual track. Includes desk accessory for uploading pattern files to the drum machine. *Music Service Software, 801 Wheeler Road, Madison, WI 53704. (608) 241-5615*
CIRCLE 293 ON READER SERVICE CARD

Pro Creator ($240.00) Combination patch librarian and random patch generator for the Yamaha DX-7/TX series. Creates totally new patches or variations of existing ones. The patch generator is interesting, but limited since you can't edit the patch parameters. *Steinberg Research, distributed by the Russ Jones Marketing Group, 17700 Raymer St., Suite 1001, Northridge, CA 91325. (818) 993-4091*
CIRCLE 294 ON READER SERVICE CARD

K3P0+ Synth-droid, **Casio Synth-droid** and **DW8000 Synth-droid** ($99.95 for K3P0+, $79.95 for Casio and DW8000 Synth-droid) These three programs are patch editor/librarians for the Kawai K3, Casio CZ 101, CZ-1000, CZ-3000, CZ-5000 and Korg DW8000, respectively. All feature patch editing and waveform editing, patch librarian functions, and sound envelope manipulation. You can also save your patches in the librarian modes. *Compu-Mates, 8621 Wilshire Blvd., #177, Beverly Hills, CA 90211. (213) 271-7410.*
CIRCLE 140 ON READER SERVICE CARD

Sound Digitizers

ADAP SoundRack ($1995.00) A no-punches-pulled, professional analog/digital converter designed for digitizing music and sounds with your ST. The SoundRack samples music typically at 44.1 Khz with 16 bit resolution, and allows you to edit your samples right from the ST screen. You can store up to 64 multi-samples in memory, and even sample directly off compact disks. 19 inches wide, rack-mountable. *Hybrid Arts, 11920 Olympic Blvd., Los Angeles, CA 90064. (213) 826-3777*
CIRCLE 240 ON READER SERVICE CARD

Navarone Audio Digitizer ($139.95). A good 8-bit audio digitizer for those of you who want to make your own M-M-Max Headroom tapes. Originally known as the Hippo Audio Digitizer. (Antic review 3/87). *Navarone Industries. 1043 Sterling Rd. #201, Mountain View, CA 94040. (415) 964-2660*
CIRCLE 113 ON READER SERVICE CARD ■

PATCH/SAMPLE EDITORS

Patch editors provide an easy way to enter values for the various parameters that shape an instrument's tones. Additional features may include a librarian function, patch generation, graphical waveform editing, hardcopy of patch parameters, and a variety of editing features (cut/paste, copy, swap).

A sample editor can be viewed as a more complex form of patch editor. These programs let you manipulate an existing digitized sound sample or use a variety of synthesis algorithms to create new sounds from their underlying harmonic structure—sounds that can be sent back to samplers for playing.

Perfect Patch Ver. 2 and **Four Patch+** ($59.00 each) For the Yamaha 6-operator and 4-operator synthesizer lines, respectively. All patch parameters are accessible from a single screen for very crisp graphical editing. Keyboard scalings, envelopes and even entire operators can be copied from a source to multiple destinations in a single pass. Includes sequencer, librarian, and online tutorial. *Aegix, P.O. Box 9488, Reno, NV 89507. (702) 329-1943*
CIRCLE 295 ON READER SERVICE CARD

Transform-Xsyn ($99.00) A series of patch editor/librarian modules available for CZ, DX-7/TX, JX8P, FB-01, DX27, ESQ-1, D-50, and TX814Z synthesizers. Graphical editing, hardcopy, librarian, intelligent patch creation. Built-in sequencer to test new patches in actual play. Multiple modules can be co-resident under GEM. Fully integrated with additional TRANSFORM MIDI software. *Beam Team, 6100 Adeline Street, Oakland, CA 94608. (415) 658-3208*
CIRCLE 296 ON READER SERVICE CARD

Softsynth ST ($295.00) Create samples using 32 oscillator additive or FM synthesis. Compatible with most major brands of samplers. Well-known program ported from the Macintosh. *Digidesign, 1360 Willow Road, Ste. 101, Menlo Park, CA 94025. (415) 327-8811*
CIRCLE 297 ON READER SERVICE CARD

CZ Patch, **DX Heaven**, **4 Op Deluxe**, **Matrix 6 ST**, **Kawai-K3 ST**, **ESQ-Apade ST**, **D-50 ST**, and **PCM 70 ST** ($129.00 ▶

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CIRCLE 057 ON READER SERVICE CARD

each, except $149.00 for **PCM 70 ST**) Series of patch editors for their respective synthesizers; **4 Op Deluxe** is for the Yamaha DX27/100/FB-01/TX814Z line. All feature integrated graphical waveform editing under mouse control, patch librarian, and hardcopy of parameters. **CZ Patch** does not support the CZ-1/230S. *Dr. T's Music Software, 220 Boylston St., Suite 306, Chestnut Hill, MA 02167. (617) 244-6954*
CIRCLE 298 ON READER SERVICE CARD

VDS MIRAGE ($249.00) Visual display sample waveform editor for Mirage. Can construct samples by FM or additive synthesis. Samples may be analyzed by Fourier transform to give 2D plot of first 20 harmonics. *Dr. T's Music Software, 220 Boylston St., Suite 306, Chestnut Hill, MA 02167. (617) 244-6954*
CIRCLE 299 ON READER SERVICE CARD

Soundfiler ST Graphical sample editor for the Akai S612 ($199.00), X700/7000 ($249.00), and S900 ($299.00) samplers. Supports waveform drawing, looping editor, crossfade looping, digital EQ, splicing, key mapping, and librarian functions. **GenWave** ($249.00) is a similar product for samplers that follow the MIDI sample dump standard (Prophet 2000, E-max). The S900 and generic editor programs require one megabyte. *Drumware, 12077 Wilshire Blvd., #515, Los Angeles, CA 90025. (213) 478-3956*
CIRCLE 226 ON READER SERVICE CARD

CZ-Android ST ($99.95) and **DX-Android ST** ($199.95) Support the Casio CZ and Yamaha DX-7/TX synthesizer lines, respectively. Graphical/numeric waveform editing, patch hardcopy, and librarian. Patch files are compatible with **GenPatch ST**. Expert system routines for new patch creation or variation of existing sound. Editing functions without patch creation module are available for DX line as **DX-Editor ST** ($149.00). *Hybrid Arts, Inc., 11920 West Olympic Blvd., Los Angeles, CA 90064. (213) 826-3777*
CIRCLE 229 ON READER SERVICE CARD

EDIT-8000 ($79.97) Patch editor, librarian, creator for the DW/EX-8000 synthesizer. Uses graphic interface of analog control panel (knobs, faders) operated by mouse as well as fast numeric entry. Includes sequencer to test new patches in actual play. Desk accessory to load patch files available free via BBS. *Savant Audio, 2140 Bellmore Ave., Bellmore, NY 11710. (516) 826-6336*
CIRCLE 230 ON READER SERVICE CARD

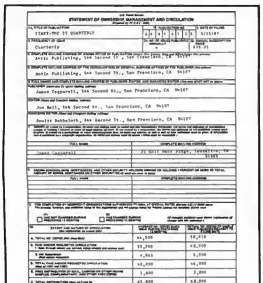
Mirage Sonic Editor ($245.00) Graphical sample editor with ability to accurately construct looping points. *Sonus Corp., 2143 Strathern Street, Suite H, Canoga Park, CA 91304. (818) 702-0992*
CIRCLE 232 ON READER SERVICE CARD

D-50 Design (279.95) Sound synthesis patch editor/librarian to work with the Roland D-50 synthesizer. *Sonus Corp., 2143 Strathern Street, Suite H, Canoga Park, CA 91304. (818) 702-0992*
CIRCLE 233 ON READER SERVICE CARD

SampleMaker ($250.00) Software synthesizer to generate or edit digital samples for Mirage, Akai S900, and Prophet 2000. Can use additive, FM, AM, or nonlinear waveshaping routines for sample synthesis. *Virtual Sounds, P.O. Box 3286, Plymouth, MA 02361. (617) 747-3397*
CIRCLE 234 ON READER SERVICE CARD

AND FINALLY. . .

MIDI Maze ($39.95) Here's one of the most unusual uses for MIDI—and it has nothing to do with music. MIDI Maze is a first-person perspective game, in which you zip down corridors and try to shoot every enemy Happy Face you encounter. Up to 16 STs can be con-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MIDI MAGAZINES

Where can you find out more about using your ST to make music? Two of the best magazines for working musicians feature regular coverage of the Atari ST. **Keyboard** focuses on electronic keyboards; a year's subscription is $23.95 from Keyboard Magazine, 20085 Stevens Creek, Cupertino, CA 95014, (408) 446-1105. **Electronic Musician** covers the whole range of MIDI-compatible musical instruments; it's $22 per year from Mix Publications, 2608 Ninth St., Berkeley, CA 94710, (415) 843-7901. And, naturally, you can find MIDI coverage in regular issues of **START, the ST Quarterly**—the #1 Guide to MIDI on the Atari ST!

nected together through their MIDI ports to play the game, so your enemies can be either computer opponents or other players. Each player has a different perspective, and you can play every-man-for-himself or in teams. However, MIDI Maze will *not* work in conjunction with Yamaha, Casio, or other MIDI synthesizers or drum machines. . . *Hybrid Arts, Inc., 11920 W. Olympic Blvd., Los Angeles CA 90064. (213) 826-3777 or (213) 826-4288 (BBS)*

CIRCLE 236 ON READER SERVICE CARD ■

Synthesizers

Synthesizers are no longer the expensive toys of rich rock stars. Like most electronic equipment, their prices have dropped while their useful features have skyrocketed, and now, they're an integral part of "serious" music composition and performance. Many people have added digital keyboards to their work—everyone from the members of the local bar band to Hollywood film composers.

Today you can choose from among a number of reasonably-priced electronic keyboards offering everything from velocity sensitivity to sampling capability—and of course, MIDI. Below is a sampling of some hot boxes with not-so-hot prices.

CASIO

The **Casio CZ-1** ($1,399) is a full-featured, 61-key touch- (velocity) sensitive synthesizer. It comes with 64 factory-loaded patches (sounds) in RAM, and can hold an additional 64 patches which you create. You can add optional ROM cartridges for additional sounds, and call up your patch information on the CZ's LCD screen. *Casio, P.O. Box 7000, Dover, NJ 07801. (201) 361-5400*

The **Casio CZ-5000** ($1,199) which is one step down from the CZ-1, contains 61 velocity-sensitive keys, 32 presets and 32 memory voices. Optional ROM cartridges hold additional sound information. View your patch programming on its built-in LCD screen.

The **Casio CZ-3000** ($999.00) contains all of the features in the CZ-1000, but includes 61 keys, 32 presets and 32 in-memory voices.

The **Casio CZ-1000** ($699.50) features 49 keys, 16 presets, and handles 16 internal voices. MIDI capable and MIDI ready. One of the most popular Casio synthesizers, this one may be the best buy for your ST.

The **Casio CZ-101** ($499.50) features a 49-key keyboard, advanced MIDI capabilities, and contains every feature of the CZ-1000 on a mini-keyboard.

Casio, 570 Mt. Pleasant Avenue, P.O. Box 7000, Dover, NJ 07801. (201) 361-5400

CIRCLE 131 ON READER SERVICE CARD

YAMAHA

Yamaha DX7II ($2,195) Ever wonder about Yamaha's logo? It's three crossed tuning forks, underlying their deep involvement with music reproduction going back many years. This is their best-known synthesizer, which features dual tone generators for multiple instrument capability. Also available with a built-in disk drive for $2,495.00.

Yamaha DX7S ($1,495.00) This one features a 16 note tone generator, 61 velocity-sensitive keys, programmable RAM, and features 128 voices and 64 performance memories. However, this synthesizer will not sample sounds. *Yamaha Music Corporation, Digital Musical Instrument Division, P.O. Box 6600, Buena Park, CA 90622. Technical Information: (714) 522-9105*

CIRCLE 132 ON READER SERVICE CARD

ENSONIQ

Ensoniq ESQ1 ($1,395) This synthesizer offers a 61-key velocity-sensitive keyboard and an eight-track sequencer actually built into the synthesizer itself.

Mirage Sampler ($1,295) The one everybody wants to copy. Comes complete with possibly the best sampling quality in its price range, and has a full 61-key velocity-sensitive keyboard. *Ensoniq, 155 Great Valley Parkway, Malvern, PA, 19355. (215) 647-3930*

CIRCLE 133 ON READER SERVICE CARD

KAWAI

The **Kawai K5** ($1995 keyboard version, $1495 module version) is a multi-timbral digital synthesizer. The keyboard version has 61 keys (velocity-driven), 48 single sounds and 48 multi (combination) sounds. It can play 16 sounds at the same time, and is especially useful for sequencing. It does not have sampling capabilities.

The **R100** and **R50** ($795 and $495) drum machines have drum samples in memory. *Kawai EMI Dept., 2055 East University Drive, Compton, CA 90224. (213) 631-1771*

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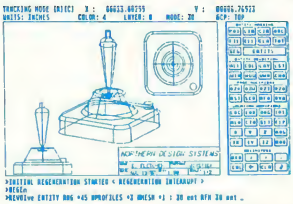

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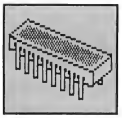

HARDWARE

By Gregg Pearlman and Frank Hayes

Solving real business problems with ST software and hardware

Computing takes software, but the real world requires hardware.

Whether you want to print a page, read a program off disk, or see graphics on a screen, your computer's signals have to interface with the real world. That's where computer software leaves off, and hardware—peripherals and accessories—have to take up the slack.

Fortunately, the Atari ST comes complete with all the interfaces you need to connect a printer, a second disk dive, a hard disk and a monitor. Some computers require extra circuit cards for these things, but with the ST, you can simply plug them in and you're ready to go!

PRINTERS

A printer lets you communicate with the non-computer world, printing out words and pictures for the benefit of those who otherwise can't see what you've created on your ST's screen. Whether you plan to write letters or novels, or print out greeting cards, newsletters, or full-scale architectural plans, you'll need a printer to put those things on paper.

Many different printers will work with the ST. For tips on printers and printer accessories that will get the most from your ST, see the nearby text box on "Printers: What to Look For."

3½ INCH DISK DRIVES

An ST without a disk drive is like a car without wheels—it can't go very far. Every ST comes with at least one disk drive, but you can have as many as two double-sided drives on line at once—for nearly 1½ megabytes of disk storage! As an added bonus, a double-sided ST drive can read disks created on IBM's newest computers, the PS/2 line.

Atari SF354 (single sided, $199.95) and **SF314** (double sided, $299.95) Atari's drives are the standard for the ST, and come in single and double sided versions with external power supplies and cases that match your ST. *Atari Corporation, 1196 Borregas Avenue, Sunnyvale, CA 94088. (408) 745-2367*

CIRCLE 102 ON READER SERVICE CARD

C-Systems Megadrive (one drive, $229.00; two drives, $349.00) The Megadrives are double-sided drives that come with internal power supplies. The DF 1000 is a single disk drive; the DF 2000 has two double-sided drives in one case. *C-Systems, Box 333, West Jordan, UT 84084. (801) 350-8855*

CIRCLE 188 ON READER SERVICE CARD

5¼ INCH DISK DRIVES

Why use a 5¼ inch drive with your ST? Mostly because it lets your ST read industry-standard IBM PC floppy disks, so you can exchange data with IBM users. It's also a great help when you're using PC-Ditto, which lets you run IBM software on the ST.

IB Drive ($269.95) If you use an IBM PC at work and an Atari ST at home, this drive may be just what you're looking for. The IB Drive reads IBM disks with PC-Ditto, or transferring files from 5¼ inch disks to the ST's 3½ inch disks. *IB Computers, 1519 SW Marlow Avenue, Portland, OR 97225. (503) 297-8425*

CIRCLE 213 ON READER SERVICE CARD

Microbyte A ($235) and **B** (quad density, $245) Microbyte's 5¼ inch drives are complete floppy systems ▶

made especially to plug into the ST and operate as a second disk drive. Microbyte A is a double-sided, double-density drive; Microbyte B is double sided and quad density. *Paradox Enterprises, Inc., 150 South Camino Seco, Suite #113, Tucson, AZ 85710. (602) 721-2023*
CIRCLE 189 ON READER SERVICE CARD

Supradrive

ST/PC Drive Cable ($39.95) If you already have an industry-standard 3½ or 5¼ inch disk drive, here's a cable that lets you connect it to your ST. The ST/PC Drive Cable allows you to simply plug in an IBM compatible disk drive for use as drive B. You'll still need a power supply for the drive, though. *E. Arthur Brown Company, 3404 Pawnee Drive, Alexandria, MN 56308. (612) 762-8847*
CIRCLE 190 ON READER SERVICE CARD

HARD DISKS

A hard disk plugs into your ST and changes your life. Programs start up almost like magic, files load and save much faster than with regular disks, and there's plenty of space for storing large files. With up to 60 megabytes or more of disk space on line, big projects become much easier. A hard disk isn't one of the first things you're likely to add to your ST, but when it's time to get one, there's nothing like it.

Atari SH204 ($699.95) A 20-megabyte hard disk. *Atari Corporation, 1196 Borregas Avenue, Sunnyvale, CA 94088. (408) 745-2367*
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Astra System HD+ ($995.00) A 20-megabyte hard disk with a 3½ inch double-sided drive built in. *Astra Systems, 2500 S. Fairview, Unit L, Santa Ana, CA 92704. (714) 549-2141*
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SupraDrive (20 Mb $699.00, 30 Mb $995.00, 60 Mb $1995.00) Hard disks in three sizes: 20, 30 and 60 megabytes. *Supra Corporation, 1133 Commercial Way, Albany, OR 97321. (503) 967-9075*
CIRCLE 192 ON READER SERVICE CARD

ICD ST Hard Drive System (20 Mb $699.95, 30 Mb $945.95, dual 20 Mb $1149.95, dual 30 Mb $1349.95) Up to 60 megabytes with one or two 20 or 30 megabyte hard disks; you can also plug an Atari or Supra hard drive into the back of the ICD case for still more storage on-line. Includes a fan and real-time clock. *ICD, 1220 Rock Street, Rockford, IL 61101. (815) 968-2228*
CIRCLE 193 ON READER SERVICE CARD

VIDEO MONITORS

If you have a 520 STFM, you can hook your computer directly to your TV set. But for the best picture (or *any* picture, if you've got a 1040 or Mega ST) you need a high-resolution monochrome or RGB color monitor—one specifically designed to plug directly into your ST. If you've got more than one monitor—or even a composite monitor—there are also switch boxes and cables that can make using your monitors much simpler.

Atari SM124 ($199.95) Atari's high-resolution monochrome monitor shows you 640 by 400 pixels with with an absolutely flicker-free picture. It's perfect for business applications, including desktop publishing. *Atari Corporation, 1196 Borregas Avenue, Sunnyvale, CA 94088. (408) 745-2367*
CIRCLE 102 ON READER SERVICE CARD

Atari SC1224 ($399.95) The RGB color monitor from Atari lets you use low or medium-resolution software, and displays up to 512 colors and 640 by 200 pixels. For graphics, games and most other ST software, this is the one. *Atari Corporation, 1196 Borregas Avenue, Sunnyvale, CA 94088. (408) 745-2367*
CIRCLE 102 ON READER SERVICE CARD

Monitor Master ($49.95) You say you have both monochrome and color monitors for your ST, and dread switching them because of the cable-swapping involved? The answer: Monitor Master. This box allows simple push-button switching between the monitors, and if you've got a 520 FMST it lets you connect a composite monitor, too. *Practical Solutions, 1930 E. Grant Rd., Tucson, AZ 85719. (602) 884-9612*
CIRCLE 202 ON READER SERVICE CARD

ST Video Box ($49.95) It almost sounds too good to be true: The ST Video Box allows the use of either a color or monochrome monitor in any of the three resolutions available on the Atari ST. That means you can use low and medium-resolution programs on your monochrome monitor, or monochrome programs with your color monitor. *E. Arthur Brown Company, 3404 Pawnee Drive, Alexandria, MN 56308. (612) 762-8847*
CIRCLE 203 ON READER SERVICE CARD

ST Composite Cable ($19.95) If your ST has a built-in RF modulator (like the 520 STFM), the ST Composite Cable lets you connect a standard composite monitor—like the ones that connect to the Atari 800 and the Apple II. *E. Arthur Brown Company, 3404 Pawnee Drive, Alexandria, MN 56308. (612) 762-8847*
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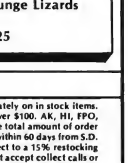

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*Please Read The Following Ordering Terms & Conditions Carefully Before Placing Your Order: Orders with cashiers check or money order shipped immediately on in stock items. Personal & Company checks, allow 3 weeks clearance. No C.O.D.'s! Shipping: Continental U.S.A.—Orders under $100 add $3; free shipping on orders over $100. AK, HI, FPO, APO—add $5 on all orders. Canada & Puerto Rico—add $10 on all orders. Sorry, no other International orders accepted! PA residents add 6% sales tax on the total amount of order including shipping charges! REASONS FOR CALLING CUSTOMER SERVICE—412-361-5291 (1) Status of order or back order (2) If any merchandise purchased within 60 days from S.D. of A. is defective, please call for a return authorization number. Defective merchandise will be replaced with the same merchandise only. Other returns subject to a 15% restocking charge. After 60 days please refer to the manufacturers warranty included with the merchandise & return directly to the manufacturer. Customer service will not accept collect calls or calls on S.D. OF A.'s 800+ order lines! Have you seen our on line catalog of 1000 software titles for Commodore, Atari, Apple, IBM and Amiga! It's on Compuserve's Electronic Mall—just type GO SDA and shopping for software will never be the same again! HOURS: Mon.-Fri. 9 AM-5:30 PM, Sat. 10 AM-4 PM Eastern Time. Because this ad had to be written 2-3 mos. before it was published, prices & availability are subject to change! New titles are arriving daily! Please call for more information! Holiday Hours: Nov. 2-Dec. 17; Mon.-Thurs. 9 AM-8 PM, Fri. 9 AM-5:30 PM, Sat. 10 AM-4 PM Eastern Time.

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HARDWARE

MEMORY UPGRADES

There are only three things certain in life: death, taxes, and the fact that you never have *quite* enough memory to run the newest, neatest ST programs. You can never have too much memory, and the ST lets you add up to four megabytes of RAM to your system. Some RAM upgrades need installation by a dealer or qualified hardware hacker; others require only a screwdriver and patience.

EZRAM 520 ($199.00) EZRAM is a solderless half-meg memory upgrade board that's quick and easy to install, bringing your 520 ST up to a full megabyte of RAM. START's technical staff has personally supervised four EZRAM 520 installations, all of which work perfectly. *Terrific Peripherals, 17 St. Mary's Court, Brookline, MA 02416. (617) 232-2317*
CIRCLE 204 ON READER SERVICE CARD

Solderless RAMboard ($199.95) You say one megabyte isn't enough—you need to upgrade your ST to four megabytes, but don't want to solder anything? E. Arthur Brown's Solderless RAMboard might be just what you need. Uses either 256K or one megabit RAM chips. *E. Arthur Brown Company, 3404 Pawnee Drive, Alexandria, MN 56308. (612) 762-8847*
CIRCLE 203 ON READER SERVICE CARD

RAM Upgrade Board ($149.95) A megabyte board that requires a minimum of soldering; do-it-yourself instructions are included. *Diverse Data Products, 1805 NE 164th Street, North Miami Beach, FL 33162. (305) 940-0458*
CIRCLE 206 ON READER SERVICE CARD

easieST RAM ($189.00; $20.00 to replace sockets). No soldering required—just plug this expansion board into two existing sockets. Instructions are included. *Aerco, P.O. Box 18093, Austin, TX 78760. (512) 451-5874*
CIRCLE 207 ON READER SERVICE CARD

CLOCKS

Will your ST give you the time of day? A computer clock lets GEM time-stamp files, and you'll never have to type in the date or time again.

SmartWatch ($59.95) Just remove the #1 ROM chip from your 520 ST, insert the SmartWatch, then plug your

Mary Lavery Pelaquin

Microcube

ROM back into the SmartWatch socket, and your ST has an accurate lithium-powered clock for the next ten years. *Michigan Software, 43345 Grand River, Novi, MI 48050. (313) 348-4477*
CIRCLE 208 ON READER SERVICE CARD

eSTe Clock ($49.95) A six-year, battery-backed clock that plugs into the ST's cartridge port. *Bigfoot Industries. 2708 E Lake Street, Minneapolis, MI 55406. (612) 722-9515*
CIRCLE 209 ON READER SERVICE CARD

Navarone Timekeeper ($49.95) Another battery-powered clock that plugs into the cartridge port—but there's another cartridge port built into the Timekeeper, so another cartridge can be added, too. *Navarone Industries, 1043 Sterling Rd. #201, Mountain View, CA 9404. (415) 964-2660*
CIRCLE 113 ON READER SERVICE CARD

Mind Mine ST Clock ($49.95) This clock installs inside your ST without soldering, and gives the standard battery-backed clock features. *Mind Mine Computer Center, 13256 N.E. 20th Street, Suite 4, Bellevue, WA 98005. (206) 641-6138*
CIRCLE 210 ON READER SERVICE CARD

ST Invisible Clock ($39.95) The ST Invisibe Clock installs on the underside of your Atari ST keyboard, and will automatically set the time on powerup. *E. Arthur Brown Company, 3404 Pawnee Drive, Alexandria, MN 56308. (612) 762-8847*
CIRCLE 203 ON READER SERVICE CARD

TRACK BALLS

ST Mouse Ball ($29.95) If your ST takes up all the space on your desk and your mouse is hunchbacked from moving around in too small a space, relief is in sight. Replace your ST mouse with this speedy trackball—it emulates the ST mouse completely and saves desk space, too. *E. Arthur Brown Company, 3404 Pawnee Drive, Alexandria, MN 56308. (612) 762-8847*
CIRCLE 203 ON READER SERVICE CARD

I/O BOARDS

Gateway ($149.95) Need a high-speed 23-channel programmable I/O device? Gateway allows computer control of process, lab, and other external equipment or procedures. *Terrific Peripherals, 17 St. Mary's Court, Brookline, MA 02416. (617) 232-2317*
CIRCLE 211 ON READER SERVICE CARD

Analog/Digital Converter ($115.00) Eight analog-to-digital input channels, two digital-to-analog output channels, and four digital control lines for your computer. This a/d converter was designed as a general-purpose interface for scientific instruments, but you can use it to sense or control almost anything in the world outside your ST. *SP Innovations, P.O. Box 33395, North Royalton, OH 44133. (216) 237-2382*
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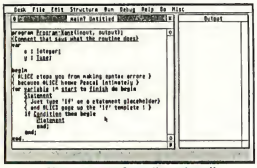
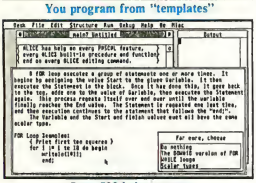
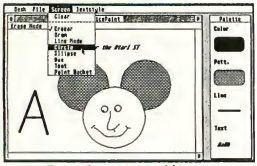
We were going to tell you all about



You program from "templates"

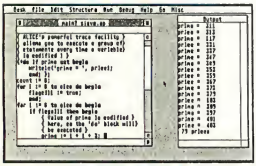


Over 700 help screens



Free paint program with source

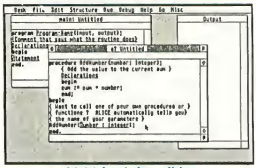
Your programs can do windows!



Powerful variable trace

ALICE

The Personal Pascal™



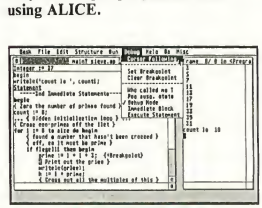
Multiple window editing

Programming Made Easy

If you're into programming, or if you *want* to be, you won't find a better system for your Atari ST than ALICE: The Personal Pascal. Already popular on the IBM-PC, ALICE now brings easy, interactive programming to the Atari ST.

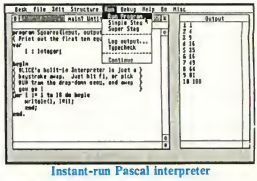
ALICE is, without question, the best way around to learn about computers and programming. Beginners can even order our ALICE based textbook for only $19.95 with ALICE.

Even if you're an expert, ALICE makes it easier to write, test and especially *debug* programs. ALICE's extensive Pascal improvements include a GEM interface even beginners can use and most of the extensions of Turbo Pascal. The surrounding examples just give a glimpse at how easy it is to put programs together using ALICE.

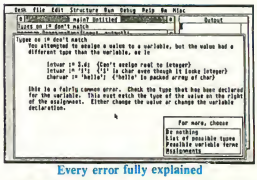


Breakpoints, Single Step

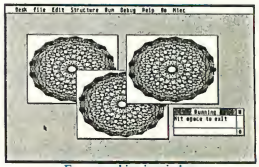
but we'd rather show you . . .



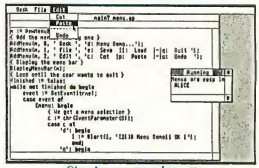
Instant-run Pascal interpreter



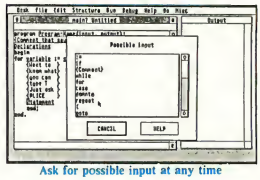
Every error fully explained



Easy graphics in windows



Simple menus and events



Ask for possible input at any time

"If I needed to learn Pascal all over again, or were going to teach a course in the language, I can't imagine using any program other than ALICE."

— Adam Green, **Infoworld**

"ALICE may be the most advanced programming environment currently available for the PC."

— Michael Covington, PC **World**

"If you enjoy programming languages, this comes pretty darn close to being as much fun as a video game."

— Gene Wilburn, **Computing Canada**

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CIRCLE 027 ON READER SERVICE CARD

HOME CONTROL

Echo Home Control Center ($99.95) This BSR/X-10 compatible controller lets your ST control lights, appliances and other electrical devices—all you need is a control module for each device you want to control. You can dim lights from 10 to 100 percent, and use 256 commands for 95 different devices. If you've already got a BSR/X10 controller, the software is available separately for $39.95. *MichTron, 576 South Telegraph, Pontiac, MI 48053. (313) 334-5700*

CIRCLE 101 ON READER SERVICE CARD ■

PRINTERS

By Gregg Pearlman and Frank Hayes

What to look for when shopping for a printer

If you own a computer, you won't get far without a printer. But what kind of printer should you buy for your ST? That depends largely on what you want to use the printer for.

DOTS, DAISIES AND LASERS

Dot-matrix printers print lots of little dots, much the way your computer screen does. The dots can form either letters and numbers, like a typewriter, or pictures. A dot-matrix printer is typically loud and comparatively fast. A dot-matrix printer with near-letter quality print will make better looking letters than one with ordinary (or draft quality) print. A dot-matrix printer may also be able to rearrange those dots into several type faces and sizes, including bold, pica, elite, condensed, expanded, underlined and italics. Lots of word-processing software has these capabilities nowadays, but it won't show up in your final versions unless your printer has these capabilities. Dot-matrix printers have some of the lowest prices around—but of course, a bargain-priced printer may be lacking some features you need.

Daisy wheel printers work like a typewriter. Each letter the printer can create is already in the printer as a fully formed character, on a circular "daisy wheel." To print a character, the printer just slaps that part of the daisy wheel against the ribbon. You can't usually create graphics with a daisy wheel printer, just the preformed characters on the wheel. However, the print is very high quality—it's indistinguishable from

Mary Lavery Pelaquin

Okimate 20

something typed on a typewriter. You can usually get different typefaces and sizes for a daisy wheel printer, but changing faces requires physically changing the daisy wheel.

Laser printers offer the best of both worlds. Like a dot-matrix printer, a laser ▸

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What you see is what you get!
Combine text and graphics easily and quickly from existing or newly created documents. Position entire paragraphs or individual words exactly where you want them. Create one, or multiple color separations ready for printing. Production time will never be the same--it will be much shorter!!
Just take a look at some of its features!

- GEM based
- Justifies right or left as you type
- Edit Multiple Columns on One Screen
- Search and Replace
- User Definable Page Size
- **Bold**, underline, ^{super} and $_{\text{subscript}}$
- *Italicize*, **shadow**, **outline**
- **Reverse Image**
- Backslant Characters
- Mirror Image / Invert Image
- Auto Headers/Footers, Page Numbers
- Easily Move Text
- Reads & Merges other files together
- Sets Tabs
- Macros
- Vertical & Horizontal Printing

PAGE LAYOUT

Whatever you require--cutting artwork from other programs, custom logos, unique borders, unusual mastheads, digitized photos--Publishing Partner is your solution. After all, it was specially designed for you--the home and/or office Atari ST user--by the pro's who realize that there's more to your computer than just typing letters.

- Vert. and Horz. rules--Exact Alignment
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- Layout Multiple Columns of text
- Change columns on finished page
- Display entire page, 50%, or 25%
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- Alternating Headers/Footers
- Mix Type, Fonts, and Sizes *anywhere*
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- Adjust line spacing (leading) by points
- Import other program's graphics
- Rotate Graphic Images
- Multiple Patterns, Shades and Colors
- Enlarge & Reduce Graphics/Exact fit
- Cut, Paste & Crop Graphics
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- Boxes, Circles, Arcs, Polygons, etc.
- Insert lines directly on the page
- Adjust Character Spacing
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Publishing Partner supports most dot matrix printers, including the Epson ™ Star ™ and Okidata ™ Printers. Also supported are any Postscript output devices such as the Apple Laserwriter ™ New print drivers are constantly being released, *so please call to make sure your printer is supported.*

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CIRCLE 068 ON READER SERVICE CARD

PRINTERS

printer creates its images out of dots—but it uses so many dots (typically 90,000 per square inch!) that the characters are as sharp as those from a daisy wheel printer. Laser printers are fast, and usually offer graphics and multiple typefaces and sizes. However, laser printers are also much more expensive than most other printers, with prices, running from about $1,500 to $5,000 or more.

What kind of printer should you get? That depends on what you'll use it for, and how much money you want to spend. If you'll just be printing out listings of your BASIC programs, a fast dot-matrix printer may be the best choice. If you'll be sending out business letters, a daisy wheel printer is probably worth the investment. And for desktop publishing, it's hard to beat a laser printer.

OTHER FEATURES

Some printers can only handle one sheet of paper at a time. That's great if you're only printing out a few pages at a time, and it means you can use preprinted forms or letterhead. On the other hand, it makes printing long documents a pain. Other printers can only handle continuous-form paper—which is great for long program listings, but may not look good for your business letters.

Fortunately, most printers come with both **friction feed** (for single sheets) and **tractor feed** (for continuous paper). But make sure that your printer will do what you want it to.

What about speed? Some printers are much faster than others—in general, daisy wheel printers are the slowest, and dot-matrix printers can be fastest, but it depends very much on the printer. Almost every printer will be rated for speed (for example, 60 characters per second), but be sure you see a demonstration of how fast the printer really is.

There are other things to think about, too. Do you need a printer that prints in color? How many different type styles or sizes are available? How about graphics?

Before you go out shopping for a printer, make a list of the features you need. It'll save all sorts of time—and help guarantee that you'll get all the features you need in your new printer. In fact, make *two* lists: the features you *need*, and the features you'd *like* (but don't really need).

SHOPPING FOR A PRINTER

Once you know the features you want, where can you buy an Atari ST-compatible printer? At any store that sells "IBM-compatible" printers, that's where—because any printer that plugs into the IBM PC will also work with the ST.

That makes it much easier to shop for an ST printer. Since almost every printer company makes printers for the IBM PC—and because those printers are very widely available—you have lots of printer choices. Just go into your local computer store and ask to see the printers for IBM computers.

An IBM printer has a couple specific characteristics. First, it has a **parallel printer port** (sometimes called a "Centronics port"). Don't be afraid to look at printers that aren't advertised as IBM-compatible—but make sure the printer has a parallel port.

An ST- (or IBM-) compatible printer that can print graphics is also likely to be **Epson-compatible**. That means that the printer's graphics commands match those on an Epson printer. The ST is designed to use Epson-compatible graphics, so if your printer will be printing out pictures, be sure it's Epson-compatible. Fortunately, many printers (and most software) are designed to use the Epson graphics commands—including, naturally enough, the printers made by Epson.

AND DON'T FORGET. . .

Once you've found a printer with the features you need and the price you can afford, you're still not done. Don't forget—your ST and printer will still need a **printer cable** to communicate. Fortunately, that's the same kind an IBM uses, too.

Don't forget that you'll need ribbons and paper. Buy your continuous-form printer paper in big boxes, not small ones—one box of 2,500 sheets is much less expensive than five 500-sheet boxes, and it's more convenient, too.

And don't forget accessories, either. A printer buffer, for example, can save you lots of time if you print many documents, because your ST can send information to your printer much faster than the printer can print it out. That means your ST must sit waiting until the printer catches up—and when your ST waits, you have to wait, too. A printer buffer is an electronic box that sits between the ST and the printer, collecting what the ST sends and feeding it to the printer. The buffer does the waiting so you don't have to.

There's one other thing that can make your life with a printer easier—that's a printer stand. It's a platform that lets you store your continuous-form paper right under the printer on your desk. That makes it less likely to jam, and you can always see how much paper you have left.

With a printer, cable, ribbons and paper (and maybe a buffer and printer stand, too), you can head for home. The printer will simply plug into your ST—and you'll be ready to print! ■

NEW • NEW • NEW • NEW • NEW • NE

FAST BASIC

USA VERSION ATARI ST ™

ATARI ST CARTRIDGE
A new and very fast BASIC interpreter ROM cartridge for the Atari ST computers. This 128K program has been written specifically for the Atari ST computers and so makes full use of (and gives the programmer full access to) all the special features of this machine.

COMPARISONS (Seconds)

BASIC	PCW BENCHMARK	TIME
IBM PC		16.9
ST BASIC		9.2
MAC BASIC		7.1
FAST BASIC		1.8

SPEED. With an average PCW benchmark speed of 1.8 seconds, this is the fastest BASIC available (faster than any other PCW have tested) and is faster than BASIC running on the new Compaq 80386 super micro. See table for other comparisons.

EDITOR. A full GEM based scrolling editor is included. Supports search and replace, cut, copy, paste and very fast scrolling speeds. Multiple programs may be held in memory at once, and each program can have its own editing window and associated icon.

PROGRAM SIZE. There is no limit to program size, other than available memory, and there is no speed degradation for running large programs as there is on many other interpreters. Strings may be up to 64K long, arrays may be over 64K.

ASSEMBLER. Similar in concept to some basics, this allows mixing of assembly language and BASIC together. The assembler can assemble at over 50,000 lines per minute making it one of the fastest available.

VARIABLES. FAST BASIC supports a full range of variables. 8, 16 and 32 bit integers for speed. Single and double precision floating point. Strings up to 64K and arrays of any size.

STRUCTURED. Programs are normally written without line numbers. This, in addition to named procedures and functions, ensures that FAST BASIC programs are easier to write and simpler to understand than any other programming language.

GEM. Direct and full access is given to the ST graphic such as circle, arc, pie, area filling etc. In addition there is a range of keywords for controlling the menus, icons and windows. It is possible to write programs that present the user with a perfectly standard GEM type interface. An example of a complete GEM program is supplied on the example disc.

— FAST BASIC INCLUDES:

- ROM Cartridge — it uses no RAM, leaving the maximum available for BASIC programs. It does not have to be loaded from disc and so offers instant start-up and can be permanently available.
- Example disc containing a range of example programs from simple loops to complete GEM examples.
- Manual. Comprehensive 400 page spiral bound manual detailing all commands.
- Quick reference card.
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Reviews

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"I don't know of a BASIC on any other machine which is so feature packed and yet still easy to use".
Atari User Nov 86

"Perhaps the most staggering advantage of Fast Basic over the official lingo concerns using the various facilities offered by GEM."
"It's a vast improvement on Atari BASIC"
Popular Computing Weekly

"If you need a good programming language for home, business, or educational use, buy FAST BASIC. If you would like to program GEM applications but do not feel competent enough to tackle C, buy FAST BASIC. If you need a macro assembler with a good editor and environment, buy FAST BASIC."
ST User magazine Oct 86

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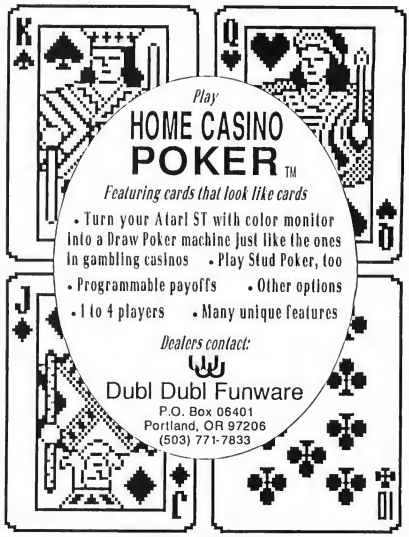

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ONLINE *continued from page 56*

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ONLINE IN PRINT

Online services are created, modified and upgraded so often that this year's "must read" book will be next year's fishwrap. With a few exceptions, you shouldn't waste money on books which are more than two years old. Exceptions include your modem's Owners Manual (most are packed with information which is rarely read. Manuals for Hayes modems are particularly instructive.)

Manuals which describe general search strategies are also valuable. Once mastered, these techniques can help you find what you need quickly, and they can be applied to any system.

How To Look It Up Online by Alfred Glossbrenner ($14.95, St. Martin's Press, New York, NY, 1987). This 486-page manual is the "must read" book for 1987-88. If you're trying to decide which online service is best for you, *How To Look It Up* will save you a good deal of money, time and aggravation. The book describes hundreds of online services, and includes a wealth of money-saving online hints, such as how to keep your DIALOG costs to a minimum and how to "sample" an online service before you subscribe. If you're buying a modem or an online subscription, pick up this book, too. It will pay for itself within several weeks.

Online Access Guide ($24.95 per year) is a bi-monthly guide to online services. A cross between a computer magazine and a TV-Guide-For-Modems, the Online Access Guide will introduce you to some of the newest and most powerful information systems. Whether you're writing a term paper or an important business report, this magazine will help you find the facts you need.

You won't find too many product reviews here, though. When you find one, you should read it with a healthy dose of cynicism; most of the magazine's advertisers are online services, and most magazines are not often willing to criticize the hand that feeds them.

You can access the Guide's BBS, The Electronic Pub, at (312) 922-9231 (300 or 1200 baud). *Online Access Publishing Group, Inc., 53 W. Jackson Blvd., Chicago, IL 60604* ■

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Continued on page 4

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BOOKS

By Matt Loveless
START Consulting Editor

The well-stocked ST library—What should be on your shelves

In any well-stocked ST library, you would find an array of books ranging from the elements of software design to programming in 68000 assembly language. But sifting through the available literature, spotting valuable additions to your library, can be frustrating, if not completely overwhelming. There really is no strategy. For example, the blind process of buying anything with the letters "ST" in the title doesn't really work: some of these books are a waste of money. Besides, some of the best books an ST user can own aren't written for a specific machine, but, rather, transcend machines.

I tried to include a wide sampling of books from a variety of carefully chosen topics, directly or indirectly related to the ST, while avoiding the canonical textbook material, such as the Donald Knuth series on programming. In the interest of brevity, I also ignored books on Pascal, FORTH (check out Cooper's **Oh! Pascal!** and Brodie's **Starting FORTH**) and other, more obscure, languages. This list is biased because my interests are unique. But each recommendation comes with a degree of sincerity few can rival: If it's on this list, it's on my bookshelf.

ST PROFESSIONAL DEVELOPMENT

The Concise Atari ST 68000 Programmer's Reference Guide. Peel, Katherine D., Robin Bradbeer, series editor. (1986) *England: Glentop Publisher Limited.* A terse but pithy reference guide oriented to the assembly language programmer. It represents a thorough distillation of the developer's documentation, providing valuable TOS, GEM, Line-A, and hardware information in one place. The information is organized in tables and every call is documented with sample values and calling conventions. It even provides the much-needed information on calling GEM from assembly language.

Programmer's Guide to GEM, $19.95 plus $2.00 shipping and handling. Balma, Philip and William Fitler. (1986) *SYBEX Computer Books, 2020 Challenger Dr., Alameda, CA 94501. (415) 523-8233.* By far the most professional book on GEM to arrive yet, it systematically presents the various aspects of the Graphics Environment Manager, carefully distinguishing between the various libraries and functions. It includes a thorough discussion of resource files and object manipulations, events, messages, and the Virtual Device Interface (VDI), plus a revised version of the public domain application DEMO.

Programmer's Guide to GEM

C

The C Programming Language, $26.67. Kernighan, Brian W. and Dennis M. Ritchie. (1978) *Prentice-Hall, Inc.,* ▶

Route 9W, Englewood Cliffs, NJ 07632. (201) 592-2000. Commonly referred to in C circles as simply "K & R," this book is the C bible; it is the text upon which all other C books are based. In short, it is the only truly authoritative

68000, 68010, 68020 Primer

definition of the language. And it should be: Dennis Ritchie started this whole thing back in the mid-60's when he built the language on a DEC PDP-11. No C library is complete without this book, and programmers will find it an invaluable reference. In all the years since it was first printed, no one, suprisingly, has delivered a worthy replacement.

The C Programming Guide, second edition, $19.95. Purdum, Jack J. (1985) *Que Corporation, 7999 Knue Road, Indianapolis, IN 46250. (317) 842-7162.* I credit Jack Purdum for making C a user-friendly language. C is complex. It has lots of punctuation, unobvious syntax constraints, and a free-form style every programmer uses differently. But Purdum makes C a palatable language. He introduces concepts with clear examples and encourages experimentation and problem solving. This is the best book for those just learning the language. Once you've mastered the concepts here, you're ready for Kernighan and Ritchie (see above).

The C Puzzle Book: Puzzles for the C Programming Language, $24.67. Feuer, Alan R. (1982) *Prentice-Hall, Inc., Route 9W, Englewood Cliffs, NJ 07632. (201) 592-2000.* The computer club I belonged to in high school offered a small prize each year for the student who could write the most confusing and convoluted ten-line BASIC program. The entries were judged on their trickiness, elegance, and final output. **The C Puzzle Book** offers a set of over 20 puzzles like the ones from my high school years, except these are written in C. Each puzzle is designed to illustrate a specific aspect of C, and anyone masochistic enough to solve every one will have a firm grasp of the language, its elements, and its syntax. A delightful companion volume to one of the other C books.

The C Programmer's Handbook, $19.95. Hogan, Thom. (1984) *Brady Communications, A Prentice-Hall Company, Route 9W, Englewood Cliffs, NJ 07632. (201) 592-2000.* Every author even thinking about making a reference guide or handbook should look at this book—this is how they should be made. Every conceivable aspect of the C language, down to common library routines, is defined. Everything gets its own page with the operator, keyword, or function set out in bold type at the top. In each description you'll find a declaration of purpose, usage rules, defaults, plus sample code and warnings.

68000 ASSEMBLY LANGUAGE

68000, 68010, 68020 Primer, $21.95. Kelly-Bottle, Stan and Bob

The Abacus ST Library

By Patrick Bass
START Technical Editor

When it came to documenting the Atari ST, Abacus got the jump on everyone. They released the first two of their ST reference books months before any other third-party developer, and I've had a love-hate relationship with them ever since. While the books are valuable, and packed with important material, be warned they contain many typographical errors and omissions. However, what they do contain far outweighs any trouble you may encounter from factual omissions or misspelled words. In the two years since they started publishing ST reference books, Abacus has introduced a complete library for the Atari ST. Let's take a look at them, in order of importance to the ST owner.

Atari ST Internals: the Authoritative Insider's Guide, 1985. ($19.95) You won't find a mention of GEM in this book, though it covers GEMDOS, Bios, Xbios and the hardware. Virtually every description of each O.S. call includes sample code, mostly in assembly language, but often in C. This book includes extensive documentation on the IKBD (*Intelligent Keyboard*), an introduction to the Line-A routines, and a commented disassembly of an early version of TOS.

Atari ST GEM Programmer's Reference, 1985. ($19.95) The only serious alternative to the GEM documentation in the Atari Developer's Kit, the GEM Programmer's Reference describes the basic differences between the AES (Application Environment Services) and the VDI (Virtual Device Interface) with clear examples and sample values. With a little study, you can soon be opening windows and reading mouse clicks. However, many of the GEM calls are left out (for example, the entire file selector box library) and the manual is by no means definitive, but I have found it handy on a number of occasions.

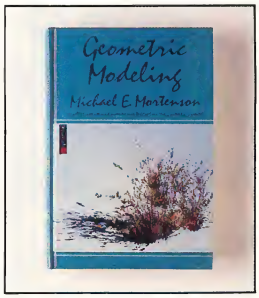
Atari ST Disk Drives, 1985. ($24.95) This edition includes everything you ever wanted to know about Atari disk drives, but were afraid to ask. All the different types of drives are covered, from RAMdisks to hard disks, with a sprinkling of floppies thrown in here and there. It includes complete details on disk structure, and even includes source code for disk handling routines.

ST Machine Language. 1985. ($19.95) If you plan on learning how to program in 68000 assembly language, this is one of the books you should pick up. Not for learning 68000, mind you, as there are many better books that show how to do that (see the Books article), but for implementing your 68000 code on the Atari ST. I enjoyed the fact that each one of the examples in this book were written and designed for use on the Atari ST, and each gives insight into how to graft your machine language routines to the ST to get your work (or play) done.

continued on page 94

Fowler. (1985) *Howard W. Sams & Co., Inc., 4300 West 62nd Street, Indianapolis, IN 46268. (317) 298-5400.* This offers what may be the clearest, funniest, and friendliest introduction to assembly language programming. Large, bold text and explicitly clear diagrams make reading easy. This is by far the best introduction to the 68000 microprocessor family and ideal for the person moving from a high level language like BASIC or Pascal. Although it does include a quick reference card which tears out of the book, it is not a reference manual. You will need one of the other, more sophisticated books to do any serious programming.

Programming the 68000, $22.95 plus $2.00 shipping and handling. Williams, Steve. (1985) *SYBEX Computer Books, Inc., 2020 Challenger Dr., Alameda, CA 94501. (415) 523-8233.* My favorite of the 68000 tomes, primarily because the entire instruction set, plus some common pseudo-ops, are laid out in the middle of the book in alphabetical order, making for extremely quick lookups and references. Every instruction is devoted about two pages of explanation. Each entry describes the instruction's purpose, offers a table of the allowed addressing modes, and includes actual demonstrations with before and after registers. There is enough of an introduction that one could conceivably learn 68000 assembly language solely from this book, but not very easily. Take special note: all the examples are written and demonstrated under CP/M 68K using AS68 and DDT-68K, tools which owners of the Atari Developer's Kit will find familiar. Also included is information on interfacing with C and a listing of an entire multitasking operating system. Does not include timing charts, nor does it discuss interrupts and exceptions in much depth. However, if you could only buy one book on 68000 assembly language, this is the one I'd recommend.



Geometric Modeling

M68000 16/32-Bit Microprocessor Programmer's Reference Manual, fourth edition, $24.95. Motorola. (1984) *Prentice-Hall, Inc., Route 9W, Englewood Cliffs, CA 07632. (201) 592-2000.* Straight from the manufacturer: the authoritative guide to 68000 assembly language. It begins with a technical introduction to the general architecture and graduates to an alphabetical list of all the instructions. Each instruction has a terse but pithy description, along with a list of the condition codes it affects and its binary format. Includes extensive timing charts and information on prefetching, pipelining, and exception processing - you just cannot find anywhere else.

68000 Assembly Language Programming, second edition, $19.95. Leventhal, Lance, Doug Hawkins, Gerry Kane and William Cramer. (1986) *Osborne/McGraw-Hill, 2600 Tenth Street, Berkeley, CA 94710. (415) 548-2805.* This book should be subtitled "A Book Just Like All Our Other Microprocessor

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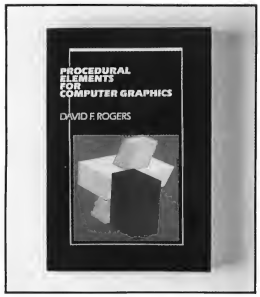
Books" because the Kane, Hawkins, Leventhal team churns out one of these massive volumes every time a new microprocessor becomes popular. It covers the full gamut of 68000 programming, stepping you through mounds of example programs. Its strong points are its variegated examples, its generic chapters on program design and debugging, and extensive coverage of input/output. It also has a nice bibliography.

The 68000: Principles and Programming, $16.95. Scanlon, Leo J. (1981) *Howard W. Sams & Co., Inc., 4300 West 62nd Street, Indianapolis, IN 46268. (317) 298-5400.* Leo J. Scanlon wrote one of the more popular 6502 books (**6502 Software Design**) and moved quickly into the next generation of microprocessors by putting out one of the first books on 68000 programming. It has an interesting historical introduction to the 68000 family of microprocessors, some nice tables, a few chapters on pinouts and interfacing, and some of the best tricks and tips I've seen. (For example, did you know that the quickest way to clear an address register is to subtract it from itself as in **sub.l a0,a0**?) Unfortunately, some of the information is antiquated or just plain incorrect. Nonetheless, I found the discussions very helpful and I constantly use many of the tricks I picked up from this book.

68000 Assembly Language Programming: A Structured Approach, $32.00. Benett, Michael J. (1987) *Prentice-Hall, Inc., Englewood Cliffs, NJ 07632. (201) 592-2000.* The 68000 chip was built with high-level languages in mind. Motorola reasoned that an environment which aided compilers would be for the better and so built in a number of complex operations such as powerful stack allocation instructions, multiplication and division, and a complex error trapping and interrupt structure. This book is the first to systematically implement the structures and practices, previously found only in high-level languages such as Pascal. It illustrates the implementation of procedures, parameter passing, information hiding, local variable allocation, and input/output. This book also includes one of the best discussions on the **LINK** and **UNLK** instructions and, ironically, an excellent chapter on interrupt service routines.

COMPUTER GRAPHICS AND ANIMATION

Procedural Elements for Computer Graphics, $27.95. Rogers, David F. (1985) *McGraw-Hill Book Company, 1221 Avenue of the Americas, New York, NY 10020. (212) 512-2000.* For computer graphics programmers, this book is



Procedural Elements for Computer Graphics

about as good as they get. It covers everything from seed fills to antialiasing to three-dimensional ray tracing and rendering. The procedures are extensively documented with flowcharts and diagrams, and the accompanying text is understandable, but at times brief. It ▶

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also contains a phenomenal bibiography at the end of each chapter. The bibliography is worth the purchase price alone! The book's only drawback is that it is oriented toward larger, number-crunching systems. This book comes well recommended from Tom Hudson.

Turtle Geometry

Applied Concepts in Microcomputer Graphics, $44.67. Artwick, Bruce A. (1984) *Prentice Hall, Inc, Route 9W, Englewood Cliffs, NJ 07632. (201) 592-2000.* In the areas where **Procedural Elements** falls short, this book specializes. The two make ideal companion volumes. The book focuses on microcomputer graphics and so it is written with the ideas of limited precision and processing time in mind. All concepts aren't covered with the depth of **Procedural Elements**, but they are dealt with clearly and systematically. Mr. Artwick's "Flight Simulator" expertise leads to the best chapter in the book, "High-Performance Graphics and Animation," where he covers subjects including flicker reduction, code optimization, and fixed-point multiplication. The book also includes a survey of the types of graphics systems available and can serve as a general introduction to computer graphics.

Principles of Interactive Computer Graphics, 2nd edition, $47.95. Newman, Willian M. and Robert F. Sproul. (1979) *McGraw-Hill Book Company, 1221 Avenue of the Americas, New York, NY 10020. (212) 512-2000.* The main strength of the book lies in its conceptual models of graphics workstations, input techniques, and user interfaces, many of which could be well implemented on the ST, but haven't been yet. Anybody thinking of designing a graphics application would do well to read it. Additionally, it also contains the basics of three-dimensional transformations, curves and surfaces, shading, and matrix manipulation.

Geometric Modeling, $46.25. Mortenson, Michael J. (1985) *John Wiley and Sons, Inc., One Wiley Drive, Somerset, NJ 08873. (201) 469-4400.* A rigorous mathematical textbook on three-dimensional geometric modeling—the foundation of computer graphics. Extensive coverage of curves, spatial representation, and surfaces. Includes some of the best discussion on splines, B-splines, and Bezier surfaces I've seen. The last third of the book is devoted to applying these procedures in the computer graphics environment. Note: This book requires a background in calculus, analytic geometry, vectors, and matrix math.

Computer Animation; Theory and Practice, $35.00. Magnenat-Thalmann, Nadia and Daniel Thalmann. Tokyo (1985) *Springer-Verlag USA, 175 5th Ave., New York, NY 10010. (212) 460-1500.* This book is **required** reading for anyone even remotely interested in computer animation. At 235 concise pages, it stands as the most complete collec-

ST Peeks and Pokes, 1985. ($16.95) Here's a book which includes most of the important memory locations inside the ST, and shows what happens when you go POKEing or PEEKing around in memory. That's right, folks—you can't tell what's where without a map, but this book is the map. It also covers different languages, including LOGO and ST BASIC.

ST Tricks and Tips, 1985. ($19.95) This volume is a collection of programs and information about the Atari ST. Basically, it reproduces source code for building everything from a RAMdisk to a printer spooler, all in a variety of languages. If you need example source code for getting started in the world of ST programming, this is an inexpensive way to go.

ST 3D Graphics, 1985. ($24.95) Well, you've been flying around in Flight Simulator II for weeks now, and you're getting interested in exactly how they programmed that three-dimensional world into your ST. This volume contains not only the methods used for three-dimensional graphics, but example source code you can just plug right inside your own programs. What more could you need?

ST Graphics And Sound, 1985. ($19.95) Yes, we all know the Atari ST can produce stunning pictures and sound. Want to know how? This book covers everything you need to know, including exactly how images are stored in memory, and gives example source code for saving pictures to disk or retrieving them. Accessing the sound chip is covered also, in a section telling how to make the ST beep in terror. Have fun!

Intro to MIDI Programming, 1985. ($19.95) Programming is nice, but *you* want to hook a synthesizer up to your ST and turn yourself into the next Vangelis or Jean-Michel Jarre. But how do you tell your synthesizer to communicate with the ST? In Intro to MIDI Programming, you'll find out how to communicate with the Casio CZ-101 synthesizer in its own language, and make it wail sweet violins all over your code. Includes C source code for you to study.

Presenting the Atari ST, **Atari ST for Beginners**, **ST BASIC Training Guide**, 1985. ($16.95 each) Here are three completely low-level books for the absolute beginner ST user. All cover the system architecture, GEM and various aspects of the Atari ST operating system (TOS). If you're a complete neophyte user, then these books are for you.

ST LOGO Users Guide, 1985. ($19.95) This book should be perfect for those of you who are still using the LOGO Atari gave away with the early Atari STs. This book contains everything you ever wanted to know about LOGO. You'll have that turtle breakdancing across your screen in no time.

ST BASIC to C, 1985. ($19.95) If you've been using BASIC for a while, and think you may want to move up to a somewhat higher-level language on the Atari ST, like C, then you should get this book. There aren't that many differences between different languages, and this book makes the transition easier. But note: you'll need C, in addition to BASIC, in order to use this book.

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tion of information on computer animation. Beginning with an introduction to conventional animation and terminology, it then leads into a historical survey of computer animation systems, followed by techniques, algorithms, and system descriptions. It covers topics ranging from modeled animation and ray-tracing to actor language systems. The last chapter is perhaps the most valuable: a case study of the authors' prize-winning computer animated film **Dream Flight**, including storyboards, algorithms, and flowcharts. A surprising omission for U.S. readers, however, will be the work done by Pixar and Evans and Sutherland. Nonetheless, this book is impressive.

MISCELLANEOUS

Turtle Geometry; The Computer as a Medium for Exploring Mathematics, $30.00 hardback; $14.95 paperback. Abelson, Harold. (1980) *The MIT Press, 55 Hayward St., Cambridge MA. 02142. (617) 253-5251.* As the subtitle of the book indicates, **Turtle Geometry** involves as much mathematics as it does turtle graphics. It begins by explaining the basics of coordinate geometry and forages into recursion, topology, general relativity, and even Einsteinian curved space-time, all the while using our friendly turtle as an example. It takes a hands-on approach—as the preface says, "... much of almost any mathematics curriculum is devoted to practicing rote algorithms and rehashing ancient theorems. It is the rare student who gets the chance to approach mathematics by doing it rather than only learning about it." Anybody armed with a healthy curiosity and a copy of ST Logo or access to turtle graphics can begin exploring mathematical concepts that may otherwise be presented only in advanced college courses.

Godel, Escher, Bach: An Eternal Golden Braid; a metaphorical fugue on minds and machines in the spirit of Lewis Carrol, $13.95. Hofstadter, Douglas R. (1979) *Vintage Books, Random House, Inc., 201 East 50th Street, New York, NY 10022. (212) 751-2600.* Pulitzer Prize-winning mathematician, computer scientist, and one-time Scientific American columnist Douglas Hotstadter begins in the essence of Bach's **Musical Offering** and leads us through his vast range of knowledge, where we mingle with formal systems, artificial intelligence, semantics, neurophysiology, psychology, and metaphysics. Mr. Hofstadter's *tour de force* encompasses a grand philosophy of men and machines, systematically building a foundation for such puzzling topics as Kurt Godel's incompleteness theorem and the amazing art of M. C. Escher. A long read, but a recommended one.

The Recursive Universe: Cosmic Complexity and the Limits of Scientific Knowledge, $7.95. Poundstone, William. (1985) *Contemporary Books, Inc., 180 North Michigan Ave., Chicago, Il 60601. (312) 782-9181.* **The Recursive Universe** deals with the venerable computer game of LIFE. Essentially, LIFE is a game played on a giant piece of computer graph paper. Certain cells are on and others off and these cells interact in an ingeniously simple manner, some dying off, some regenerating, in a kaleidoscopic splendor that hints of the primordial soup and recombinant DNA. Poundstone alternates chapters, discussing the game of LIFE and its various implementations, and then discussing the philosophical implications, grounding out in simple thermodynamics and self-replication. This book is both approachable and intellectually challenging. ■

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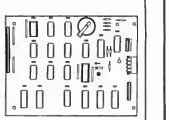

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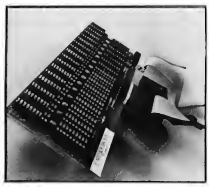

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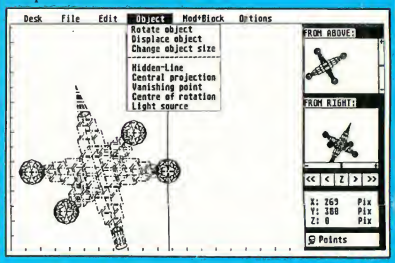

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We're a resource. The Atari Resource: three magazines, on-line services, and a catalog of software. But not just a catalog—The Catalog. And you're holding it in your hands. ***Instant Gratification!***

The fastest way to get Antic Software is at your local Atari dealer. But if you can't find it there, by all means, let them know what they're missing. Then rush on home and give us a call. One free phone call, and before you know it your new Antic program is in your mailbox. Open the box, pop it in your machine, and go to town.

We've worked overtime to make Antic software the best you can buy for your Atari. Why? Because we live and breathe the Atari line of computers. We were there at the beginning, are there now, and will always be there—supporting the Atari user. We design our software *exclusively* for the Atari machines and know Atari hardware inside and out.

*Gary Yost and Jack Powell (the product development team) are 'brainstorming' specs for a new CYBER add-on. Gary and Jack have been Atari users since 1981, and have been with Antic since 1983. Gary may be found, almost nightly, on CompuServe's SIG*Atari, talking with Atari users and programmers, fielding questions, and uploading demos—keeping his finger on the pulse of the Atari community. Jack bases his experience on years with the Antic Editorial department. Instrumental in the development of* ST Resource *and* STart, The ST Quarterly, *Jack has kept in touch with readers' problems and needs—particularly in the area of written technical information.*

Because we've been here the longest, we know the most people—and they know us. We've got the best Atari software because we've got the best Atari programmers. Simple. Tom Hudson's been writing programs for Atari computers for as long as we've been in business. He's not just a programmer, he's a close friend.

And, yes, we've got an unfair advantage: *Antic* magazine and *STart, The ST Quarterly*. We're not only a resource to the Antic community. The Antic community is a resource to us! In 1985 we sponsored a $2,000 DEGAS art contest. This was how we met Darrel Anderson.

Darrel Anderson is far more than a contest winner. He's a professional artist who knows the graphics possibilities of the ST computer. And professional means he's flexible and he's fast with results. And the faster he is, the sooner you get your program. Want clip art for CAD-3D? Darrel creates FUTURE DESIGN DISK, the most complex CAD-3D objects we've seen on this system. Want to show what CYBER STUDIO can really do? Darrel blows everyone away with CYBERSCAPE. What if you've got a 512-color paint program you want to show off? Just turn the page and check out the SPECTRUM 512 art.

And, when the beta testing is finally complete, the documentation typeset, and the package design finished, it's time to get the final product to *you*.

Have you noticed our new 800 number? That's right, we've moved our 800 operators in house.

Now, you when you call and ask for a "Bifurcated Cyber Diphlex," your operator will know what you're talking about, because an Antic staff member is not just an answering service. (And remember, our toll-free number is for orders only.)

Once your software is shipped, our job has just begun. Antic has the best follow-up and customer support of anyone in the Atari software business. Our customer service people are ready for your calls. Our technical resources are second-to-none. (If Scot Tumlin can't answer your technical question, he can always turn to the Editorial programmers: Patrick Boss, Charlie Jackson, or Frank Hayes.)

Once your order is taken, it's processed as quickly as possible. Fidez Bituin handles the paperwork because she is accurate. She also has a background in accounting, so she knows what's being entered in that computer. When Fidez processes your order, you get the right program—and you get it now!

We used to have an outside company package and ship our products. We'll never do that again! They couldn't handle it, and they really didn't care. We can and we do. All our packaging and shipping is now done in-house, supervised by Frank Ciminesi. Frank's got a thing about secure packaging, and he's got a thing about quick turnover. He can't stand having orders cluttering up his mailroom. Frank will have your shipment snugly packed, in the truck, and on its way.

And Antic's customer service is not limited to telephone support or correspondence.

We're the most active Atari company on CompuServe, and have our own online service, ANTIC ONLINE (type GO ANTIC).

Through CompuServe, you can address anyone in Antic plus many of the actual authors of Antic Software (including Tom Hudson and Alan Page).

One of our customers recently had a problem with one of our products (okay, okay, we're not perfect), and left us a message on CompuServe. We contacted the author, who solved the problem and mailed a fix to the owner within a week. That's not only goodwill, it's good business.

Antic software support includes product support. When you buy an Antic product, you join a big family. Your program is not an orphan. It has a whole group of friends in The Catalog—compatible products that expand and enhance its power. And you can be sure that more are on the way.

Antic proudly supports adult vocational programs.

arc
A United Way Member Agency

Who needs an AMIGA?

SPECTRUM 512™

The Omni-color Paint Program

by Trio Engineering

"Ellen" by Darrel Anderson

SPECTRUM 512 is the paint program you've wanted since you bought your ST. It gives you 512 colors to be creative with. *All at the same time.*

When we first saw this program, we couldn't believe our eyes. But there it was — a rock-solid, low-resolution screen displaying rich colors composed of a chock-full palette of 512 colors. No flicker, no faking, no fooling. We couldn't stop playing with it.

512 colors means a lot more than just bright rainbows. Perceived resolution is increased *threefold.* Anti-aliasing replaces staircase zags — even in your old pictures. And the anti-aliased line mode creates an automatic, no-zag, french curve — smooth as a baby's bottom. Subtle shading and highlighting effects become possible for the first time, automatically.

48 Colors per Scan Line

The standard way to put more than 16 colors on the Atari ST screen is through "raster interrupts" — color registers are changed with each scan line. But this gives you only 16 colors each scan line, and this limited color arrangement causes "banding," where horizontal bands of similar colors streak across your picture. Pretty restrictive.

SPECTRUM 512 gives you *48 colors per scan line!* And you don't have to stop to think about it because SPECTRUM 512 does it for you. Just pick any one of 512 colors and draw. If your chosen color exceeds the 48-color limit on any scan line, SPECTRUM 512 automatically adjusts the entire scan line of colors for a "best fit" — on the fly! The end result is, for all intents and purposes, you can place 512 colors anywhere on the screen!

How did they do it? The SPECTRUM 512 engineers hooked an oscilloscope to the Atari ST MMU chip and reverse-engineered its timers. Using this information, they designed a brilliant method to manipulate those timers and stuff more colors into extra simulated bit planes, before the signal even gets to the video shifter chip!

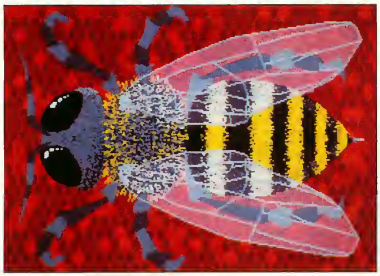
The SPECTRUM 512 work screen, including the user-defined palette

We sent SPECTRUM 512 to professional artist Darrel Anderson. As you can see from these pages, he went wild. Imagine what SPECTRUM 512 can add to *your* CAD-3D, DEGAS or NeoChrome pictures! No question, if you use a color monitor and have any interest in graphics, you will love SPECTRUM 512.

Look at all these tools!

Drawing:

- Freehand "pen" drawing
- "Rubber line" and "French curve" mode (no jaggies)
- Polygon (no jaggies)
- Circle/ellipse (no jaggies)
- Fill—patterned or solid
- Fill New—fill over any existing patterns or colors!
- Patterns—20 predefined, 20 user-defined
- Brush
  - 38 brush shapes, solid or patterned
  - User definable brushes
  - Auto-align patterns, or pixel offset for overlap



The DEGAS Bumblebee, before

and after SPECTRUM 512

Works with all ST paint programs, plus CAD-3D 1.0 (ST0214) and CYBER STUDIO (ST0236).

New!

"Laserbee" by Darrel Anderson

- Airbrush—four sizes, nine flow speeds
- Undo buffer erases mistakes

Anti-aliasing:
- Zag-Out—Anti-aliasing DEGAS/Neo pics for smooth edges
  - Full screen
  - Local box
  - Brush
- Blur—Adjustable neighboring pixel averaging
  - Full screen
  - Local box
  - Brush
- No Zag—Anti-aliasing and auto-curve for:
  - Lines
  - Polygons
  - Circles

Colors:
- Select colors from:
  - 512-color system palette
  - 1 to 192-color user-defined palette, or
  - Any color on screen
- Save and load custom palettes
- Fixed or floating color menus for auto-color adjustment
- Change last painted color to any of 512
- Auto-create smooth color ranges between any two or more colors
- Color cycle paint flow through any range of colors:
  - Brush (solid or patterned)
  - Airbrush
- Fantastic color edit mode includes:
  - Search and replace one color with another
  - Search and replace several colors with several others
  - Add or subtract red, green, or blue values of one or more colors
  - Increase or decrease luminence of one or more colors
  - Perform any of the above functions globally (full screen), or locally with cursor control
- Magnify window for all functions
- 12-screen (1-meg) scrollable cut & paste buffer
- 4-way flip, and scale
- Programmable slide-show program to display your SPECTRUM 512 art
- Detailed manual includes advanced screen photography techniques
- Load IFF Amiga pics

Public Domain SPECTRUM 512 pics!
The pictures on this page, plus *many more*, by Darrel Anderson and Richard Berry, are available for only $12.00 on the SPECTRUM 512 SLIDE SHOW DISK (PD9100). See our ST PUBLIC DOMAIN LIBRARY on page 20.

SPECTRUM 512
ST0249 $69.95
REQUIRES: Color monitor. 520ST's built before 12/85 may require $30 MMU chip upgrade from auth. serv. center.
DEGAS™ Electronic Arts
NeoChrome™ Atari Corp.

Monday-Friday MasterCard, VISA Only
All 50 states 6AM-6PM PACIFIC TIME

"Antic's CAD-3D is one of the best programs I've seen for the Atari or anything else."
— Jerry Pournelle **Byte Magazine**

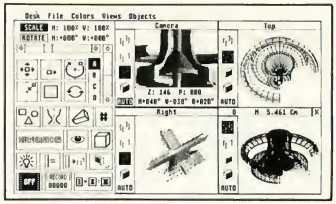
THE CYBER STUDIO™
Featuring CAD-3D 2.0

Works with all ST paint programs, and the CYBER family.

Tom Hudson's STEREO CAD-3D 2.0™
Hidden within your Atari ST is a professional 3D workstation. A 3D design system that is intuitive — yet powerful enough for professional artists, advertising agencies, or design firms.

Design and *walk through* your dream house with CAD-3D 2.0. Programmers use our system for dimensional tasks like flight-simulator scenic design; artists create accurate perspective foundations for their DEGAS or NeoChrome pictures; engineers find CAD-3D 2.0 the perfect sketchpad for conceptual design; and VCR owners use the CYBER STUDIO to create 3D titles and cartoons for home videos.

We made version 2.0 an open-architecture system, so that any programmer can easily write custom applications for CAD-3D 2.0 that run as desk accessories: motion control choreography (CYBER CONTROL-ST0250), advanced rendering/ray tracing, finite element analysis, texture mapping, custom modeling tools . . . There's no limit. CAD-3D 2.0 will *never* become obsolete.



Let your creativity soar with all these new features:
- Icon control panel — fast, intuitive interface
- All new, DEGAS-style color design system permits custom-color lines, edges and backgrounds, plus multi-colored objects
- *Real-time* display mode for instant response (uses 3D math developed by Jez San for Starglider)
- Supports (optional) STEREOTEK 3D glasses (TH9020) for 3D viewing
- Dimensioning (feet/inches or meters/centimeters)
- Graphic lighting control — drag lights anywhere
- GDOS output supports laser and dot matrix printers
- Compatible with Generic CADD 2.0 from Generic Software
- User-selectable pivot points for articulated rotations
- Enhanced Spin, Extrude, and Join tools
- Load DEGAS pics into CAD-3D background

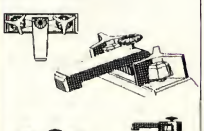
Mark Kimball's CYBERMATE™
The CAD-3D Animation/Editing language
CYBERMATE is a "post-production" animation editing language that gives you control over:
- Sequence looping, cuts, fades & dissolves
- Color cycling animation
- Sound effects (created with the G.I.S.T. editor, on pg. 19)
- Title generation and text display

CYBERMATE features editing power plus full programmability. At your fingertips is the most efficient real-time playback system for 3D graphics on any microcomputer. And it's fast! Up to 60 frames-per-second.

CYBERMATE transforms your one-meg ST into a TEN-MEGABYTE frame buffer. And because it's a real programming language, CYBERMATE can adapt to new technologies, like the new digital video tape recorders from Japan, RGB-to-NTSC converters, MIDI, and SMPTE time code.

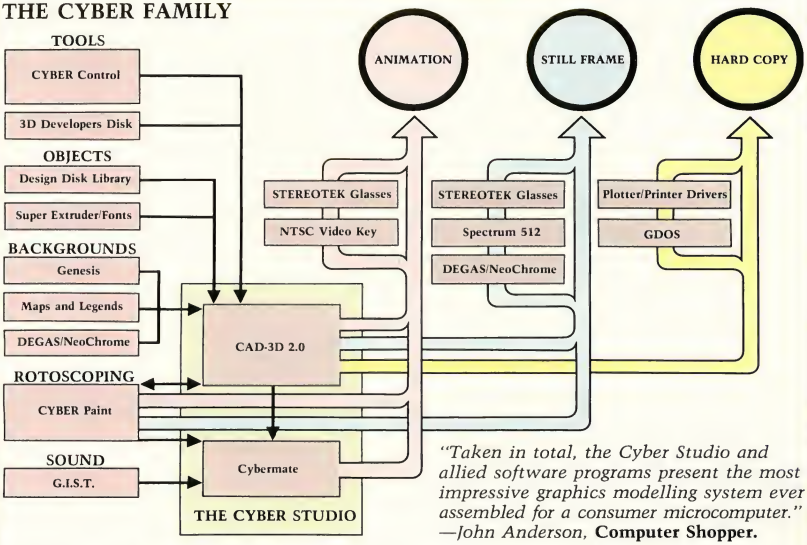
THE CYBER STUDIO
STEREO CAD-3D 2.0 plus CYBERMATE
(2-disk set)
ST0236 $89.95
REQUIRES: one-megabyte RAM
Upgrade from CAD-3D 1.0 for only $60 (plus original disk and $5 shipping)
Starglider™ Firebird Software
DEGAS™ Batteries Included
Generic CADD 2.0™ Generic Software

The Original . . .
Tom Hudson's CAD-3D™ 1.0
520ST-compatible



"A remarkably powerful modeling system."
Computer Graphics World
If you own a 520ST and are interested in computer graphics, many of the features of CAD-3D 2.0 are included in this original version—even a basic animation system.
CAD-3D 1.0
ST0214 ~~$49.95~~
REQUIRES: 512K RAM
Now! $29.95

THE CYBER FAMILY



"Taken in total, the Cyber Studio and allied software programs present the most impressive graphics modelling system ever assembled for a consumer microcomputer."
—John Anderson, **Computer Shopper.**

So many products are being added to the ever-expanding CYBER FAMILY, we drew a flow chart to help you understand how they work together.

Here's a typical use of the CYBER FAMILY, which you can follow using the flow chart: Using CYBER CONTROL, you write a program to control several unique cameras in CAD-3D 2.0 for an animation sequence which uses skeletons from the HUMAN DESIGN DISK, being assembled in front of a molecular background provided by GENESIS. Your completed animation may be immediately viewed from CAD-3D 2.0 without even firing up CYBERMATE. And then, you may want to touch up some of the frames with CYBER PAINT — perhaps add some tweened Aegis Animator sequences. This time you check out your new animation directly from CYBER PAINT. If you want to add some wild G.I.S.T. sound effects, and eye-catching color cycling, the editing program, CYBERMATE, comes into play. Finally, you send the resulting, real-time animation straight out your 1-meg 520ST into your VCR, splicing it into your 45 minute budget presentation to, say, the National Science Foundation. And you did it for less than a tenth the cost of any other 3D animation system.

Monday-Friday MasterCard, VISA Only
All 50 states 6AM-6PM PACIFIC TIME

Online CYBER CONNECTION

To back up our growing CYBER family of products, we've begun an online feedback service on CompuServe. It's called the CYBER CONNECTION, and includes the latest CYBER STUDIO animation demos, upgrades, public domain premieres, and more. Much of the new material posted here will not be available anyplace else. Send messages directly to the authors like Tom Hudson and Mark Kimball. And check out their replies as they respond to other users. CYBER CONNECTION includes hints, tips, and suggestions from the best.

The CYBER CONNECTION is easy to find: At the CompuServe prompt, type *GO ANTIC*. When the first menu appears, select *Online Cyber Connection*, and you're in!

Composite Video Cables
For those of you who own a 1-meg 520ST with composite outputs, Practical Solutions sells a special monitor cable ($15) that has composite video jacks which avoid the noisy (and VCR-incompatible) RF signal output.

NOTE: Those with 1040STs will soon be able to use The Video Key, an RGB-to-composite converter with a much higher quality NTSC signal, available from Practical Solutions (602-884-9612).

CYBER CONTROL™

New!

The CAD-3D Motion Control Language

by Tom Hudson

STEREOTEK OPTIONAL

Works with CYBER STUDIO

Tom's latest brainstorm: CYBER CONTROL, The CAD-3D Motion Control Language—a desk accessory programming language, with built-in GEM text editor. When you want to simulate a real event with articulated life-like animation, plug in to CYBER CONTROL.

CYBER CONTROL is an animation scripting language that locks in to CAD 3-D 2.0, controls all of its functions, and magnifies its already powerful capabilities. Whether you're a hobbyist or a scientist, you can create animated 3D models in a single afternoon. Simulate particle physics; 3D animation for entertainment or education; 3D financial analysis; animated, fully dimensional math models; event reconstruction of P.I. litigation; human factors engineering. . . you name it!

Now, you can write code to control any feature of CAD-3D 2.0—plus powerful new features not in CAD-3D 2.0! With the new *hierarchical control*, you can create graceful birds with wings of many pieces, soaring in beautiful harmony. Or a complex clockwork mechanism of linked parts, moving in offbeat syncopation. . . . But we'll let Tom describe his newest baby:

As CAD-3D 2.0 grew into a powerful animation system, I realized that truly complex animations would require a scripting language for proper control. I purposely designed CYBER CONTROL as a BASIC-like language so anyone could pick it up quickly.

When activated in CAD-3D 2.0, CYBER CONTROL takes over full control of all functions, creating and manipulating objects and cameras (yes, three different ones). Its primary use is as a cinematic motion-control script language, but its flexible nature makes it an ideal "front-end" for CAD-3D so you can write your own BASIC-like programs that use CAD-3D as a "graphic engine!"

Language features include:

- FOR/NEXT for full Loop control; Conditional IF/THEN; GOSUB/RETURN.
- Labels instead of line numbers
- Numeric expression handling; *floating point*; logical AND and OR; parenthesized expressions; function library including sine, cosine, tangent, square root, and more!
- Up to 128 user-defined, alphanumeric variables, significant to 8 characters! Hardcopy Print statement for debugging.

Other features include:

- Two new cameras! Now, move your camera *anywhere* in the CAD-3D universe — fly *through* your scenes!
- Real-time animation preview mode!
- Hierarchical Connectivity. Attach objects to each other for fluid, connected movement — walking skeletons, or hinged mechanisms.
- Smooth 3D splines:
  - Move cameras along realistic flight paths
  - Apply natural movement to articulated models
  - Build new types of models (coils, fractals, etc.)
- Layer foreground and background images for cel animation.

I hope you enjoy CYBER CONTROL. Your ST can automatically *create animations that would take you* days *to complete — in a matter of hours. Start the program and walk away, as your computer does all the work!*

— Tom Hudson

CYBER CONTROL
ST0250 $59.95
REQUIRES: CYBER STUDIO
Recommended: CAD-3D version 2.0 2
CAD-3D 2.02 is available **only** in The Catalog's CYBER STUDIO package (ST0236), which also includes CYBERMATE.

HOLOGRAM CONTEST!

You can win a CAD-3D hologram signed by Tom Hudson! What's that? A CAD-3D hologram?

That's right! Using a revolutionary new production process, Advanced Dimensional Displays, Inc. has developed reflective, laser disk holograms that *float* holographic images above the disk! (Like an inanimate version of: "Help me Obi-wan Kenobi. . . .") And this incredible new process uses CAD-3D images as objects!

The three best monoscopic *and* stereoscopic animations (six total), designed using CYBER CONTROL, will earn their respective authors a five-inch hologram, generated by CAD-3D and autographed by Tom Hudson. Contest deadline is midnight, January 31, 1988.

Note: This contest is only available to registered CYBER CONTROL owners. Limited to one entry per owner, and you must include the contest entry blank enclosed in the CYBER CONTROL package.

Monday-Friday MasterCard, VISA Only
All 50 states 6AM-6PM PACIFIC TIME

CYBER PAINT™
Pro Animation Studio
by Jim Kent

Sometimes 3D animation just isn't enough. The classic Disney animations were painted, cel by cel, in a flowing, two-dimensional brilliance of color. Some of the best animation is still created this way. Thus, CYBER PAINT.

CYBER PAINT is a frame-by-frame animation/paint program with a lot of extras. You can use it by itself to create 2D animated fantasies, or...

...load in a three-dimensional CYBER STUDIO animation and add classic animation flourishes.

Say you've just created a CYBER STUDIO animation of a rocket launch, and it looks great — a realistically shaded 3D space vehicle lifting off. But now you want to add flickering exhaust flames, smoke, and some alien trees waving in the breeze. CYBER PAINT lets you do it fast. And it's fun!

Designed by Jim Kent, author of Aegis Animator, CYBER PAINT lets you touch up individual frames, or add smooth, tweening effects — automatically — to any range of frames. And, with CYBER PAINT, you can *merge your Aegis Animator animations* directly into the 3D CYBER Universe!

And, since CYBER STUDIO isn't required, you can use CYBER PAINT as a stand-alone 2D animation/paint system. The possibilities are limitless.

3 frames of CYBER STUDIO animation before CYBER PAINT

The same 3 frames after a CYBER PAINT touch-up

Works with all ST paint programs, plus CYBER STUDIO (ST0236), and AEGIS ANIMATOR.

New!

Just a few of CYBER PAINT'S many features:

- Automatic mode for cel registration
- ADO-style special efx
- Fly animations on multiple axes or paths
- Real-time "scratch video"
- Cut & Paste, Stretch, Flip & Rotate
- *Overlay* or *underlay* entire animation files, portions, or single pics.
- Multiple brushes + Airbrush & Stipple
- Pen, Line, Polygon, Circle, and Box
- Tweening operations on selected areas
- Time menu for global or local tweening
- Flood fill and Color Separation
- Real-time Magnify, active at any time
- Color Cycle, Tint, Inverse, Change
- Intuitive mouse or keyboard control

CYBER PAINT
ST0251 $69.95
REQUIRES: One-megabyte RAM & color monitor
Aegis Animator™ Aegis Development
DEGAS™ Electronic Arts
NeoChrome™ Atari Corp.

CYBERSCAPE™
A 3-D "feature film" on disk
by Darrel Anderson

Skim the fantastic, 3-dimensional terrain of the mind! Metamorphosing metallatons and transforming tubular time slots! This full-color, animated feature was created by *professional*

artist Darrel Anderson, to show what can be done with CYBER STUDIO (ST0236). An incredible **tour de force** of computer graphic power, this demo is a guaranteed auto-lobotomy of the very first order!

CYBERSCAPE DS
(1 double-sided disk)
SB0104 $10.00
REQUIRES: Double-sided drive and 1 megabyte RAM

FUTURE DESIGN DISK™

by Darrel Anderson

Get a fast start on your three-dimensional explorations with the CAD-3D FUTURE DESIGN DISK. Everything you need to create **spacecraft, stations, bases, vehicles, robots,** and **androids**. Model your future then populate it with androids and CAD-People. Bring it to life with CYBERMATE; detail it with any popular paint program. Includes:

- Blueprints
- Complete models
- Component parts
- Construction tips

FUTURE DESIGN DISK
ST0232 $29.95
REQUIRES: CAD-3D 1.0, or CYBER STUDIO

HUMAN DESIGN DISK™

by Richard Berry

Populate the CAD-3D Universe. Bring to life your CAD-3D creations with the CAD-3D HUMAN DESIGN DISK. Complete modular male and female prototypes, in skeletal anatomy forms, are included. Complex

head and hand details add realism to your figures. Modify your figures to create the infinite variety of the human form, pose your figures, detail the images with any popular paint program, or bring them to life with the CYBERMATE Animation System. Includes:

- Blueprints
- Tips on the dynamics of human anatomy.

HUMAN DESIGN DISK
ST0242 $29.95
REQUIRES: CAD-3D 1.0, or CYBER STUDIO

ARCHITECTURAL DESIGN DISK™

by Darrel Anderson

Create CAD-3D renderings of your Dream House or build an entire CAD-3D City from the ground up. Component parts including: Doors, Windows, Arches, Roofs, Walls, Stairways, and a wide variety of architectural accoutrements. Create your own CAD structures and populate them with HUMAN DESIGN figures. Build "sets" for your CYBERMATE animated movies.

NOTE: The ARCHITECTURAL DESIGN DISK can be used to visualize and render real world architecture. It is not intended for use as an architectural engineering tool. Includes:

- Blueprints
- Complete models
- Design tips

ARCHITECTURAL DESIGN DISK
ST0243 $29.95
REQUIRES: CAD-3D 1.0, or CYBER STUDIO

Now you can write the next hit 3D program!

3D DEVELOPER'S DISK

For CYBER STUDIO

by Tom Hudson
Works with most popular ST C's plus machine language

While Tom was rewriting CAD-3D, he quickly realized that it was impossible to add *everything* and still release a product in this century. Plus, who wanted CAD software that required a 4 megabyte machine? So he opened up the system—by providing a programmer's 'pipeline' through desk accessories.

Opportunity Knocks!
The 3D DEVELOPERS DISK clearly explains to programmers and developers how to access the pipeline. Included on the disk are full-featured source and object code examples, plus detailed instructions by Tom Hudson showing you how to hook into CYBER STUDIO. Create your own 3D applications—with no knowledge of 3D math. There's no licensing fee required.

3D DEVELOPER'S DISK
ST0244 $29.95
REQUIRES: CYBER STUDIO

3D-FONT PACKAGE™

by Tom Hudson
Works with CAD-3D 1.0 and CYBER STUDIO

Design your own 3D greeting cards, signs, logos, and letterheads with CAD-3D. Over 250K of serif and sans-serif letters. At the heart of this *packed* disk is Tom Hudson's *Super Extruder Tool*, which doubles as a 3D Font Editor. With it, you can create new kinds of complex, *multicolored 3D objects* (such as those seen in the 3D DESIGN DISKS) that can't be built with CAD-3D alone.

3D-FONT PACKAGE
ST0224 $24.95
REQUIRES: CAD-3D 1.0, or CYBER STUDIO

3D PLOTTER & PRINTER DRIVERS™

Supports Hewlett-Packard pen plotters (and compatibles); plus Gemini/Star, Epson, Okidata, IBM, Color, NEC, Panasonic, C-Itoh dot-matrix printers.

PLOTTER DRIVERS
ST0225 $24.95
REQUIRES: CAD-3D 1.0, or CYBER STUDIO

True stereoscopic 3D graphics for your Atari ST

STEREOTEK™ 3D GLASSES

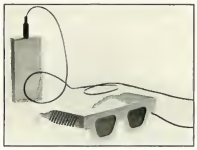
by LC Technologies

© Michel Tcherevkoff '88 West

Put on the STEREOTEK glasses and jump into a new universe. Discover a magical world that you always knew existed. That *extra* dimension—**depth**. Now you can add depth to your computer graphics with STEREOTEK Liquid Crystal glasses. Solid, realistic, 3D images you want to reach out and touch. STEREOTEK glasses plug into your Atari ST cartridge port to provide absolutely realistic 3D graphics in full color or high-res monochrome. Your STEREOTEK depth-view system includes:

- One pair electronic Liquid Crystal Shutter glasses with six-foot cable (can be comfortably worn over eyeglasses)
- ST cartridge interface unit—supports six sets of glasses (additional sets optional)
- DEGAS Elite Stereo Desk Accessory
- Stereo CAD-3D animation and stereo slide show by Tom Hudson
- For programmers: Complete developer's instructions plus source code for adding stereo to your own programs (C or GFA BASIC)

The secret to full-color stereo images on a computer screen is electronic Liquid Crystal Shutter (LCS) glasses. Two optical shutters in eyeglass frames are connected electronically to the ST. Every time the ST screen refreshes (60hz/color, 70hz/mono), one shutter closes and the other opens.



The monitor displays alternating right and left eye views synchronized with the shutters. The alternating views appear faster than the eye can see, and your brain translates the normally flat monitor image into one of startlingly realistic depth.

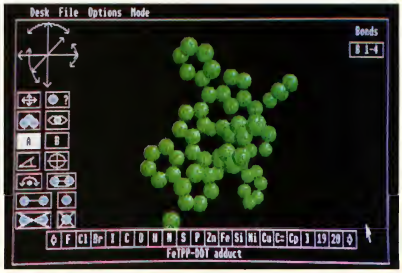
STEREOTEK 3D SYSTEM
TH9020 $149.95
ADD-ON GLASSES ONLY
TH9021 $99.95
Satisfaction guaranteed or your Money Back! (during 30-day warranty period)

LC Technologies is a venture of Tektronix, Inc.

ORDER TOLL FREE (800)234-7001
800
Monday-Friday MasterCard, VISA Only
All 50 states 6AM-6PM PACIFIC TIME

GENESIS™
The 3D Molecular Modeler

by Scott Legrand



The atoms of life: carbon... nitrogen... hydrogen... oxygen... phosphorus...

This is the stuff we're made of. But until now, only research scientists in large universities could actually *image* the building blocks of matter.

Imagine creating the basic elements yourself, then watching as they come to life. And with a pair of STEREOTEK glasses, this miraculous process unfolds in 3D stereoscopic depth.

Using GENESIS and your mouse, you can:

- load and display amino acids, hydrocarbons, and sugars
- create your own molecules onscreen or build them with data from pre-stored libraries
- Explore X-ray Crystallography

Rotate 3D molecules on any axis — X, Y, or Z, using real-time control. In *stereo*, hexagonal carbon rings and delicate fingers of hydrogen burst right out of your monitor.

With two molecules onscreen, you may:

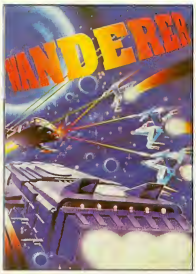
- create your own rules for molecular bonding, then animate the chemical reaction between them
- derive the new empirical formula and print hardcopy data for reference

GENESIS offers the same type of iconic control panel and intuitive human interface pioneered on the Atari ST with CYBER STUDIO (ST0236). Three different display modes for every imaging need:

1) STEREOTEK LCS glasses (TH9020)
2) Red/blue anaglyphic glasses
3) No-glasses (monoscopic)

And with data provided on the program disk, you can create virtually any known molecule using the on-line periodic table of elements.

GENESIS
ST0239 $79.95
REQUIRES: One-megabyte RAM



Now available for use with StereoTek Glasses

LCS WANDERER™

Deep space has never been so real!

by Pyramide Software

LCS WANDERER is the first ST game designed for full-depth stereo. Written in France, but set in outer space, this stunning arcade adventure transports you through galactic Space sectors, Black holes, and Limbo. Startlingly realistic, stereo point-of-view animation puts you in the cockpit as you swoop and dive through star fields while dodging enemy aircraft.

This is no ordinary space shoot-em-up. The bizarre, complex plot involves the ruthless kidnapping of every cat on earth. As you wander though space, collecting purloined pussycats, you run across the Heads of State of the Planetary sectors with whom you must play interstellar poker. LCS WANDERER is a complex, multimodular program—really several games in one. Journey from the dogfights in the Space sectors to the interstellar poker strategies, from the Battlezone-style of the Planetary sectors to the stereo tunnel of the Black holes, and Limbo. . . well, there's always Limbo.

The liquid crystal clarity of the StereoTek glasses transforms LCS WANDERER into a multi-colored micro universe within your monitor. Includes a completely redesigned solid-surface cockpit, full 16-color displays, and reduced eye fatigue compared to the original red/blue version.

LCS WANDERER
ST0238 $39.95
REQUIRES: Color monitor and StereoTek Glasses
Battlezone™ Atari Corp.

Monday-Friday MasterCard, VISA Only
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$5,000 CONTEST

Antic and LC Technologies are co-sponsoring a competition to search for the **most innovative stereo application program.** We're going to pay $5,000 in cash (advance against royalties) for the winner, plus a continuing royalty upon publication here in The Catalog.

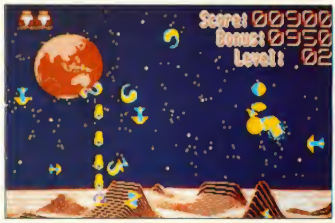
For an official entry blank and competition details, write to:
STEREO COMPETITION,
The Catalog,
544 Second Street,
San Francisco, CA 94107,
or call (415) 957-0886.

A new perspective in Arcade Action!

SHOOT THE MOON™

3D Alien Invaders

by Mountain Fresh Software



You've been in worse fixes — but you can't remember when. Aliens! Floating down from the sky, dropping bombs. And not just overhead . . . and not just to the right . . . and not just to the left . . . but *way down back there*, and *right up front here!*

Fortuitously, your three years of *depth* indoctrination at the Leadership Cadet Spaceways (LCS) institute has handily prepared you for exactly this kind of vile, humanity-threatening situation. With the LCS STEREOTEK glasses (TH9020) firmly affixed to your face, you correctly perceive the precise Z-space location of each ugly little alien beastie, manipulate your Kronos-Smithfield servo-remote laser tractor beneath the erratically twitching horror, and blow the abhorrent critter out of the sky. But, no time to enjoy the view, Depth Cadet! There's plenty more space nasties where that thing came from. And, if you clear this sky, it's on to another world — where the monsters get smarter.

SHOOT THE MOON is a colorful, high-speed shoot-em-up in the classic arcade tradition, with fabulous animation, original sounds, and one big difference — *stereo*. The floating aliens menace you from multi-depth levels as you maneuver your ship beneath them, find the right depth level, and pulverize them.

Beyond the sheer entertainment value of SHOOT THE MOON, we've found stereo games to be excellent training tools for children requiring ocular muscular excercise, or training in depth perception.

And, for those who want their traditional arcade games to remain completely traditional, you can play SHOOT THE MOON in 2D without the glasses. The game play is just different enough to make it a whole new challenge. Master the double-dimension version before moving on to the STEREOTEK universe, or, if you already have STEREOTEK glasses, master both versions.

SHOOT THE MOON
ST0252 $39.95

The world on a disk. Maps for everybody!

MAPS AND LEGENDS™ The Cartographer

STEREOTEK OPTIONAL

Enhanced Version

by Harry Koons and David Chenette

Hold on a second. Now that you've word-processed, spreadsheeted, databased and telecommunicated with your Atari ST, aren't you looking for **something different?**

How about Cartography? Until now, mapmaking has been a unique art mastered by only a few talented people. With MAPS AND LEGENDS, your Atari ST becomes a personal desktop cartography system.

Show your children exactly what the world looks like—with or without political boundaries. And in STEREO, the world globes appear to be floating *in front* of your monitor. Or print an impressive custom map to go with your travel itinerary. We use MAPS AND LEGENDS all the time at the office for sales and marketing maps. And since it's based on the GEM interface, it's GEM-easy to use!

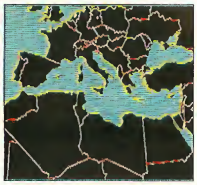
MAPS AND LEGENDS 3.0
ST0202 $34.95
(upgrade is $15)

LET'S GET TECHNICAL

Packed with features, including: Stereo Compatibility, Built-in 9000-Coordinate Database, 11 Different Map Perspectives, Plotting from any altitude, Works in all 3 screen modes, Built-in Paint System (and compatible with DEGAS and NEO), Multi-font Labeller, Custom Overlay Plotter (create your own maps—build your own map databases), Auto-locate Mode (reads coordinates, distance and bearing from maps) and so many more that we don't have room to list them all.

DATAMAP COLLECTION™

Expand Your Maps and Legends Database!



NATIONAL POLITICAL BOUNDARIES
Europe, Latin America, S. America, Asia, Africa

PROVINCIAL BOUNDARIES
Australia, Canada, China, U.S.S.R.

PLUS HISTORICAL MAPS AND MORE!

DATAMAPS
ST0227 $24.95
REQUIRES: MAPS AND LEGENDS 2.0 or greater

Now! A professional flight planner for the ST!

THE NAVIGATOR™

by Scott D. Stephenson Works with MAPS AND LEGENDS

Sometimes, you really need to know *exactly* where you're going. Have you ever wondered, while boarding your plane, how the pilot will find his way to your destination? The answer is navigation. The pilot follows a detailed flight plan created by his navigator.

Now, accurate computerized navigational planning is available on the Atari ST. THE NAVIGATOR is a professional, automated flight planner created specifically for the ST by professional navigator Scott D. Stephenson. Private pilots, military pilots, navigators (ocean-going as well as air), and commercial operators can use this amazing program to create accurate, detailed flight plans.

Amateurs, arm-chair flyers, teachers and students of navigational theory can discover how the professional navigator plans his flight, compensates for wind direction, establishes waypoints, and calculates times and distances. And we've included a special MAPS AND LEGENDS overlay function which creates custom map overlays, graphically displaying your flight paths.

- **Private Pilots:** You'll love THE NAVIGATOR'S printed flight plan and extensive ICAO waypoint database.
- **Armchair Pilots:** Generate your own flight plans for subLogic's FLIGHT SIMULATOR.
- **Teachers:** Show your students the rudiments of navigation. Use THE NAVIGATOR plus MAPS AND LEGENDS to measure the earth!
- **Sailors:** Plan for currents or winds—taking fuel flows and times into consideration.
- THE NAVIGATOR comes complete with these databases: European ICAO, Asian ICAO, and US ICAO.

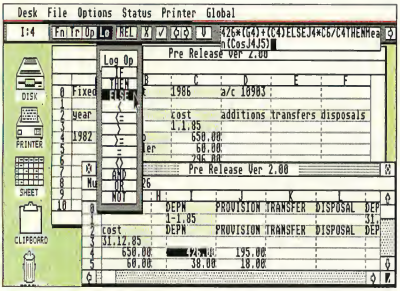
2 PROGRAMS IN 1!
Included with THE NAVIGATOR is THE NAVIGATION TOOLKIT, a bonus program of computer navigation tools which performs sophisticated data management operations on your waypoint databases. Create new data files or modify existing files using its advanced random-search technique.

THE NAVIGATOR
ST0245 $49.95

Byte tests show A-Calc almost *twice* as fast as Microsoft Multiplan on the Mac Plus!

A-CALC PRIME™

by Kuma Computers, Ltd. UK



That's right! In the February 1987 review of the Atari 1040 ST, **Byte** magazine selected A-CALC 1.0 to test the Atari against the Amiga and the Macintosh Plus. On recalculation of a 25 x 25 cell spreadsheet, A-CALC was the clear winner at 4.7 seconds, compared to 7.5 on the Mac Plus, and 6.5 on the Amiga (using Lattice Unicalc).

And now, you can have all the speed of the original GEM-based spreadsheet plus the powerhouse features of the next generation: A-CALC PRIME—it blows away the competition.

Features that made the original A-CALC 1.0 the easiest-to-use spreadsheet ever:

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"This is the easiest to use spreadsheet that I've ever seen." —W. Krieger, **Computer Shopper Magazine**

- Up to five windows open at once
- WIDE VIEW option to see 50 percent more of your worksheet at once
- SEARCH for character strings
- Powerful PRINTER FORMATTING commands
- .DIF file compatibility
- Exclusive A-CHART compatibility
- Sparse-matrix design maximizes available RAM

And now, PRIME adds dozens of special features:

- Row and column lock
- Conditional expressions (IF, THEN, ELSE, etc.)
- MACROS
- Labels
- 8192 rows x 256 columns
- Color/pattern coding of formula, text, value, etc.
- SORT and FIND
- Trig functions
- **Sideways** printing (for Epson FX 80)
- High-speed SMOOTH updating
- Complete printer control from **within** the spreadsheet
- Password-protected cells (hide and unhide)
- Additional ease-of-use features:
  - **Off-screen** scrolling with the mouse
  - **Out-of-the-way** convenient edit window
  - Cell and range reference by **pointing with the mouse** (even reference cells in inactive windows!)
  - **Ten** clipboards
  - Illustrated manual and on-disk examples

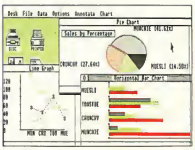
In short, PRIME gives you premium spreadsheet power for the rock-bottom price of $59.95. And, for A-CALC 1.0 owners, the upgrade is only $20.00 (plus $5.00 shipping. Enclose your original ver. 1 disk).

A-CALC PRIME
ST0235 $59.95

Make your next presentation the one they remember.

A-CHART™

by Kuma Computers, Ltd. UK



A-Chart

When was the last time you were excited about your spreadsheet? A-CHART makes working with figures **fun and intuitive.**

A-CHART automatically turns your A-CALC (or A-CALC PRIME) spreadsheets into beautiful graphs that are DEGAS-compatible. And, if you don't have a spreadsheet, A-CHART's **built-in editor** will help you organize those numbers into a super-sharp presentation.

View your data in **eight different chart styles**—change styles instantly with one mouse click. **Drag and size multiple charts** in each window, **define your own fill patterns and line styles.** The flexibility of the graphic presentation of your numbers will give you **an entirely new perspective on your business or home budget.** And A-CHART grows as you do, with the capability of storing up to 50,000 data points in a 512K machine and 150,000 datapoint in a 1 meg machine. **Full statistics menu** for detailed analysis includes Mean, Median, Variance, Standard Deviation, Skewness, T-test, F-test, and much more.

A-CHART
ST0230 $39.95

Epson Compatible Printer from A-CHART
Multi-printer compatible from DEGAS

Degas Enhanced

File Compatible with BASE-TWO, PHA$AR and A-CALC PRIME

PHA$AR™

Professional Home Accounting System and Register

by Marksman Technology

PHA$AR: A friendly, GEM-based, single-entry accounting system that will make your life easier. PHA$AR is fast, sophisticated and contains the best interface programming design we've seen in any ST applications program.

GENERAL FEATURES
- 130 expense/income categories
- 40 accounts (VISA, checking, etc.)
- Up to 500 transactions per month
- Custom check printing
- A.I. parser predicts input, minimizes typing
- Instant help messages with right mouse button
- Relational design integrates financial data

TRANSACTIONS
- Automatic transfers between accounts
- Split-category transactions
- Create transaction macros for repetitive entries
- Point-and-type spreadsheet-style relational summary update

FINANCIAL ANALYSIS
- Easy budget setup and maintenance
- Analyze loan/savings plan
- Display multiple loans simultaneously for easy comparison

RECONCILIATION
- Display outstanding transactions for any account
- Confirm transactions with a single keystroke

IBM and Amiga users say: "The first home accounting package I have found in five years that is actually usable." — **Mark Baldwin, Littleton, CO**

"I am enjoying your tutorial almost as much as I admire the power and versatility of the software itself." — **Joe Joyce, Huntington, VT**

PHA$AR is the standard by which other financial packages will be measured

REPORTS
- Clearly formatted printed reports include:
  - Account Summaries
  - Category Summaries
  - Net Worth Statement
  - Tax Calculations
  - And more...
- Display or print total income/expenses, monthly or year-to-date
- Sort categories in any order
- Built in data graphing
- Compatible with A-CHART (ST0230)

DATE/ADDRESS ORGANIZER
- Store up to 250 names, addresses and phone numbers
- Integrated scheduler stores special occasions
- Display calendar with highlighted special occasions
- Optional auto-alert reminds you of important events

TAX
- Design your own tax forms—never out of date
- Calculate tax liability in less than one minute
- Project tax liability at any time

PHA$AR
ST0237 $89.95

BASE TWO™

The GEM Database by the Authors of DBMASTER ONE

The next step in databases!

by Dan Matejka and Stanley Crane

It's no fun re-learning your database commands every time you boot it up. And those simplistic "filecard" databases just don't have the power to do the job. Or, maybe you've just created your custom database, entered 5,000 records, and now you want to print a report. . . good luck. You need a degree in programming just to get some decently formatted hard copy.

Dan Matejka and Stanley Crane have eight combined years of experience writing databases on computers ranging from the IBM PC to the Apple Macintosh. And their databases range in complexity from the extremely powerful and complex IBM PC DB MASTER to the familiar, introductory DB MASTER ONE on the Atari ST. They've watched the ST database market grow—and they've spotted a gap: until now, ST databases have been either too simple, or too complex. Until now, ST owners were limited to easy-to-use, inflexible "mailing lists," or involved, programmable "throw-backs" to the CP/M or MS-DOS world. Until now, there was no intuitive, yet powerful database featuring an adaptable report generator. *Until now.*

BASE-TWO fills the gap. Entirely GEM-operated, DB MASTER ONE owners will find it familiar, yet far more powerful. Look over some of the features and see if it solves your problem:

INSTANTANEOUS SORTING!

size	number records	sort time
512K	5,000	5.1 sec
1 Meg	10,000	9.7 sec
2 Meg	20,000	19.2 sec
4 Meg	50,000	46.1 sec

Using a sample eight-field mailing list.

- Variable field types:
  - Implicit (default)
  - Alpha
  - Numeric
  - Date (calculable)
  - Formula
- Formula fields automatically calculate results from several fields in same record
- Adjustable numeric decimal placement
- Re-edit database at any time without losing data
- User-definable .DIF file creation for software compatibility (with A-CHART, for example)
- DB MASTER ONE conversion program
- On-line Help screens
- Optional mouse or keyboard control
- 64 character label length
- 100 fields per record
- Multi-level Search and Sort
- Totally RAM-based for instant action
- Format disks from within program

The intuitive BASE-TWO **Report generator** includes:

- Multi-line field word-wrap; screen and printer
- Completely adjustable label or column-format report
- Optional, automatic date, time and page numbering
- Print reports to screen, printer, or ASCII disk file for word-processor editing
- Optional subtotal printout
- Adjust number of records per page
- Double-line report headers
- Place "comment" text anywhere
- Customize with printer control codes
- "Soft" field borders for autofield truncation
- Single-sheet or continuous feed option
- Store 10 custom reports for each file
- Up to 100 unique fields per report

BASE TWO
ST0246 $59.95

DB MASTER ONE is a registered trademark of DB MASTER Associates.

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All 50 states 6AM-6PM PACIFIC TIME

As you can probably tell from reading the Catalog, we Antic folks are very proud of our products, and we're particularly proud when we receive letters from you.

ON A-CALC PRIME:

AC PRIME is the spreadsheet that I have been waiting for. It combines the power of VIP Professional with a GEM interface so good I can (almost) operate the spreadsheet entirely with the mouse if I want. And the SIDEWAYS option prints directly from the program, instead of from a separate utility. I bought a new EPSON-compatible printer just to use the sideways feature. Combined with A-CHART, you've created an [illegible]eatable mix of productivity and value.

Richard Thieman
Virginia Beach, VA

ON PHA$AR:

When I bought an Atari ST nine months ago, one of the major goals I had in mind was control of finances. After two disappointing and inadequate programs, I decided to try again with PHA$AR, on the strength of an advertisement and a review in ST Applications.

It is one of the most impressive programs I have ever seen: everything I had been searching for and more--versatile, easy to use, and superb documentation. Software of this caliber makes computer ownership both a pleasure and a valuable asset.

Darrel W. Orwig
Long Beach, CA

ON BASE TWO:

I recently purchased your program BASE TWO. As a former Mac owner who used REFLEX by Borland, let me say I found your program much easier to use.

Preston Lindey
Toledo, OH

ON FLASH:

Dear Publishers of Flash:

Thank you thank you thank you thank you thank you thank you thank you (etc.).

Michele Gray
Sausalito, CA

Thank *you* and keep in touch!

At publication time, the Cyber Studio is being used by:
- General Motors (Project Trilby division)
- Rockwell Space Systems (Space Station division)
- Industrial Light and Magic (Lucasfilm)
- Forensic Computer Graphics, Inc. (accident reconstruction)
- General Dynamics, Ft. Worth (F-16c human factors design)
- Yale University (Dept. of Physiology exchange program with Shanghai University, China)
- Disneyland (computer displays for Star Tours)

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The complete line of Antic Publishing software offered in THE CATALOG is available to retailers. You can carry the top-quality, bestselling products you've come to expect from Antic: titles such as FLASH, MAPS AND LEGENDS, and CAD-3D, as well as our exciting new products, including CYBER STUDIO and all its add-ons! And, we offer profitable discounts, ease of ordering, and speedy delivery so you can capitalize on the swiftly growing Atari market.

We're eager to help you serve the growing community of Atari owners in your area. Please give us a call at (415)957-0886 and ask for Brian Sarrazin, Sales Manager.

8-BIT SOFTWARE AUTHORS AND DEVELOPERS

The Catalog has embarked on a global search for great software. If your software is great and runs on the Atari 800/XL/XE, we are searching for you. Help us find you.

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Powerful mail merge program for use with 1ST WORD.
BB9001 WAS...$29.95 NOW ONLY...$15.95!

MACRO ASSEMBLER by GST, Ltd.
A professional quality 68000 macro assembler + library.
BB9009 WAS...$79.95 NOW ONLY...$49.95!

C COMPILER by GST, Ltd.
A powerful GEM software development package for the Atari ST.
BB9010 WAS...$99.95 NOW ONLY...$59.95!

PERSONAL PASCAL from D.S.S., Inc.
GEM supported Pascal development system.
BB9006 WAS...$79.95 NOW ONLY...$49.95!

HOME ACCOUNTANT by Habba
A powerful, full featured home accounting system.
BB9007 WAS...$69.95 NOW ONLY...$39.95!

MAPS & LEGENDS 2.0
The original MAPS & LEGENDS cartography system by Antic (not STEREOTEK compatible).
BB9008 WAS...$34.95 NOW ONLY...$19.95!

ST ENTERTAINMENT

TRANSYLVANIA by Polarware
The classic graphic adventure game featuring the Count himself!
Now for the Atari ST!
BB9002 WAS...$29.95 NOW ONLY...$15.95!

CRIMSON CROWN by Polarware
Exciting sequel to TRANSYLVANIA! Recover the Crimson Crown or...?
BB9003 WAS...$29.95 NOW ONLY...$15.95!

CARDS by Michtron
Play Poker, Cribbage, Blackjack and more! Test your skill!
BB9004 WAS...$39.95 NOW ONLY...$15.95!

SPECIAL ST VALUES!

EXPERT OPINION by Mind Soft
Transform your ST into an expert on any subject. EXPERT OPINION creates production-rule knowledge bases; GEM based so you don't need to learn a programming language. BONUS application disk on gemology included. Please note this is a sophisticated computer science tool requiring study to use effectively.
BB9012 WAS...$99.95 NOW ONLY...$59.95!

DISK DOCTOR by Dan Matejka
Disk zapped by a power surge? Wrong file in the trash can? DISK DOCTOR will make recovery of your lost data as painless as possible. You can even use its built-in GEM disk editor to personalize your software's menus and error messages. It's the perfect file repair utility and a valuable programming tool.
BB9013 WAS...$24.95 NOW ONLY...$19.95!

STAR STRUCK--THE ASTROLOGER by Harry Koons
This GEM-based celestial workhorse instantly creates charts using formulas for the nine most popular historical house systems. If you don't know the coordinates of your birthplace, just click on the U.S. or world maps! STAR STRUCK works in color and monochrome and comes with loads of extra fonts.
BB9014 WAS...$24.95 NOW ONLY...$19.95

High quality software at blow-out prices! All items are sold on a first-come, first serve basis from limited stock, so order now! Software bargains exclusively from The Catalog.

DISK SALE!
25 5-1/4" HIGH QUALITY DISKETTES ONLY $9.95.
Single-sided single-density, we use them as double-sided "flippies".
Bulk erased overstock, disks at this price must be sold "as is". BB0013

THE BOOKSHELF for the Atari XL/XE

BEST OF ANTIC ANTHOLOGY
298 pages of material from ANTIC's first year. Original magazines are now out-of-print collector's items!
BB0004 WAS...$12.95 NOW ONLY...$3.95! WITH DISK BB0005...$6.95!

ATARI PLAYER-MISSILE GRAPHICS IN BASIC
Create professional-quality Atari special effects.
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Master the Mysteries! 202 pages unlock the secrets.
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ATARI GRAPHICS AND ARCADE GAME DESIGN
477 pages of tricks, tips and six ready-to-run games!
BB0009 WAS...$19.95 NOW ONLY...$6.95!

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Could be the closest look anyone's going to get of Halley's Comet.
BB0015 WAS...$17.95 NOW ONLY...$5.95!

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Unique game and construction set, 4 players/scrolling screen.
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Two classic strategy card games for the price of one!
BB0017 WAS...$19.95 NOW ONLY...$5.95!

THE XL/XE BARGAIN WORKSHOP

REAL ESTATE AND STRATEGIC FINANCIAL CASH FLOW ANALYSIS
Two powerful modelling tools for the price of one!
BB0020 WAS...$19.95 NOW ONLY...$5.95!

DISK SCANNER
Edit and repair single- or double-density disks!
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A comprehensive collection of BASIC programming tools!
BB0023 WAS...$24.95 NOW ONLY...$5.95!

130XE MAGIC
Word, Spell and Graphic Magic. Three for one!
BB0022 WAS...$12.95 NOW ONLY...$5.95!

MAPWARE
Create high-resolution world maps in four different projections.
BB0018 WAS...$15.95 NOW ONLY...$5.95!

DEEP BLUE SECRETS
Source code for The Catalog's own DEEP BLUE C COMPILER (AP0188).
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Individual back issue disks and magazines are available far July 1983 thraugh the current issue. September 1984 magazine is sold out.

Individual disks are $5.95 each, magazines are $4.00 each. Remember ta include shipping and handling charges (see ORDERING INFORMATION, page 17).

Ordering individual magazines ar disks is easy! AMS stands far Antic Magazine. ADS stands far Antic Disk. Follaw these praduct codes with the manth and year yau want. Far example, ta arder the March 1987 disk and magazine, write:

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All programs in this series sold as is. There's almost no documentation included, except what's built into the programs themselves. Therefore, you may need some expertise in order to use the products properly. Because this is public domain software, the Customer Service Department cannot provide the same type of service as for programs we publish ourselves (i.e., copyrighted Antic software). However, all programs have been tested at Antic and will perform.

TRIVIA QUIZ

The *ultimate* Trivia Game! 100% machine language. Play alone or with 2 friends (2 on XL/XE). *Plus* create your own Trivia Files (over 350 questions per disk—730 with double density). Includes instructions and Assembly SOURCE CODE.
PD0072 $10.00

THE RAMBRANDT COLLECTION

Now you can design your own special effects slide shows for RAMbrandt pictures. Choose a different dissolve for each picture: horizontal or vertical wipes, pixel dissolve, spin, telescape, and five others. Change the speed of the dissolves, mix graphic modes, repeat pictures or dissolves in any order. Supports 130XE RAMdisk, comes with a selection of the best RAMbrandt art. (RAMbrandt **not** required.)
PD0073 $10.00

FIX XL (PD TRANSLATOR)

Run early 400/800 software on your XL or XE.
PD0026 $10.00

DOS 4.0

by Michael Barall
Here it is—the DOS that Atari, Inc. spent over $100,000 on and never released. Code named QDOS, it supports single, 1050 (enhanced), and double density drives. Single drive systems require minimal disk swapping. Docs included in Atari's 100 screen online (Help) system. DOS 4.0 is fast—two times faster than DOS 2.0, three times faster than DOS 2.5.
PD0067 $10.00

ICON GRAPHICS EDITOR

by Gregg Tavares, The NightHawk Group
Draw your own Print Shop icons with this advanced paint program. Use this fabulous "MacPoint"-style program to create your own libraries of icons. Full-featured drawing program includes user-definable fill and a smart brush which can AND, OR or XOR with the background.
PD0088 $10.00
REQUIRES: Print Shop
Print Shop™ Broderbund Software

VT100 TERMINAL EMULATOR

Turn your Atari into a DEC-compatible 80 column VT-100 graphics terminal. Works with Hayes-compatible modem and interface. No other hardware needed.
PD0037 $10.00

ANTIC FORTH

Learn the fast, compact FIG-FORTH language. Double-sided disk includes tutorial and editor.
PD0020 $10.00

RADIO & ELECTRONICS (JACE)

Another great JACE collection. This one will teach you Ohm's law, satellite orbit prediction, and Morse code. It also includes a YAGI antenna designer, three resistor design programs, an LC circuit computer and HAM programs.
PD0064 $10.00

130XE HI-RES DESIGNER

For 130XE owners only. R-DRAW, a powerful new Mode 8 paint program that has lots of goodies like spray paint, auto-artifacting, 4 text sizes, stor fields, L-R reverse (for T-shirts), and more. R-DRAW is so good that, if it had run on all the machines, it would've been accepted for APX.
Special: includes the BASIC SOURCE CODE for this compiled program.
PD0070 $10.00

AMIS XM10.BBS from M.A.C.E.

A full-featured bulletin board for the 835, 1030 and XM301 modems. Version 4.5PD supports the auto answer on the XM301. The other modems will require an easy-to-build ring detector (instructions included). Join the telecommunications revolution with this easy-to-use and easy-to-maintain BBS.
PD0080 $10.00

COMPUTER USING EDUCATORS SOCIETY (C.U.E.S.)—San Mateo

Official Education Packages from teachers who use Ataris. EDPACK #1 includes world geography, states and capitals, French and English Hangman, math games. EDPACK #2 has spelling bee, metrics, advanced math, and the famous Function Machine.
C.U.E.S. EDPACK #1
PD0044 $10.00
C.U.E.S. EDPACK #2
PD0045 $10.00

1030 EXPRESS/ TSCOPE 850 EXPRESS/ TSCOPE MPP EXPRESS/ TSCOPE

Keith Ledbetter's brilliant modem program, now available for all modems: 1030 EXPRESS for Atari 835, 1030 and XM301; MPP EXPRESS for the Supra/MPP 1000 series; 850 EXPRESS for modems using the 850 (or compatible) interface. *Bonus:* each comes with the correct version of TSCOPE/MSCOPE so you can access the R.I.E. VIDTEX graphics on Compuserve.
1030 EXRESS/TSCOPE
PD0081 $10.00
850 EXPRESS/TSCOPE
PD0082 $10.00
MPP EXPRESS/TSCOPE
PD0087 $10.00

ASTRONOMY & METEOROLOGY (JACE)

The Jacksonville Atari Computer Enthusiasts (JACE) have collected these wonderful programs for amateur astronomers. Includes an observation simulator for tracking objects in the solar system, a planetarium prototype, a planet tracker, and much more.
PD0063 $10.00

PD MICROPAINT ARTIST

(A.C.A.O.C.)—BBS: 714-731-6523

Improved clone of the original high-power graphics program for Ataris. Full documentation.
PD0053 $10.00

This 2 DISK SET gives you complete command of your dot matrix printer.

PICTURE PLUS 3.0 and LISTER PLUS 1.5

Non-Standard Magic!

by Chet Walters

BEST SELLER!

PICTURE PLUS is the total graphics utility combined with the ultimate ATARI screen dump. Naw Version 3.0 is faster and works with nearly any DOS. It even works with RAMdisks.

Translate pictures between Microlllustrator, SuperSketch, Point, Fun With Art, B/Graph, Movie Maker, Micrapainter, Atari Light Pen, Atari Tauch Tablet, Kaala Pad, LOGO, Computer Eyes, Drawlt, RAMbrandt (when canverted), Graphics 7, 7+, 8, 9, 10, 11, and 15.

Work with the entire picture ar just the area you want. PICTURE PLUS will merge twa pictures, reverse a picture left ta right (far T-shirts), turn it upside down, mave it in any direction, make a negative, or change calars. Add text anywhere on the picture, in any calar(s) and any font(s), in 6 sizes.

PICTURE PLUS will print screens in 4 sizes fram 3" x 4" ta 8" x 14". Directly supports printers campatible with Epsan, Gemini, Prawriter, Okidata, color IDS, and calar Mannesmann Tally. Custam printer installatian program handles most others.

LISTER PLUS will print anything exactly as it appears an yaur screen including contral characters, inverse letters, custam character sets, and character graphics. These twa packages formerly sold far aver $30 each.

PICTURE PLUS and LISTER PLUS
AP0179 $19.95
REQUIRES: 48K RAM, Atari BASIC
Optianal: Dot Matrix Graphics Printer

Simulate a trip to the Moon.

ORBIT—A TRIP TO THE MOON

BEST SELLER!

by John D. Reagh

Dack with the Space Statian to get supplies, then head for the Moon. Estoblish a law altitude orbit, detach the landing module and descend ta the lunar surface. This is a seriaus simulation af a true mission. Fuel cansumptian, life support systems, orbital pasition, altitude, rocket burn time, thrust vectors, radial velocities, orbital constants—keep track af them all. On-baard ship's computer instantly plats new caurses.

Designed and written by a Lockheed aeraspace engineer. Complete with dacumentatian that's educatianal taa.

ORBIT-A TRIP TO THE MOON
AP0168 $15.95
REQUIRES: Jaystick

The RAMbrandt of character graphics

ENVISION

by Darren Schebek

Create giant, multi-screen, 8-way scralling pictures. Build effortless animatians (up to 128 frames at 10 speeds). There has never been anything like ENVISION befare. Did you think character graphics were blacky, ugly substitutes for the real thing? Take another laak at this screen shot. Graphics 0. And in real life, it's animated.

ENVISION has aver 50 cammands giving yau total cantrol aver the Atari's 6 incredible text mades. Print aut yaur pictures, da fancy typesetting. ENVISION alsa supports GTIA modes 9 & 11. A special utility canverts micrascreens ta character graphics that are indistinguishable from the original. ENVISION is a brand new art medium and much mare. It will create standalone pictures ar produce BASIC and Assembler SOURCE CODE, a programmer's dream come true. On the 130XE, ENVISION supports 16 simultaneaus fants.

ENVISION
AP0185 $19.95
REQUIRES: Jaystick
Optianal: BASIC, MAC/65, SynAssembler, Epsan-compatible printer

Mercator Projection

Perfect for Geography, Science, HAM Radio, History, Current Events

EARTH VIEWS

by R.G. Wilson

EARTH VIEWS is a *world atlas*—an *electronic globe*—an exciting adventure *game*. Yes, it's all three in ane. Call up many different maps and views of the Earth instantly. Includes detailed hi-res maps and projections linked ta a "Gazeteer" af *world place names*.

Rotating Globe

In the *game:* yau fly inta the Bermudo Triangle and go an quests ta exciting places. Detailed screens display langitude and latitude, lats af calarful infarmatian.

EARTH VIEWS
AP0141 $19.95
REQUIRES: Jaystick

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THE FAMILY TREE

by Harry Koons

Record and access up to 6 generations of historical family data with THE FAMILY TREE. Enter names, dates, places and facts; then print out an actual pedigree chart of your own lineage (on any printer). Use the joystick or keyboard to select any relative. Display three windows of pertinent information about that family member instantly. All historical data can be displayed and edited on-screen. Save up to 24 generations on one disk. Send printed charts to distant relatives—get their help in completing each family member's history. Preserve your family tree for posterity!

THE FAMILY TREE
AP0133 $19.95
REQUIRES: Atari BASIC
Optional: One Joystick

Finally, a flexible, full-featured database

DATA MANAGER XL

by William Bartlett

LIMITED STOCK

Here's a flexible, integrated data base manager/mini-word processor that's easy to use. Highly flexible features include: color-coded files, program handles up to 100 fields (indexable categories), each field as large as 120 characters. Quickly make changes with easy add and delete options. Print custom reports from existing files. An Index Manager function allows sorting and file rebuilding.

Use with compatible AtariWriter and/or Ward Magic for mail merge, form letters, or other letter/list processing needs! A special "Tools Manager" section features: database diagnostics and utilities plus a disk drive speed checker! How-to instructions are complete and detailed.

DATA MANAGER XL
AP0129 $19.95
REQUIRES: Atari BASIC

SHERLOCK 1050

by Dan Moore and Steve Ahlstrom

Get a fighting chance to restore crashed disks. Examine or edit any byte in any sector of your single or enhanced density disks (in HEX or ASCII). Disassemble (from the disk itself) any machine language file or autoboot disk and learn its secrets. Restore deleted files and salvage broken files with the Trace option.

SHERLOCK 1050
AP0155 $19.95

PRINTER DRIVER CONSTRUCTION SET

by John Eric Hinckley

Now AtariWriter is totally compatible with every printer. Comes with drivers for FX-80/MX-80, 10X/SG-10, NEC 8023, Prowriter, 1027, HR-25. Build your own drivers for other printers.

PRINTER DRIVER CONSTRUCTION SET
AP0131 $19.95
REQUIRES: AtariWriter cartridge

CHAMELEON CRT TERMINAL EMULATOR

Version 4.03

Written in machine language
by John Palevich

LIMITED STOCK

Turn your Atari into a variety of computer terminals! Five popular types: Glass TTY, ADM-3A, DEC VT-52, IBM 3031, ASCII, plus a test terminal. Software supports tab, backspace, line feed (on/off), form feed, bell signal, speeds up to 9600 bps, plus a lot more! Wide-screen 80 and 132 column emulation. You've never seen anything as fast and smooth as the vertical *and* horizontal fine scrolling. All these features make CHAMELEON flexible enough to use with UNIX operating systems. Perfect for logging on to non-standard systems, such as MCI MAIL and DELPHI, because you can customize *all* terminal parameters. Auto-dials and stores up to 16 phone numbers. Supports file transfers and features an all Atari 850-interface, 835, 1030, and XM301 modems. Version 4.03 includes Columbia University's Kermit file-transfer capability, in addition to total compatibility with the popular Xmodem protocol.

CHAMELEON CRT TERMINAL EMULATOR
AP0113 $19.95
REQUIRES: 48K RAM

The only programmable modem software available

BACKTALK 1.2

by Steve Ahlstrom, Dan Moore and Don Curtis

BEST SELLER!

Designed by the authors of Paperclip, Synfile+, and Sherlock 1050, BACKTALK is powerful and easy to use. "Script" files can be executed with the touch of a button. Or they can run automatically—even in the middle of the night while the phone rates are lowest. Now you can wake up in the morning and read your email—with your morning paper—without having to download anything yourself! Bulletproof file transfer. Three protocols: Xmodem (with or without CRC), Amodem, and Xon/Xoff. Supports 300, 1200, 2400 baud modems, ASCII/ATASCII translation, full and half duplex. CB "chat" window provides uninterrupted communication during on-line conferences. Smooth scrolling text reduces eyestrain. Friendly pop-up menu makes entering commands a snap.

Now you can use BACKTALK with every modem. Supports Hayes-compatibles and Atari 1030/XM301. There's even a way to load your own modem handlers. 130XE users will love the way they can download files into the RAMdisk.

BACKTALK 1.2
AP0154 $19.95
NOTE: Some early 810 disk drives will not work reliably with BACKTALK's high speed I/O.

Your computer can teach you the language of the ST.

DEEP BLUE C COMPILER

LIMITED STOCK

by John Palevich

MATHLIB

by Frank Paris

DEEP BLUE C is faster and more powerful than BASIC. C is one of the most transportable languages—runs on other computers with minor modifications. This all-purpose language is the *de facto* standard for the new generation of 68000-based machines like the Atari ST. Pointers, recursive functions, and high-level control structures make complete software systems easy to design, implement and maintain.

MATHLIB is a complete library of math functions for DEEP BLUE C. The 32 functions provide access to Floating Point and Trig operations. Now you can get both disks for the price of one!

DEEP BLUE C and MATHLIB
AP0188 $19.95
REQUIRES: Text Editor like Word Magic

INTERLISP/65

by Special Software Systems

The Catalog is proud to offer INTERLISP/65, version 2.5, from Special Software Systems. LISP (LIST Processing) is the symbolic language of artificial intelligence applications, designed especially to logically manipulate structured symbols. It's different from any language you've ever used on the Atari!

INTERLISP/65 is a subset of the standard "INTERLISP" dialect of LISP. This version includes special enhancements so you can take advantage of the Atari's graphics and sound capabilities. Over 70 pre-defined functions are included, plus these features:

- Eight-digit, floating point arithmetic, including multiplication, division, exponential, and logarithms.
- PEEK, POKE, and XIO functions for access to monitor and hardware functions.
- STICK and STRIG for game controller input.
- Sequential disk file functions, including OPEN, CLOSE, PR#, IN#, NOTE and POINT.
- PAGE and TAB screen control functions.
- Debugging facilities include BREAK and BAKTRACE.
- Example LISP programs on disk include the famous "Towers of Hanoi" puzzle which provides an excellent example of the power of recursive programming, plus "Doctor," a classic example of artificial intelligence applied to conversational programs.

And now, version 2.5 includes 21 new functions, a special graphics-buffer initialization sequence, plus the new TRACE utility far detailed debugging.

INTERLISP/65
AP0191 $19.95

BASIC VIEW

by Softview Concepts

This is a utility all BASIC programmers will want. Beginners will learn programming faster, and veterans will find BASIC VIEW invaluable for debugging. Written entirely in machine language, BASIC VIEW provides a window showing the actual execution of your program code while the program is running. Even if your program uses full graphics displays, you can instantly switch—without program interruption—to the BASIC VIEW window, and then back to your program display. Beginners quickly see which line of code is affecting the program while it actually happens.

Features Include:

- Joystick controlled for ease of use.
- Current line highlit during program execution.
- Adjust program execution speed using joystick "throttle."
- Variable Display shows updated contents of variables during program execution.
- Stop, skip to any line, then restart your program at any point.
- Variable Menu displays all variables, arrays, strings in alphabetical order.
- Examine dimensional array structures and elements, and memory locations.
- "Find" command for instant search of any variable or array element by name.

BASIC VIEW
AP0192 $19.95

Power combo for Assembly language programmers

LIMITED STOCK

FLOATING POINT PACKAGE

by Louis J. Chorich III

EXTENDED D.D.T.

by Jim Dunion

FLOATING POINT PACKAGE makes math with MAC/65 as easy as BASIC. It gives you the tools to use the precision of Floating Point operations. Also includes Floating Point array management and Trig functions.
REQUIRES: Mac/65

EXTENDED D.D.T. (EXDDT) is the best debugger, made even better.The improvements include:

- Symbolic disassembler
- EXDDT completely relocatable
- NEXT instruction for single stepping past subroutines
- Includes mini-assembler
- Complete source code and all assemblers

FLOATING POINT PACKAGE and EXTENDED D.D.T.
AP0189 $19.95
MAC/65™ Optimized Systems Software, Inc.
Ideal partners for MAC/65. Use FLOATING POINT PACKAGE to speed development.

Monday-Friday MasterCard, VISA Only
All 50 States 6AM-6PM PACIFIC TIME

Great moves. . . for all level players

Colossus Chess 3.0

The *Ultimate*Computer Chess

BEST SELLER!

by Martin Bryant English Software UK

Here's a chess program with all the moves of a *chess master, a great chess tutor* ar a *master tournament opponent*. Whether you're a beginner ar a pra, COLOSSUS CHESS 3.0 is far you.

Dare to challenge the program that *outplayed* 20 af the best computer chess programs available.

- Unique twa-screen dual display—current game and unique view of COLOSSUS's "brain." Watch COLOSSUS consider thausands af maves.
- On-screen elapsed-playing-time *clocks add realism*, excitement ta Taurnament made (full taurnament play).
- COLOSSUS teaches *you* ta be a better chess player with simulation modes (infinite mode, problem made, equality made, average mode, all-the-maves made, blindfalded made). Adjust playing speed and style.

COLOSSUS CHESS 3.0
AP0161 $15.95
REQUIRES: 48K RAM
Note: Colossus Chess was named ***". . . one of the best buys in chess programs today" by Analog*** *Magazine (Nov. '85).*

Joystick-busting Kung-Fu Action

CHOP SUEY

BEST SELLER!

by English Software UK

An actian-packed martial arts competitian simulation. Far anyone wha likes thrill-a-minute campetitive games. One or twa players. Eight progressive levels, twa speeds—normal and (far the insane) superfast. Killer scorpions add an unpredictable element. Fast, smaath animation and 29 an-screen colars add ta the excitement.

CHOP SUEY
AP0162 $15.95
REQUIRES: One Joystick per player
". . . one of the best Atari buys of the year. Go get it grasshopper!" Atari User Magazine (UK)

The card game of royalty. . . and society

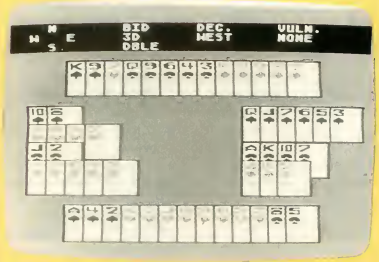
BLUE TEAM BRIDGE

by Walt Huber

A complete, tournament-level computerized bridge simulatian. Naw you can learn ta play and play more aften. Imprave your game.

New players can learn ta play right. Intermediate players can learn an advanced style of bidding. Advanced players can learn new bidding canventions ta sharpen their skill. All will have a warthy competitor when you "can't get a foursame together." Your favorite game is always at your fingertips.

BLUE TEAM BRIDGE
AP0178 $15.95
REQUIRES: Joystick

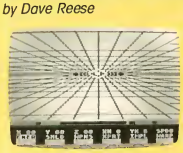


Star Raiders was a great game. . . for its time.

LIMITED STOCK

XTAL(CRYSTAL) — AN ADVENTURE IN SPACE

by Dave Reese



A planet-threatening Ion Radiation starm has develaped in the peaceful Canasian section. Yaur mission: destray that starm.

The EXCALIBUR comes equipped with impulse and warp drives, transparters, phasers, communicators, shields, quadrant map display, and a spectacular 3D cockpit/navigation viewscreen.

XTAL (CRYSTAL)
AP0158 $15.95
STAR RAIDERS™ Atori Corp.

PROGRAMMABLE spreadsheet for the XL and XE computers

CALC MAGIC

by Metamorphosis Development

LIMITED STOCK

This is o full power, fost spreadsheet presented in o much eosier-to-use programmoble, multi-menu pockoge. Now you can have sophisticated facilities to really contral a spreadsheet—and get o solid grip on yaur budget ar business.

Features include:

- Built-in plain-English programming language. Build templates to reduce yaur keystrokes.
- Quickly test multiple "whot if" conditions and determine actuol effects.
- Pop-up menus let you choose commonds easily, avoid complex command sequences.
- Suparts DIF file transfer.

CALC MAGIC
AP0177 $24.95
REQUIRES: XL ar XE Computer, 64K

THE ENHANCEMENT DISKS (A 2-disk set)

by Robert Wilson

Ever since B/GRAPH—the mast powerful Atori business/graphics saftwore ever—was released, rumars persisted that its co-author, Robert Wilsan, had created o collection af super utilities and enhancements for the originol progrom that, combined, mode the whole set comporoble ta business-presentotion systems warth hundreds af dollars an ather canputers.

Those rumars were true. For severol yeors, Robert Wilsan created, debugged, palished, and rewarked his callection af utilities until they became faur packed disk sides af pragrams and documents. Although it is possible to use mony of these progroms without awning B/GRAPH, THE ENHANCEMENT DISKS ore primorily designed to run with B/GRAPH—which is avoilable fram Batteries Included.

THE ENHANCEMENT DISKS features include:

- Bubble chorts far market segmentotion analysis
- Oppased bar charts
- Segmented harizantal bor charts
- Loan amartization schedules
- Instant switching af platted variables
- Covariance and carrelation matrices

And THE ENHANCEMENT DISKS suppart the Atari 1020, Radio Shack CGP115, and Mannesmann Tally Pixy platters far the ultimate in clear presentation. Platter featires include:

- Exploded pie chorts
- Floating bor charts
- Platting of algebraic expressians
- 17 factars per graph with averlays
- Left and right side scoling

THE ENHANCEMENT DISKS
AP0190 $19.95
REQUIRES: Atari BASIC
Recommended: B/GRAPH
B/GRAPH™ of Batteries Included

Organize ideas with the only outline processor for the Atari. Compatible with Word Magic, Atari-Writer, Paperclip and other word processors.

CREATIVE PROCESS Version 1.8

by Dave Thorson

LIMITED STOCK

Outine processars have become indispensible authors' tools (you've seen them advertised far the Macintash and IBM). CREATIVE PROCESS an the Atori is o tremendaus oid in report writing—far business or school. Capture yaur ideas and turn them into *professional* documents. Reduce the time needed to get aut a document, because speed is the key feature. It can help you manage your projects, moke sense out af lang meetings, and monitor works in pragress. Plus, it's sa flexible that it can be used as: an address and phane number filer, calendar, recipe data-base, and far organizing everything. Pap-up cammand windaws let yau cancentrate an ideas. Undo key, adjust-able screen calars, utilities package, and *130XE RAMdisk* suppart ore only o few af CREATIVE PROCESS'S huge list af features. Cames precanfigured far single and enhanced density. Capoble of supparting yaur dauble-density DOS's as well. 100% campotible with Ward Magic, Atari-Writer and Paperclip.

CREATIVE PROCESS
AP0151 $19.95
Optional: Printer, Word Magic

SPELL MAGIC

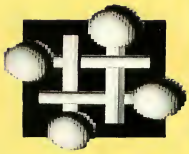
by Blue Collar Software

Also works with Atari-Writer and Paperclip!

Spell it *right—every time,* with this 34,000-ward integrated dictionory. Get started fast with an-line help and simple menus. Install SPELL MAGIC and Ward Magic together an one disk. *Also*—check documents created by ather ward processors such as Paperclip and HamePock, *and AtariWriter.* Check in context: SPELL MAGIC *always* displays your document in a window in the upper half of your screen. Add an unlimited number of expandable *personal dictionaries* (up to 10,000 words each). Updates your personal dictionary autamaticolly while checking wards. Counts wards. Works with single ar double drive systems.

SPELL MAGIC
AP0144 $19.95

FREE BONUS! Order now and get a FREE DISK of pictures and extra character fonts.



All-time best-selling Atari paint program

RAMbrandt™

Atari Design Studio

by Bard Ermentrout

Imagine . . . the ultimate paint software. For under $20! Sit down with RAMbrandt and enter a design studio with the tools to make anyone a creative artist. It took our technical staff three hours to step through each of RAMbrandt's features. Use the built-in toolkit to enhance your own programs or picture files. Or just doodle for the joy of it! We barely have enough room to list all the power, but here goes:

- 5 graphics modes (7, 7+ (ANTIC E), and GTIA 9, 10, 11)
- Works with joystick, Koala Pad/Touch Tablet or both
- Horizontal and vertical coordinates always displayed
- Box, Circle/Ellipse, Rubber band line, Freehand plot, Text (4 sizes, any font—3 fonts included), Zoom, Mirror (vertical, horizontal, 4 way)
- Fill (solid, pattern, random, user-defined patterns)
- Unlimited user-defined brushes (5 pre-defined)
- Quilts and Tiles (user-definable color patterns—5 of each pre-defined)

BEST SELLER!

- Paint or Fill with any pattern, quilt, tile, or font
- 128 colors in any mode with easy one key DLI access
- Random/Probability/Exclusive-Or/Transparent "colors"
- Color Hunt Mode (point over only the color you choose)
- Animate mode (up to 32 frames at any speed)
- Window mode—any or all of your picture: Rotate, vertical or horizontal flip (T-shirts), wipe, animate, scale (larger or smaller), cut and paste, rubber stamp
- Printer dumps for Epson, Star (Gemini), C. Itoh, NEC and compatibles
- Okimate 10 color printer dump supports color fine-tuning
- Load pictures from Movie-maker, Microlllustrator, Micropainter, and Computer Eyes formats
- 130XE RAMdisk Support!

RAMbrandt
AP0157 $19.95
REQUIRES: One Joystick and/or Koala Pad or Atari Touch Tablet

A 3-D Solid Object Modeler for RAMbrandt

SOLID OBJECT MODULE

by Bard Ermentrout

Now you can easily create 3-D objects with RAMbrandt. Start with 8 different primitives: Sphere, Torus, Cylinder, Spool, etc. Combine them to make complex structures. Then flip into RAMbrandt to complete your picture. This module will not rotate the objects, but it will do just about everything else: 4, 8 or 16 level grayscales. Halftones (random or up to 64 dithered patterns). Backlighting or paint source lighting. Clipping window to use parts of objects. Undo command. Much, much, more. If you use RAMbrandt, you need the SOLID OBJECT MODULE.

SOLID OBJECT MODULE
AP0182 $15.95
REQUIRES: 48K RAM, RAMbrandt

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47

of the best Atari 8-bit programs available today!

SOFTWARE FROM
THE CATALOG
AN INFORMATION TECHNOLOGY COMPANY

CAD-3D COLLECTION II

New!

More fantastic 3D objects! Includes the NEW TV STAR TREK ENTERPRISE; detailed Space Shuttle with working bay doors; Israeli Lavi Fighter; Advanced "F-24" Swept-Wing Fighter; complete Atari Logo; and Darrel Anderson's CYBERSCAPE DISKCRAFT!

PD9101 $12.00

REQUIRES: CAD-3D 1.0 or CYBER STUDIO

MISFIRE

New!

MISFIRE is by David Snyder, and it's the first user-submitted (1.5 minute long) CYBER STUDIO animation. MISFIRE is a frighteningly real scenario of a next decade SDI nightmare featuring multiple scenes and special effects. Who will survive? This disk is completely self-contained and needs no other program. Just boot it and amaze your friends.

PD9102 $12.00

REQUIRES: DS drive, 1-meg. RAM, and color system

SPELL/Writer's Tools

SPELL, written by Eric Bergman-Terell in Personal Pascal, is a simple spelling-checker for ASCII or 1st-Word files. It scans your document, reporting incorrect words and allowing you to add them to the program's unlimited-size dictionary.

PD9093 $12.00

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TOM HUDSON'S PD3DCTL

New!

This is the early, public domain version of Tom's motion control language desk accessory for CAD-3D 2.0 — a subset of the powerful CYBER CONTROL (ST0250, elsewhere in The Catalog). Create your own programs to control CAD-3D 2.0 and automatically create CYBER STUDIO (ST0236) animations.

PD9095 $12.00

REQUIRES: CYBER STUDIO

DARREL ANDERSON'S SPACE PROBE

New!

This superb CYBER STUDIO (ST0236) animation demo with sound effects was created by Darrel Anderson, author of CYBERSCAPE (SB0104), for the Contact Aliens Lifeform PBS special. Complex space probe enters space in the foreground before diving to the distant planet's surface.

PD9096 $12.00

REQUIRES: One-megabyte RAM, DS drive, color

DARREL ANDERSON'S SPACE DOCK

New!

Another fabulous CYBER STUDIO (ST0236) animation demo by Darrel. This one features a deep-space hydro-wing launch from one of the Future Design craft.

PD9097 $12.00

REQUIRES: One-megabyte RAM & DS drive

TOM HUDSON'S STEREO STEELYBOINK

New!

STEREOTEK OPTIONAL

Incredible, animated ray-tracing demo by Tom Hudson shows off the amazing properties of the STEREOTEK glasses as reflective balls bounce in three-dimensional space.

PD9098 $12.00

REQUIRES: STEREOTEK GLASSES, one-megabyte RAM, DS drive, color

SPECTRUM 512 SLIDE SHOW

New!

Professional artists Darrel Anderson and Richard Berry contribute to this colorful collection of SPECTRUM 512 (ST0249) pictures. (Includes pictures from SPECTRUM Catalog ad.) Show your friends what the Atari ST is really capable of. Or, if you don't have SPECTRUM and want to see what it can do, we've included a special slide show program on this disk. *You don't need SPECTRUM to display these 512-color pictures.*

PD9100 $12.00

XLISP

XLisp, written by David Betz, is a version of the LISP programming language based on the Common LISP standard with extensions for object-oriented programming.

PD9084 $12.00

ARChive Collection

A collection of tools for manipulating archives—multiple files combined and compressed into single library files for later extraction and use.

PD9094 $12.00

CAD-3D COLLECTION I

The first collection of complex objects created by Tom Hudson with CAD-3D.

PD9085 $12.00

REQUIRES: CAD-3D

PROFF

PROFF is a text formatter similar to popular mini-computer tools like RUNOFF and TROFF. PROFF takes input from standard ASCII text files with embedded formatting commands and produces fully-formatted output files.

PD9089 $12.00

STEREO STARS & SLIDE SHOW

New!

STEREOTEK OPTIONAL

Float through stereoscopic space with this hypnotic, animated starfield demo. Plus, over ten full-stereo slide pictures! Show your friends, then load them into DEGAS Elite and touch them up!

PD9099 $12.00

REQUIRES: STEREOTEK Glasses and DS Drive

MicroEMACS COLLECTION

MicroEMACS, originally developed by David Conroy, is a popular implementation of a useful subset of the EMACS text editor used on mini-computers.

PD9090 $12.00

ST Software Bargains
See pp. 30-31

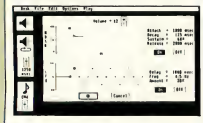
STart Back Issues
See p. 29

The program that created the sounds in CYBERSCAPE!

G.I.S.T.™
G.I. Sound Tool

by Lee Actor &
Gary Levenberg
for Synthetic Software

Works with C Compilers, CYBER STUDIO (ST0236), and Dr. T's MIDI Recording Studio



If **sound** has always fascinated you . . . or if you're a programmer or developer . . . take a look at G.I.S.T., the sound editor. G.I.S.T. was created to establish a standard of sound generation on the Atari ST that far surpasses the abilities of the built-in sound chip. G.I.S.T. is really two programs:
1) GEM-based editor
2) Sound Driver

As you can see from the screen display, the G.I.S.T. editor gives you real-time mouse control over any sound shape. The key to G.I.S.T.'s power is dynamic control of the GI chip. Each voice has three ADSR (envelope) controls and three LFO's (low frequency oscillators). You'll be creating sounds like a professional engineer—Near Synthesizer Quality (NSQ) sound.

For programmers, the Sound Driver is linkable object code that can be used in your own software. Adding superior sound effects to **any** program . . . it's interrupt driven, so it won't impact the speed of your software. In fact, it's already built into CYBER STUDIO—just one of many useful applications.

NOW! Compatible with GFA BASIC & PERSONAL PASCAL!

LET'S GET TECHNICAL

- Volume ADSR to shape attack, decay, sustain, release
- Volume LFO for Tremolo effects and AM (Amplitude Modulation)
- Frequency ADSR—frequency shifts up to ± 3 octaves!
- Frequency LFO for Vibrato effects and FM (Frequency Modulation)
- LFO delay lets you add effects at any point in the sound
- MIDI-compatible! Use your keyboard to play the GI chip
- Three sound windows may be open at once

Add sound effects to your CYBER STUDIO animations!

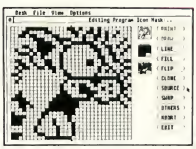
GFA BASIC™ Michtron
Personal Pascal™ O.S.S.

G.I.S.T.
ST0233 $34.95

Start Icon Editor Hits "Big Time!"

P.I.E.
Professional Icon Editor

by Alex Leavens



It began as a hot little desk accessory in START, The ST Quarterly—you know, "Customize Your Desktop Icons!" or so the copy read. And it was a lot of fun. You could redesign your Trash Can to look like a paper shredder. But the programmer, Alex Leavens, just couldn't leave it alone. He kept *adding* things.

Now, the Desktop Icon Editor has graduated. P.I.E. is the *Professional* Icon Editor—for programmers as well as desktop artists. Alex has added icon code generation so you can now design icons for your own programs. And while he was at it, he added a bunch of graphics improvements to delight the artist in you.

New features include:

- Generates Resource Construction Set code for icon images; P.I.E. can be used from within the Resource Construction Set to create and edit icons for the resources you're currently working on!
- Improved Editing Features:
  - Faster Print and Line Modes
  - New Image Cut & Paste Functions
  - Selectable Fill Patterns
  - Nine-level Bi-directional Undo buffer
  - In-program Desktop Icon Preview mode
- Improved Keyboard Resource

P.I.E.
ST0248 $29.95

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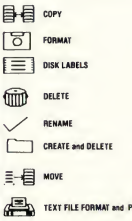
Add a world of DOS Icons to all of your GEM programs.

CRYSTAL™
(It makes GEM shine . . .)

by Jim Thompson



These are the DOS Icons Digital Research forgot when they wrote GEM. It's too bad Atari didn't put CRYSTAL into the TOS ROM's, because for about 30K of code, CRYSTAL gives TOS the most powerful features of MS-DOS. Plus, you never lose the look and feel of GEM. And since CRYSTAL is a desk accessory, it's always available.

In fact, these eight icons will eliminate all the frustration you feel from not having powerful DOS functions available from within your favorite GEM program (or the desktop) . . .

Of course, CRYSTAL is compatible with all monitors, all disk drives, and all printers.

Make your favorite personal version of GEM shine—for $24.95.

CRYSTAL
ST0229 $24.95

"The best utility buy of the year, without a doubt."
— **Current Notes**

BYTE *picks FLASH*
— Top Atari terminal program!
SALE 25% OFF
FLASH 1.5™
The Most Popular ST Terminal Program
by Joe Chiazzese and Alan Page

If you own a modem you should be using FLASH. Why? Because FLASH is the best. It will simplify your online time and make telecommunicating more enjoyable and less expensive.

And now, with version 1.5, FLASH just got a whole lot better — for a whole lot less (effectively $15 after subtracting the $15 CIS time). Check out the new features:

- Enhanced GEM Word Processor
  - Automatic, adjustable word wrap
  - Search and Replace
  - Reformat text blocks
- Supports CompuServe's B protocol for faster, more convenient file transfers (in addition to color Vidtex graphics).
- Now includes VT100/VT52 line-drawing character set
- New Script language functions
- Command line history
- Faster Type-ahead lets you scroll thru previous lines and resend them
- YMODEM batch file
- Ability to run other ST programs from inside FLASH

Ask Anyone
If you're looking for an ST terminal program, ask any online veteran about FLASH. FLASH is so GEM-intuitive, you feel right at home the first day you use it. Imagine turning on your ST, and with *one click* from the GEM desktop, beginning an online session on your favorite BBS. Watch FLASH dial the number, log on, and *automatically* browse through the most recent messages or files. Then, edit some email in the *built-in text editor*, and upload it right from the capture buffer, instantly! And FLASH is programmable, so you have total control for full customization.

"FLASH is my #1 choice on the Atari ST."
*— Ron Luks, Founder of CompuServe's SIG*Atari and Atari Developer's Forum.*

LATE FLASH!!
Order now and get an *additional* $18 FREE GEnie time!

FLASH has a barrel-full of terminal emulation, so it's compatible with a wide range of mini or mainframe systems. And talk about bulletproof transfers! It's got the *most reliable XMODEM around!*

PACKED WITH FEATURES!
In addition to the new features, here are some of the original, solid standards. See for yourself why **Byte** magazine chose FLASH as the top Atari terminal program.

- Programmable "script" language (70 plus commands)
- Unlimited Macro keys
- Mainframe VT100 terminal emulation
- XMODEM (CRC), ASCII and DC2/DC4 file transfers
- Totally configurable to *your* needs!

FREE! Try FLASH now and get $15.00 of CompuServe access time.

FLASH 1.5
ST0220 ~~$30.00~~
Now!
Only $29.95
(* Free upgrade with original disk and $5.00 shipping.)

"FLASH is the fastest, most complete, most reliable terminal program I've used..."
— M. Ratcliff,
ANALOG Magazine

BBS and Kermit Accessory for Flash!
REMOTE CONTROL ACCESSORY & KERMIT PROTOCOL™
by Joe Chiazzese and Alan Page
Instant Kermit protocol within Flash with this custom desk accessory. Plus Remote Control accessory turns Flash into a mini-BBS.
REMOTE/KERMIT
ST0226 $24.95
REQUIRES: FLASH ST022

Soup up your modem...in software!
QUICKTRAN™
The Modem Accelerator
by Adrian Jovanovich
Works with FLASH, or by itself.
Your 1200-baud modem can now transfer files at over 2000 baud... 2400 baud now flies at 4000 baud... The telephone company can't stop you. It's totally legal!

QUICKTRAN comes to you as two disks, each with an identical desk accessory. One QUICKTRAN accessory shrinks the file you're sending — in real time, using one of four automatic compression schemes. The second accessory — on the receiving end — expands the file to it's original size as it's coming in over the phone lines. Why spend hundreds on a faster modem when you can transfer files in almost half the time with QUICKTRAN?
QUICKTRAN
(2-disk set)
ST0247 $34.95

DON'T LET THIS HAPPEN TO YOU!

*"I ordered FLASH and got these funny purple things!" "Shipping and handling? **What** shipping and handling!" "Why did I get ST software! I wanted XL/XE software!" "My software was delivered **where**?"*
Sounds alarming, doesn't it? We don't want this to happen to you!
Take a moment to read the ordering information below,
so that we may ship you your order as fast and accurately as possible.
Thanks for ordering from The Catalog!

Lisa Wehrer
Manager, Customer Service
The Catalog

ORDERING INFORMATION

1. Check for any hardware requirements at the end of each product description (e.g., REQUIRES: one-megabyte, color monitor, etc.).
2. Make sure the programs you are ordering are for your machine. The first three letters of the **Item Number** will tell you which machine each program is for.

FOR THE ATARI ST				FOR THE ATARI XL/XE		
ST0	PD9	SDS	SB0	AP0	PD0	ADS
TH9	BB9	ST9		TH0	BB0	

3. **$20.00 minimum order,** on all orders.

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1. Use the attached order form if possible. If you do not have one, please:
a. **Clearly print** you name, address and telephone number.
b. **List Quantity, Item Number,** name of item, price of item and total.
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Magazines	$1.00 each	$5.00 each	$1.00 each

For Order Inquiry and Technical Support, please call: (415)957-0886
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Compuserve™ subscribers enter: GO ANTIC
We regret we are unable to accept technical support or order inquiry calls on our 800 number. The 800 number is for **orders only.**

Prices and availability subject to change without notice.

HOW TO ORDER

WANT TO SELL YOUR ST SOFTWARE?

HERE'S HOW:
We market a wider variety of software than anyone in the ST marketplace. Whether you're a first-timer, veteran, or a major software firm, we have a place for you in The Catalog. We also distribute through over 1,000 retailers. So, if you're looking for broad distribution and understanding support, send us your program and let us take a look. Worried about security? So are we. Just send us a description of your software and we'll arrange the necessary non-disclosure agreements.
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