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THE OFFICIAL ATARI JOURNAL

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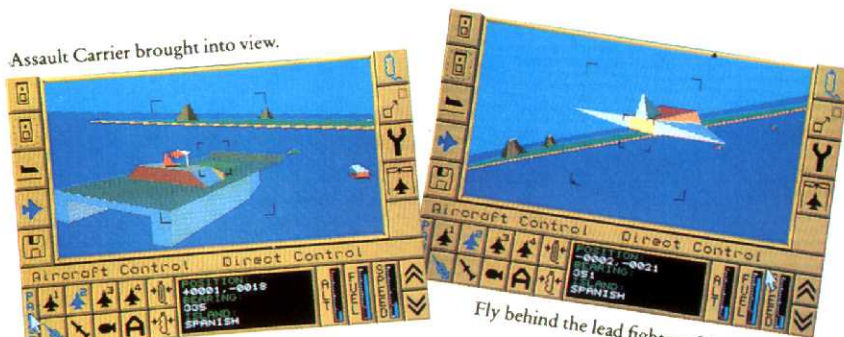
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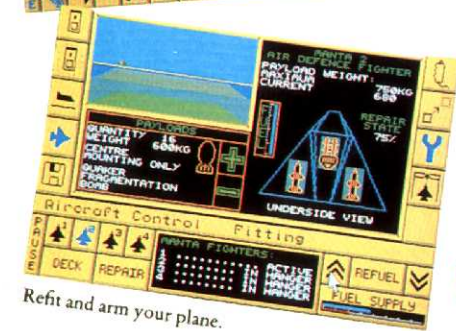
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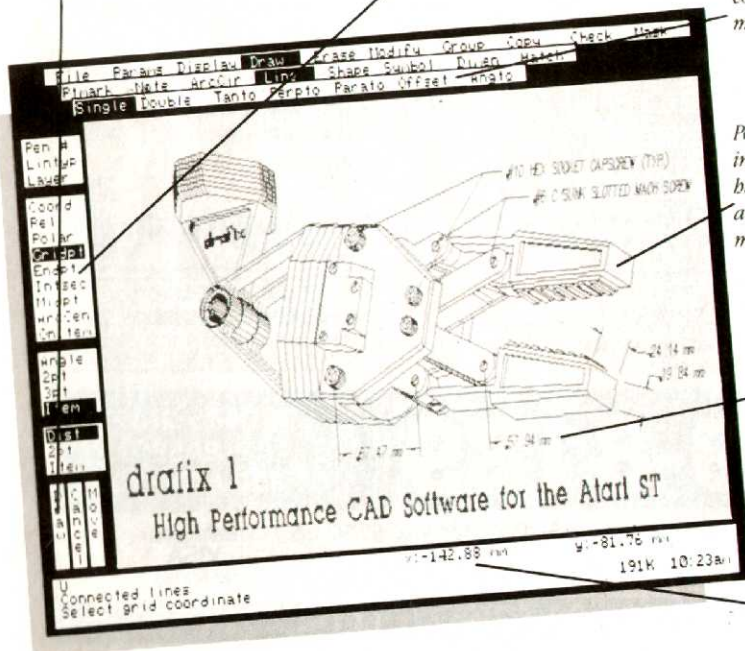
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THE OFFICIAL ATARI JOURNAL

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### POSTMASTER:

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## Piracy Among Friends

Dear Editor:

I wish to take issue with your stand on piracy. It is good to copy programs from friends. This way knowledge and experience can be shared for the benefit of all.

Of course, some piracy is wrong, and should be stopped. Businesses should not be allowed to copy programs. Anyone who can make money with a program should pay for the program.

Clubs that buy programs to share with members should be outlawed. Police can infiltrate such clubs and punish offenders as any other kind of criminal.

But to give a program to a friend? Please! Programs are no different from books and magazines, which are passed around for free.

Most people I know copy programs just to have, to play with, to learn the possibilities. Such people would not buy most software and should not be compelled to do so.

You mention that if piracy is not stopped, people will stop writing programs. I have a simple solution: If an individual copies a program and likes it, he should be allowed to pay the software developer directly.

A typical program that retails for \$100, say, can usually be found through a mail order house for \$59. Part of this money is for shipping, inventory, and other costs. To send the developer, not the retailer, \$20 would more than give him any profit he would have from a sale. This way the developers would be happy and so would the users.

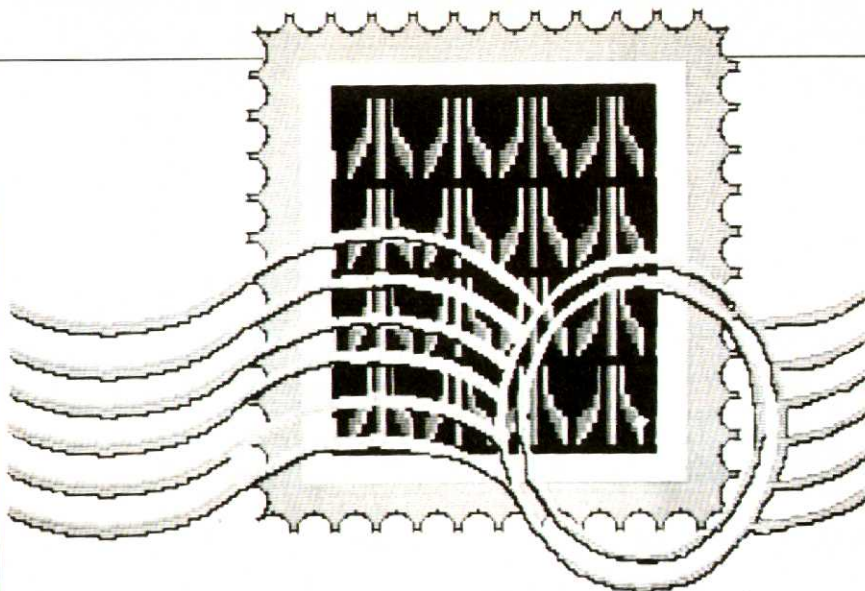
Sanford Aranoff  
16 K.K.L. Ave.  
Kiryat Motzkin  
Israel

*Our January/February '88 cover story on piracy has generated more mail than any article we have published in ten years of dealing with important issues in the computer industry. We have reproduced some of the most interesting ones here to give you an idea of what other Atarians are thinking about this problem.*

## ... Its Own Reward

Dear Editor:

Since I bought my 520ST about a year and a half ago, I have heard much about piracy and the damage it does to the industry through lectures, my local user group, and articles such as Mr. Linzmayer's.



# Letters To The Editor

I decided early on that I would not pirate, and all the software I have was obtained legitimately. The user group I belong to (Access in Sacramento, CA) has actively opposed piracy by warning those who post commercial products on bulletin boards, criticizing software ads that seem to encourage piracy, and making piracy grounds for expulsion from the group.

I will refrain from pirating not to save the industry, but because honesty is its own reward.

Experience has shown me that many users of other computers pirate extensively, that this is not an exclusive phenomenon of Atari users. Some companies blame piracy for lack of sales and to justify discontinuing product lines. Although there may be some basis for their complaints, there are other reasons for lack of sales, including poor products that are not worth buying, poor marketing, high prices, and stiff competition. It is easy to pass the blame, but if there is a good product for a fair price, it will sell.

Peter K. Bellville  
209 Downing Dr.  
Galt, CA 95632

## Download Demos

Dear Editor:

I was amazed at the mendacity shown by your gallery of pirates. Do they drive their cars with stolen gas because "it's too much trouble to go through our purchasing department"?

The majority seem to believe that they are getting something for nothing, which is probably why Neil Larson has concluded that Atari users don't value

property rights. I think Mr. Larson may be only partially right; in my limited experience, Atari users have demonstrated a very high regard for value.

The best TOS software is remarkably reasonably priced compared to MS-DOS packages. While some of this software may not have all the features of comparable MS-DOS applications, it is much less expensive, and in many cases the TOS programs work better.

Software that has been ported over from MS-DOS machines is usually so expensive that Atari users want to obtain copies to "try it out" to determine if it is as good as the stuff at the office. In my limited experience, it usually isn't as good, and I'm glad I didn't break the bank to buy something I would never use.

I think the answer may lie in having user groups download disabled demo programs for inclusion with public domain and shareware on their Disk of the Month. These demos would provide maximum exposure at what seems to me to be minimum risk to the developers.

In closing, I would like to thank you for producing such a useful and interesting magazine. Your features, reviews, and modest price make it the best buy on the newsstand.

David G. Hyman  
9 Coach House Gate  
Nepean, ON K2E 7N1

## No Free Lunch

Dear Editor:

I believe you have hit upon an important moral problem.

I believe that ST users are blessed

with a good variety of software packages sold at reasonable prices by developers such as Abacus, MichTron, Mi-graph, Timeworks, and others. If you compare the prices of equivalent programs for IBM and Apple computers, you will soon discover what a bargain the Atari is.

This piracy reminds me of the CB craze a few years ago, when everyone did what he pleased, regardless of the law. I think that Atari users should rise above that attitude. No one wants to invest time and money to develop software only to find that someone else is stealing it or copying it for profit. I agree that if this attitude isn't changed, we may find ourselves on the short end of the software stick.

I do not agree with Neil Larson of MaxThink when he says that the Atari ST "appealed to the counter-culture who don't necessarily value property rights." I think this is a sophisticated class-oriented remark, and it pleases me that Mr. Larson has removed himself from the ST market. I do not, however, disagree with the rest of his analysis.

Atari ST users have an impressive

computer for the price. Let's not fall into the trap of expecting something for nothing; there is no such thing.

George W. Lambroff  
629 Ordway Ave.  
Bowling Green, OH 43402

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### Fatal Mistake

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Dear Editor:

Your article on piracy was probably the most important piece you have published to date. Piracy has already taken its toll on the Atari community. I have owned my 800 since 1983 and have seen a decline in software availability over the years. Now that I have a 130XE, I feel it's a shame that I have an excellent machine with little software that supports its capabilities.

Atarians rant and rave that the companies refuse to release their hit software. Usually the people who ask these questions are the ones who pirate software and want more freebies. The result is that the more honest customers suffer. They end up not being able to get the software they want because of the

pirates.

The problem doesn't just exist in the U.S. anymore. Pirates now go to the foreign markets and import pirated software from abroad—especially from the U.K.

Unless this stops, the Atari machines (8-bit and ST) will eventually find themselves without new software. Only then will the pirates realize the fatal mistake they have made.

Jack Lee  
Bridgewater, NJ

---

### It Works!

---

Dear Editor:

I enjoy *Atari Explorer* so much that I read each issue cover to cover. I am 12 years old, and my Atari 1040ST is my first computer. I have gone through both manuals, and I have been reading everything I can on programming. I am taking a computer class at school.

I would appreciate it if you would print more articles for beginners like me.

When I saw the title "War of the Words" (Summer '87), I had to read



# ATARI

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# Letters To The Editor

the article, and now I am using *Word Writer ST* to write this letter to you.

My last word of praise is for the article in your September/October '87 issue called "STunning Animation with Color Effects." I was overjoyed that when I tried out animating my *Neo-Chrome* pictures it worked!

Joe Suttie  
5691 E. Beck, Apt. 12  
Fresno, CA 93727

## Real Programmers

Dear Editor:

I was surprised and delighted to dis-

cover that I had become a contributor to your March/April 1988 issue via the "Real Programmers" item in *User Friendly*.

However, I cannot claim original authorship of the piece. I adapted it from an item of the same name that appeared in the March 1987 issue of *Atari ST User's News* (now *ST User's Network*, Box 27285, Salt Lake City, UT 84127) and passed it on to the editor of our *MVACE* newsletter. As *ASTUN* article stated, the author is unknown.

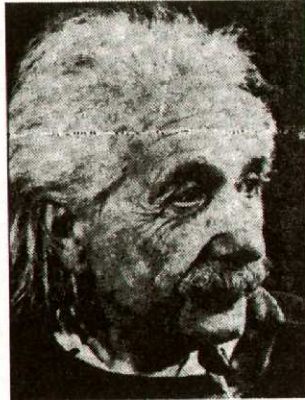
Kervyn D. Mach  
7528 Belle Plain Dr.  
Huber Heights, OH 45424

Dear Editor:

Two quick remarks with respect to my article on *Fleet Street Publisher* in the March-April 1988 issue. First of all, here is how the pictures on page two of my mock-syllabus would have looked had I been able to print them properly. My second point is an apology. Sharp-eyed readers will no doubt have observed that, at some point between the third and fourth versions of the first page of this syllabus, the word *succeed* in the banner headline across the top of the page managed to lose one of its c's (see Figures 4 and 5 in the article). I have absolutely no idea how such a mistake came about, and I certainly do not wish to affront the reader's intelligence by offering an excuse. I suppose that most of us can benefit



This is what History 192 did for me!



This dummy-dodo was so stupid that he proclaimed himself a socialist!

from being taken down a peg every now and then, so I choose to interpret my mistake as an object lesson in human fallibility and a reminder that there is probably no such thing as an excess of humility.

Frank Kofsky

## Missing Monica

Dear Editor:

In your January/February '88 issue, a letter was written by Ms. Monica McCabe, inquiring about game hints for *Ultima II*. I might be able to answer some of her questions, and possibly she could answer a few of mine.

If she gave you an address, could you give her my name and address so she could get in touch with me.

Derek Smith  
1775 Superior  
Wyandotte, MI 48192

*Unfortunately, Monica did not include her address with her letter. If she will write again and give us that important bit of information, we will forward letters from other interested readers to her.*



## The Unfriendly Skies

By now, readers should have deduced that we generally include at least one incorrect answer (sometimes inadvertently) in each *Puzzles & Problems* column. In the Jan/Feb issue, the answer to *The Friendly Skies* was incorrect, as reader Roger Lumsden of Willowdale, ON, has pointed out.

You will recall that we asked how many planes a westbound passenger would see on a five-hour flight from New York to Los Angeles, assuming eastbound flights leave LA once an hour. The answer is that the passenger will see the five planes that took off before his departure, the five that took off after his departure, plus the one that take off just as he lands, for a grand total of 11. This counter-intuitive answer results because the relative speed of the planes is twice the actual speed, because the planes are traveling toward each other.

Moral: Don't believe everything you read. And don't always trust your intuition. ■

## Thwarting Attract Mode

### 8-BIT HELP KEY

Have you ever feared for your eyesight as you tried to read your 8-bit screen during a long print or computation that allowed the "attract" mode to begin? After roughly seven minutes

without a keystroke, the Atari starts shifting screen colors and densities to prevent a "burn in" of the screen phosphors.

If you need to see what is on the screen but are afraid to press a key for fear of upsetting the program, try pressing Shift-Control-A. The operating system interprets this combination as a keypress without any corresponding

data. The computer will exit the attract mode, bringing the screen back to normal with no danger of upsetting the execution of the program.

*Reprinted from an article by John Nagy in the November 1987 issue of W.A.C.O. Printout, the monthly publication of the Westmoreland Atari Computer Organization, 230 Clairmont St., N. Huntingdon, PA 15642. ■*



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Frank Kofsky put his dibs on *WordPerfect* for the ST about six nanoseconds after it was announced. He had high hopes for the ST version of the popular word processor and wanted to be sure he was the one who got to review it for *Atari Explorer*.

Imagine our surprise when, months later after the much-heralded program was finally released, we received from Frank a 20-page, non-stop denunciation of the program.

What to do? Frank was a reliable reviewer who had written thorough, balanced evaluations for us in the past. The program was one about which we had been hearing good things ever since Will Fastie, IBM columnist for *Creative Computing* and later editor of *PC Tech Journal*, pronounced the product of an obscure company in Utah with the improbable name of Satellite Software International the word processor of choice for PC users.

We knew that in the intervening years, *WordPerfect* had deposed *WordStar*, long the reigning king of Word-processor-dom, and that *WordPerfect* was available for more different computers than any other program in its class. We had also heard scattered reports of serious bugs in the newest version—unfortunately, the one for the Atari ST.

Had Frank lost his marbles? Had WordPerfect Corporation (née SSI) hoodwinked the Atari world with the slickest bit of chicanery since the World Power Systems hoax of 1979?

#### A Question of Integrity

Negative reviews always create problems for editors. Most magazines try to avoid them, either by ignoring inferior products or by publishing raves they know to be false simply to keep their advertisers happy. We're sure you know of a few in each of those categories.

We at *Atari Explorer* certainly don't go out of our way to write about bad products; we think you would rather hear about the good ones. We don't hesitate to mention the ways in which we think an otherwise decent product might be improved, but we have found that most of the truly bad products on the market do themselves in long before they reach the top of our review queue.

So, most of the time, the question of how to handle a negative review lies

## Where we stand on negative reviews

A

B

C

D

E

Editorial

quiescent . . . until a troublemaker like Frank Kofsky awakens it.

In the case of *WordPerfect*, the reputation of the program was so positive and so much was expected of the ST version that we knew we had a responsibility to our readers to tell them if there was even a hint of inferior performance. If there is one principle about which there is no ambiguity, it is that a magazine like ours must help its readers sift through the hype and find what is good and what is bad in the many products

**A magazine like ours must help its readers sift through the hype and find what is good and what is bad in the many products that vie for their hardware and software dollars.**

that vie for their hardware and software dollars.

Which brings us back to the question at hand—what to do about these harsh words about a product that everyone wanted to love. We had to get a second opinion.

Marian Lorenz was well qualified to do the second review. She had purchased the program with her own money, so she was beholden to no one, and she had been using it for several months, so she had finished climbing the learning curve. And . . . she was an unabashed admirer of *WordPerfect* and all its features. You will find her review alongside Frank's in this issue.

#### First-Hand Observations

We also decided to have a look at the program ourselves, and spent several days putting it through its paces. In fact, we spent more time with this program than we have ever spent working with a program for which we were not actually doing the review ourselves.

We installed it on our hard disk system—more than once; we created files; we imported files; we converted files; we checked our spelling; we created macros; we changed fonts. We clicked with the mouse; we pressed the function keys in all possible combinations. We printed documents; we printed pages; we printed blocks. And we reached some conclusions . . . but you will have to turn to page 26 to find out what they are. ■

By BETSY STAPLES

# The reviews are in . . .

"A Best Buy' I'm impressed"

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

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

Jerry Pournell, Byte Magazine, October 1987

"pc-ditto is a winner."

Charlie Young, ST World, July 1987

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

Donna Wesolowski, ST Informer, August 1987

"This truly incredible software emulator really works."

Mike Gibbons, Current Notes, September 1987

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U.S. Marshals and agents of the U.S. Customs Service recently seized 2000 counterfeit versions of Atari's 2600 video game system at the Port of Los Angeles. The imitations were made by Fund International Co. Ltd. of Taiwan and were being distributed in the U.S. by P.S.D., Inc. of Canoga Park, CA, according to Joshua Tropper, an attorney representing Atari.

The fake games were seized on December 17, 1987 at P.S.D.'s Terminal Island warehouse following a court order issued by U.S. District Judge Terry Hatter in San Jose, CA. Congressman Ernie Konnyu of California's 12th District assisted Atari in working with the federal agencies.

Atari president Sam Tramiel said that video game counterfeits "hurt our country's industry by depressing sales and hindering the development of new technology. We're letting the counterfeiters know that we will do everything legally to stop them."

#### Lightspeed C Publisher Purchased

Clearstar Softechnologies, best known as the publisher of Lightspeed C, has recently been purchased by OmegaSoft of Harrells, NC. As a division of OmegaSoft, Clearstar will continue to develop new 8-bit software, as well as support its existing product line, which includes such titles as *Elite Personal Accountant*, *TimeBomb*, and *Classy Chassis*. According to John G. Mott of OmegaSoft, the company may begin to develop products for the Atari ST also. Clearstar can now be reached at P.O. Box 140, Harrells, NC 28444, (919) 532-2359.

#### OSS Purchased by ICD

ICD and OSS (Optimized Systems Software) have signed an agreement under which ICD will manufacture, market, and support all existing OSS software titles. These titles include Mac/65, Action!, Basic XL, Basic XE, *Writer's Tool*, and DOS XL for 8-bit computers and Personal Pascal for the ST.

ICD can be reached at 1220 Rock St., Rockford, IL 61101, (815) 968-2228. Product support is also available on CompuServe, Genie, Delphi, Bix, and ICD's own BBS at (815) 968-2229. The OSS phones in San Jose, CA will no longer provide product support.

#### Activision to Distribute Firebird Software

Activision and Telecomsoft have an-

**Counterfeit games seized,  
new partners in the industry,  
gaming news, and more**

# News & Views

By DAVID H. AHL

nounced an agreement under which Activision will handle the sales and distribution of the Firebird and Rainbird lines software in North America. Both lines were previously marketed through Firebird Licensees, Inc. in Waldwick, NJ.

The Rainbird name is best known in the U.S. for adventure games, including *The Pawn* and *Guild of Thieves*, and the action game, *Starglider*, whereas Firebird is best known for the recreational program, *Elite*.

Telecomsoft will continue to develop games and graphics programs for Atari 8-bit and ST computers in Europe and the U.K.

#### Computer Games Publications

If you subscribe to *Computer Gaming World*, you know that they recently tried a short-lived experiment to produce a quarterly magazine, *Computer Gaming Forum*, to leak industry gossip, run interviews with game designers, and give some insight into the industry. It seemed like an interesting but risky venture to me, and apparently advertisers agreed; *Forum* was dropped after two issues, and now *Computer Gaming World* has boldly gone to a monthly frequency and will incorporate some of the industry insider information on its

pages. Subscriptions are \$29.50 per year from *Computer Gaming World*, P.O. Box 4566, Anaheim, CA 92803.

For a different look inside the gaming industry with a focus on actual game design and philosophy, Chris Crawford, author of *Balance of Power* and many other truly outstanding games, has started "The Journal of Computer Game Design."

The third issue featured long discussions on Chris's latest game, *Siboot*, multi-player games, arithmetic methods in game design, and more. The Journal is published bi-monthly, and each issue runs about 16 pages of solid type. Subscriptions are \$30.00 per year (6 issues) from The Journal of Computer Game Design, 5251 Sierra Rd., San Jose, CA 95132.

#### A New Post for Neil

Neil Harris, who has been for several years "the voice of Atari" and the person in Sunnyvale most Atarians feel they know best, has been given a new assignment as director of sales and marketing for the East and Midwest regions of the country. He says he plans to continue providing the on-line support, for which he is so well known, "but more from a managerial perspective."

For maximum coordinated publicity with Atari, software developers are encouraged to establish contact with Atari's public relations agency, Amidei and Company at (415) 788-1333. Contacts are Neil Amidei, Gary Frank, and Steve Bomar.

#### Credit Due

In the Jan/Feb Graphics Gallery, we ran an unidentified image by "HUD." We probably should have guessed that it was Tom Hudson, noted author of *Degas*, who deserved the credit. ■



"Yes, they are. Did you have an appointment."



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Polydisk is a 512K version of a Megadisk. Polydisk gives you the same fast boot features, the high speed access, and the print spooler. Polydisk has a power supply (like Megadisk) but does not contain a battery back-up.

Note: Those with only 512K of main memory can use Switch/Back with a Polydisk, just like those with one Meg.

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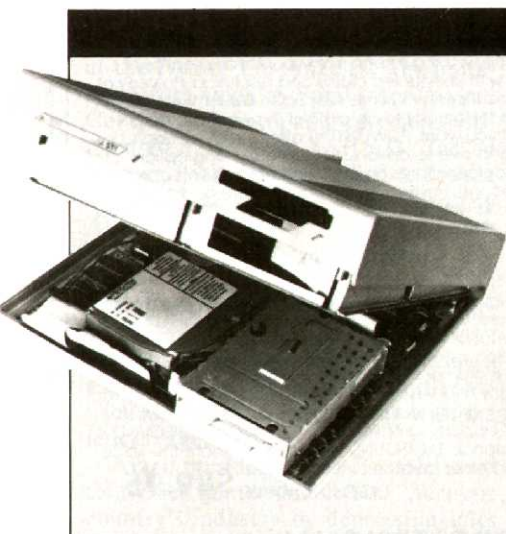
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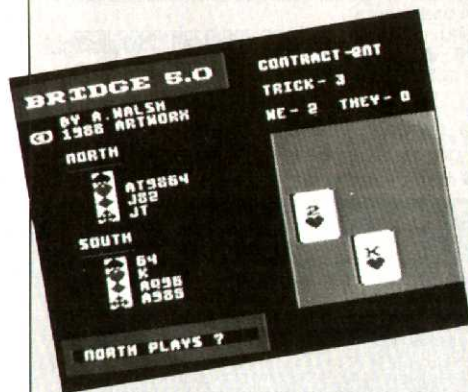
The MegaDrive comes with formatting software that allows the hard disk to be divided into as many as twelve logical partitions, each of which is treated as a separate drive by the GEM desktop. Retail price is \$1049.

Supra Corporation, 1133 Commercial Way, Albany, OR 97321, (503) 967-9075.

Recent releases  
of hardware and software  
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ENTERTAINMENT SOFTWARE



Artworx announces the release of *Bridge 5.0* for the 8-bit line of Atari computers. An enhanced version of *Bridge 4.0*, the new version features improved bidding based on the Standard American-Five Card Major approach. Additional features include Stayman convention, the ability to request an opening hand, auto-bid and auto-play options, and the ability to replay interesting hands at a later date. The program is also available for ST computers. \$29.95.

Artworx, 1844 Penfield Rd., Penfield, NY 14526, (716) 385-6120, (800) 828-6573.

The *Professional Baseball Handicapping System* from **Software Exchange** allows the baseball enthusiast to handicap games using information found in the sports section of the daily newspaper. Because the user enters the

data used by the program to predict the winner, point spread, and total points, there is no need to purchase additional data disks. The program is available for both 8-bit and ST computers. \$49.95.

Software Exchange, P.O. Box 5382, West Bloomfield, MI 48033, (313) 626-7802, (800) 527-9467.

**MicroDeal** announces *Slaygon* for the Atari ST. In this game, you are called upon to help your government maintain peace and justice in the world using the Slaygon—the most sophisticated military robot ever created. Controlled from within by one highly trained specialist, the machine possesses the strength of 100 men, the armor and weapons of a small tank, and the intelligence of its operator. \$39.95.

*Tanglewood*, also for the ST, is a graphics adventure that challenges you to help your Uncle Arthur regain the mining rights to the planet of Tanglewood. The game is mouse-controlled, requiring no text entry. It offers more than 1200 locations, 700K of graphics, and "enough puzzles to keep you busy for months." \$39.95.

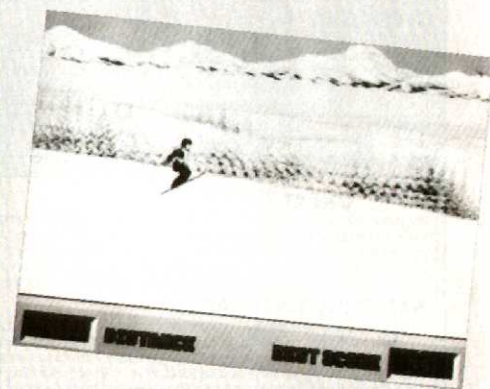
MicroDeal, 576 South Telegraph, Pontiac, MI 48053, (313) 334-3553.

*Gunship*, a simulation of the U.S. Army's AH-64A Apache attack helicopter, is now available for the Atari ST from **MicroProse**. Army regulations require new pilots to train at the Gunship base in the U.S. before reporting for increasingly hazardous combat duty in Southeast Asia, Central America, the

Middle East, and Western Europe. With comprehensive factual detail, *Gunship* generates the topography, enemy weaponry, and strategy that would, or did, accompany conflict in each region. Using a joystick, mouse, and/or keyboard, the player controls not only the aircraft, but its weapons and counter-measures as well. \$49.95.

MicroProse, 120 Lakefront Dr., Hunt Valley, MD 21030. (301) 771-1151.

**Mindscape** has released four new games in the Thunder Mountain line of low cost software. In *Winter Challenge*, which is available for Atari 8-bit and ST computers, up to six players go for the gold in an Olympic-style competition which features ski jump, downhill, bobsled, giant slalom, and biathlon events.



In *Tau Ceti*, a space adventure for the ST, players use infrared night sights, a

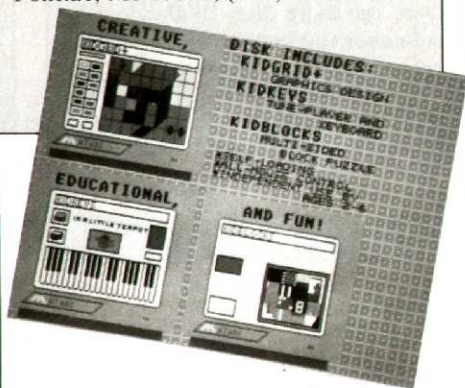
## EDUCATIONAL SOFTWARE

MichTron has released two new educational programs for the ST. *Invasion* is designed to help ST users improve basic typing, spelling, and math skills. You can create, add to, or modify the content of the game and determine whether use vocabulary words that you can memorize, nonsense words that test your typing skill, or math problems that you can solve or use to gain speed with the number keys. You can also decide whether to have the words or problems attack randomly or in the order entered. \$29.95.

MichTron has also released *Pre-School KidProgs* for the ST, a set of

three programs designed to stimulate the development of young children. *KidGrid+* is a drawing program featuring 192 triangles that the child can fill with any of 12 colors. *KidKeys* allows the child to choose one of 20 songs or play music himself on the three-octave keyboard. *KidBlocks* presents an on-screen, multi-sided block puzzle for the child to unscramble. \$39.95.

MichTron, 575 South Telegraph, Pontiac, MI 48053, (313) 334-5700.



## UTILITIES AND SYSTEMS SOFTWARE

Computer Crossware Labs has released version 1.3 of Real Basic, the company's Basic interpreter for the Atari ST. Version 1.3 is compatible with all previous versions as well as original ST Basic. A series of GEM keywords and functions has been added to simplify GEM programming; most GEM tasks can now be performed with a single Basic statement rather than with PEEKs and POKES. A MIDI statement allows MIDI port use. \$49.95.

Computer Crossware Labs, 516 Fifth Ave., Suite 507, New York, NY 10036, (212) 644-2591.

MichTron announces *Juggler*, a switching program that lets you keep up to seven GEM applications resident in memory at the same time on your Atari ST. Files with .PRG extensions are run as if they were standard GEM applications and can be juggled during operation. .TOS and .TTP applications are run to completion, as if clicked on from the desktop, before being juggled. \$49.95.

MichTron, 576 South Telegraph, Pontiac, MI 48053, (313) 334-5700.



360° scanner, and four-way screen to help them win night battles. *Wizball* is "a dazzling action game."

*Tai-Pan*, based on James Clavell's novel set in 19th century China, is brought to life with colorful graphics and detail. All titles retail for \$14.95 each.

Mindscape, 3444 Dundee Rd., Northbrook, IL 60062, (312) 480-9209.

*Questron II* from Strategic Simulations challenges the ST user to destroy the Evil Book of Magic. To do so, you must journey back in time to ensure that the book was never created. Towns, cathedrals, forests, tombs, and dungeons must be explored, and many of the 60 different kinds of creatures you face must be fought with weapons and magic spells. \$49.95.

Strategic Simulations, 1046 N. Rengstorff Ave., Mountain View, CA 94043, (415) 964-1353.



### Wide-Carriage Microline 183 Printer

Okidata announces the wide-carriage Microline 183 parallel printer. Equipped with a standard pull tractor as well as a friction feed platen, the printer offers speeds of 120 cps in utility mode, 60 cps in emphasized and enhanced mode, and 30 cps in near letter quality mode. It accommodates spreadsheets and other oversized documents

with up to 237 columns of condensed characters.

The Microline 183 offers a variety of print styles, including italics, enhanced, emphasized, superscript, subscript, and underlining. It can also produce double-density, bit-image graphics, enabling users to develop custom characters and illustrations, charts, and graphs with up to 144 x 144 dots per inch resolution. Retail price is \$399.

Okidata, 532 Fellowship Rd., Mount Laurel, NJ 08054, (609) 235-2600.

**MUSIC AND GRAPHICS SOFTWARE**

Passport Designs has released version 2.0 of *Master Tracks Pro*, a professional music sequencer for the Atari ST. The package offers five main modules, which provide 64 tracks of real- and step-time input, song editing, step editing, a system-exclusive librarian, and a keyboard control mapper. Features new in version 2.0 include a dialog window for automatic setting of punch-in and -out points and a Conductor Track Data Window, which graphically reflects changes made to the Conductor Track from the Change Window or with the pencil and eraser tools. Improvements have also been made to Elapsed Time, Quantize Window, and Measure Insertion. \$349.

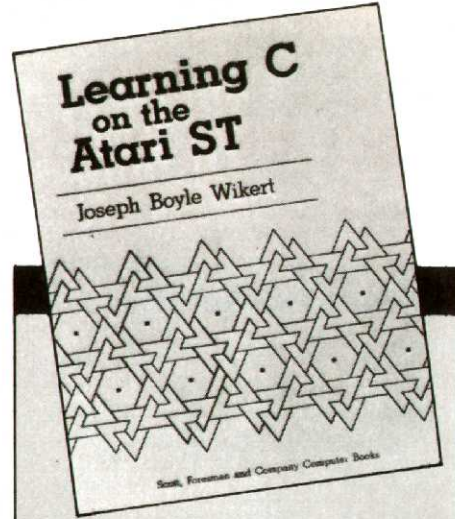
*Master Tracks Jr.* is an entry-level sequencer for the ST. The program provides 64 tracks for real- and step-time recording, MIDI song pointer, 100K plus not capacity with 1Mb of memory,

auto punch-in and -out, step input, MIDI files, and many other features. \$129.95

Passport Designs, Inc., 625 Miramontes St., Half Moon Bay, CA 94019, (415) 726-0280.

New from *MichTron* is *GFA Artist*, an animation program that allows you to create pictures and complex animated forms and save them to disk. Two modes—Low-Res, the normal resolution mode, and Low-Res Static, which lets you use more than 1000 colors on the screen at the same time—are available. And the Function Selection Box allows you to integrate both low- and medium-resolution into one screen. The program is compatible with *Neo-Chrome*, *Degas*, and *Color Star* formats. \$79.95.

MichTron, 576 South Telegraph, Pontiac, MI 48053, (313) 334-5700.



**Book Teaches C**

*Learning C on the Atari ST* by Joseph Boyle Wikert moves from the fundamentals of C programming to discussions of more complex topics such as syntax and structure.

As readers gain experience, they learn to write more sophisticated programs using files, multi-dimensional arrays, and pointers. The book explains popular graphics routines and demonstrates how to use GEM. Retail price is \$19.95.

Scott, Foresman and Company, 1900 East Lake Ave., Glenview, IL 60025, (312) 729-3000.

**Come to grips with GEM!**

Pascal \$149  
 Fortran \$199



**Prospero Pascal for GEM and Prospero Fortran for GEM - two new products for the Atari ST - with:**

- Complete programming environment with editor and workbench
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- Linker, Run-time Libraries, Librarian, X-referencer, Symbolic Debugger
- Compiled Pascal or Fortran GEM bindings
- Complete language and GEM documentation
- Access to BIOS, XBIOS and Line A routines

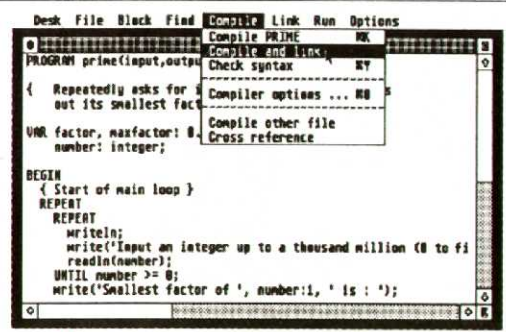
The programming environment is designed to stay resident in your Atari while you are programming. It controls the editor, the compiler, the linker and utility programs, and allows you to run the program you have compiled or any other program.

With the **four-window editor** you can load up to four different source files, and cut and copy between them - the editor understands Wordstar® command sequences. It has block copy and move as well as powerful search and replace functions.

The **compiler** is Prospero's well established Pro Pascal or Pro Fortran-77 compiler, both of which conform fully to ISO and ANSI standards.

The **linker** is fast and efficient; assembler language libraries may be introduced.

The **debugger** provides complete source line tracing and source variable display capability; break points can be set; the calling sequence may be shown, the last ten lines executed can be listed, as can any source lines from the main program or any libraries; you can execute SID or any other program; screen switching separates program text and GEM output.



Windowing and graphics support is provided by GEM; the documentation gives all the explanation needed to use these powerful functions.

The three volume **Documentation** pack includes:

- Installation and operating instructions
- Implementation details
- The programming language specification
- Detailed descriptions of all 109 VDI Bindings and all 101 AES Bindings, with example programs.

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# New and Improved

Software packages are constantly being enhanced by their publishers to add features, fix bugs, and incorporate the latest technological advances. To derive the maximum benefit from your software investment, it is important to know what updates have been made to the packages you use. If you are not using the most current version of a package, contact the manufacturer to find out what enhancements have been made and what you must do to obtain the new version.

Working from information provided by the publishers

themselves, we have compiled a list of the most current version numbers of many popular 8-bit and ST software packages and software/hardware products. Program version numbers are often found printed in the documentation, on the title screen, in a README text file on disk, or in an About . . . item in the left-most menu on the GEM desktop.

While every attempt has been made to make this list as comprehensive as possible, we realize that a few fine products may have been omitted. If you would like to see a specific program added to this list, please send your suggestion to New and Improved, *Atari Explorer*, 7 Hilltop Rd., Mendham, NJ 07945.

Note: we have not included entertainment and educational programs in this list because, as a general rule, these packages are not updated frequently.

## 8-Bit Programs

Action, OSS	3.06
Bank Street Writer, Broderbund	1.0
Basic XE, OSS	1.2
B/Graph, Electronic Arts	1.1.1
Blazing Paddles, Baudville	04412
Chipmunk, Microdadt	3.0
ComputerEyes, Digital Vision	1.3
Desktop Performance Studio, Virtuosonics	1.1
Draper Pascal, Draper Software	2.0
First XLent Word Processor, XLent Software	2.1
FlashBack, ICD	1.1

Guitar Wizard, Baudville	11602
Kyan Pascal, Kyan Software	2.02
MYDOS, Supra	4.3
PaperClip with Spellpak, Electronic Arts	2.0
Print Shop, Broderbund	1.0
Print Shop Companion, Broderbund	1.0
SpartaDOS Construction Set, ICD	3.5A
Super Archiver, Computer Software Services	3.02
TypeSetter 130XE, XLent Software	1.4
TypeSetter 48K, XLent Software	1.3

## ST Programs

Aegis Animator, Aegis Development	2.10
Alice Pascal, Looking Glass Software	1.5
APL 68000, Spencer Organization	6.05C
Athena II, Iliad Software	1.8
BBS Express, ICD	1.3
BB/ST, QMI	1.12
CAD 3D, Antic	2.02
ComputerEyes Color, Digital Vision	1.3
ComputerEyes Mono, Digital Vision	1.0
Cyber Paint, Antic	2.0
Dac-Easy Accounting, Dac Software	1.0
Dac-Easy Payroll, Dac Software	1.0
Data Manager ST, Timeworks	1.1
DataTrieve, Abacus Software	2.03
dBMan, Atari	3.0
Degas Elite, Electronic Arts	1.1
DeskCart, QMI	1.02
Dollars & Sense, Monogram Software	1.2
EasyDraw, Migraph	2.2
EZ Calc, Royal Software	1.33
First CADD, Generic Software	1.0
Fontz, Neutron Engineering	1.00
GFA Basic, MichTron	2.027
GFA Compiler, MichTron	2.02
Ist Word, Atari	1.06
Ist Word Plus, Prospero	2.02
Flash, Antic	1.6
Fleet Street Publisher, Spectrum Holobyte	1.1
Fortran for GEM, Prospero	2.11
Hard Disk Accelerator, Beckemeyer Development	1.13
Hard Disk Toolkit, Beckemeyer Development	1.03
Informr, Regent Software	1.04
Interlink ST, Intersect Software	1.74
Inventory Manager, Regent Software	1.2
Inventory Master, Royal Software	1.2
IS Talk, Electronic Arts	2.03
LabelMaster Elite, Migraph	1.0
LDW Basic Compiler, Logical Design Works	2.0
Magic Sac, Data Pacific	5.9
Mark Williams C, Mark Williams	2.1.7

MasterPlan, ISD Marketing	1.0
Micro C-Shell, Beckemeyer Development	2.70
Micro RTX Developer Kit, Beckemeyer Development	2.70
Modula 2, Jefferson Software	1.1
Modula-2, TDI Software	3.01A
MT C-Shell, Beckemeyer Development	1.10
Multi-Manager, New World Software	1.0+
Music Studio, Activision	1.0
Pascal for GEM, Prospero	2.10
Payroll Master, Royal Software	1.3
PC-Ditto, Avant-Garde Systems	3.0
Personal OS-9/ST, Microware	2.2
Personal Pascal, OSS	2.0
Phasar, Antic	3.0
Philon Fast/Basic-M, Philon	1.35
P.M. Interface, XLent Software	1.1
Print Master Plus, Unison World	1.61
ProCopy, Proco Products	1.50
Professional C Development System, Megamax	2.0
Professional OS-9/ST, Microware	2.2
Publishing Partner, Soft Logik	1.03
Regent Base, Regent Software	1.1
Regent Word II, Regent Software	870403
ST Accounts, ISD Marketing	2.0
ST Hard Drive Utility Disk, Supra	3.01
ST Sprite Factory, Future Software Systems	1.1
ST-Talk Professional, QMI	2.0
SwiftCalc ST, Timeworks	1.1
The Chameleon, Future Software Systems	1.0
The Manager, BMB Computerscience	1.0
The Navigator, Antic	2.0
Thunder, Electronic Arts	1.31
True Basic, True Basic	2.0
True Basic Run-time, True Basic	2.0
VIP Professional, ISD Marketing	1.2
WordPerfect 4.1, WordPerfect	1/31/88
WordUp, Neutron Engineering	1.00
Word Writer ST, Timeworks	2.0
Write 90°, XLent Software	1.3
Zoomracks II, Quickview Systems	1.0

# Win! Win! Win!

**Don't pass up these chances to win big (and little) prizes**

A trip to Paris. Software packages. Subscriptions to *Atari Explorer*. Graphics image libraries. These are some of the many prizes you can win by entering one or more of the contests in progress at *Atari Explorer*. Your chance of winning depends, of course, on the number of entrants. However, in previous contests two out of every five entrants have won prizes! That's a whole lot better than the lottery, the offers you receive in the mail, and even the contests run by other magazines in which your chance of winning may be 1 in 500,000 or worse. So rev up those computers and get your entries in the mail.

Right now, you have a chance to win a trip to Paris and software packages in the Advanced Art Studio Contest, software packages and subscriptions to *Atari Explorer* in the 1K Programming Contest, and subscriptions and graphics disks in the Graphics Gallery Contest.

## Advanced Art Studio Contest

This contest requires that you produce a graphics image using Firebird's *Advanced Art Studio* software package. Judges will be looking for entries that are both graphically pleasing and interesting and that also take advantage of the unique features of *Advanced Art Studio*. Because the program is brand new, all contestants have an equal opportunity to win.

### Contest Rules:

1. Graphic images must be created with *The Advanced Art Studio* and submitted on a 3½" Atari ST disk.

2. Entries must be postmarked by June 1, 1988. Neither Firebird nor *Atari Explorer* can take responsibility for entries lost or damaged, however

caused.

3. Entries should be submitted to Firebird Licensees, Inc., Attn: Graphics Contest, 71 Franklin Tpk., Waldwick, NJ 07463.

4. Winning entries will be chosen based on creativity, originality, and skill. The decisions of the judges are final. Judges include David Ahl and Peter Kelley of *Atari Explorer*, Tom Benford of Benford Communications, and two representatives of Firebird Licensees.

5. Entrants may not be employees of Firebird Licensees, Inc., Atari Corp., or subsidiaries, affiliates, or agencies of either company.

6. All entries become the property of Firebird Licensees, Inc. including intellectual property rights and world-wide publishing rights. Firebird will not undertake to sell any entry for commercial gain.

7. All entries must include the following signed and dated statement: "The enclosed entry is my own work. I hold the rights to it and its use and guarantee that I have not infringed any copyrights. I am legally entitled to pass on the rights for the use of my entry to Firebird Licensees, Inc.

"I am not an employee of Firebird Licensees, Atari Corp., or any subsidiary, affiliate, or agency of either company."

8. First prize is a round-trip flight to Paris, France, plus four days hotel accommodation for one. Awarding of the prize is contingent on the winner's ability to obtain the required visa and any other necessary documentation. No cash equivalent prize is offered unless the winner is under the age of 18 and is unable to travel alone or arrange for an

adult traveling companion.

9. Second through fifteenth prizes are Firebird software packages.

10. Winning entries will be published in the September/October 1988 issue of *Atari Explorer*.

12. The contest is open to residents of the United States and Canada. No purchase is necessary. Void where prohibited.

## 1K Programming Contest

While computer memory capacities have leaped from 1K to 4K to 16K to 64K to 512K, there is still a place for short programs in the world. Not because short is good per se, but because short programs are usually fast and economical of both resources and people time. Hence, our on-going competition for the best programs that fit in 1K or less.

### Contest Rules:

1. Programs—including data, dimensioned arrays, etc.—must fit in 1K (1024 bytes) or less.

2. Programs may be written on either an Atari 8-bit or ST computer in any standard, widely available language.

3. Programs should be submitted with a disk containing the program (and language, if possible), a hard copy listing, a sample run, and a description of the program and its purpose. If you want the disk returned, include return postage.

4. Entries should be submitted to 1K Contest, *Atari Explorer*, 7 Hilltop Rd., Mendham, NJ 07945.

5. Winning programs will be chosen on the basis of usefulness, originality, and quality of programming style.

6. One or more programs will be selected as winners every issue and will appear in *Atari Explorer*.

7. The author of each winning entry will receive a 3-year subscription or extension to *Atari Explorer* plus a recently-released game package.

## Graphics Gallery

Graphics images produced in *Degas* or *NeoChrome* may be submitted to our on-going Graphics Gallery. See details on page 24. ■

## Using The Right Button

### ST HELP KEY

By holding down the right button on the mouse you can select files and folders in an inactive disk window just as if it were the active window on the ST desktop. For example, open up drive A and then B, which leaves B as the active window.

Now, to copy a file from A to B, simply click on the desired file just as you normally would, except hold down the right button on the mouse when making your selection. Now drag the selected file over to the active window (drive B) and when you release the left-button, you will be prompted to verify the copy. You can even make multiple selections by holding down a Shift key when choosing files and folders. ■

## Thwarting \*.\*

### ST HELP KEY

If you change the path or wildcard in the GEM Item Selector and then click on the scroll bar or arrows, instead of the diamond or gray bar at the top of the directory box, the selector will not automatically revert back to the \*.\* wildcard. ■

# Disk Drives that are Setting new Standards for ST Enhancements



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- The GTS is dual sided, double density floppy disk drive with a 720 k formatted storage capacity.
- Comfortable. Impressive. Friendly. Three excellent reasons to go see and test drive the new GTS-100 at your ST dealer today.

## Future

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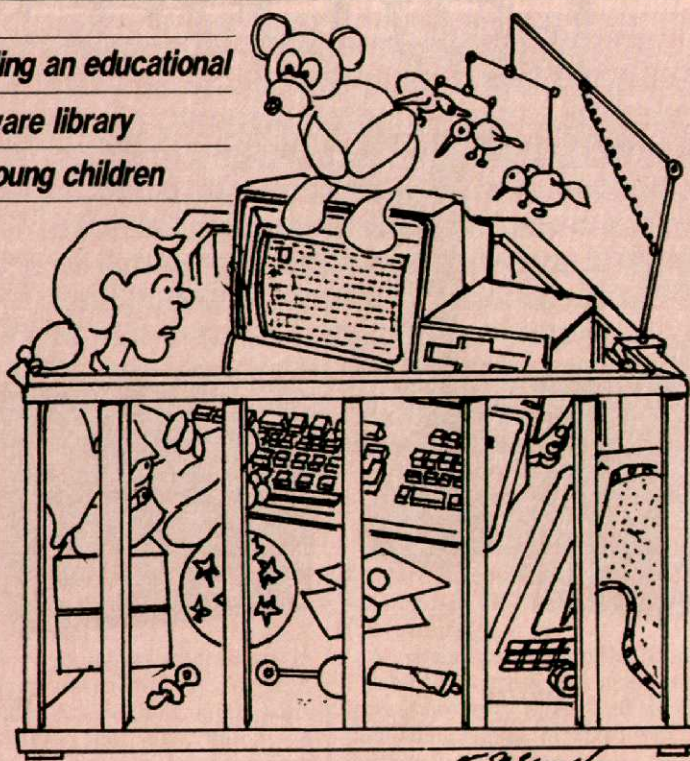
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**Building an educational  
software library  
for young children**



# Atari Classroom

By D. A. BRUMLEVE

Because I have been working with kids and computers (and perhaps because I have five kids and four Atari STs), I am frequently asked to recommend "educational" software. This request always catches me off guard, because it implies a view of computers and education that I simply do not share.

Most people have a concept of educational software which includes programs that teach or provide practice in specific academic skills. Such programs are essentially electronic worksheets. We own a few of them, including *Algebra I* from MichTron, which our oldest likes a lot, and *Decimal Dungeon* from Unicorn, which he regards as "OK." These programs can be effective in providing motivation and in helping children practice needed skills, but they play only a very limited role in teaching them to use a computer effectively.

In my opinion, virtually any category of software can have educational value. To get the most out of a computer, a child needs more than the ability to use

a few programs; he needs to develop an awareness of and an appreciation for the potential of the computer to make him more productive.

Not only are there many things he can do more easily and more quickly with a computer; there are also many things he can't do *at all* without a computer. A child should learn to use a computer as computers are used in the real world. And, in the real world, computers are used as *tools*.

Our son Danny, age 9, hates to write his work out by hand, and I think it is because of the awkwardness of error-correction with pen or pencil. He is willing to write long stories and reports with a word processor, though, and will go over his work several times, making small corrections, before he prints it out. But he did not see the correction potential of word processing until I pointed it out.

The desire to type his homework has, in turn, provided motivation to learn touch-typing. (By the way, many children are not developmentally ready to

exercise this degree of fine motor control in the grade school years.)

Danny enjoys drawing, and he uses Atari's *NeoChrome* or *Degas* from Electronic Arts to illustrate his reports. With GFA Basic from MichTron, he writes his own programs for his own purposes; he has one that keeps track of his savings toward a radio-controlled car, for example. In other words, Danny has learned to regard the computer as adults do—as a tool, not a toy—and he uses it for his own real purposes just as adults do.

## A Wide Variety of Programs

To maximize the educational value of a home computer, parents can provide a child with a wide variety of programs that serve different purposes in his world. The job doesn't end with the provision of programs, however; the child has to learn how—and when—to use them.

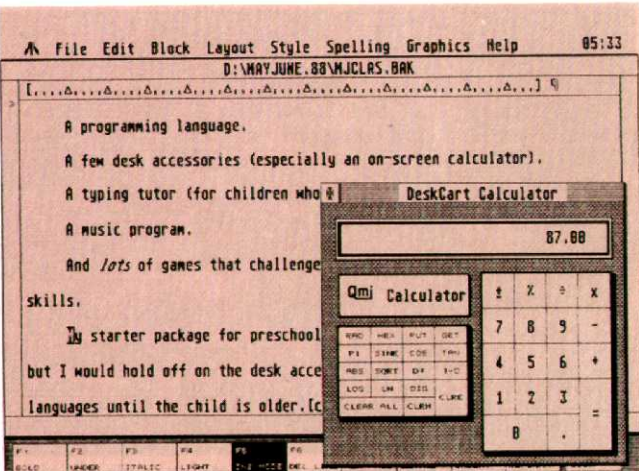
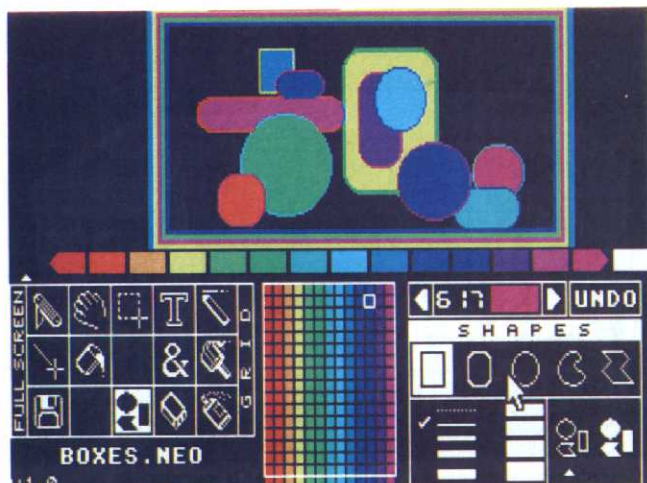
Parents and teachers can help him learn to use the programs and play games with him, but they can also observe the child's needs and point out how the computer can help meet those needs, if the child doesn't think of it himself. This kind of support is very important.

To expose children to a variety of uses for the computer, I recommend this starter package for children aged 8 and up, at home or in school:

- A good drawing program.
- An easy-to-use word processor.
- A programming language.
- A few desk accessories (especially an on-screen calculator).
- A typing tutor (for children who do not already touch-type).
- A music program.
- And *lots* of games that challenge one's thinking skills.

My starter package for preschoolers is essentially the same, but I would hold off on the desk accessories and programming languages until the child is older.

Selecting the "best" software for your child in each category is also an individual matter. Because new software packages are introduced almost daily, please check your dealer's shelves and the new product announcements in this and other magazines to find out what is new. Once you know what is available, you can use the software reviews in *Atari Explorer* and the reports of friends who have used the programs that interest you to help you compare programs with similar purposes and decide which is best for your child.



A drawing program such as NeoChrome is an essential part of any child's software library.

A desktop calculator is a must for older children. This one is one of the desk accessories included with the DeskCart cartridge from QMI.

Four of my children, ranging in age from 4 to 9, routinely "beta-test" my own programs and those of other authors. (No one can zero in on a bug faster than a child!) By observing the children as they work with programs and by listening to their reactions, I have developed a set of guidelines, which I use in selecting programs for them.

For preschool children, I look for programs that allow even the youngest users to work entirely independently. Such features as automatic loading, minimal reading and typing, large icons, color-coordinated selections, and consistent formats all contribute to independent use, boosting the child's self-esteem and confidence. To promote pre-reading skills, I try to provide programs in which objects on the screen move from left to right.

Because young children often cannot tell the difference between left and right, programs which permit the child to use either or both mouse buttons are best. Small children need large targets for the mouse, and selections should be clearly indicated. Screens should not be too busy nor offer an overwhelming number of selections.

Programs with creative, stimulating activities will hold the child's interest for at least several minutes at a time. The best programs for this age group offer challenging activities but are easy to learn to use.

I do not recommend the purchase of any copy-protected software for preschoolers. Disks in the hands of small children are accidents waiting to happen, but the benefits of independent use far outweigh the risks.

It is a good idea to make your child

his own copy of the programs he uses. As mentioned above, one of the ways in which independence is achieved is through the use of programs that load automatically. A public domain program called BOOTMAKR.PRG creates a file which, when inserted in an AUTO folder on the child's disk, will auto-boot a specified program whenever the reset button is pressed.

I have used BOOTMAKR to set up individual auto-booting disks for each program my younger children use. When

### ***Even a brief exposure to programming will give a child a new appreciation for the commercial software he uses.***

they want to work with a program, they simply select the disk, insert it in the drive, and press the reset button, with no need to appeal for adult help.

Older children often enjoy programs intended for adults. Unfortunately, many such programs offer little protection from user error. For example, a program that exits to the desktop without asking if you really want to quit causes much frustration for this age group (and for adults, too). Look, instead, for programs that use "second chance" alert boxes to protect the user from quitting a program by mistake.

Copy-protection is a problem for old-

er children, too. If you must buy a program that cannot be backed up, be sure to send in the warranty card. You will almost certainly need to take advantage of the replacement service eventually.

I also look for programs with uncomplicated procedures (especially for saving and loading) and consistent formats for children of grade-school age. A program that allows you to perform a given procedure three different ways, with three separate steps in each of the possible ways, is not a good choice for children.

Clear on-screen instructions and help files built into the program are a boon to young users, who tend to ignore printed documentation. In short, the ability of your child to use a program independently is a good indicator of its appropriateness for his age.

#### **The Value of Games**

While children should become familiar with programs in each of the listed categories, most of the programs in a child's software library are likely to be games.

Adults who have little experience with games may not appreciate the hidden educational value and sophisticated challenge of games currently available for the ST. Games that take advantage of the remarkable capabilities of the ST are a far cry from the likes of *Pong* and *PacMan*.

Graphics/text adventures (*King's Quest* from Sierra On-Line and *Sundog* from FTL, for example) provide an excellent opportunity for children—and their parents—to develop creative thinking skills. These games require logic, experimentation, and divergent thinking.



Games that allow the user to design custom playing fields provide an outlet for creativity while challenging thinking skills. *Airball Construction Set* is complex arcade-type game.



Graphic adventure games like *King's Quest II* can provide an entertaining and educational experience for the whole family.

I suggest that parents pursue one of these challenging games with their children. Our entire family made a group effort to solve *King's Quest II*, with every member contributing ideas which eventually led to success; it was a very exciting and eye-opening experience for us all. (Note that text-only adventures, no matter how challenging and well-designed, are unlikely to interest children.)

Even some games which seem at first glance to provide nothing more than

exercise for the fire button finger actually require careful planning and inventive problem-solving strategies. A prime example is the public domain DGDB; the shoot-'em-up aspect attracts the child's interest and the strategic challenge keeps that interest strong. Another positive feature of DGDB is that, when two people play, they are most successful when they co-operate as partners rather than competing as adversaries.

Some game packages allow the user

to design playing fields and other features for the game. The public domain *Deluxe Stone Age*, *Mean 18* from Accolade, and *Airball Construction Set* from MichTron are three programs that provide an outlet for creativity while challenging the child's thinking skills as he develops new gameboards.

You will note that I recommend a programming language for all but the youngest computer users. Not all children will be able to make their living as programmers, to be sure, but even a

## Sources of Software

Public domain (and *only* public domain) software may be copied freely. It is often possible to obtain programs from a friend, your user group, or a local bulletin board system (via modem) at no cost. All of the public domain programs mentioned in this article are available on Genie.

The Atari magazines publish public domain and other programs that you are free to copy for your own use. Some of these are also available on disk. There are also public domain dealers who charge a nominal fee for their service. Among those who carry many public domain programs suitable for children are the following:

Accusoft  
P.O. Box 02214  
Columbus, OH 43202

Brad Roltgen Enterprises  
719 E. Minarets  
Fresno, CA 93710  
(209) 432-2159

CN Library  
122 N. Johnson Rd.  
Sterling, VA 22170

The publishers of the commercial programs mentioned here are listed below. These programs can be purchased from your local dealer, through a mail-order firm, or directly from the publisher.

Accolade  
20833 Stevens Creek Blvd.  
Cupertino, CA 95014  
(408) 446-5757

Atari Corp.  
P.O. Box 61657  
Sunnyvale, CA 94088  
(408) 745-2367

Electronic Arts  
1820 Gateway Dr.  
San Mateo, CA 94404  
(415) 571-7171

FTL  
6160 Lusk Blvd., C-206  
San Diego, Ca 92121  
(619) 453-5711

MichTron  
576 S. Telegraph  
Pontiac, MI 48053  
(313) 334-5700

Sierra On-Line  
P.O. Box 485  
Coarsegold, CA 93614  
(209) 683-6858

Unicorn  
2950 E. Flamingo Rd. #B  
Las Vegas, NV 89121  
(702) 737-8862

brief exposure to programming will give a child a new appreciation for and understanding of the commercial software he uses.

Logo is often recommended as an "educational language," but I have found that children over the age of 6 or 7 are seldom satisfied with their products in that language, so I recommend Basic, the most widely-used computer language.

### Increasing the Benefit

There are many other ways to increase the benefit your child derives from his computing experience. Our children have enjoyed meetings of our Children's ST Users Group, a group of nearly 20 children who come together at our house once a month to play games, swap public domain software, and share ideas about computing.

Your local Atari user group may have a children's SIG or be willing to start one, or you can start one yourself. If you live in a metropolitan area, you will probably be able to find enough children to form a group. We didn't know many of the children who now come to

our meetings before we started the group; I advertised on a local BBS and in area schools to gather a quorum.

Some software categories which are not on my starter list may be useful to children with special interests. A child

phy buff may want to digitize his pictures. A child who enjoys industrial arts will appreciate a good drafting program.

Most children will need considerable adult assistance to become proficient

**To maximize the educational value of a home computer, parents can provide a child with a wide variety of programs the serve different purposes in his world.**

with a large record, videotape, or rock collection, for example, may want to catalogue it with a database. A child with an interest in electronics may want to tackle some very difficult projects, perhaps software and hardware to control his electric train set or to control lights and appliances throughout the house.

A budding reporter can use a desktop publishing program to publish his own neighborhood newspaper. A photogra-

with programs for special applications such as these, but the rewards can be great. The computer becomes a tool. Now that's education. ■

*Dorothy Brumleve serves as the adult facilitator of the Children's ST User Group and co-librarian of the Champaign-Urbana (IL) ST User Group. She has written a number of public domain programs for preschoolers, which are available for download on Genie, and MichTron has just released her first commercial package, Preschool KidProgs.*



### What Is IMG Scan?

IMG Scan is a simple, inexpensive device which turns your dot matrix printer into an image scanner allowing you to scan any page that can be put into your printer! Keeping in line with Atari's power without the price philosophy, IMG Scan finally makes image scanning simple and affordable. This brings powerful graphic capabilities to desktop publishing, image processing, and graphic art applications on the Atari ST! At \$99.95, the IMG Scan opens doors that were closed by expensive and inferior video digitizers.

*This entire brochure was created on an Atari ST using a desktop publishing program and IMG Scan. All images and line drawings were reproduced with IMG Scan, imported into the desktop publishing program, and printed on an Apple Laserwriter. This is how easy IMG Scan is to use.*

**SEYMOR-RADIX**  
P.O. Box 166055 Irving Tx 75016 (214)255-7490



Fig. 2. This image was scanned from an original cover removed from Vanity Fair magazine with IMG Scan and printed on an Apple LaserWriter.

### How It Works

The operation of IMG Scan is very straight forward. A small cartridge (approx: 1.6" X 1.9") plugs into the Atari ST's cartridge port and is connected to the printer's head via a thin, flexible image cable. This image cable can be attached most anywhere on the print head using nothing more than a piece of adhesive tape. The user is at option to use any method he may come up with to mount the cable, but is not encumbered by an inflexible mounting bracket. This is one reason that IMG Scan can be made to work on most any printer. With the image cable attached to the print head, the printer is controlled by the IMG Scan driver software. The software can be set for sizing the scanned image among 20 different levels of magnification or reduction. Since 256 gray levels are recorded, and the ST is capable of displaying only 16 colors at a time, the contrast of individual gray level ranges can easily be adjusted and assigned to color palette positions. The image may then be colorized or saved to disk etc.

### Applications

IMG Scan is an indispensable tool in desktop publishing. It is very useful in things like adding photographs, charts, clip art, line art, or anything that can be scanned, to newsletters, business cards, letter heads, etc. You could for example, put your own picture on your own letterhead! Also it can be used to create a computerized photo album. Send pictures of family and friends over the phone lines. And of course, IMG Scan is perfect for use with art programs to enhance your art creations.



Fig. 3. This image was scanned from a photocopy of a National Geographic cover with IMG Scan and printed on an Apple LaserWriter.

### IMG Scan

**\$99.95**

Phone orders call: (214)255-7490. VISA/MC accepted

### ORDER FORM

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

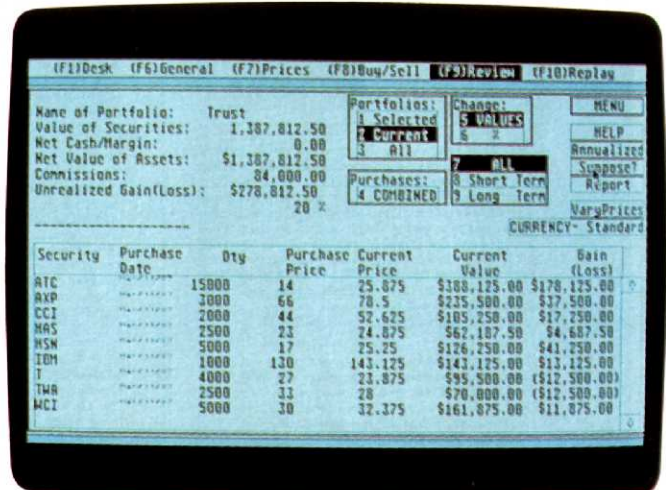
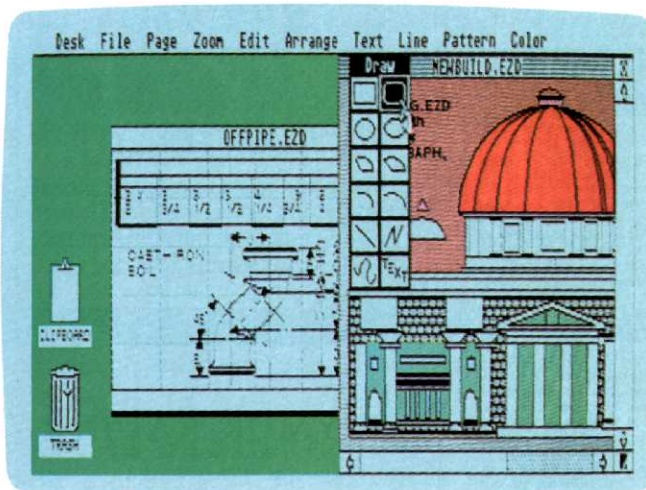
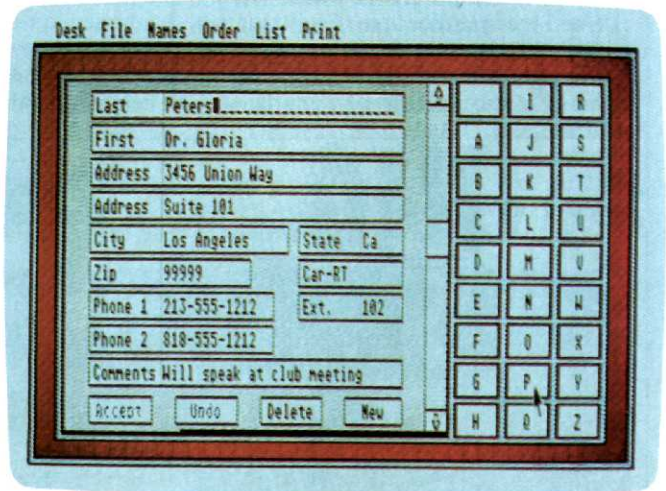
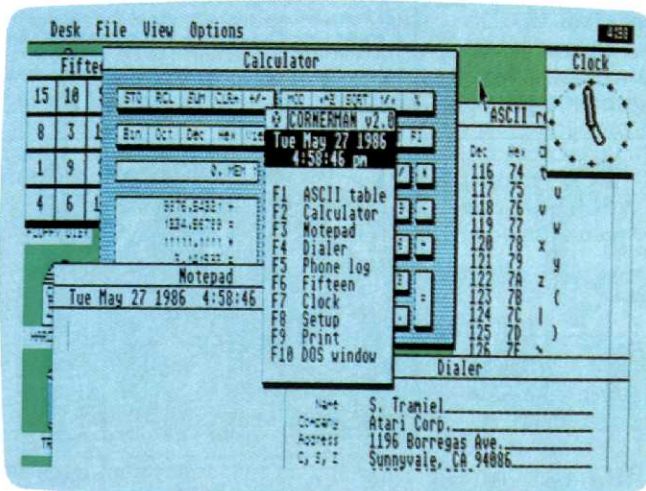
VISA/MC # \_\_\_\_\_

Quantity \_\_\_\_\_ Amount Enclosed \$ \_\_\_\_\_

**SEYMOR-RADIX**

P.O. Box 166055 Irving Tx 75016  
(214)255-7490

# At almost half the price of a Macintosh, it looks even better.





This could be love at first sight. And who would blame you?

After all, you're looking at the business end of the new business machines from Atari.\*

The Mega2™ and Mega4™

The two most powerful, full-featured personal computers you can buy for not very much money.

And just look at everything you get.

The Mega™ computers come with 2 or 4 megabytes of memory, standard. Enough for the largest personal computer applications.

There's a graphics accelerator, our exclusive BLITTER™ chip, for faster, smoother scrolling, graphics and

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And since our resolution is one of the highest of any standard personal computer monitor, you'll like what you see.



In color, of course.

There's no shortage of programs to put on that screen, either.

From word processing to data bases to spreadsheets to powerful CAD and desktop publishing solutions.

And they're as reasonably priced as our computers.

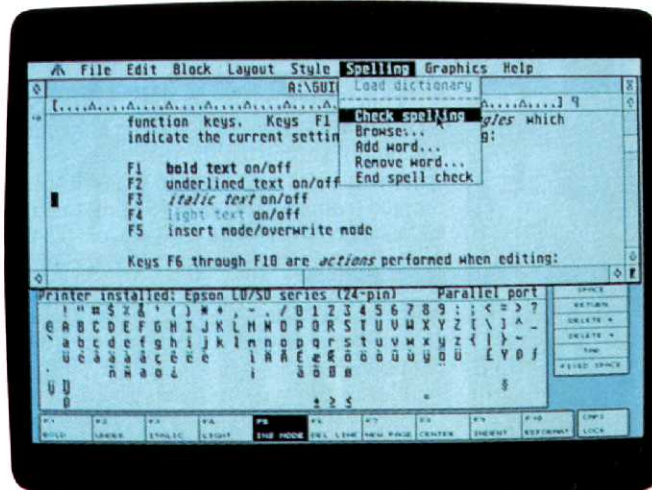
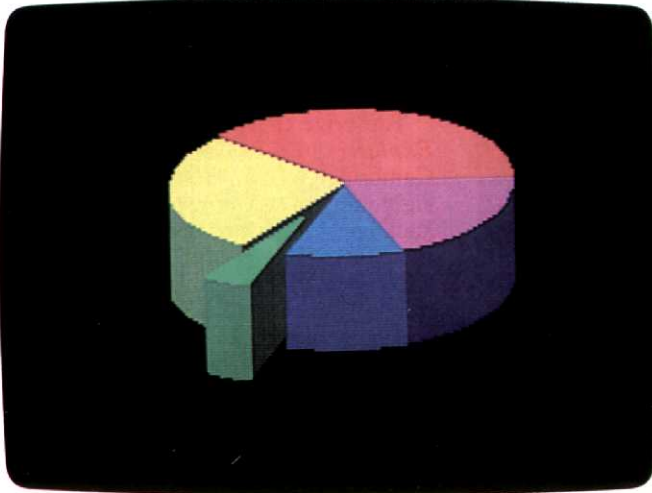
Which brings us back to the reason the new Atari Mega looks so good in the first place.

Simply put, it's a faster, more feature-rich computer than a Mac SE.

For just about half the price.

Now, for the name of your nearest Atari Mega dealer, call us at (408) 745-2015.

Because knowing what you know now, can you really look us in the face and say you wouldn't like to see a little more?



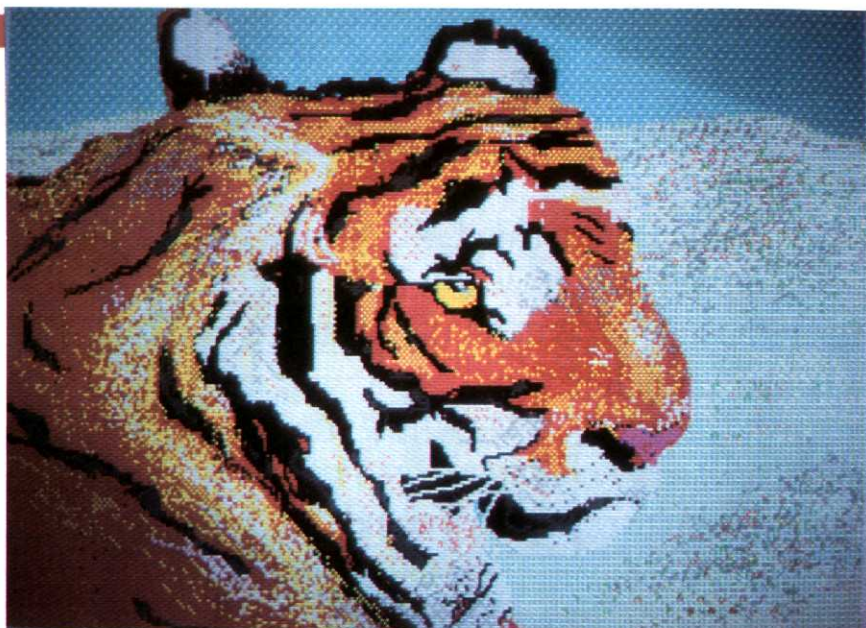
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Power without the price.™

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Madonna (Degas) by Katio Chan  
of Sparks, NV.



Red Tiger (Degas) by John Riley of Jackson, KY.



Tank (Degas)  
by George Bradford  
of Cambridge, ON.



Moose (Degas) by George Bradford.

The ten winning images displayed on these two pages were chosen from among the many images submitted since the end of our last contest. As in previous contests, the ratio of images submitted (and winners) continues to run 40% *NeoChrome* and 60% *Degas*.

Top prize (a 3-year subscription to *Explorer*) goes to George Bradford of Cambridge, ON. George submitted eight images, all of which were outstanding; we have reproduced three of them here. All of the other winners whose entries are displayed here will receive one-year subscriptions (or extensions) to *Atari Explorer*.

To enter our ongoing Graphics Gallery contest, submit your image(s) on disk in either *NeoChrome* or *Degas* format. Your disk must be labeled with the format used and your name and address. Also send a self-addressed stamped envelope with 39 cents postage for the return of your disk. We will return your disk with *ten new images* in the format of your choice.

Your entry must include a signed statement as follows: "I certify that the image(s) submitted is (are) my own personal work and that no portion was copied from any image belonging to another person or organization or from copyrighted printed or video material. I give *Atari Explorer* the right to print my image(s) and/or use it (them) in promotional material or computer show displays."

Please allow eight weeks for the return of your disk. If you are a subscriber, please include an address label (or copy) showing all code numbers so that we can extend the correct subscription if you win. ■



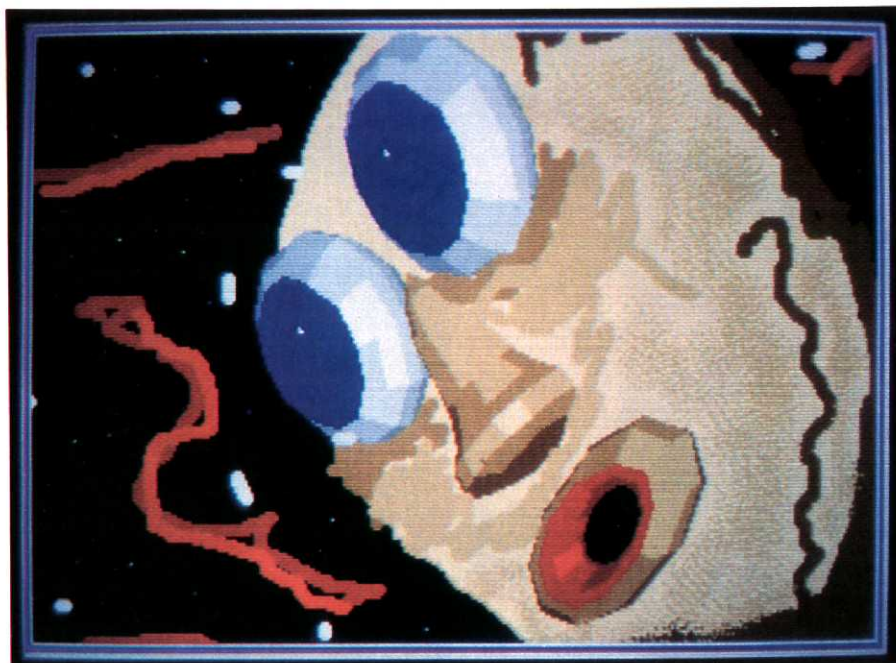
Spaceship (NeoChrome) by Mike Cummings of Red Oak, TX.



Orcinus (NeoChrome) by John Bonovit of St. Bonaventure, NY.



Early Man (Degas) by George Bradford.



Fear (NeoChrome) by Stephen Giard of Grand-Mere, PQ.

# Graphics Gallery

Temple (Degas) by Steve Childress of Euless, TX.



Scout Ship Mark VII (NeoChrome) by Ralph Philbrick of Orono, ME.

# WordPerfect: Triumph Or Tragedy?

## WordPerfect

**System:** Atari ST

**Recommended equipment:** Two floppy drives or hard disk drive

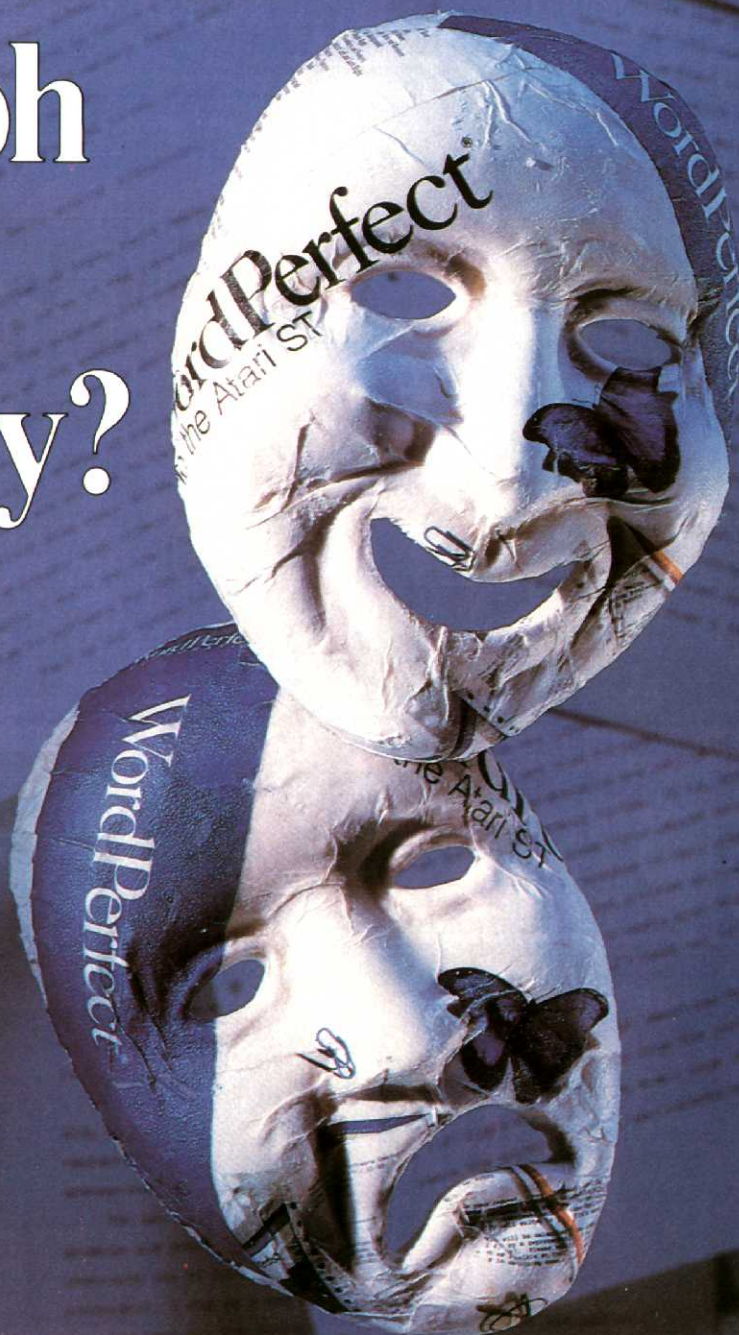
**Version reviewed:** 4.1

**Copy protection:** No

**List price:** \$395

**Manufacturer:**

WordPerfect Corporation  
288 West Center St.  
Orem UT 84057  
(801) 225-5000



Photograph by Jeff MacWright

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**W**e've said it many times before, but the accompanying reviews of the long-awaited Atari version of *WordPerfect* demonstrate it yet again: The choice of a word processing program is an emotion-charged decision—a choice at least as personal as briefs vs. boxers or bandeau vs. underwire.

In an attempt to present as balanced a view as possible, we publish here two very different opinions of the program that purports to be *the* most widely-used word processor for personal computers. Both of our authors are members of the academic community—both with presumably similar requirements in a word processing program. Yet one swears that the power far outweighs the problems, while the other can't get past the problems to find the power.

We even note that some of the features one criticizes are listed as virtues by the other. What is the truth? Who is right?

As we see it, to quote the old Certs commercial: they are both right. That is why we decided to print both reviews and why we recommend that you read both before deciding if *WordPerfect* is for you.

But before you move on to the articles

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***We recommend that you read both of the accompanying reviews before deciding if WordPerfect is for you.***

themselves, we have a few comments of our own to add.

#### **Is There a PC in Your Past?**

After reading these and other reviews and spending quite a while with the program ourselves, we feel confident in suggesting that if you are used to a key-

board-oriented word processor of the IBM variety (perhaps you use a PC or clone at work; perhaps you have even mastered *WordPerfect* on another machine), you will like *WordPerfect* in its Atari ST incarnation. You will welcome the translation of familiar menus and uniform commands. You will be able to slip right into a productive relationship with the package without dropping a bit.

If, however, you are a complete ST convert (perhaps the ST is your first computer; perhaps you are simply sold on the GEM interface and can't remember what life was like without it), you will have a difficult time adjusting to the IBM-ish ways of *WordPerfect*. You will immediately notice and resent the fact that the program responds to your mouse-clicks with something less than lightning speed. Occasionally it even leaves the busy bee on the screen after it has finished performing a requested function, leaving you to guess when you can proceed.

You will be irritated by references to IBM-only keys such as Home (the ST has Clr/Home) and stymied by the printer selection screen that requires you to press the IBM PgDn key to view additional options. (We couldn't find a substitute for PgDn and eventually gave up hope of ever seeing the end of that list.)

No matter what your computing background, you will probably love the ease with which macros can be created and find yourself looking for places to use them. And unless you are that very rare combination of accurate typist and perfect spell-er, you will undoubtedly find the spelling checker a godsend.

Nor will you be able to find much fault with the documentation. We have nothing but good to say about the man-

---

*In which we prove*

---

*once again that*

---

*one man's bug*

---

*is another man's*

---

*feature*

---

**By BETSY STAPLES**

ual—its content, its approach, its presentation.

### Fasten Your Seatbelt

We have no Count or Countess of Crash in our offices, but we did manage to bring the system to its knees with frightening regularity and without even trying. In general, we found the learning process exhausting and frustrating, and we went home several days in a row complaining of user-abuse.

One afternoon, when the program died immediately after boot-up six times in succession, we were forced to trash all the *WordPerfect* files on our hard disk and re-install them—a situation that was neither disastrous nor amusing.

When we found that we could not (without resetting the computer) stop printing a document and cancel the print job if we decided we didn't want the whole document printed out, we called the *WordPerfect* support team and were assured that the malfunction was not a figment of our imagination and that a very pleasant young woman named Ann would mention it the next time she met with the programmers.

During the same call, we told Ann that the spelling checker had, in the course of a routine check, inexplicably and irretrievably locked the system up. She told us to abandon our 1/8/88 update of the Spelling disk and replace it with an earlier version.

We have no doubt that *WordPerfect* Corp. is acting in good faith as they seek to produce a bug-free version of *WordPerfect* for the ST. We have already received three updates and feel confident that we will eventually receive a version that will merit our whole-hearted endorsement.

Would we entrust the hundreds of thousands of characters we generate each month to the current version of *WordPerfect* for the ST? Not on your life! ■



# WordImperfect

**A potentially powerful word processor**

**capable of driving the user to the brink of distraction**

**By FRANK KOFSKY**

**W**ith the exception of the Mega ST line and the SLM804 Laser Printer, probably nothing has been more eagerly awaited by Atarians of the ST persuasion than their own version of the world-famous *WordPerfect*. It has finally arrived—an authentic Big Name on the ST software scene.

In the course of girding my loins to tackle a review of this much ballyhooed product, I talked with several users about their experiences with *WordPerfect* for the ST.

"Well, you really need a hard disk to run it," conceded one.

"Oh, it's buggy as hell," another off-handedly admitted.

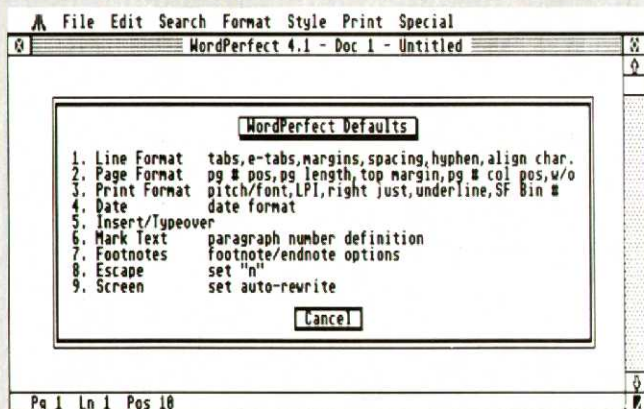
But somehow neither of these facts seems to interfere with their infatuation. It is as if the important thing to them is the Platonic ideal of the program—its essence, as it were—while the actual operation of the software is simply a messy detail whose existence,

while it cannot be denied, is accorded only minimal significance.

I could be wrong, of course, but the impression I get is that many people are willing to banish the imperfections of *WordPerfect* from their minds simply because it is the word processor most widely used in the U.S. and abroad. For myself, I don't believe I have ever been more disappointed in an item of software for the Atari ST.

Part of the reason for the disappointment, you may be thinking, is that our—all right, then, *my*—expectations for *WordPerfect* were so great. The premise is indeed correct—I did have high hopes for the program—but the conclusion does not follow. Believe me, were *WordPerfect* to come to us labelled XYZ, a product of Fly-by-Night Software, Inc., at a list of price of \$39.50 as opposed to \$395, I would be no less dismayed at its performance. The sole difference in this case would be that the disproportion between what the program cost and what it delivered would be less enormous.

*Frank Kofsky is a professor of history at Sacramento State University. He has been an Atari ST user for two years.*



**Figure 1. The start-up program allows you to change WordPerfect defaults.**



# WordPerfect

*The powerful, full-featured word processor  
for which ST users have been waiting*

**By MARIAN LORENZ**

To set forth my case before you, I will summarize it thus. First of all, not only is the program difficult to use, it is *inordinately, unnecessarily* so. Second, a considerable part of the reason for this difficulty stems from the apparent decision of WordPerfect Corp. to give compatibility between the version of the program for the Atari and that for the IBM and clones priority over compatibility between *WordPerfect* and the conventions with which most ST users have grown familiar.

Third, there are numerous and crucial disagreements between the manual and the program—in which what the former leads you to expect is not what the latter causes to happen—and there are too many points at which the manual is maddeningly incomplete. Fourth, the number of times that the program simply fails to work—by executing a command erroneously or not at all, by freezing the screen, or by spontaneously resetting the computer—is unconscionably, unforgivably great.

## Starting from the Top

The first time I had some inkling of what I was getting into with *WordPerfect* was when, in the course of browsing in my favorite Berkeley bookstore, I sidled over to the computer section and cast a glance at the volumes in residence. Titles containing the name *WordPerfect* numbered no fewer than 19 and occupied two complete shelves.

*Continued on page 35.*

Historically, Atari Computers have been easy to use. When you purchase an Atari you expect to bring it home, plug it in, and find it ready to go. You do not have to worry about video cards, printer cards, or incompatible DOSes. Likewise, software for Atari computers has always been easy to run, usually requiring you to do nothing more than boot up the program.

Consequently, when a year ago I was given the opportunity to work with a full-featured word processor (DW3) on the IBM PC, I was overwhelmed by my own inexperience. Installation of a complex program on a hard disk system was new to me, as were the complicated command codes needed to make that system perform. Nevertheless, I persevered, and through mastering most DW3 features and, later, learning to use other similar word processors, I became aware of the power these full-featured word processors had to offer and began

to wish for a high-end word processor for my Atari ST. Consequently, a couple of weeks after seeing *WordPerfect* at the Atarifest in Worcester, MA, I purchased a copy of the program.

Before discussing the specifics of *WordPerfect*, some general observations on word processors are in order.

- Prior to purchasing any word processor you should have a clear idea of what you want to accomplish with it. Once you know this, you will have a good idea of which features you require.

If all you want to do is correspond with Aunt Sally once or twice a month, *WordPerfect* (along with the other word processors in its class) is definitely overkill. There are several inexpensive programs—and some free ones in the public domain—that will serve you adequately. If, however, you are a business person, a student, a writer, or a member of the academic community, you probably need a package like *WordPerfect*.

- The features a program offers and the way in which those features are accessed is a matter subject to strong per-

*Marian Lorenz is director of a preschool program for handicapped children in Central Islip, NY. She has been an Atari owner for eight years.*

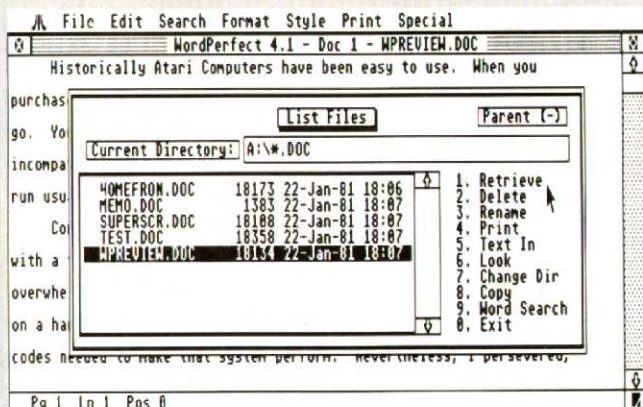


Figure 2. The File menu allows you to list the files in your directory and execute the commands listed at the right.

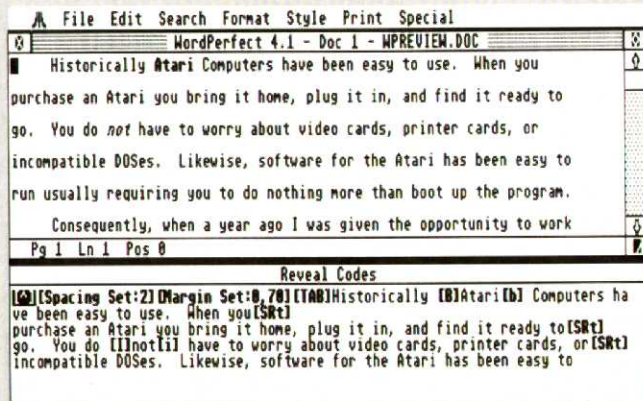


Figure 3. The Reveal Codes command displays codes that tell the program how to print your text.



sonal preference. When it comes to command codes vs. pulldown menus and keystrokes vs. mouse clicks, it can be truly said that "one man's meat is another man's poison."

Therefore, when reading a review of a word processor, you must be aware of and take into consideration the biases of the individual reviewer. To illustrate: in reading this review, you should know that I have a prejudice against mice, and for me any program that offers an alternative to mouse-control is preferable to one that is mouse-dependent.

• With software as sophisticated as *WordPerfect*, the when-all-else-fails-read-the-manual approach is not viable. Before you purchase a software package of this complexity, you must make a commitment to spend as much time as necessary learning how to use it.

Before you begin to use *WordPerfect*, you should, at the minimum, read through the manual and complete the tutorial through lesson 10. You can then complete the remaining 19 lessons at your leisure. [We recently received a press release announcing a video training package for *WordPerfect* that "takes approximately 8 to 12 hours to present" and sells for \$990.—Ed.]

The good news is that the first time you use a macro to enter an oft-typed phrase, create a table of contents, or edit a footnote, the time you spent learning will pay off.

### A Hefty Price Tag

To Atari ST users, who have become accustomed to paying less than \$100 apiece for word processors, databases,

and other productivity packages, the \$395 list price of *WordPerfect* may seem excessive. So let's take a look at some of the intangibles that are piggy-backed onto the software.

Perhaps the most important thing to know is that you are getting a tested product, a product that was created at Brigham Young University by a computer science professor and a graduate student. As the program developed, each new feature was tested by the secretarial staff who would be using it. Rather than being upgraded from an 8-bit machine, as many popular word processors have been, *WordPerfect* has been scaled down from a minicomputer to the 16-bit machines, so it uses the capabilities of the machine to the fullest.

You also get technical support through two toll-free numbers staffed by more than 200 specialists.

Because the program has been available for other computers for some time, a full line of "how to use *WordPerfect*" books [not to mention \$990 video packages.—Ed.] is available in your bookstore, computer store, or library. So, if after reading the manual and completing the tutorial, you feel you need more training, you should have no trouble finding the help you need.

Another valuable intangible is the ability to transfer *WordPerfect* files from one computer to another. To transfer information to or from another computer that uses 3½" disks, you simply use the Text In/Out (Ctrl-F5) command. For transferring files between computers with incompatible disk for-

ats, there is a file transfer utility. The computers can be connected directly or via modem.

In addition, for \$36 you can join a support group sponsored by *WordPerfect* Corporation that issues a monthly instructional newsletter, "The *WordPerfect* Perfectionist." This newsletter is crammed full of helpful tips.

Finally, *WordPerfect* takes advantage of the GEM interface, offering mouse control, pulldown menus, dialog boxes, and the other user-friendly features ST users take for granted. However, the Atari version of the program retains the keyboard commands originally developed for the IBM. In fact, *WordPerfect* on any brand computer except the Macintosh (which has no function keys) uses the same commands. Consequently, once you learn *WordPerfect* you can use it on any computer for which it is available.

### Hardware Requirements

*WordPerfect* runs on the Atari 520ST, 1040ST, and Mega ST, requiring a minimum of 512K of memory. The manufacturer recommends two 3½" floppy disk drives or a hard disk. *WordPerfect* can be run with one disk drive but not too effectively.

The program runs in medium or high resolution on a color or monochrome monitor. About 190 printers, including dot matrix, daisywheel, and laser printers, are supported.

### The Software

The *WordPerfect* package includes six single-sided floppy disks. The first is

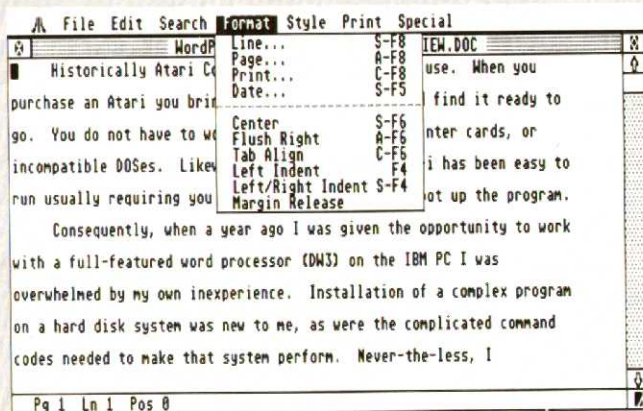


Figure 4. The Format menu offers a variety of options for determining the format of your document.

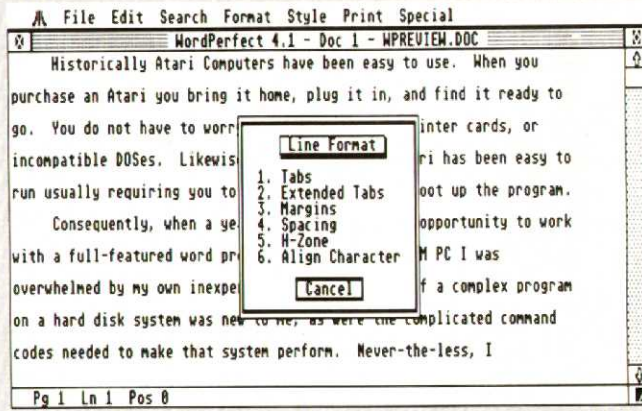


Figure 4a. The Line Format menu.



the program disk, which holds the 186K *WordPerfect* program.

The Print disk, not surprisingly, holds the drivers for the 190 supported printers. The Speller disk holds the 115,000-word spelling checker, and the Thesaurus disk holds 10,000 words for which synonyms can be listed onscreen.

The Learn disk is the all-important tutorial. A printer manual and speller manual are also included here.

The 588-page Manual is comprehensive and well written in a combination tutorial/reference format. It is, without a doubt, one of the best examples of expertly-produced documentation to which Atari owners have been treated in many years.

It is professionally typeset and printed on high-quality coated stock. The writing style meets even *Atari Explorer's* high standards, and I have yet to find a typo or misspelling.

The main body of the text describes the procedure for implementing a given command from the keyboard, and a 1½" right-hand margin on every page shows mouse users the point-and-click equivalents of the keyboard commands where available.

The chapter devoted to learning to use the program is the longest in the manual—262 pages. The reference portion is a close second with 229 pages arranged in alphabetical order by feature or command name. Another section covers installation of the program on your ST.

The Appendix contains information on writing your own printer driver, modifying the spelling dictionary, and

keeping your directories tidy. The comprehensive index includes a glossary, which will be helpful to novices.

In addition, a few handy extras are included: a color-coded Quick Reference Card, a color-coded template for

program and its capabilities.

*WordPerfect* makes use of a feature known as virtual memory, which allows your document to be as large as the memory of your computer. This means that *WordPerfect* can access any part of

## ***With software as sophisticated as WordPerfect, the when-all-else-fails-read-the-manual approach is not viable.***

the function keys, and a set of decals (complete with a diagram of an IBM keyboard) with which to color-code your Alternate, Shift, and Control keys.

### **WordPerfect Features**

*WordPerfect* is a full-featured, document-oriented, what-you-see-is-what-you-get word processor. Before you can use the program, you must complete two tasks: copy the disks and set up (install) your copy of the program disk. Both tasks are easily completed.

To make your backup disks, you use the backup program, which is accessed from the desktop. For hard disk drive owners, a clear explanation of how to copy *WordPerfect* files is provided.

The start-up program is also accessed from the desktop. This program writes a printer and font file to the *WordPerfect* program disk and allows you to customize the word processor to meet your needs. I concur with *WordPerfect's* suggestion to use the default settings until you become more familiar with the pro-

gram and its capabilities. *WordPerfect* makes use of a feature known as virtual memory, which allows your document to be as large as the memory of your computer. This means that *WordPerfect* can access any part of

the document without having to reload it and that you can edit up to four documents by using the switch command rather than going through a save/reload sequence.

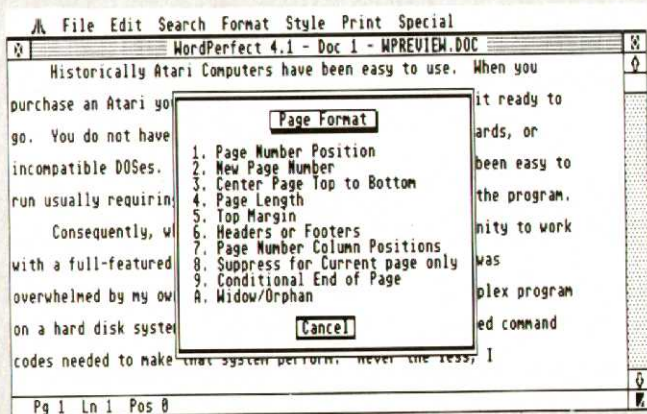
As far as the actual size of a document is concerned, *WordPerfect* suggests limiting documents to between 20 and 70 pages to maximize editing and scrolling speed.

### **The Screen**

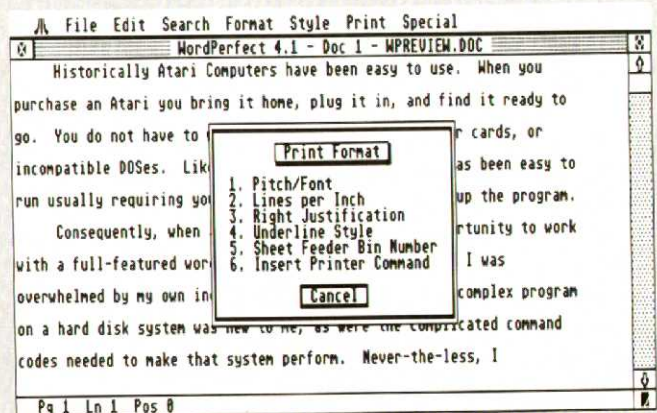
When you boot up *WordPerfect* by clicking on the program icon you see an almost blank screen.

The title bar indicates which *WordPerfect* window you are in and displays the filename of the document in the window. At the bottom of the window is the status line, which indicates page, line, and column position, along with messages and warnings from *WordPerfect*.

You can control the appearance of the screen by choosing the colors of the screen and text, the shape of the cursor,



**Figure 4b. The Page Format menu.**



**Figure 4c. The Print Format menu.**



and the shape of the mouse pointer. You can also toggle the automatic screen rewrite feature off, if for some reason you do not care to have the text on your screen reformatted each time you make a change.

to alter the margins of your document after it has been typed, *WordPerfect* will automatically reformat your document. Documents can be printed out in either justified or ragged right format.

Line spacing can be set for just about

fy the length of the page and the number of single-spaced text lines on the page. The top margin is preset at 1" and can be altered.

Headers and footers can be up to two lines long, and you can define as many as two headers and two footers at any point in the document. They can be printed centered, flush right, or flush left, and they can appear on every page, on odd numbered pages, or on even numbered pages. The Suppress option turns off any combination of page formats for the current page only.

Another option allows you to instruct the program to keep a block of text together at all times. And a related feature "protects" your text from widows and orphans, making sure that at least two lines of a paragraph appear at the bottom and top of each page.

The Print Format feature controls vertical line spacing, embedded printer commands, and the pitch and font of your output type.

The Pitch/Font option allows you to change the type style and number of characters per inch (10, 12, 15, or proportional) of your output, depending, of course, on the capabilities of your printer. Vertical line spacing can be set to 6 or 8 lines per inch.

You can also specify how you want underlining to appear—single or double, continuous or non-continuous. Non-continuous does not underline tabs, flush rights, or indents; continuous does. Both styles underline spaces.

You can embed in your document any command your printer recognizes—the command to change colors

## WordPerfect has extensive math capabilities, which can turn a document into a low-level spreadsheet.

### Formatting

All aspects of the appearance of a document are under user control. You can change the format settings almost anywhere in the text, as many times as you desire. Some settings—margins, for example—affect the appearance of the screen. Others—justification and centering, for example—take effect only when the document is printed.

The Line Format menu (Shift-F8) allows you change tabs, margins, spacing, hyphenation, and alignment as many times as you want within a document.

Tabs are preset for every five spaces, but can be reset to suit your needs. Only the text following a new tab setting is affected. A Tab Align feature allows you to align text, numbers, or characters vertically. Extended Tabs are included for use when your right margin extends past character position 160.

Margins can be set to any value between 0 and 250 and can be changed at any point in the document. If you decide

any vertical interval you desire, including half spaces.

Hyphenation is controlled by what *WordPerfect* calls an H-zone, a user-definable area on either side of the right margin, which determines if a word should be hyphenated or wrapped to the next line. When a word in your text extends beyond the H-zone, *WordPerfect* prompts you to position the hyphen where you want it.

The Page Format menu (Alternate F8) controls pagination and page length.

Page numbers can be either Arabic or lowercase Roman. They can be positioned at the top or bottom, left, right, or center, or alternating left/right. Pagination can begin with any number on any page, which is useful for numbering the pages of a document saved in more than one file. You can also change the location of a page number for a selected page.

Page length can be set to letter size, legal size, or other, which lets you speci-

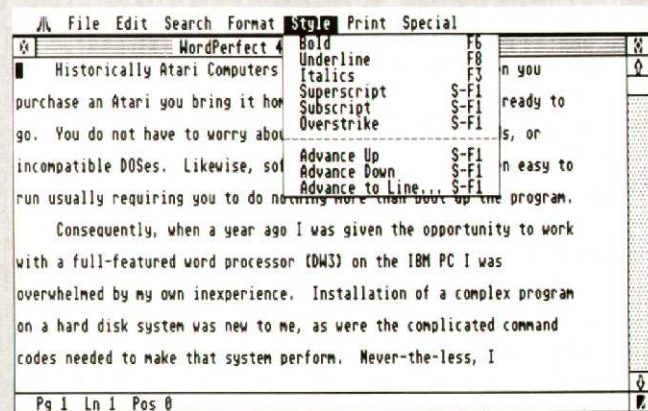


Figure 5. The Style menu offers a choice of type styles. Note that Advance Up and Advance Down refer to the ability of the program to print one half line up or down from current text.

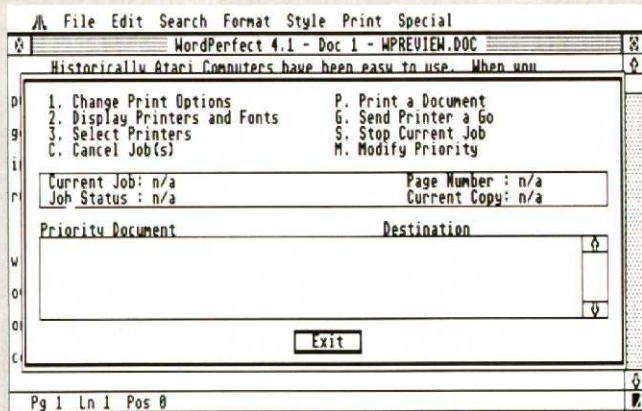


Figure 6. The Printer Control menu allows you to manage your printing jobs.

on a color printer, for example. If a large number of codes is to be sent to the printer you can create a file of these code using Basic and have *WordPerfect* send the whole file to your printer.

You can also have the program center from top to bottom the text on a page, which is great for short letters.

The Footnotes menu (Control-F7) takes care of numbering and formatting footnotes and endnotes in your text. There are 13 options relative to spacing, margins, numbering, and separation from text. Footnotes can be changed to endnotes and vice versa. Essentially what you do is type in your footnote information and relax while *WordPerfect* keeps track of it.

### Macros

A macro is a special file that remembers a series of keystrokes or mouse commands to be used later. For example, in writing this review I defined the Alternate-P and the Alternate-W combinations to type out *WordPerfect* and *word processors* respectively.

Simply stated, macros are powerful tools that are only as complicated as you make them. They make word processing simpler by storing frequently-used words, paragraphs, formats, etc. and allowing you to retrieve them with a few keystrokes.

*WordPerfect* allows you to chain your macros together; when one macro is finished, the next macro automatically starts. Therefore, you can define a macro to carry out any *WordPerfect* command. You could, for example, by chaining macros, mark every occur-

rence of a given word or phrase for inclusion in an index, list, or table of contents.

Related to macros is a feature called keyboard mapping. *WordPerfect* displays all of the characters available on the ST. If your printer has the capability, you can print them out by assigning keystroke combinations consisting of Control or Alternate and one of the letters A to Z. This is a marvelous feature for anyone who writes scientific papers or other documents that require specialized notations.

### Math

*WordPerfect* has extensive math capabilities, which can turn a document into a low-level spreadsheet. You can perform the usual arithmetic calculations on rows and columns of numbers and display the result in a different column or row.

You can use the math functions just about anywhere in a document; a math section can, for example, cross over page boundaries and extend all the way across a page to column 250. With this feature you could quite easily put together a professional-looking financial report.

### Merge

One of the more powerful and versatile features of *WordPerfect* is the Merge function, with which you can create a form letter or other document (primary file) that appears to be personalized.

Unlike some other word processors, *WordPerfect* merges the information

you supply (secondary file) into the document, without changing the print or leaving spaces. The most obvious application of the merge function is the preparation of form letters, but *WordPerfect* goes beyond the obvious to offer 13 different merge commands, which should give you some idea of what you can do with this feature.

A particularly handy command is Forms Fill-in, which is designed for the person who fills out the same form(s) repeatedly. With Merge you can do this task with information supplied from the keyboard, a primary file, or a secondary file.

### Other Features

The remaining features of *WordPerfect* are simply too extensive to discuss in detail: word count, case conversion (upper-to-lower/lower-to-upper), text columns—newspaper style (up to five across) or parallel, automatic dating, typewriter-like margin release, save and resume working on a document without a reload, outlining and paragraph numbering, border draw to create borders or illustrations, binding width so that on double-sided documents the print on the even numbered pages moves to the left, sub- and superscripts, to name a few. *WordPerfect* can also be used as a program text editor, and I found that its files can be imported to *Publishing Partner*.

### The Down Side

Prior to discussing the bugs and idiosyncrasies of *WordPerfect*, I should tell you that I consider myself the "Count-

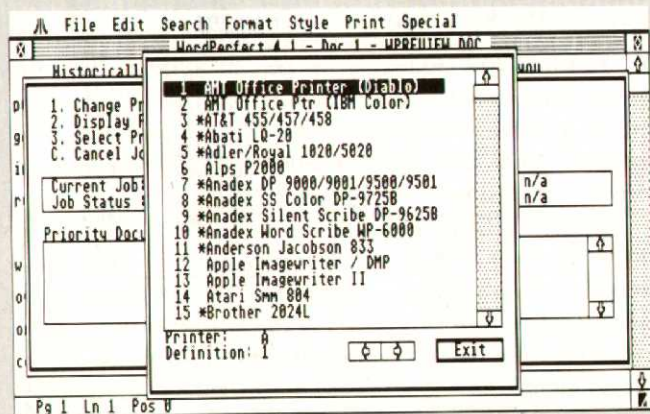


Figure 6a. You can select up to six different printer definitions from a menu.

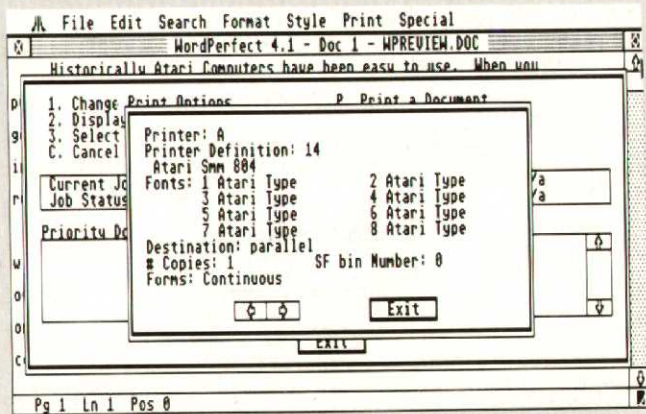


Figure 6b. The Display Printers and Fonts command shows available fonts and other important information for each of your printer definitions.



ess of Crash." I have crashed GFA Basic, *Degas*, and *Publishing Partner*, to name a few. In fact, it was through using *Publishing Partner* with its propensity to crash, that I got into the habit of saving before revising or printing and

I have heard complaints that *WordPerfect* is difficult to manage and unreliable because it locks up the computer. So far the only crashes I have experienced have involved printing. If *WordPerfect* is unable to find the printer file,

ments with *WordPerfect*, as well as using it to write this review. Other than those above, I had no problems.

I felt that perhaps my experience using DW3 might have given me an unfair advantage in learning the system, so I asked a friend who had never seen *WordPerfect* to try it out. My only stipulation was that he could not use the manual. Using just the keyboard template, he was able to produce a letter with centering, underlining, bold, italics, footnotes, and print it out. Using just the onscreen menus, he was able to use the Print Format, Line Format, and Page Format menus.

## ***WordPerfect is not for Type A personalities with little or no patience; it takes time to learn how to tap the versatility.***

making backups. Also, as inefficient as it may seem, I do not use folders, because I have in the past filed programs in folders and been unable to retrieve them.

That said, let's look at some of the shortcomings of the program. Starting at the beginning: when describing the set-up procedure, the manual does not tell you when to insert the Font disk. However, when you are told to enter the full path name, it becomes evident that the Font disk should be in the drive.

At other times the manual advises you to select an option number that does not exist. However, once you read the choices on the screen the correct choice is evident.

Sometimes a macro can be touchy and fail to perform as expected. For example, if your cursor is too far to the right side of the screen, a macro that types in a word or phrase may not appear in the proper place. This problem can usually be remedied by reformatting the document.

It asks you to enter the complete path and file name. Once, when the requested information was already on the screen, I pressed Return. It was only after the screen turned red with black bombs that I remembered that I had the Speller disk in drive A. Although I admit that I displayed something less than total cleverness throughout this scenario, I think that some sort of message that would have prompted me to look at the disk in the drive would have been preferable to a crash.

I have completed the entire tutorial and found that every command works as explained in the lesson. There were no lock-ups or crashes; nor did any of my files become irretrievable. In my own work, I found that whenever a particular command was not performing adequately it was because I was not yet familiar with that command. In every case, returning to the tutorial solved the problem.

I have produced a 250-page teacher's handbook and other assorted docu-

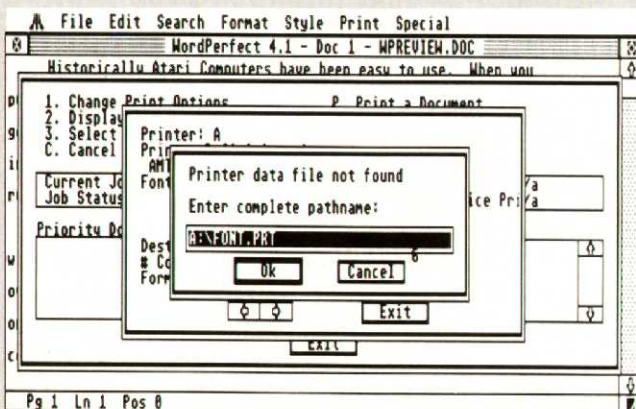
### **Summary**

In summary, *WordPerfect* is not for Type A personalities with little or no patience. It takes time to learn how to tap the versatility and power of the program.

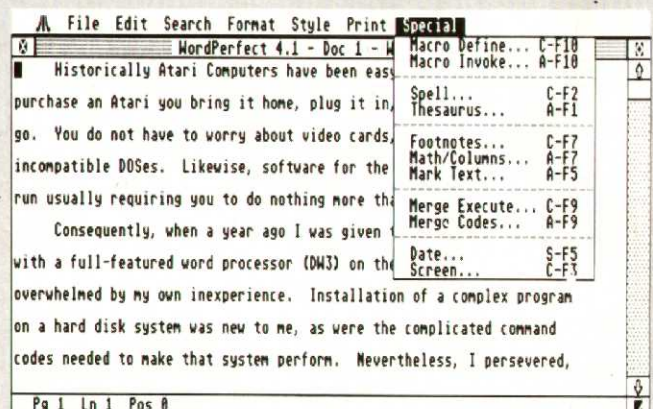
I have found that *WordPerfect* enables me to get my thoughts down on paper and make them look good quite easily. As with any powerful word processor it takes a bit of study to master the advanced techniques.

*WordPerfect* can be compared to the new electronic typewriters with on-board memory. You can turn them on and start typing, but it takes time and practice to learn how to take advantage of their full potential.

Like all software packages, *WordPerfect* has both good points and bad points. All in all, however, I am impressed with its power which, by far, outweighs any problems I have encountered. ■



**Figure 6c.** We had some problems with the Printer Control menu. Among other things, we found this particularly intransigent dialog box. Each time you click on Ok, the box reappears. You can, however, escape by clicking on Cancel eight times in succession. The program keeps track of the clicks for you; the 6 just to the right of the Cancel box indicates that we have to click only twice more.



**Figure 7.** The Special menu offers a list of unrelated but useful features.



# WordImperfect

Continued from page 29.

Because I wanted to have an objective standard by which to evaluate *WordPerfect*, simultaneous with my attempt to master that software on the Atari, I set out to see if I could learn a different word processing program of roughly equivalent complexity on another computer.

Accordingly, while working my way through the *WordPerfect* tutorial, I began doing likewise with that of Microsoft *Word*, another program that has not, to my knowledge, been accused of displaying excessive kindness toward newcomers. What I discovered was that, after little more than a week, I could understand and use all of the advanced features of *Word* that appealed to me. At the same time, I was still scuffling with the intermediate chapters in the *WordPerfect* tutorial.

To describe *WordPerfect* as "difficult to use," therefore, is to open oneself to charges of criminal understatement—rather like telling your neighbors to expect a light breeze when a tornado is imminent.

## That Ol' Blue Magic

The Atari version of *WordPerfect*, I have been informed by those who know about such things, mimics the IBM version. What that means is that the program operates almost entirely on the basis of commands generated by depressing a function key, either unac-

panied or in conjunction with the Shift, Alternate, or Control key. Most of these commands call onto the screen a box containing a series of numbered alternatives, from which you can, in theory, select the option you desire, ei-

taneously (e.g., F1=bold-faced text, F2=italicized text). Here, in contrast, is the way the *WordPerfect* allows you to select special typefaces: F3=italics, F6=bold, F8=underline. Makes lots of sense, right?

**The number of times the program simply fails to work is unconscionably, unforgivably great.**

ther by clicking the mouse on it or by typing its number.

I have no quarrel with this kind of program; in certain respects, in fact, I consider it preferable to some software for the ST that is too mouse-besotted to suit my taste. What does bother me though is that there is no discernible rhyme or reason to the way *WordPerfect* assigns commands to these keystroke combinations.

It would not be easy under the best of circumstances to commit to memory 40 different keystrokes and the command associated with each. As a result of the way *WordPerfect* is set up, however, it is an enormously more difficult chore than it need be.

## Function at the Junction

Most word processors for the Atari ST, if they make use of the function keys, do so by assigning the most common operations to a contiguous sequence of these keys, without requiring that any other key be depressed simul-

Wait, it gets better. *WordPerfect* offers both a spelling dictionary and a thesaurus; logic would dictate that the commands to operate the two be placed adjacent to one another on the same function key. But this is what *WordPerfect* gives you instead: the combination Control-F2 initiates the spelling check; the remaining three commands involving the F2 key are those for search and replace operations. Meanwhile, opening the thesaurus is accomplished with the Alternate-F1 combination. So much for logic.

*WordPerfect* does provide a partial means of remedying this situation, but it is just that—partial. The program permits you to define two types of macro commands (a macro command, which usually consists of a small number of keystrokes, causes the program to execute a longer sequence of keystrokes and mouse-clicks).

The first type involves holding down the Alternate key while depressing a single letter key; the second is more

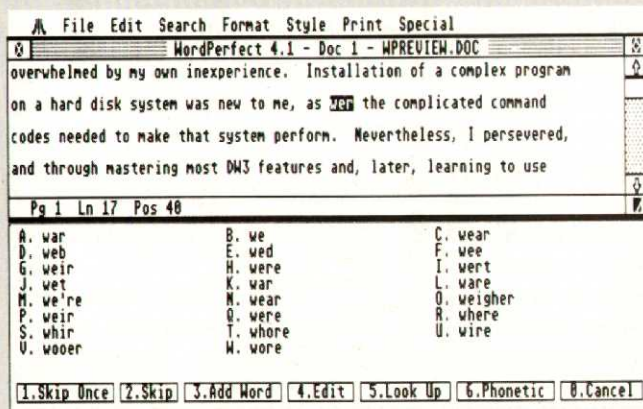


Figure 7a. The spell checker suggests possible correct spellings for the highlighted word.

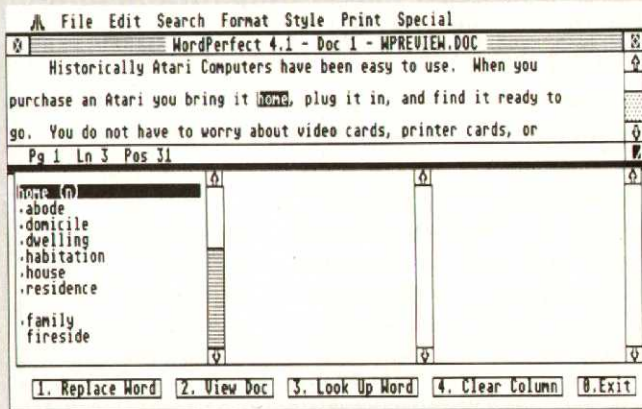


Figure 7b. The thesaurus lists synonyms for the highlighted word.



complicated, requiring you first to press the Alternate-F10 combination, then type the name of the macro in the box that appears on the screen.

It is, therefore, possible to smuggle a certain amount of rationality and simplification into the *WordPerfect* system of keystroke commands by substituting combinations that are easy for you to remember for the function key commands furnished with the program.

There are, however, some severe limitations in your ability to circumvent the program thus, the main one being that only 26 Alternate-keystroke combinations are permitted (one for each letter of the alphabet). Combinations such as Shift-Alternate-letter and Control-Alternate-letter, which would seem to be a logical extension of the scheme, are not accepted by the program; nor, for that matter, are Alternate-number combinations.

Hence, no matter how ingenious you are in devising your own combinations, you will still be left with a certain irreducible amount of chaos and confusion.

### Questions and More Questions

It is only natural to ask why the authors of *WordPerfect* did not choose to do things differently. It is tempting to answer this and other questions about the way *WordPerfect* operates with something flippant along the lines of, "Because that would make the program too systematic and easy to grasp."

What I suspect to be the truth, however, is that the Atari version of *WordPerfect* was more or less automatically burdened with the same set of awkward

keyboard commands as the IBM version. The thinking underlying this decision is that, with near-identical commands, people could use the program at the office on their IBM-like machines, then continue to work at home using an Atari ST.

That choice may be understandable, possibly even defensible; but it was not wise. However many ST owners who work with *WordPerfect* in two locations there may be, I am willing to wager that there are many more who have used other word processors for the ST that depend on a set of mnemonic keyboard commands. If *WordPerfect* Corporation had any concern for the needs of these users, therefore, it would have rewritten the program so as to make less use of the function key combinations and more use of combinations with which ST owners were likely to be conversant and comfortable.

The same argument holds for the various menus and boxes that ask you to supply information. Almost all of these appear to have been imported without modification from *WordPerfect* for the IBM, rather than having been recast to follow the conventions that are near-instinctive to anyone who has used an ST for more than a week.

The ostensible rationale for this approach may have been, as I have suggested, to make it possible for users to shuttle to and fro between IBM and Atari computers. Yet in the back of my mind there is a lingering suspicion that the decision may have been occasioned as much by *WordPerfect* Corp.'s wish to bring the Atari version to market

quickly so as to be able to get on with more important matters (such as completing the forthcoming revision of the IBM version to allow it to remain competitive with the recently-upgraded *WordStar*).

### Let's Compare

It is instructive in considering this hypothesis to compare the way *WordPerfect* revised the program for the Atari with the way it carried out the same task for the Macintosh. To begin with, there can be no question that the folks in Orem were essentially forced to come up with a product to which Mac owners would be attracted if they were to have any hope whatsoever of making their software a rival to *Word*, long the dominant word processor in the Mac market. Which, in turn, meant redesigning the program virtually from the ground up. For one thing, Mac owners are near-obsessed with what they call "preserving the Macintosh interface," which, being interpreted, means that they expect *all* programs, without exception, to use a common set of keyboard commands, to handle files in the same way, to preserve a certain format in dialog boxes, and so forth.

What's more, the standard Macintosh keyboard does not have function keys, presenting yet another compelling reason for replacing the function key commands.

Having spent so much effort revamping the program for the Mac, *WordPerfect* could have elected to do the same for the Atari at minimal additional cost. That it declined to do so tells us some-

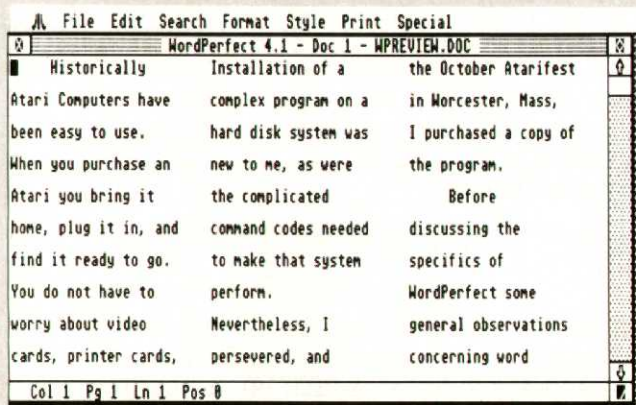


Figure 7c. The Math/Columns option arranges your text in columns.

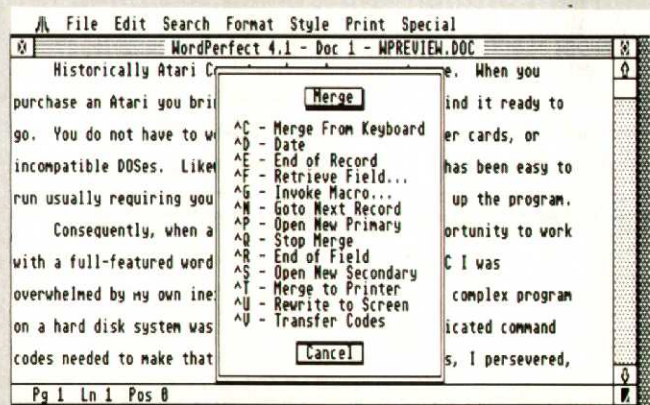


Figure 7d. The Merge menu.

thing, in my opinion, about just how much concern the company has for the needs of Atari users.

All the foregoing might be dismissed as just so much ill-natured *kvetching*, however, were *WordPerfect* able to live up to its reputation as *the* word processing software for people who want everything—automated footnotes, multiple columns on a page, integration of outlines with text, macros, complete control over character and line spacing and every other aspect of the final appearance of a document.

The sad but unavoidable truth of the matter is that *WordPerfect* for the Atari ST simply fails to make good on its promise. The manual, to be sure, leads you to believe that all these prizes will be yours if you but persevere. The reality is quite otherwise.

After struggling with the program, you may come to feel, as I did, rather like that hapless soul who hungrily looks through the restaurant window at the sumptuous repasts within, but lacks the wherewithal to partake of them—teased and tormented.

You get the first intimation of the disparity between promise and practice at the very outset when the manual instructs you to format seven single-sided disks. Being a timid conformist, I did as I was told.

You next run the backup program to make copies of the master disks. And what do you suppose happens when you do? The very first thing is that the software proceeds to reformat six of the seven disks you have just formatted yourself, while you sit there hurling

maledictions and imprecations in the direction of Orem, UT.

This is a minor point, I admit, but one that is all too indicative of things to come. In one place, for instance, the manual may ask you to select a certain

reset the computer or by resetting itself spontaneously.

Instance in point: Lesson 10 in the *WordPerfect* tutorial, Text Columns, in which the assignment is to create three sets of columns. Were I to tell you how

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***The impression I get is that many people are willing to banish the imperfections of WordPerfect from their minds simply because it is the word processor most widely used in the U.S. and abroad.***

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item from a list of options; when you try to do so, you find that no such item or number is offered.

#### **The Worst Is Yet to Come**

Much worse than these still comparatively small errors are those portions of the manual that omit crucial information. I repeated Lesson 13, on the numbering of outlines and paragraphs more times than I care to admit, solely because the manual never informs you that choosing the option to redraw the monitor screen in the Screen menu does not in fact cause the *physical* screen to be redrawn unless and until you follow that step by pressing the down-arrow.

Most distressing of all are those times that the program refuses to carry out an instruction that you enter—an offense it sometimes compounds either by causing the screen to freeze, forcing you to

many times I attempted—with no success—to complete this lesson without having the program crash first, I would, I am sure, be accused of exaggeration. Suffice it to say that, after reaching the point of total frustration, I decided that I had nothing to lose by giving *WordPerfect* a call.

Later the same day, a courteous representative returned my call. What kind of monitor did I have, she wanted to know. Monochrome, I replied. In that case, she informed me, I was not to use the mouse, because “something” in the program made it crash when the mouse was employed with a monochrome monitor.

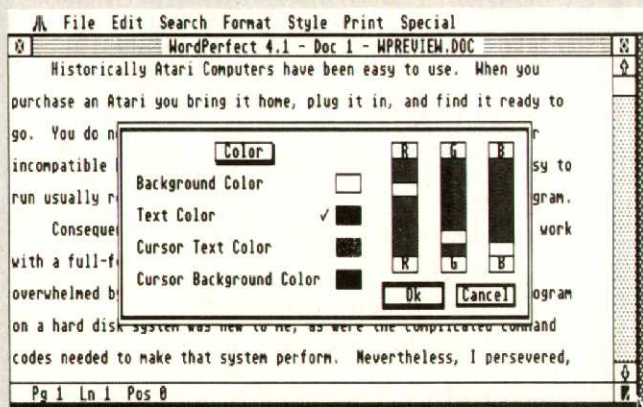
There was no problem in using the mouse with a color monitor, she continued, and I would be happy to know that *WordPerfect* was aware of the problem and trying to solve it.

You have no idea how thrilled I was to receive this news . . . or maybe you can guess. A word processing program for the Atari ST that can be used with either a monochrome monitor or a mouse, but not both—what could be more ludicrous than that?

Perhaps you see now why I speculated that *WordPerfect* Corp.’s desire to get the ST version of the program to market may have taken precedence over its desire to release a program that would work smoothly.

As far as I am concerned, *WordPerfect* comes perilously close to degenerating into a bad joke at the expense of the ST-using public. It promises much, but of that much, it delivers far too little.

The late Lenny Bruce had a routine about a “makeout book” that he jokingly threatened to write someday. Under the guise of instructing the man who



**Figure 7e.** The Screen option allows you to change the way text appears on a color monitor.



read it in how to woo and win the woman of his choice, the book would actually lead him into a series of offenses so ghastly that his chances with the object of his affections would be ruined beyond redemption. If he had been able to spend a few minutes trying to make *WordPerfect* do what the manual says it should, I am sure he would have recognized the program as close kin to his book, the different motives of their respective authors to the contrary notwithstanding.

#### Where to Next?

And where, you may be wondering, does all of this leave us? The alternatives for those who own an Atari ST and want a full-featured word processor are, as I see them, these. To be on the safe side, you can stay on the sidelines and engage in some watchful waiting while *WordPerfect* decides if, when, and how it will make its offspring right (to say nothing of write).

Should you be the wagering type, you can purchase *WordPerfect* now, mindful of the fact that the software has a tendency toward intermittent self-de-

struction and too often falls well short of the claims made for it by the manual. In this case, you are gambling that *WordPerfect* will be shamed into re-revising the program until it performs as advertised.

In any case, with respect to my own inclinations, I will merely say that nothing short of a very large cash payment could induce me to use the ST version of *WordPerfect* on a regular basis for my own writing needs. Yes, yes, I know what you may be sputtering—the program gives you every feature you could ever ask for in a word processor. Undeniably so. But I would rather settle for fewer features and greater reliability and simplicity—greater useability.

To put it another way, it is difficult enough in writing to get the words that best express your meaning down on paper without having to engage in hand-to-hand combat with your software.

But that is my individual, idiosyncratic choice, and I hardly expect everyone to share it. For all I know, the very peculiarities of *WordPerfect* that make me want to give it wide berth (for the time being, at least) may be just the

things that pique the interest of someone whose outlook is vastly different from mine. ■

#### Which Version?

At press time, *WordPerfect* Corporation had released three updates to version 4.1 of *WordPerfect* for the ST. Marian Lorenz based her evaluation of the program on the original (10-7-87) release.

Frank Kofsky reviewed the first update (10-28-87). And our own comments pertain to the second update (1-8-88).

When asked to detail the changes incorporated in the most recent (1-31-88) release, a spokeswoman for *WordPerfect* told us that changes were limited to minor bug fixes.

We appreciate the company's continuing effort to release a bug-free product, but we do not feel that the overall assessment of any of our authors would have been affected by the opportunity to use a different release. ■

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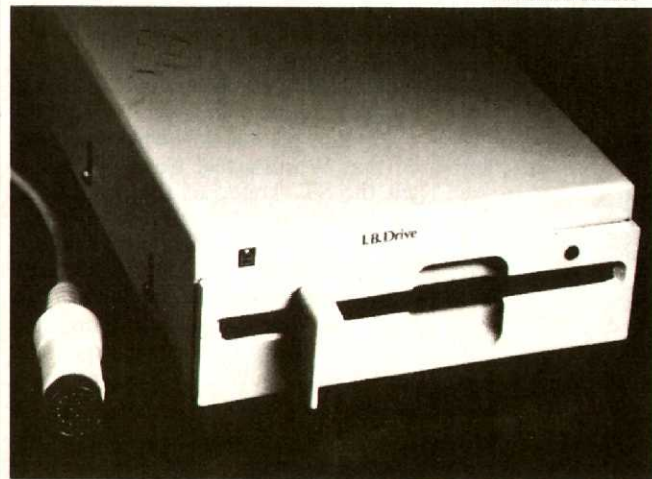
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A mere three or so years ago it was a lot of beeping and booping, and not much more. The sound of those pure tones—perfect square waves if you were to use an oscilloscope to examine them—became synonymous with home computing. Yes, the machines could carry a tune, but it didn't really sound all that good. Digitized sound was at its best when alerting you to the presence of Xylons in your sector: Beep-boop-beep-boop.

Computer sound has come a long way in a short time. Nowadays it is just about indistinguishable from sound that comes from your TV, radio, or compact disc player. And what's more, you can create these sounds yourself.

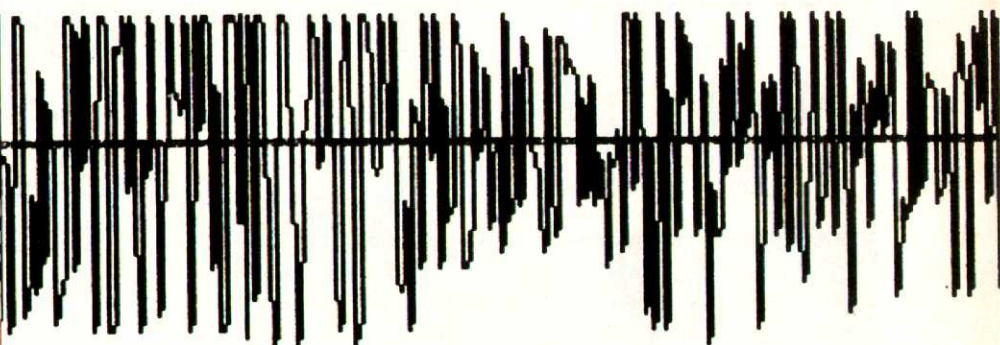
To some Atari ST owners—those who bought the machine purely for productivity purposes—sound is more or less superfluous. To others who are involved in MIDI music, it is the driving force behind their involvement with the machine. But to many from both of these categories, the fact that there is an audio amplifier and speaker inside both the Atari ST monochrome and color monitors is an oft-forgotten fact.

Productivity users only turn the volume knob to hear the "keyclick," and we don't know of many who do even that. And about the last thing the ultraserious MIDI folk would think of is turning the volume knob on the monitor. They run sound directly out of their sophisticated Casios, Yamahas, and Rolands.

Though the ST sound chip may pale in comparison to those found in dedicated synthesizers costing thousands of dollars, it is still very capable, and in some cases, can do things other devices cannot. The best example of this is sophisticated audio digitization.

Sampling keyboards are still very expensive, and user-sampling is impossible with most popular low cost synths, such as the Casio CZ series and Yamaha DX series. And yet the Atari ST itself is capable of high fidelity digital sampling. And the resulting samples can be manipulated in a variety of ways, yielding some very interesting results.

Audio digitization can enrich the experience of the most casual ST hobbyist—without even requiring the purchase of special digitizing hardware. And at the same time, it gives the ST owner a new and compelling reason to turn up the volume. There are at least three audio digitizer products on the



## Sound Advice

### *The state of the art in audio digitization*

Atari ST market today. Each consists of a hardware cartridge and a disk software component, and each digitizes sound in its own format, each unfortunately being incompatible with the rival formats.

As you might imagine, each system sports its own advantages and disadvantages, and before you decide which one is best for your applications, let's have a brief look at the three most popular systems available today.

### ST Sound Digitizer

The Navarone ST Sound Digitizer began its life as the Hippo Digitizer, and in the course of its move to Navarone, has benefitted from a substantial reduction in price.

The Navarone unit sports the widest range of sampling frequencies, from 1K to a whopping 64K samples per second. The memory requirements of a 64K sample are impractically massive, however, and probably not worth the resulting increase in fidelity. A good rule of thumb is to sample at twice the highest frequency you will be sampling. For example, a sampling rate of 40K will give you more than ample fidelity to cover a source with a range of 20-20,000 KHz.

The software component of the Navarone digitizer runs very smoothly and exhibits a good deal of polish. A "scope" mode allows you to set the gain with ease and accuracy. A waveform editor allows you to cut, copy, and paste pieces of the waveform, just as if you were working with a word processor.

You can reverse a sound to play it backwards (fun to do with snippets of old Beatles tunes). You can raise or lower (squeeze or stretch) the pitch of any sound, adjust the level, and even

mix sound segments together. MIDI users will find that the unit can play digitized samples right through a MIDI keyboard—a very neat trick.

The main drawback of the Navarone system is that it requires the hardware unit for playback. This means that sounds created on the Navarone system are playable only on systems equipped with Navarone digitizers. It also means that you can't include digitized sounds in your own programs, if you want to share those programs with other ST users who don't own the Navarone system. Since the other units we evaluated are capable of playing back through the existing ST audio system, we cannot help but view the Navarone ST Sound Digitizer as lacking in this respect.

**System:** Atari ST

**Price:** \$79.95

**Summary:** Excellent software; requires hardware unit for playback.

**Manufacturer:**

Navarone Industries, Inc.

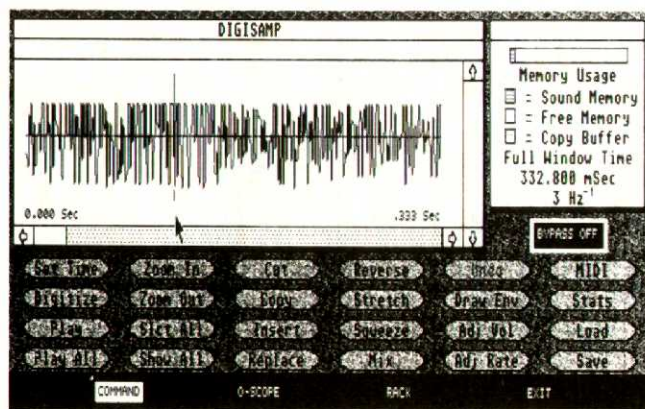
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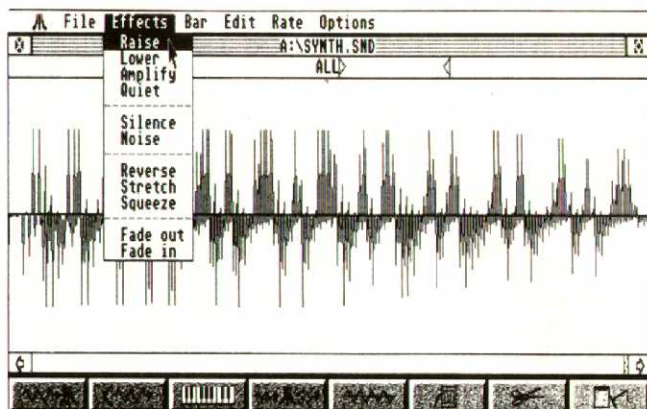
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By JOHN J. ANDERSON



ST Sound Digitizer from Navarone



Digisound ST/Professional from Alpha Systems

## Digisound ST/Professional

The two units offered by Alpha Systems, Digisound ST and Digisound Professional, are by far the most fully-featured units you can buy today. The professional version provides the serious MIDI musician as well as the hobbyist with a very powerful system. And yet even the "base-sticker" version is superlative in its capabilities.

The software that accompanies the Digisound units is very well-written and, in addition to offering most of the features listed above for the Navarone system (oscilloscope mode, waveform editing, reverse, mixing, etc.), allows you to attach musical pitch levels to sounds without a MIDI keyboard and filter them as well.

Digisound allows you to draw your own waveforms freehand, if you so desire, and to fade sound in and out. Its realtime echo command allows you to add reverb to your sounds. You can sample at rates up to 40 KHz—more than enough for the most serious musical needs.

Included in the very complete documentation accompanying Digisound ST are instructions for using digitized sounds in your own programs. The accompanying disk includes a folder with sample programs on it, as well as the source code to play sounds from your own programs, with no external hardware necessary. On this score Digisound clearly beats the Navarone unit.

Digisound Professional offers all the features of Digisound ST, along with logarithmic sampling and playback, which uses special circuitry to extend sound quality for playback through an external amplifier. It also allows realtime mixing of line and microphone inputs.

**System:** Atari ST  
**Price:** ST, \$89.95; Pro, \$149.95  
**Summary:** Full-featured units with superlative capabilities.  
**Manufacturer:**  
 Alpha Systems  
 1012 Skyland  
 Macedonia, OH 44056  
 (216) 374-7469

Digisound ST Professional is clearly the best-built of the hardware units we tested. It features input and output gain potentiometers and the facility to handle a stereo input source. We recommend Digisound ST Professional to anyone interested in a top-of-the-line audio digitizer. If not for the question of standards (discussed below), it would clearly be our unit of choice.

At press time, we learned of a new software product from Alpha Systems, *Digiplayer* (\$49.95), which is a sound editor program said to be compatible with all cartridge-based digitizers. We will follow up with an evaluation of this package in a future issue.

# Parrot II

*An audio digitizer for 8-bit Atari computers*

The ST is not the only Atari capable of audio digitization. The Parrot II from Alpha Systems gives 8-bit owners a low-cost way to capture real-world sounds.

The Parrot II is a hardware/software package that consists of a system disk, interface box, cable, and 43-page manual. The hardware component of the Parrot II is a blue, plastic box measuring 4" x 2.75" x 1.5" with a large knob on top. There are two input jacks on the front of the box marked Microphone and Amplified Source. On the rear of the box is an 18" cable, which plugs into the joystick port.

Despite what the documentation says, the only way to get the Parrot to work is to plug it into joystick port #1, not #2. A normal microphone plugs

**System:** Atari 400/800/XE/XL  
**Price:** \$59.95  
**Summary:** A low-cost way to experiment with sound digitization.  
**Manufacturer:**  
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into the first input jack, and a powered or amplified sound source such as a Walkman, compact disc player, or stereo is connected to the amplified input jack using the supplied cable. All output sound is routed through the monitor speaker; there is no easy way to run your

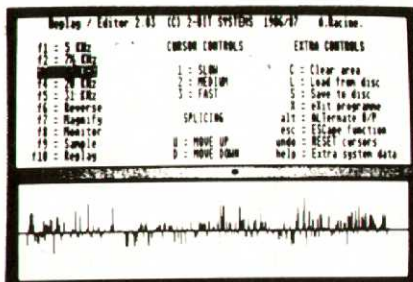
## ST Replay

MichTron's ST Replay is currently the best-selling audio digitizer. Because the documentation covers its file format extremely thoroughly and no copyright is claimed for playback, ST Replay has become the de facto standard for ST audio digitization.

ST Replay is capable of very high quality digitization, even though limited to a high-end sampling rate of 31 KHz. If you are playing sound back through the monitor speaker, this is a moot point. Even through a stereo, 31 KHz sounds very good indeed. The software side of the ST Replay is its most vulnerable spot. It is not nearly as sophisticated as the Digisound or even the Navarone software. In fact, it is downright amateurish. For example, you will find that you need to press the escape key repeatedly to move between modes. The mouse is largely unsupported, and many of the special effects you can do with the other systems are not possible with ST Replay.

And yet, the sound quality of ST Replay samples themselves are superlative, and that is the basic job for which you purchase an audio digitizer. Though the software interface is rather

**System:** Atari ST  
**Price:** \$99.95  
**Summary:** The current de facto standard for ST audio digitization.  
**Manufacturer:**  
MichTron  
576 S. Telegraph  
Pontiac, MI 48053  
(313) 334-5700



ST Replay from MichTron

primitive, you can in fact edit, splice, overlay, reverse, fade, and add echo to your samples.

More important, the documentation accompanying ST Replay contains an entire chapter devoted to programming with sound samples along with the file

**MichTron has even gone so far as to allow their customers to distribute sounds created with ST Replay without legal encumbrance.**

format of the samples themselves. The people who created the unit understood that users would want a way to incorporate sounds into their programs and play them back without external hardware.

MichTron has even gone so far as to allow their customers to distribute the sounds created with the package without legal encumbrance. On this score, Replay is the undeniable victor. The package ships with a public domain software player, and no copyright notice is demanded when incorporating sounds. (Digisound requires your software title screen and documentation to read "Digital sounds created with Digisound from Alpha Systems," and "Sounds played with portions of soft-

recordings through a stereo system.

The Parrot II comes with a double-sided system disk, which contains two samplers, an emulator, five sound files, a public domain player, and two Basic programs that use digitized sounds. The sampler allows you to monitor, record, playback, save, and load sound files. Which sampler you use is determined by your computer type. The XE sampler uses the extra memory of that machine to provide a larger workspace for your recordings.

Using the Monitor mode of the sampler, you set the optimum recording level for your input source. This is the trickiest part of digitizing sound, because you must try to balance the volume from your source (if it is amplified), the volume on the monitor/television, and the gain control knob on the interface itself. The whole process is complicated by the fact that there is no visual indication of the sound level on-screen because whenever the Parrot II is recording or playing digitized sounds, the display is blanked. What you hear through the speaker in your monitor is

exactly how the sound will be recorded.

Once you are satisfied with the sound level, you set the recording speed from 1 to 255 (1 is the fastest and provides the best results). At a recording speed of 1, you get roughly one second/10K free RAM. A 400/800/XL has 32K of recording space, whereas the 130XE provides a 86K workspace. Keep in mind that a 30K sample takes up 246 sectors when saved to disk.

After you have recorded some sounds, the Emulator allows you to edit samples in 1K patches. This is a relatively complicated procedure that uses the joystick to edit the waveforms. Sounds can be structured by splitting them into nine tracks that can be played like notes on an instrument. The system disk contains several structured files that turn the 8-bit Atari into an entry-level synth.

The Parrot II comes with a sample program called Guessnum that shows you how to incorporate sound files into your own programs. A separate Basic subroutine provided on the disk allows you to load and play sound files. And

with the public domain player, you can share your sound files with friends, even those who don't own a Parrot interfaces themselves. A disk full of pre-recorded sounds is available from Alpha Systems for only \$4.95.

The documentation is a hold-over from the original Parrot (still supported, but no longer sold), though Alpha Systems claims to be working on an new version of the manual. The basic difference between the original Parrot and the Parrot II is that the new model has a built-in A/D (analog/digital) converter. Therefore the sampler programs for each are different, though the two may share sound files.

At \$59.95, the Parrot II provides a low-cost opportunity to experiment with audio digitization, though the overall sound quality is not on a par with that of ST digitizers. The hardware is simple and solid, and the software comes with everything you need to record, play, and manipulate sounds. If you want to hear what the Parrot is capable of, Alpha Systems sells a demonstration disk for only \$5.00. —**OWL**

ware that are copyright Alpha Systems © 1987."

In relinquishing their claim to a copyright on sound playback, MichTron has cued ST Replay as the common standard for ST digitized audio. Further, the ease with which ST Replay files can be handled from MichTron's compatible GFA Basic, one of the most popular programming environments for the ST, has also enhanced its position.

So, despite the fact that Digisound is undeniably the superior hardware unit, ST Replay format is the way to go if

**Audio digitization**  
can enrich the experience of  
the most casual hobbyist—  
without even requiring the  
purchase of special digitizing  
hardware.

sharing sounds with others is your goal. Many sounds digitized in ST Replay format have found their way to the ST Roundtable on Genie (see this month's Teletalk). All of these can be played back by everyone—not just owners of the unit. And an entire library of ST digitized audio is available from the Acme Dot Company, P.O. Box 5923, Titusville, FL 32783.

The bottom line is that you must decide what you are looking for in an audio digitizer. If you are using it in conjunction with MIDI devices, the Navarone and the Digisound are the units to have a good look at. If you are interested in digitized audio as a component of the powers of the Atari ST, the MichTron ST Replay is the unit for you. ■

## To Reopen A Window

### ST HELP KEY

When you swap the floppy disks in an ST drive, it is not necessary to close and then re-open the disk window to make the Desktop recognize the new contents of the drive. Instead, simply press the Esc key after you have made the swap, and the active window will be updated with information from the new disk. ■



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# Personal Pascal Version 2.01

*Lots of improvements make this upgrade worth having*

I felt a real sense of anticipation when I learned that a new version of Personal Pascal had been released. Last year, using version 1.1, I had programmed my way through four computer science classes and acquired a fondness for it despite some fairly serious limitations.

When I opened the review package, it was immediately apparent that substantial changes had been made: the manual was 50% thicker than the first edition and there were two disks instead of one.

The Pascal .INF file comes configured for a 520ST with one or two single-sided disk drives. If you are running some other configuration, you will probably want to edit the .INF file before you boot-up for the first time. On my 1040, I use a 550K RAMdisk loaded with all the files necessary to edit, compile, and link. This results in a really quick working environment for program development.

## The Manager

Personal Pascal is now entirely GEM-based, and it is fast. The Manager is the shell from which you use the other portions of the system: Editor, Compiler, and Linker. From the File menu you can select which portion of the system to use, or run a program. The Options menu contains functions for setting the Compiler and Linker options, selecting the files to be compiled,

Options. The File section contains the usual file commands. With Block commands, you can mark, cut, paste, or hide a block; blocks can also be saved to or loaded from a file and printed. I particularly appreciate the last when I am debugging code, because I frequently want to look at a larger section of code than will fit on the screen.

The Find menu contains the commands for global search and replace; the search command can be set so that it is or is not case sensitive. The commands in the Mark menu give you quick access to different sections of a long listing by allowing you to set as many as four marks. You can also jump to the top or bottom of the listing.

Statistics in the Options menu lets you check the size of the files you have open, the amount of space left in each edit buffer, the amount of free memory, and the amount of free space left on disk. The Options menu also allows you to select between insert or type-over mode and to enable auto-indent.

Print File is a feature that was sorely missed in the first version. The listing is printed without line numbers, however, and I wish there was an option to print them. I prefer to print a final listing without them, but while I am chasing bugs, it is nice to be able to note the numbers of the lines I need to change.

Three files can be open at any one time. An indicator in the upper right-hand corner allows you to choose with the mouse which is visible in the text window. As a test of Personal Pascal, I wrote an address book program that could sort and search records on different fields. The multiple windows made it a snap to find sorting and searching procedures I had written earlier, cut out the blocks I needed, and paste them in the new program.

## Compiler and Linker

The average user will probably not notice significant differences, other than easier compiling and linking of separate modules and libraries, in the new Compiler and Linker. I did an informal speed test on the Compiler with a 60K source file and found the new version to be about 15% faster than the old.

Two new data types—alfa and short integer have been added to the language definition to increase compatibility with other versions of Pascal.

## Personal Pascal v2.01

**System:** Atari ST  
**Version:** 2.01  
**Copy protection:** No  
**Summary:** Real improvement of an already good Pascal programming system.  
**Price:** \$99  
**Manufacturer:**  
 ICD/OSS  
 1220 Rock St.  
 Rockford, IL 61101  
 (815) 968-2228

and specifying which disk drives hold library and source files.

## The Editor

The Editor is the most important feature of any programming environment, because it is where you spend most of your programming time and where you can save or waste the most time. The Editor of the first version of Personal Pascal can best be described as tolerable. The new editor is delightful; it is fast, and the GEM interface makes it easy to use.

The Editor menu is divided into five sections: File, Block, Find, Mark, and

By **STUART DUDLEY DIMOND III**

## PRODUCT REVIEW

### Documentation

The documentation of the first version of Personal Pascal definitely needed improvement, and improvement it got. The missing index has been added, and topics have been rearranged in a more logical sequence. The increase in size of the manual is a result of a larger and more readable typeface and a somewhat better layout.

To present the syntax of Pascal, the old manual used the Backus Naur Formalism, which I suspect beginners found about as easy to read as Egyptian hieroglyphics. The new edition uses simpler syntax diagrams to convey the same information—a change that most users will welcome.

All the material in the manual has been re-worked to improve readability and style. Some topics, like Modular Compilation, have been given much more thorough treatment than they received in the first edition.

Personal Pascal v2.01 is an excellent, moderately priced programming system. If you have the earlier version, you will want to upgrade. If you have been thinking about learning Pascal but are a little awed by compilers, you will find this one friendly and easy to use.

You can buy Personal Pascal and program within its limited GEM interface as a beginner. Later, when you want complete access to GEMDOS, BIOS, XBIOS, VDI, and AES, *Tackle Box* from SRM Enterprises will give you an upgrade path that will not require you to switch to C.

Owners of the old version of Personal Pascal can obtain the new version by sending the old manual to OSS along with a check for \$29.50. ■



### Monitor Master

**System:** Atari ST

**Price:** \$49.95

**Summary:** Switches between monochrome and color monitors; provides composite video output with a 520ST.

**Manufacturer:**

Practical Solutions, Inc.  
1930 East Grant Rd.  
Tucson, AZ 85719  
(602) 884-9612

# Monitor Master

*An easy way to connect  
two monitors to your ST*

If you have both a monochrome and a color monitor on your ST, you know that each time you want to switch, you should power down, unplug one monitor, plug in the other, and power back up. Now, with Monitor Master, you need only click a switch to toggle back and forth between monitors. You still have to wait for the ST to reboot for the newly connected monitor type, but the entire process is much more convenient.

Monitor Master has a 30" cable that plugs into the monitor jack on the computer and two output jacks for the cables from your two monitors. It also has two RCA jacks, one of which provides a composite (NTSC) video signal and the other an audio signal—but *only* when

used on a 520ST with a built-in RF modulator. If your 520ST has an RCA jack marked "Television," it has an RF modulator; if not, it doesn't.

When using Monitor Master, be sure that all the cables are plugged in straight and securely. For a while I thought my ST had gone bonkers, but I soon discovered that the dark purple screen was just the result of a loss of green color due to an insecure connection.

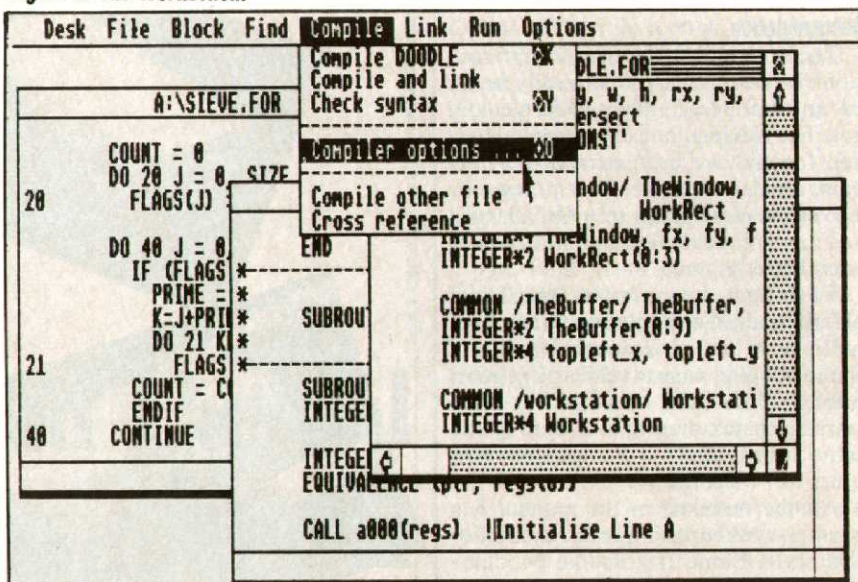
Another caution is to turn off one monitor when using the other, or keep them separated by at least a foot. The vertical scan frequency of the color monitor is 60 Hz, while the monochrome scans at 70 Hz, so radiation from the idle monitor can interfere with the operation of the other, causing jitters and waves.

Don't expect the same crisp, clear signal on a composite monitor or VCR that you get on your Atari SM124 or SM1224. This has nothing to do with Monitor Master, which is just a switch, but rather with the inherent limitations of composite video and the relatively low quality video circuit in the ST.

Fifty bucks seems like a lot for "just a switch," until you consider the cost of replacing a mangled monitor jack or a cable that has been flexed just once too often. The way I see it, Monitor Master is an ounce of prevention and a pound of convenience all rolled into one. ■

By DAVID H. AHL

Figure 1. The Workbench.



# Prospero Fortran for GEM

## ANSI standard Fortran 77 for Fortran lovers and GEM developers

Software for the Atari ST is often judged by how well it uses the GEM interface. Therefore, it is important, when reviewing a programming language and development system, to evaluate the ability of the package to produce GEM applications.

Prospero Fortran for GEM does a good job in both respects. It is a powerful developer's system that you can use to create standard Fortran programs and full-fledged GEM applications.

Your job as a programmer is made easier by Prospero's GEM-driven graphic shell, the workbench, from which you have access to the editor, compiler, linker, and other programs, including your own creations and utilities supplied by Prospero.

Fortran, considered by some to be a dead language, is still the programmer's lingua franca when it comes to number crunching and scientific applications. Prospero Fortran is a full implementation of the ANSI (American National Standards Institute) standard Fortran 77. Thus you can refer to any of thousands of Fortran reference and tutorial books if you have a problem learning or programming with the language.

If you have an application that you want to port over to your ST from the mainframe at work, don't worry. If it was written to conform to Fortran 77, it

can probably be recompiled without modification.

Prospero Fortran comes with three large volumes of documentation and two unprotected, single-sided disks that include the native-code compiler, editor, linker, interactive symbolic debugger, and the workbench. Also included are utilities such as XREF, a cross-reference generator, and a library utility.

The first volume of the manual covers the installation of the system, the workbench, and the language implementation details. It also covers advanced topics, such as how to interface assembly language routines to your Fortran programs. The other two volumes are devoted to the GEM AES (Application Environment Manager) and VDI (Virtual Device Interface).

### Who Should Use Prospero Fortran

Prospero Fortran is a solid implementation of Fortran 77; if this is what you want, then shop no further. However, if you are new to programming, especially programming on the ST, you may want to consider a less complex language, such as the version of Basic supplied with your computer. Prospero Fortran is not for beginners.

You won't find many magazines or books full of GEM-based Fortran program listings, but the GEM bindings supplied with Prospero Fortran are complete. With these, you shouldn't have too much trouble converting the many available C programs to Fortran.

Unfortunately, Prospero Fortran doesn't come with a resource construction kit which would facilitate the creation of menus, dialog boxes, and icons; these can be created within your programs but require significant coding. Alternatively, you can use third-party resource construction kits, such as K-Resource by Kuma Computers of Berkshire, England.

Whether an experienced Fortran coder from the early days of mainframe computing or a developer of modern GEM applications, you will enjoy the ease with which you can write fast, compact code with Prospero Fortran. Be warned, however, that a few bugs exist; most of them are merely cosmetic but several serious ones persist (see below).

### Inside Prospero Fortran

The manual states that you need 400K of memory and 720K of disk space to run Prospero Fortran. However, it is possible to develop on a minimal 520 ST (one single-sided drive and no extra memory), if you don't mind all the

By PAUL S. MacMILLAN



```

Probe Symbolic Debugger version mg 1.1
Copyright (C) 1986 Prospero Software
(Type H for Help)
SIEVE (source file: SIEVE)

>>list 12..24
12 +
13 *          COUNT = 0
14 *          DO 20 J = 0, SIZE
15 * 20        FLAGS(J) = .TRUE.
16 +
17 *          DO 40 J = 0, SIZE
18 *          IF (FLAGS(J)) THEN
19 *            PRIME = J+J+3
20 *            K=J+PRIME
21 *            DO 21 KK = K, SIZE, PRIME
22 * 21        FLAGS(KK) = .FALSE.
23 *            COUNT = COUNT + 1
24 *          ENDIF
>>break count>1000
>>go
23 *          COUNT = COUNT + 1
'break count>1000'          1001
24 *          ENDIF
>>display prime
7933
>>break ->>break prime>12000
>>go
19 *          PRIME = J+J+3
'break prime>12000'          12007
20 *          K=J+PRIME
>>display count
1437
>>quit

```

Figure 2. A sample debugging session.

disk swapping required to compile and link on such a system.

I have been running the package on an unexpanded 520 ST with two single-sided drives, a configuration that works just fine. On my system there is enough free memory to configure a 90K RAM disk, which speeds up the development cycle a little. Users with 1Mb or more of RAM should really be able to fly.

After starting the workbench (Figure 1) from the desktop, you are ready to edit your source code. You can have up to four windows on the workbench at any given time.

The editor works somewhat like *1st Word*. All of the search, block, and cut-and-paste operations are present, as are keyboard equivalents for most editor and workbench commands.

One annoying feature of the editor is that whenever you click on a scroll bar or re-size a window, the mouse cursor flickers between the bee and the arrow. Also, if you attempt to create a line longer than 246 characters, an alert box appears. Instead of being truncated, the troublesome line is discarded altogether. Even more disconcerting is that if the next line you type extends past the

right edge of the window, the entire system crashes!

From the workbench, files can only be saved or deleted. There is no provision to print files. Unless you have a desk accessory for this specific purpose, you must return to the desktop to obtain hardcopy printouts of your code.

There are some subtle features about the editor/workbench that are quite thoughtful. If you have several source files on the desktop, the Compile menu items change to reflect the active file. If you open several files at once, their windows automatically tile nicely on the desktop. You can run any program from the workbench that you can from the GEM desktop. However, after running a program from the workbench, windows do not react to full-size messages properly; the background color on the desktop changes, too. Nothing serious, but it can be distracting.

The compiler, when invoked from the menu or by a keystroke, can compile a file that is in memory (i.e., from a workbench window) or on disk. The compiler itself is disk-resident; you must wait for it to load each time you compile. All of your Include files must be read from disk as well. For this reason, transferring the necessary files to a RAM disk

really speeds up the compilation process.

Strange things can happen if the compiler receives an error report from TOS, such as when you try to write to a full disk. Error messages appear on the screen in seemingly random—and sometimes dangerous—locations. A line of text informing you of the error is displayed on the screen, but not in a window. While I was preparing this review, an error message once erased the menu bar and, in effect, crashed the system.

After a successful compilation, the Link menu displays an entry for the file just compiled. The linker will link your .BIN file from disk with the Fortran library, and the GEM library if it is needed, to produce a stand-alone program that you can run from the workbench or the GEM desktop. If you wish, you can specify a linker control file that contains the pathnames of other .BIN files and libraries to be linked. To reduce the final code size of your application, you can scan libraries for only the modules you need. No run-time licensing fee is required for applications created with Prospero Fortran, so you can distribute your programs as you see fit.

Prospero includes a library utility that collects your compiled .BIN files into manageable libraries of related

## Prospero Fortran for GEM v2.101

**System:** Atari ST

**Required equipment:** 400K RAM and 360K disk space

**Copy protection:** No

**Summary:** A full implementation of ANSI standard Fortran 77.

**Price:** \$199

**Manufacturer:**

Prospero Software

100 Commercial St., Ste. 306

Portland, ME 04101

(207) 874-0382

Program	Source code size (bytes)	Compile/Link time (min:sec)	BIN file size (bytes)	PRG file size (bytes)
Sieve <sup>1</sup>	627	0:21	472	19,456
Doodle <sup>2</sup>	22,579	3:55	10,329	41,984

<sup>1</sup>Sieve is the Sieve of Eratosthenes benchmark program. A RAMdisk was used to hold the source, .BIN, and .PRG files and the libraries.

<sup>2</sup>Doodle is a simple but complete GEM application supplied by Prospero. Because of the size of the program, the RAMdisk was used only for the source, .BIN, and .PRG files.

Table 1. Compile and link times.

functions and subroutines. For instance, all of the GEM routines are in one library, and the linker will use only those portions of the library that are needed by your application.

While there are built-in routines to access the time and date and to PEEK and POKE arbitrary memory locations, Prospero's handling of GEMDOS, XBIOS, and BIOS is akin to that of ST Basic. That means it is possible to make GEMDOS calls, but it is not easy. To their credit, Prospero did include support for the low-level "Line A" graphics.

The debugger provided by Prospero is an excellent addition to the package. It has commands that let you set breakpoints, monitor the values of selected

variables, and even change their values during program execution. You can direct output to an alternate viewing screen if you wish, which is essential in the debugging of GEM and other graphics-oriented programs. Moreover, you can keep a permanent log of the debugging session and execute any program from within the debugger. Running a program in the debugger is interactive, like running a program in interpreted Basic. A sample debugging session is shown in Figure 2.

Table 1 gives representative compile and link times for two sample programs. The first of these, the ubiquitous Sieve of Eratosthenes, is often used to gauge the speed of a system. Ten iterations were performed in under six seconds, a

speed that is competitive with the fastest compilers for the ST, Macintosh, and Amiga.

The GEM documentation is among the finest I have seen. For each section of the AES and VDI there is an explanatory passage followed by a detailed description of every call. All of the parameters of the calls are detailed, and examples are provided for each one.

## Fortran is still the programmer's lingua franca when it comes to number crunching and scientific notation.

The manuals are extremely well written. Unfortunately, they contain some material that is not relevant to the Atari implementation of GEM, but dedicated ST owners have learned to live with this sort of thing.

### Conclusion

The documentation is so well done that it might be the most impressive part of Prospero Fortran for GEM, and the debugger certainly makes the package a candidate for serious programmers.

The workbench, while suffering from a few bugs (which could be easily eradicated in future releases) is adequate. The GEM support is excellent, though the GEMDOS, BIOS, and XBIOS support is not so great. Enterprising programmers can write the GEMDOS bindings for themselves, though additional sources of documentation will be needed.

All in all, Fortran lovers and prospective GEM developers should seriously consider Prospero Fortran.

*Editor's Note: Version 2.12 of Prospero Fortran for GEM was released just prior to publication. A spokesman for Prospero told us that in the new version, the compiler, linker, and library have been "significantly" speeded up, and desk accessories are supported. The upgrade is available to current owners for \$15. For the most recent versions of many other popular packages, see New & Improved elsewhere in this issue.*



## Picture Quiz

Can you identify this computer (35 points), the microprocessor it used (10 points), the year it was introduced (10 points), each of the five system elements (5 points each), the selling price of the system within 10% (10 points), and the specific game that is being played (10 points). Hint: all of the system elements are visible in the photo. Answers are on page 96. ■

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 P.O. Box 61657  
 Sunnyvale, CA 94088

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Outside USA, add \$10 to cover shipping

*The Informer combines features of a spreadsheet,  
list manager, and relational database*

# Bottom Line

By DAVID H. AHL

Regent Software bills *The Informer* as a "multi-table database with presentation graphics in spreadsheet format for the Atari ST." Just what does that mouthful mean?

"Spreadsheet format" means that the data are stored in an array, just like a spreadsheet. The big difference between *The Informer* and an ordinary spreadsheet is that each row of data has one or more codes assigned to it, so it can be easily retrieved. Also, each column is assigned an attribute, such as numeric, currency, text, date, code, or

picture.

"Presentation graphics" is a bit pretentious. What it really means is that you can use a *NeoChrome* or *Degas* image as a background for a data entry form or as a piece of data to be stored and retrieved.

"Multi-table" refers to the versatile feature in *The Informer* that allows you to link data from up to four tables to one another.

One other important aspect of *The Informer* should be stated at the outset: it is a menu-and-mouse oriented database; no programming or strange se-

quences of characters are needed to use it.

Enough of definitions. What about the product? When you open the 7" x 10" vinyl plastic box, you find a single 3½" disk, an 83-page manual, and information about a program called Gateway, which allows you to import data from *Hababase*, *Regent Base*, *dBMan*, and, if you have the most recent version (1.04), *DataManager ST* into *The Informer*. In return for your product registration card, Regent Software will send you a copy of Gateway free.

## Documentation

Most manuals are divided into two main parts, a tutorial and a reference section. While some manuals are much better than others, conceptually the idea of tutorial and reference sections has merit. When you use the product the first few times, you want a tutorial, but as you become more experienced—or if you have used a similar product before—the reference section is a more efficient way of getting your questions answered.

Unfortunately, *The Informer* manual is divided into a tutorial section, which covers forms set up and data entry, and four other sections—curiously not listed in the contents—which are sort of reference sections with embedded tutorial material on searching, sorting, viewing, and printing the stored data. To make matters worse, the manual is written in the "My name is Jason, and I'll be your waiter tonight" California-friendly style. This is doubly unfortunate, because the program itself is a serious product; in fact, it is one of the most versatile and—dare I say it—pow-

File Column Display Print Math Sequences Informer - Ver 1.04

Messages

S	Name	Date	Time	Visitor	Representing	Phone Number
1	Charlyn	09/12/87	11:23 am	Peterson	Self	(213) 555-1212
2	Frank	09/08/87	01:15 pm	John	Xiox	(213) 549-8477
3	Lorette	09/18/87	12:15 am	Frank	Regent	(818) 882-2888
4	Mark	09/05/87	09:11 am	Dave	Mostdata Corp.	(818) 746-5454
5	Ron	09/06/87	11:11 am	Pat	Softdata Compe	(818) 555-4545
6	William	09/07/87	08:08 am	John	Tiara Software	(415) 454-8778

MSB DESC - - Save Undo Drop New Prev Next

Informer data is stored in spreadsheet format.

==== Create/Alter the Sublist ====

NEW Sublist ADD to Sublist FULL List SUB List EQUAL NOT EQUAL

John  
100

Ignore Reset All Selections ACCEPT

Sublists of data can be made based on up to four different columns of data.

erful databases available for the Atari ST.

### A Memory-Resident Package

*The Informer* is a memory-based package; the program and all the data reside in memory, rather than the program being in memory and the data on disk (Naturally, you store your data files on disk at the end of a session). Because the package is memory-resident, it leaves only 165K for data on a 520ST.

Practically speaking, this means that a basic 520ST will handle about 1600 average-size records, while a 1Mb system will handle about 6400. Therefore, I strongly recommend a system with at least 1Mb of memory.

The manual warns that *The Informer* may not be compatible with certain desk accessories, such as *Cornerman*, *Thunder*, and others that use large amounts of memory. The package also requires TOS in ROM.

An *Informer* database is a collection of up to four related or non-related tables. Each table is an organized collection of records. Each record contains between two and 36 fields (or columns) of data; you can think of a record as a row on a spreadsheet. Records (rows) and fields (columns) can be added, deleted, redefined, or rearranged as your needs change.

Each table can be viewed on the screen as either a list (looks like a spreadsheet) or a data entry form that you create yourself.

Each field of data has a unique set of attributes that you select to help control the entry and output of data. Attributes include names (titles), math formulas,

**You can use a NeoChrome or Degas image as a background for a data entry form or as a piece of data to be stored and retrieved.**

## The Informer

**System:** Atari ST (1 Mb recommended)

**Price:** \$99.95; trial pack, \$19.95

**Summary:** Interesting database that stores data and graphics in spreadsheet format.

**Manufacturer:**

Regent Software  
7131 Owensmouth Ave.  
Suite 45A  
Canoga Park, CA 91303  
(818) 882-2800

formats, justification, sort sequence, data type (numeric, currency, date, etc.) and control (forces a specified type of entry). While this may seem complicated, these attributes have to be assigned only once—when you design a new data entry form. Assigning them is easily done by clicking the mouse on a series of boxes in an attributes menu.

As with any database, the first step in using *The Informer* is to create a data

entry form. The tutorial in the manual takes you through this process reasonably painlessly, although I found that some of the sample files on the disk had slightly different names than those cited in the manual.

Once your form is designed, you can start entering data. Depending upon your application, you can enter a great deal of data all at once (customer list, inventory, index of magazine articles) or enter it piecemeal over a long period of time (phone messages, orders). For the most part, you enter data by simply following the prompts on your entry form and filling in the blanks. Eventually, however, you will want to retrieve data, and perhaps manipulate it as well.

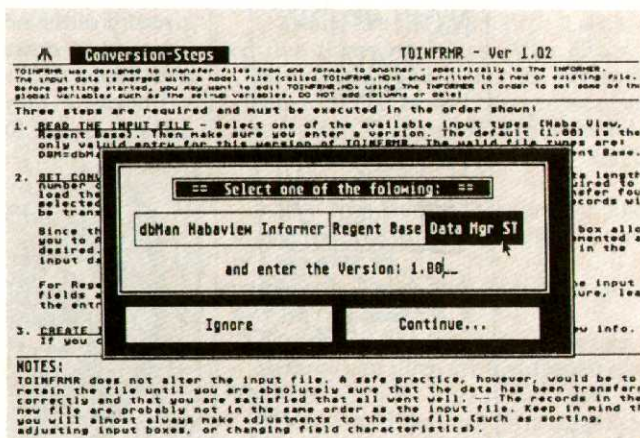
### Manipulating Data

If you want to manipulate your data, it is easiest to think of your database as a spreadsheet (which, in fact, it is). As such, it allows you to perform many common spreadsheet functions, including moving columns, rows, or individual cells; globally changing data or parameters; searching; and sorting.

You may wish to do a mathematical



Graphics from Degas Elite and most scanners can be used to create custom data entry forms.



Data can be imported from other programs.

calculation on an entire field (column) of data. For example, you could multiply a column by a constant to calculate sales tax or add two columns—order total plus sales tax, for example—to produce a new column.

example, you could sort names alphabetically within a larger sort of zip codes. Or you could sort inventory items by three or four subcategories.

Aside from the manual, the weak link in *The Informer* is the printing func-

and displayed on the screen but, of course, you can not alter them. A nifty feature allows images to be reduced to one-half or one-quarter of their original size and displayed within the data entry form box. You can then specify whether you wish to have the reduced image or its filename displayed.

In putting *The Informer* through its paces, I did not identify any major problem areas, I never got a screenful of cherry bombs, and I never found myself in a situation from which I could not recover. On the other hand, more than once my intuition led me astray—the menu is deceptive because some items are intuitive and some are not—and I ended up roundly cursing the manual.

There are no real benchmarks for evaluating a database such as this one. In general, I sense that it is fast—certainly it ought to be since it is memory-resident—but I can offer no definitive, quantitative measure of its speed.

Ease of learning and ease of use vary markedly for the various functions. Constructing a data entry form and entering data are easy, because the manual leads you by the hand through these functions. However, I found data manipulation, searching, sorting, viewing, and printing anything but easy to learn. Once I mastered these functions, using *The Informer* was relatively simple.

But I wouldn't want to put the program away and come back to it in a month or two. My sense is that, unlike a bicycle, *The Informer* requires that you use it fairly regularly to maintain proficiency.

Having used the program for a while now, I am left with the feeling that *The Informer* is an interesting but curious product. It has some functions of a spreadsheet, but is hardly a full-featured one. It has some functions of a list manager, but can't even print labels. Ditto its relation to a hypertext stack and a relational database. Nevertheless, the presence of functions of four such useful products opens some interesting possibilities.

I can envision many applications for *The Informer*, and I am sure that users will devise many others. Let's hope that Frank Cohen at Regent Software keeps us informed about what people are doing with his latest product. Although that task should probably take second place to a rewrite of the manual, which would allow me to give *The Informer* an unqualified recommendation. ■

## ***If you can live with tabular output, The Informer is quite versatile in terms of formatting, justification, hiding columns, and printing U.S. and foreign currency entries correctly.***

To search a table, you effectively create a new subtable of the items found by your search parameters. You start with the Display menu, from which you specify whether to search the entire list or a sublist. For each field (column), you can specify one or more search parameters—all zip codes between 070xx and 079xx or telephone messages for someone other than Linda with the word "urgent" in them, for example. The menu provides a wide range of logical operators which work with words, numbers, and dates.

A special category of searching is called Find. Using this function, you can specify any pattern of keyboard characters, such as a name or date, and the program will search for and display all instances of it.

When sorting your data, you can sort one column at a time or specify a sequence of columns to be sorted. For

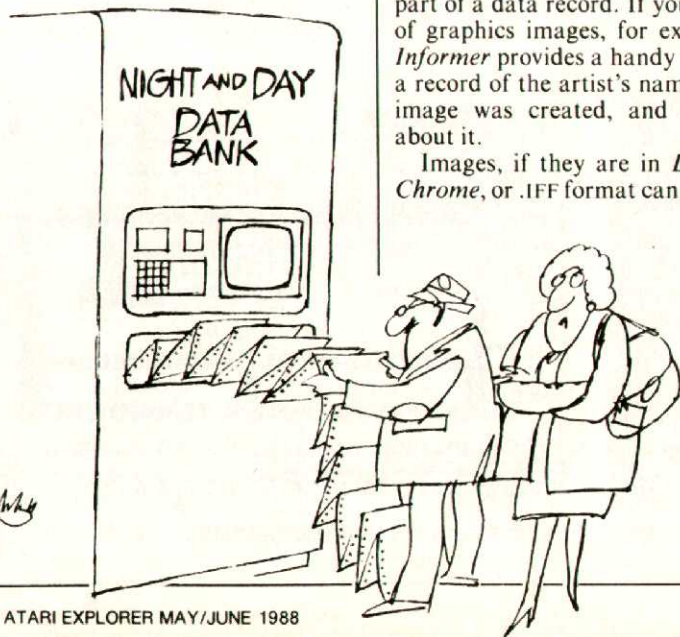
tion. Despite the fact that the manual promises that *The Informer* has "powerful functions to create printed reports according to your custom needs," I found that unless I wanted my output to look like either a spreadsheet or a data entry form, I was out of luck. If you want something "exotic," such as four-line mailing labels, 3 × 5" file cards, invoices, statements, or Roladex cards, forget it.

### **Summary**

If you can live with tabular output, *The Informer* is quite versatile in terms of formatting, justification, hiding columns, and printing U.S. and foreign currency entries correctly.

As mentioned earlier, *The Informer* handles graphic image data as well as alphanumeric data, although in a different way. Basically, image data are handled by including the image name as part of a data record. If you have a file of graphics images, for example, *The Informer* provides a handy way to keep a record of the artist's name, when the image was created, and some notes about it.

Images, if they are in *Degas*, *NeoChrome*, or .IFF format can be retrieved



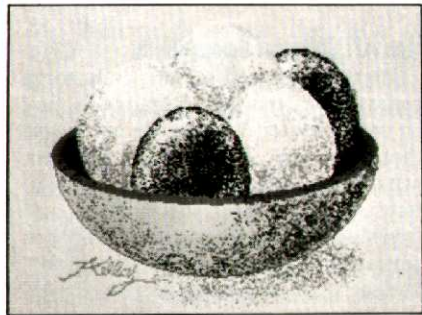
This month, all but one of our puzzles are drawn from the wonderful world of probability, an important concept that is used in writing any kind of computer simulation program. Whether you are trying to determine the purchasing behavior of consumers in the toothpaste market, the effect of acid rain in the Adirondacks, the location at which Amelia Earhart's plane went down, or the chance of defeating the evil wizard in the latest computer game, the immutable laws of statistics and probability will be your guides. Our problems are much simpler than the examples above—you won't even need a computer to solve them—but the basic concepts are the same. Answers are on page 96.

### No Bright Eyed Girls

In a class of 10 boys and 20 girls, half of the boys and half of the girls have dark eyes. What is the probability that choosing one student at random will yield a boy or a dark-eyed youngster?

### White and Black Balls

From a bowl containing three white balls and two black balls, you draw one at random and find that it is black. What is the probability that the next ball you choose will also be black?



### Toss Three Coins

Three coins are tossed simultaneously, and all three land heads up. If they are tossed a second time, what is the probability that they will land all heads or all tails?

### Bar Dice

At a bar, Tom proposes a game to Jack in which each of them will roll a single die. If Tom's die is higher than Jack's, or if the sum is 7 or 11, Tom gets 10 cents from Jack; if Jack's die is higher or if both throws are equal, Jack gets 10 cents from Tom. Is this a fair game?



### Would You Fly This Airline?

Wilderness Airlines has found that on a given flight, the probability of a defect in the automatic landing gear is  $10^{-7}$ . So too, is the probability of a defect in the fuel supply mechanism. If these defects are independent, what is the probability of at least one of them occurring?

### Ned's and Robin's Children

Ned has two children. They aren't both boys. What is the probability that both are girls?

Robin also has two children. The older is a boy. What is the probability that both are boys?

### Math and Chem

In a school, 25% of the students failed mathematics, 15% failed chemistry, and 10% failed both. Let us select a student at random.

(a) If he failed chemistry, what is the probability that he also failed math?

(b) If he failed mathematics, what is the chance that he also failed chemistry?

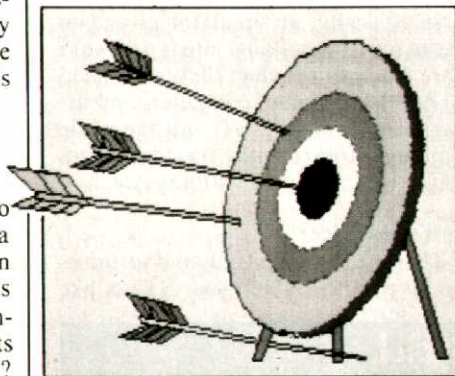
(c) How likely is it that he failed at least one subject?

# Puzzles & Problems

By DAVID H. AHL

### Hit the Target

Sue and Ellen have recently taken up archery. The probability of Sue hitting the target is 1 in 4 and of Ellen hitting it, 2 in 5. If they both shoot together, what is the probability of at least one of them hitting the target?



### Who Will Fred Marry?

And finally, a problem based on logic rather than probability:

Over the last few years Fred has dated five charming ladies, Alice, Betsy, Cindy, Darcy, and Ellen. He recently announced that he will marry a teacher who is over 30 years old. From the following facts, can you determine who she is?

- The five women are in two age brackets: three women are under 30 and two are over 30.

- Three women are managers and two are teachers.

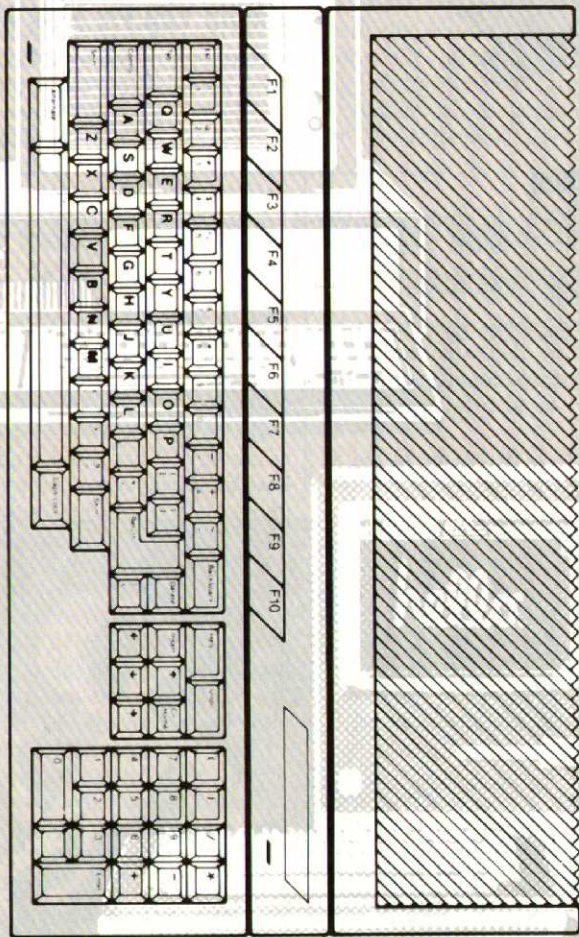
- Alice and Cindy are the same age.

- Darcy and Ellen are in different age brackets.

- Betsy and Ellen have the same occupation.

- Cindy and Darcy have different occupations.

What exactly is an emulator, and why should I care?



# All About Emulators

One of the hottest trends in the Atari ST community right now is emulation. An *emulator* is basically a product that makes your computer function like a completely different machine. For example, Avant-Garde's excellent *PC-Ditto* makes the ST work like an IBM PC, giving it the ability to run MS-DOS programs. (For more about *PC-Ditto*, see David Ahl's review in the Nov/Dec '87 issue of *Atari Explorer*.)

Why is so much excitement being generated by emulators? The simple answer is that many of the most popular programs for other computers are not available for the ST—and may never

be. This is an economic issue for developers, many of whom find it most profitable to create programs for the machines with the largest installed bases—currently the IBM PC and the Macintosh.

So basically, an emulator gives you the luxury of walking into a software store, buying a product that is intended for another brand of computer, and using it on your Atari ST—all the while remaining free to enjoy the advantages that you can get only with the Atari.

## What's The Catch?

There are lots of pitfalls and surprises on the path to making your ST act like

another computer, a fact that might come as a surprise to the novice user, who might assume that he could simply pop a Mac disk into an ST drive and boot the program.

"After all," he reasons, "the Mac disks are physically identical to those used by the ST. Also, both machines use the same 68000 CPU (Central Processing Unit), so what's the hassle?" Well, there are all sorts of technical (and legal) problems that preclude this level of *compatibility*.

Compatibility is the issue that may eventually determine the winners in the race for microcomputer supremacy, and the quest for compatibility has spawned throughout the industry committees, conferences, and task forces devoted to establishing standards that will promote it. To date, no group has succeeded in setting forth anything that could truly be considered an industry standard. Hence the problems faced by those who try to create emulators.

## Catch #1: No Emulator Exists

The first catch is that you may not be able to get there from here, *at all*. Right now, only a handful of emulators exist for the Atari ST. If you want to run software for the XYZ computer, but there is no XYZ emulator yet, you're out of luck. For example, at present there is no way to run Amiga software on an ST.

## Catch #2: Software Compatibility

The second catch is that while some programs written for computer X may run on computer Y under an emulator, others may not. This is a big problem with all emulators. For reasons we will discuss in detail later, it is difficult and often slows things down considerably to simulate another machine *perfectly*. Tradeoffs are the name of the emulation game.

For example, let's say a certain feature of a given machine is used in only one out of a hundred programs. If a developer includes support for this little-used feature in the emulator, it might slow down *all* programs by 50%. Because speed is almost always sacrificed in emulation anyway, most developers will elect not to include that feature in the emulator. CP/M emulators, for example, often do not support the "half carry bit," a seldom used feature of the 8080 processor that is particularly difficult to emulate.

## Catch #3: Speed

The third catch is that under emulation, your programs may run *much*

By DAVID SMALL



more slowly than what you're accustomed to. This is the issue that emulator makers dance around the most. Properly written ST software demonstrates darned good performance for a personal computer; that 68000 processor in there is humming along at eight million cycles per second.

Eight million cycles per second is fast enough to make the screen scroll very quickly, crunch spreadsheets in a flash, and create stunning graphic effects. If you see a program running slowly on the ST, you can usually assume that the author has done something wrong and wasted the potential of the processor. In today's microcomputer market, 8 MHz is a lot of horsepower.

Some emulators manage the equivalent of only one million cycles or less, and that is noticeably slower than what ST users are accustomed to. For example, *PC-Ditto* runs at about one-third the speed of a standard PC (not an AT), according to the widely used SI benchmark. Regardless of the accuracy of the SI benchmark, I believe it to be a good overall judge of the 1.0 MHz (4.77/3) performance of *PC-Ditto*.

#### Catch #4: Disk Compatibility

The fourth catch is that it may be impossible to read directly the disks that contain the desired programs and data. For instance, how would you read data from a 5 $\frac{1}{4}$ " disk or, more subtly, a 3 $\frac{1}{2}$ " Macintosh-format disk into the Atari ST? The ST drives are 3 $\frac{1}{2}$ ", IBM-format, double-density; you need external hardware to read anything different.

At present, you have two options when it comes to alternative disk drives for the ST. The first is a separate drive designed to read IBM 5 $\frac{1}{4}$ " disks. Three companies, Future Systems, I.B. Computers, and Paradox Enterprises, sell these units. (Hobbyists take note: it is possible with a little work to adapt a standard 5 $\frac{1}{4}$ " drive to the Atari ST; the signals are basically compatible.)

The second, Translator One from Data Pacific, when used in conjunction with the Magic Sac hardware/software package, lets you read Macintosh 3 $\frac{1}{2}$ " disks. Hence, you can basically purchase IBM or Mac disk compatibility "off the shelf." (For more about the Magic Sac, see the Jan/Feb '87 issue of *Atari Explorer*.)

If you can't read the disks directly,

*David Small is with Data Pacific, developer of the Magic Sac and Translator ST. He has supported Atari products with written and spoken words, software, and schematic diagrams practically since the dawn of Atari-time.*

## The Speed Game

Experienced techno-whizzes will realize that I have simplified the clock speed issue here, but it is a concept that must be understood by anyone who wants to understand and/or use emulators, so I have done my best to render it comprehensible.

Basically, what we call the *clock speed* of a computer refers to the raw speed at which the computer performs very low level operations—one memory access, one output, one anything. To say that a computer has a clock speed of 4.77 MHz is to say that the computer is performing 4.77 million of these simple operations each second, which is the speed at which an IBM PC runs.

To execute one machine language instruction usually takes between 4 and 30 of those very low level operations. The instruction must be fetched from memory, the microcode executed, and so on. So while the clock speed may be 4.77 MHz, the actual number of instructions being performed per second is considerably less.

With the Atari ST, for example, we begin with an 8 MHz clock, but it takes much more than 0.125 millionth of a second to execute a complete machine language instruction.

What is important to know is that the relative efficiency of the processor has a great deal to do with how much work you get out of all those little clock ticks. One reason the Atari 800 is so darned fast for a computer of its class is that the 6502

processor executes virtually every instruction in three clock cycles, sometimes two. The base clock rate of the 8-bit machines is 1.5 MHz (taking into consideration time lost to the video display).

Now consider the IBM PC. It is 4.77 MHz machine. Lots faster than the Atari 800, right? Well... the 8088 in the IBM often takes 10 to 20 clock cycles to execute an instruction. So the 8-bit Atari and the IBM-PC turn out to be roughly equivalent in number-crunching ability, even though the IBM is "clocked three times faster."

So the relative speed of emulators is really difficult to ascertain accurately. It comes down to a comparison between, say, the IBM executing little sub-instructions at 4.77 MHz and the ST executing complete instructions at 8 MHz. And there are more complications. Sometimes you can cleverly code an emulator to say, "Gee, I know what these next 8088 instructions are trying to do. Rather than slowly emulating them one at a time, I'll just execute them all at once with 68000 instructions." This is like translating a whole phrase at a time into a foreign language instead of a word at a time.

Hence, I have chosen to use clock speed as a way to compare speed between machines. Even though it is not an entirely accurate measure, as an overall measure of the performance of a given emulator—and that's what it's all about—it is fair enough. ■

you must physically connect the ST and the other machine, and transfer the programs and files across with XMODEM or another serial transfer protocol. This is not something for a neophyte to tackle; even experienced computerphiles approach the transfer process with fear and trembling. (Do I need DSR hooked to RTS? Do I need a null modem cable?) It is a very tedious process when large numbers of files are involved and should be done only as a last resort when you absolutely must maintain access to an old software library and no alternatives are available.

Another stumbling block is copy protection. As much as we would all love to see an end to copy protection, it has not been abolished yet. As a general rule, if you can't copy the disk using conven-

tional utilities on the native system, it is darned unlikely that you will be able to transfer the program to foreign hardware. For instance, you can virtually forget about running copy-protected Atari 8-bit games on the ST. Nor can you run certain protected IBM software with *PC-Ditto*.

#### Hardware Emulators

Recently there has been a lot of talk about hardware emulators for the ST. These would theoretically add another CPU chip to the ST. For instance, add an 8088 to run IBM software. The idea is that the 8088 can execute 8088 instructions very quickly, and thus provide good emulator speed.

Paradox Enterprises will probably be the first to release a hardware emulator

of this sort. The ParaBox, slated for mid-May release, is built around a 10 MHz NEC B20, which is described as "a streamlined version of the 8088 that runs 10 to 30% faster."

The ParaBox boasts either CGA or monochrome video and up to 640K of RAM on board. The unit plugs into the back of the ST, extending the footprint by about 2", and has a slot for additional cards. Retail price is set at \$350.

A separate unit, containing two or eight additional card slots, can be connected to the ParaBox via an external cable.

Another possibility for hardware emulation is to set the ST up as a terminal to an IBM CPU. It is amazing how inexpensively an IBM-compatible circuit board can be obtained; much of the cost of a clone is related to the power supply, keyboard, and monitor. If the

ST is used for these functions, you can build an IBM-style system quite inexpensively indeed. There doesn't seem to be a lot of activity along these lines, however.

#### Why the Speed Differential?

To understand why most software-based emulators are so darned slow, you need to understand a few fundamental things about computers.

## The Current Crop of Emulators

### CP/M (Z-80 processor) Emulator

**Speed:** 1.0 MHz. Acceptable if you have ever worked with CP/M on a 2 MHz computer (quite common as recently as 1982). If you are used to a quicker machine, forget it. Speed is about 1/4 as fast as something like the ATR-8000 and 1/6 as fast as today's hottest CP/M machines, such as the SB180 from MicroMint. It does handle the subset of CP/M code written in Z80, such as Turbo Pascal.

**Software Compatibility:** Seems excellent. I have run a number of CP/M applications, including *WordStar*, and have experienced no problems whatsoever.

**Disk Compatibility:** The 3 1/2" CP/M disk format isn't compatible with the native format of the ST, so you must maintain separate disk libraries. Also, most CP/M software these days comes in either 8" single density or 5 1/4" Kaypro format, neither of which can be read directly by the ST, even with a third-party external disk drive.

**Comments:** This emulator was originally written in Germany and is now available free on many of the information services and bulletin board systems, and in user group libraries. The emulator isn't particularly easy to set up, but once you get it together, it is an acceptable CP/M. I am puzzled as to why it can't keep its programs and data files in the native ST disk format, however, since many other CP/M emulators running MS-DOS can (MS-DOS and CP/M are extremely compatible disk layouts).

**Price:** Free.

### Magic Sac Macintosh Emulator

**Speed:** 8.0 MHz. Runs most Mac software just as fast as the Mac.

**Software Compatibility:** Has compatibility problems with certain software programs, but is constantly updated to fix bugs. Most commonly-used Mac programs work fine, with the exception of those, such as HyperCard, that require the new 128K ROMs.

**Disk Compatibility:** Supports its own floppy disk format that is neither ST nor Mac, so it requires separate disks. Without external third-party hardware, you can't read Mac disks with the ST drive. The hardware to read or write Mac disks directly (the Translator One) costs almost twice as much (\$279) as the Magic Sac. Now works with hard disk drives.

**Comments:** Recently this product has been made compatible enough that people without much technical knowledge can use it comfortably.

**Price:** \$149.

**Manufacturer:** Data Pacific.

### ST Transformer (Atari 8-bit 6502) Emulator

**Speed:** 1.0 MHz. Not bad, considering that the original Atari 800 is a 1.5 MHz machine.

**Software Compatibility:** Surprisingly good. While the most recent version of the emulator does not support some of the more esoteric features of the 800, such as display list interrupts, it does support enough to get by in most applications, including the popular *PaperClip* word processor. Sound is also supported.

**Disk Compatibility:** Since you can't read the original disks, it's best to forget anything copy-protected, which is a large amount of the 8-bit software base. It is remotely possible that someday someone will teach the ST to read double-density Atari 8-bit disks with an external 5 1/4" drive.

**Comments:** Written by Darek Mihocka, the ST Transformer was originally published in the September 1987 issue of *ST-Log* magazine and is available on a wide variety of bulletin board systems. This is not a product for novice users; it is more like an excellent software hack for experienced computerists.

**Price:** Free.

### PC-Ditto MS-DOS Emulator

**Speed:** 1.0 MHz.

**Software Compatibility:** Amazingly good. Runs many programs that are wholly dependent on idiosyncrasies of the IBM. Thoroughly tested for compatibility.

**Disk Compatibility:** Fortunately, the ST uses MS-DOS format disks, which the IBM can read and write directly. You must have IBM programs on 3 1/2" disk before they can be read into the ST, or you will need an external 5 1/4" drive (\$269 from Future Systems; \$279.95 from I.B. Computers; \$245 from Paradox Enterprises) to read older-style IBM disks directly. Also works with hard disk drives.

**Comments:** Written by Bill Teal of Avant-Garde Systems. This is the best of the software emulators—truly state of the art stuff.

**Price:** \$89.95.

**Manufacturer:** Avant-Garde Systems.

### ParaBox IBM Emulator

**Comments:** A hardware emulator that plugs into the back of the ST. Not yet available for testing.

**Price:** \$350.

**Manufacturer:** Paradox Enterprises.

Four popular CPUs are the very hearts of today's microcomputers: the 6502, used in the 8-bit Ataris, Apple II series, and Commodore 64; the 8080 or Z80, used in CP/M machines; 8088 and its close cousin the 8086, used in the IBM PC and clones; and the 68000, used in the Atari ST, Amiga, and Macintosh.

Each processor understands a completely different *machine language*, the language in which all programs are ultimately written. If you look at any program at its lowest level, you find that it is just a bunch of carefully coded numbers. The key point is that each processor relies on a different set of numbers to tell it what to do.

For instance, the 8080 uses a decimal 243 to indicate a *jump*, which is similar to a GOTO statement in Basic. The 68000 uses a 78 followed by a 250 to indicate a jump.

So let's say I'm trying to run a 68000 program for the Mac on the 68000 ST. All those little number-instructions are basically the same; all I have to do is account for some minor differences between the ST and Mac. Because the Magic Sac uses original Mac ROMs to handle most of the funky features of the machine, the ST is not burdened with emulating these. On the other hand, the ST Transformer, an Atari 8-bit emulator, must mimic the 8-bit custom chip set in software *and* translate 6502 codes to 68000 instructions.

Now let's see how *PC-Ditto* tries to emulate an 8088 program written for the IBM PC. The ST doesn't understand one single number that the program sends, so each number must be translated to the proper one(s) for the 68000—one at a time.

From an assembly language programmer's point of view, you have to keep your own program counter, stack pointer, and so forth. Then, for every instruction executed/emulated, you have to:

- Get the current opcode (the number of the next 8088 instruction).
- Increment the address-pointer of the current instruction.
- Look up the address of the routine to execute that number 68000-style.
- Jump to that routine.
- Execute that routine.
- Jump back to the code to get the next opcode. And so forth.

You must go through this sequence every time you execute a single 8088 instruction; it turns out that an average of eight 68000 instructions are needed to replace every 8088 instruction. So, you can see why *PC-Ditto* has a perfor-

## ***When deciding whether to invest in an emulator, you should ask yourself how important speed is to the application you want to run.***

mance rating of 1.0 MHz.

Basically the problem is one of translation. Try to carry on a conversation in a foreign language when you have to look up each and every word in the translation dictionary, and you'll have a good idea why most emulators are slow.

The more computer literate among you will ask, "Why can't you translate it all at once, at the beginning of the program, and only do 68000 instructions after that?" While this is theoretically possible, there are some technical snags.

Programs often jump around internally, and you would have to recode all those jumps. Programs that change themselves during execution (self-modifying code) would not work. And, finally, it is darned hard to look into memory and differentiate between program code, which needs translation, and data, which had better not be touched.

The next big wave in emulation tech-

nology will be "smart" software emulators. These will translate the program once, watching as it's executed the first time, and memorize how it is translated. Subsequent runs will use the translated version and be much faster. Also, with a little help from hardware, the speed of the emulation process can be increased considerably. I have already seen some very interesting prototypes using this approach.

### **Does Speed Matter to You?**

When deciding whether to invest in an emulator, you should ask yourself how important speed is to the application you want to run. How often will you need the full 8 MHz, going flat out?

If you are a typical user, about 99% of the time your computer's CPU chip sits idle, waiting for an event to occur. It waits for you to press a key or move the mouse, or for the disk to spin around, or for a new character to come in from the modem. When something does happen, there is a brief flurry of intense activity, as the word processor performs a search, the database a sort, the spreadsheet a recalculation.

If your application spends a lot of time waiting, the emulator does the same thing, only more slowly. But you won't notice if the computer is waiting for that next keypress one million times a second, or eight million times a second. Sure, you'll notice the emulator plodding along as it does a sort or a recalculation, but if your application is not "CPU-bound" (i.e., your time is spent waiting for something other than the CPU), you will be pleased with the performance.

Because arcade games rely on the CPU for frequent updates of screen graphics information, we can pretty much discount the possibility of playing arcade games on an emulator; you would notice the speed difference immediately. But word processing isn't out, nor is low-level spreadsheet crunching, nor even database work. You will find that, while the machine seems a bit sluggish in spots, even the reduced speed is acceptable for applications of this sort.

My opinion is that the performance of the ST is great, and the performance of the ST using an emulator is acceptable. For specialized applications that really need power, emulation probably won't work out; you either need a completely different computer or a program designed specifically for the ST. To quote an old hot-rod adage, "Speed costs money. How fast do you want to go?" ■

### **Companies Mentioned**

Avant-Garde Systems  
381 Pablo Point Dr.  
Jacksonville, FL 32225  
(904) 221-2904

Data Pacific  
609 E. Speer Blvd.  
Denver, CO 80203  
(303) 733-8158

Future Systems  
21634 Lassen  
Chatsworth, CA 91311  
(818) 407-1647

I.B. Computers  
1519 S.W. Marlow Ave.  
Portland, OR 97225  
(503) 297-8425

Paradox Enterprises  
150 S. Camino Seco, Ste. 113  
Tucson, AZ 85710  
(602) 721-2023

About two years ago, I purchased an artificial intelligence workstation complete with high-resolution graphics and a powerful high-speed processor. Included in the purchase was an AI language developed by Seymour Papert, one of the best known AI pioneers in this country.

No, I didn't spend \$50,000 dollars on a machine from Symbolics Inc. or Lisp Machines. For a very modest price I bought an Atari ST at my local computer store and received Logo free with the purchase.

The purpose of this article is to introduce you to the world of artificial intelligence and the mind-stretching things you can do with your ST. The current generation of specialized AI machines is more powerful than the ST, to be sure, but most of the significant research in the field up until now has been done on less powerful hardware.

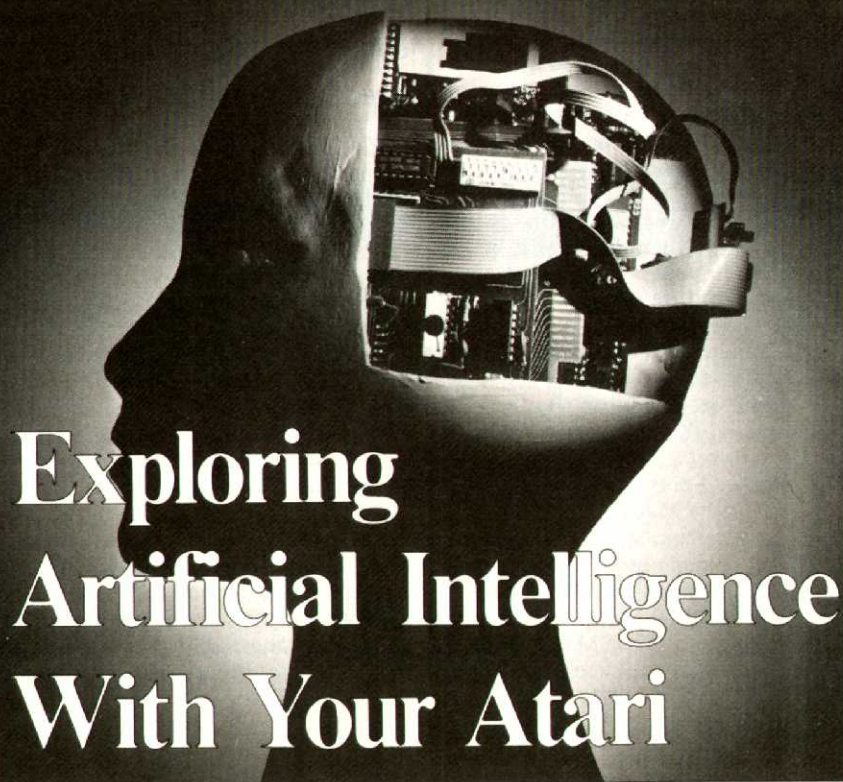
#### What Is Artificial Intelligence?

The term "artificial intelligence" brings to mind the emotionless voice of the HAL 9000 computer in the movie "2001," as it informs us that no HAL series computer has ever made a mistake. In fact, early AI researchers had hopes of achieving something very much like HAL when they started their work in the 1950's. Even then, the computational abilities of computers were so awesome compared to those of human beings that it seemed inevitable that machines would soon surpass us on all intellectual fronts. Thirty years of research has shown that those expectations were naively optimistic.

One can define artificial intelligence as any use of a computer and software to imitate an ability that we normally associate with human beings. Included within these bounds are experiments in robotics, machine vision, speech recognition and language understanding, chess playing computers, symbolic mathematics, music composition, and the creation of expert systems. I enjoy debating whether it is possible for a computer to be intelligent in the same way a human is, but space is too limited to address that topic here. Accompanying this article is a short list of books that examine some of the philosophical and moral questions in detail. I hope you will be interested enough to read some of them.

People from many different backgrounds have engaged in AI research. Computer scientists explore the field in an effort to increase the number of ways

*Teaching a computer to think can be a fascinating experience*



# Exploring Artificial Intelligence With Your Atari

computers can be used in problem solving. Cognitive scientists and psychologists explore human perceptual and reasoning processes by modeling them in the computer as a kind of test tube of the mind. People in the arts and sciences have used AI as a tool to extend their creative abilities. All of these areas are open to exploration by the average Atari owner. You already have the equipment; the only other requirements are curiosity and the willingness to experiment.

#### A Short History of AI

The human desire to build a machine with abilities like those of men go back as least as far as the Greek myth of the bronze robot Talos. But it wasn't until the mid-twentieth century that Alan Turing devised a test to determine if a machine could imitate human intelligence.

In this test, a person communicates with two terminals—one of which is operated by another person and the other by a computer. He asks questions to

which both the other person and the computer must respond. Turing felt that the computer could be called "intelligent" when the questioner could no longer distinguish its responses from those of the human being.

The main problem with this test is that it fails to define intelligence in much the same way that IQ tests do. If you pass the test, you are considered intelligent without regard to the mechanisms of thought used to generate your answers.

Turing's work, which was done before any serious attempts had been made to create machine intelligence, reflects the optimism of early researchers. Within a few years of his suicide in 1954, an artificial intelligence laboratory was started at MIT under the direction of John McCarthy and Marvin Minsky.

It was Minsky who, in a paper entitled "Steps Toward Artificial Intelligence" published in 1961, actually gave the field its name. One of McCarthy's most significant contributions was the

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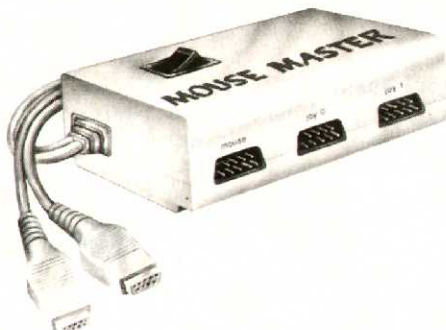
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- One type of data (ASCII), column widths not specified
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See Review of DBSense in ATARI EXPLORER, March/April 1988

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development of Lisp, which has become the computer language of choice for artificial intelligence researchers in this country. Researchers at Stanford and Carnegie-Mellon Universities have also made important contributions to the field.

Many fascinating projects have been undertaken over the years. In 1964 Joseph Weizenbaum started work on a program that came to be called Eliza, which imitated a nondirective psychotherapist. He was dismayed to learn that some people became deeply involved with his rather simple-minded therapist.

Terry Winograd, while earning his doctorate at MIT in the late 60's, developed a program called SHRDLU that used an imaginary world of wooden blocks as the basis for a program that understood language. The program, which could accept commands to move the blocks to different places and answer questions about the positions of blocks and what it had done, was the precursor of the command parsers we now find in text adventure games.

The work of several other people at MIT ultimately resulted in the creation of a program called Maccsima, which performed symbolic mathematics. This program was so well-designed that it could perform integration with greater skill than a human being.

### Expert Systems

The area of AI that currently seems to have the most commercial potential is *expert systems*. Expert systems are programs that attempt to embody the knowledge of an expert in some skill or decision-making capacity. The objective is to give a novice access to the knowledge or skill of an expert without having to query him directly. American Express, for example, uses an expert system to grant or deny approval for certain large purchases cardmembers want to charge. And some large electronics manufacturers use expert systems to diagnose circuit board failures.

All expert systems make use of a *knowledge base*—a body of specific knowledge and rules about the subject with which the system works. Where they differ is in the way in which they use that information to arrive at a conclusion.

A *generate-and-test* system develops many possible answers to a question and tests to find the hypothesis that best explains a known result. A *rule-based synthesis* system follows a set of rules to

achieve a result. And a *rule-based analysis* system uses its rules to analyze information and arrive at an answer.

A group at Stanford, led by Edward Feigenbaum, developed a generate-and-test program called Dendral in the late 70's. Dendral is used to analyze the information contained in mass spectrograms and deduce the structure of a chemical specimen. The program is given the formula for the chemical being analyzed, from which it generates all of the possible structures that could exist and their mass spectrograms. It then tests by comparing the possible spectrograms with the actual spectrogram of the material. The answer it returns is very likely to be the chemical structure of the compound.

Perhaps the most famous expert system of all, Xcon, developed at Carnegie-Mellon, is an example of a rule-based synthesis system. This program is used by Digital Equipment Corporation to determine which of several hundred module types should be used to configure a VAX computer. The process of configuring a computer starts with the customer's specification of a processor and a variety of peripherals. Xcon follows a set of rules to determine what cabinets, power supplies, and other accessories will be required and where each component will fit.

Mycin, developed by Edward Shortliffe at Stanford, is an early example of a rule-based analysis system. It diagnoses bacterial infections by asking questions about the patient, his symp-

toms, and the results of any tests that have been performed until it has enough information to determine what the infectious agent is. A knowledge base of about 500 rules allows it to diagnose about 100 different bacterial infections.

This is but a small sample of the work that has been done in AI to date. People involved in AI research have tended to maintain a somewhat elitist attitude toward the rest of computer science; nevertheless, the results of their work are being absorbed into the main stream of computer knowledge. As techniques developed in the laboratory make their way into the workplace, they shed their aura of mystery and become simple extensions of the resources available to all programmers.

Now that you know a little bit about AI, let's examine some of the programming methods that have been used in the field.

### Recursion

One of the features central to Lisp, the computer language of AI research and development, is *recursion*. Recursion is the process of defining something partially in terms of itself. The way to visualize an example of recursion is to imagine a TV camera focused on the monitor that displays the picture the camera produces. You see a picture of the monitor, containing a picture of the monitor, and so on, ad infinitum. Lisp, Forth, and C are all recursive languages in the sense that their higher level func-

## Hints For Entering Logo Programs

Program Listings 2 and 4 may be entered either directly into ST Logo or by way of a word processor that can save files as ASCII text. Most readers will find the latter easier, since the ST Logo editor is limited and somewhat cumbersome.

When using a word processor, enter the programs as they are printed and then SAVE them to disk as ASCII text files. Because Logo is modular, the listings can be entered as one single text file or broken up into two separate programs. After you have checked to see that you have entered all of the lines correctly, especially the lengthy PPROP statements in Listing 4, you can load the text files into ST Logo.

As each file is loaded, its routines will be defined and, in the case of

listing 4, the property statements read. When the question mark prompt appears, you can execute either program.

To determine the factorial of a number, type FACTORIAL n (where n equals a whole number between 0 and 13). The computer will return the correct result. Entering a negative number or a value greater than 13 will cause Logo to run out of stack space for its calculations.

To instruct the computer to find its way out of the maze, type SEARCH :ROOT, and the program will begin its search for the maze exit, printing the values of the nodes as it proceeds. When the exit is found, the question mark prompt reappears. ■

**The computational abilities of early computers were so awesome compared to those of human beings that it seemed inevitable that machines would soon surpass us on all intellectual fronts.**

tions are written in the language itself.

More important from the programmer's point of view, however, is the use of recursion within the language. If a language supports recursion, the programmer can write simple routines to perform tasks that would be much more awkward to do using iteration (FOR-NEXT loops). The real advantages of recursion are not very visible when applied to simple problems, but with more difficult tasks they become quite apparent.

ST Basic was not designed for recursion but will allow it in a limited sense. ST Logo is a dialect of Lisp that supports recursion but is limited in the number of levels it will handle. I have written the examples (see Listings) in both languages, and I suggest that you try them both ways to gain an understanding of the inherent differences between the two. Part of the focus of AI has been on creating computer languages with more powerful problem solving capabilities built in.

Our first example will use the factorial function, which is expressed as  $N!$ . To find  $3!$  we multiply  $3*2*1$  for a result of 6. It is possible to write a FOR-NEXT loop to solve this:

```
100 PRINT "ENTER NUMBER":
110 INPUT N : IF N<0 THEN END
120 K=N
130 GOSUB 160
140 PRINT "FACTORIAL =" :N
150 GOTO 100
160 ' FACTORIAL SUBROUTINE
170 IF N=0 THEN N=1
180 K=K-1
190 IF K<1 THEN 220
200 N=N*K
210 IF K>1 THEN GOSUB 160
220 RETURN
```

Listing 1. A recursive program to calculate factorials in ST Basic.

```
ENTER NUMBER? 5
FACTORIAL = 120
ENTER NUMBER? 0
FACTORIAL = 1
ENTER NUMBER? 10
FACTORIAL = 3628800
```

Listing 1. Sample output.

```
ANSWER = 1
FOR I = 1 TO N
ANSWER = I * ANSWER
NEXT I
```

This is quick and easy and even yields the right answer for 0!, which is defined as 1. To solve it recursively we observe that for any case  $N! = N * (N-1)!$  and  $N!$  where  $N = 0$  is 1, expressed in pseudocode as:

```
IF N = 0 THEN N = 1
N = N * FACTORIAL(N - 1)
```

Look first at Listing 1. Because ST Basic doesn't allow parameter-passing, we fake it by using a global variable K that is decremented at each calling level. The loop made of lines 100 through 150 lets us enter a value for N, quits if N is negative, and calls the subroutine if it is not.

Lines 160 through 210 contain the subroutine, which first checks to see if  $N = 0$ , then decrements K and, if we have not reached the bottom level, at which  $K = 0$ , multiplies  $N * K$ .

This is not real recursion, because it computes the value of  $N!$  from the top down:  $3 * 2 = 6$ , then  $6 * 1 = 6$ , rather than  $(N * ((N - 1) * ((N - 1) - 1)))$ . See Listing 2 to understand the power of doing it properly in Logo.

We define a function called FACTORIAL, which tests to see if the value passed to it is 0. If it is, the program returns a value of 1, if not, it computes  $N *$  the value returned by calling itself and passing  $N - 1$  as the parameter. This means that it keeps calling itself all the way down to the point where  $N = 0$ , which causes it to return the answer 1, so that  $1 * 1 = 1$ ,  $1 * 2 = 2$ , and finally  $2 * 3 = 6$ .

The two features of Logo that make this possible are the ability to create local variables and pass them as parameters and the ability to call functions by name—concepts that originated in AI and are now common in all high level programming languages.

**Maze Search**

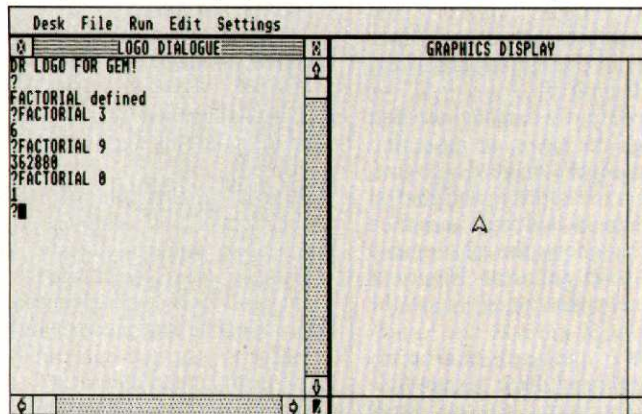
Now that we have had a look at recursion and how it works, let's move on to a problem that looks a little more like AI and show how recursion can be used to solve it. In Figure 1, we see a simple maze; we want the computer to find the way from the center of this maze to the exit.

The first question we ask ourselves is: How do we represent the maze to the computer? This turns out to be a form of one of the fundamental problems in AI: *knowledge representation*.

When we think, we are exercising a higher level function of our brains. We are unaware of the chemical reactions that take place to represent our knowledge of the world. We use our eyes to look at the picture of the maze, and the

```
TO FACTORIAL :N
TEST 0 = :N
IFTRUE [OUTPUT 1]
IFFALSE [OUTPUT (:N * FACTORIAL (:N - 1))]
END
```

Listing 2. A recursive program to calculate factorials in Logo.



The ST screen as ST Logo calculates factorials.

**Listing 3. ST Basic program to search for a path through a maze.**

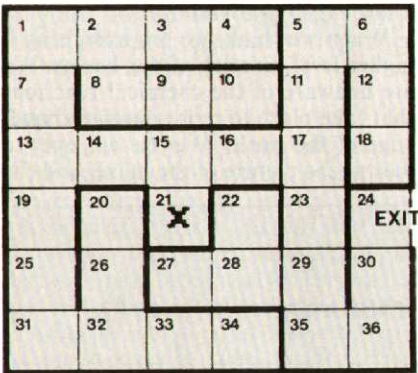
```

10 DIM PARENT(36), LEFT(36), RIGHT(36)
100 ' READ MAZE DATA INTO ARRAY
110 FOR I=1 TO 36
120 READ NODE,LEFT(I),RIGHT(I),PARENT(I)
130 NEXT I
135 ' TREE SEARCH PROGRAM
140 HERE=21
150 GOSUB 180
160 PRINT "EXIT IS AT";HERE
170 END
180 ' TREE SEARCH SUBROUTINE
190 IF LEFT(HERE)=0 THEN 160
200 IF RIGHT(HERE)=0 THEN 160
210 PRINT "HERE=";HERE
220 IF LEFT(HERE)<=0 THEN 250
230 HERE=LEFT(HERE)
240 GOSUB 180
250 IF RIGHT(HERE)<=0 THEN 280
260 HERE=RIGHT(HERE)
270 GOSUB 180
280 HERE=PARENT(HERE)
290 RETURN
500 DATA 1,2,-1,7
510 DATA 2,3,8,1
520 DATA 3,4,-1,2
530 DATA 4,-1,-1,3
540 DATA 5,6,-1,11
550 DATA 6,12,-1,5
560 DATA 7,1,-1,13
570 DATA 8,9,-1,2
580 DATA 9,10,-1,8
590 DATA 10,-1,-1,9
600 DATA 11,5,-1,17
610 DATA 12,18,-1,6
620 DATA 13,19,7,14
630 DATA 14,13,-1,15
640 DATA 15,14,16,21
650 DATA 16,17,-1,15
660 DATA 17,11,23,16
670 DATA 18,-1,-1,12
680 DATA 19,25,-1,13
690 DATA 20,-1,-1,26
700 DATA 21,15,-1,-1
710 DATA 22,-1,-1,28
720 DATA 23,29,-1,17
730 DATA 24,0,-1,30
740 DATA 25,31,-1,19
750 DATA 26,20,-1,32
760 DATA 27,-1,-1,28
770 DATA 28,27,22,29
780 DATA 29,35,28,23
790 DATA 30,24,-1,36
800 DATA 31,32,-1,25
810 DATA 32,26,33,31
820 DATA 33,34,-1,32
830 DATA 34,-1,-1,33
840 DATA 35,36,-1,29
850 DATA 36,30,-1,35
    
```

```

HERE= 21
HERE= 15
HERE= 14
HERE= 13
HERE= 19
HERE= 25
HERE= 31
HERE= 32
HERE= 26
HERE= 20
HERE= 33
HERE= 34
HERE= 7
HERE= 1
HERE= 2
HERE= 3
HERE= 4
HERE= 6
HERE= 9
HERE= 10
HERE= 16
HERE= 17
HERE= 11
HERE= 5
HERE= 6
HERE= 12
HERE= 18
HERE= 23
HERE= 29
HERE= 35
HERE= 36
HERE= 30
EXIT IS AT 24
    
```

**Listing 3. Sample output.**



**Figure 1. The maze.**

retina processes the image and sends nerve impulses to the optic lobes of the brain to be interpreted.

Before the computer can begin to find its way through the maze, we must find a way to represent the maze. To do this, we use numbers to represent the grid on which the maze is laid out and then create a tree that shows the relationship between the grid squares. Figure 2 shows the tree constructed from the maze.

Many kinds of problems can be expressed as tree structures; all possible moves in a chess game (a very large tree), the relationships between the

rules needed to make a complex decision, and the structure of a human language, are all examples.

The computer searches the tree the way a person finds his way around in a building constructed like the maze. It can't see the exit; it must simply try different paths until it finds the right one. The algorithm followed is a simple one: at each fork, take the left path and continue; if you reach a dead end, return to the fork and follow the right path. In pseudo-code it looks like this:

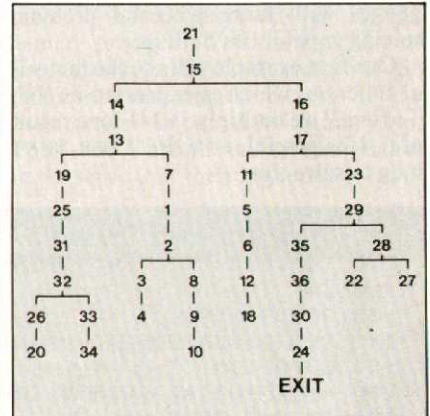
```

SEARCH PROCEDURE
VISIT A SQUARE
SEARCH LEFT
SEARCH RIGHT
    
```

I was surprised that I was actually able to make this work in ST Basic (see Listing 3).

Lines 10 through 130 dimension three arrays and load the tree data. Each node (square) contains the information on where you can go from it: left, right, and back where you came from (parent). The last piece of information is necessary so you can find your way back from a dead end.

The variable HERE contains the current location in the tree and is set to 21



**Figure 2. The tree.**

to start, because that square is the starting point. The search subroutine is in lines 180 through 290 and calls itself again with each step forward. Line 280 causes the routine to back up before returning, if the square reached is a dead end.

Now look at Listing 4 to see how much easier it is to perform the same task. The property list statements create the tree; the ROOT is the starting point; and GOAL is F for false until we find the exit. Since I don't usually program in Logo, I wrote the routine in



Listing 4. ST Logo program to search for a path through a maze.

```

TO SEARCH :NODE
IF (:NODE = "NIL) [GO "HERE]
IF (:NODE = "EXIT) [MAKE "GOAL "T]
IF (:GOAL = "T) [GO "HERE]
PRINT :NODE
SEARCH GPROP :NODE "LEFT
SEARCH GPROP :NODE "RIGHT
LABEL "HERE
END
    
```

```

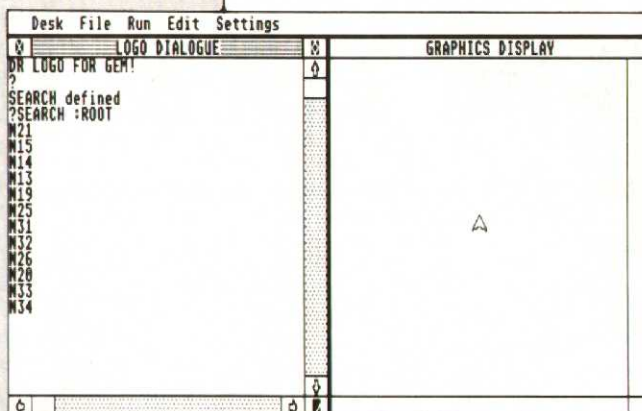
MAKE "ROOT "N21
MAKE "GOAL "F
    
```

```

PPROP "N1 "PARENT "N7
PPROP "N1 "RIGHT "NIL
PPROP "N1 "LEFT "N2
PPROP "N2 "PARENT "N1
PPROP "N2 "RIGHT "N8
PPROP "N2 "LEFT "N3
PPROP "N3 "PARENT "N2
PPROP "N3 "RIGHT "NIL
PPROP "N3 "LEFT "N4
PPROP "N4 "PARENT "N3
PPROP "N4 "RIGHT "NIL
PPROP "N4 "LEFT "NIL
PPROP "N5 "PARENT "N11
PPROP "N5 "RIGHT "NIL
PPROP "N5 "LEFT "N6
PPROP "N6 "PARENT "N5
PPROP "N6 "RIGHT "NIL
PPROP "N6 "LEFT "N12
PPROP "N7 "PARENT "N13
PPROP "N7 "RIGHT "NIL
PPROP "N7 "LEFT "N1
PPROP "N8 "PARENT "N2
PPROP "N8 "RIGHT "NIL
PPROP "N8 "LEFT "N9
PPROP "N9 "PARENT "N8
PPROP "N9 "RIGHT "NIL
PPROP "N9 "LEFT "N10
PPROP "N10 "PARENT "N9
PPROP "N10 "RIGHT "NIL
PPROP "N10 "LEFT "NIL
PPROP "N11 "PARENT "N17
PPROP "N11 "RIGHT "NIL
PPROP "N11 "LEFT "N5
PPROP "N12 "PARENT "N6
PPROP "N12 "RIGHT "NIL
PPROP "N12 "LEFT "N18
PPROP "N13 "PARENT "N14
PPROP "N13 "RIGHT "N7
PPROP "N13 "LEFT "N19
PPROP "N14 "PARENT "N15
PPROP "N14 "RIGHT "NIL
PPROP "N14 "LEFT "N13
PPROP "N15 "PARENT "N21
PPROP "N15 "RIGHT "N16
PPROP "N15 "LEFT "N14
PPROP "N16 "PARENT "N15
PPROP "N16 "RIGHT "NIL
PPROP "N16 "LEFT "N17
PPROP "N17 "PARENT "N16
PPROP "N17 "RIGHT "N23
PPROP "N17 "LEFT "N11
PPROP "N18 "PARENT "N12
PPROP "N18 "RIGHT "NIL
PPROP "N18 "LEFT "NIL
PPROP "N19 "PARENT "N13
PPROP "N19 "RIGHT "NIL
PPROP "N19 "LEFT "N25
    
```

```

PPROP "N20 "PARENT "N26
PPROP "N20 "RIGHT "NIL
PPROP "N20 "LEFT "NIL
PPROP "N21 "PARENT "NIL
PPROP "N21 "RIGHT "NIL
PPROP "N21 "LEFT "N15
PPROP "N22 "PARENT "N28
PPROP "N22 "RIGHT "NIL
PPROP "N22 "LEFT "NIL
PPROP "N23 "PARENT "N17
PPROP "N23 "RIGHT "NIL
PPROP "N23 "LEFT "N29
PPROP "N24 "PARENT "N30
PPROP "N24 "RIGHT "NIL
PPROP "N24 "LEFT "EXIT
PPROP "N25 "PARENT "N19
PPROP "N25 "RIGHT "NIL
PPROP "N25 "LEFT "N31
PPROP "N26 "PARENT "N32
PPROP "N26 "RIGHT "NIL
PPROP "N26 "LEFT "N20
PPROP "N27 "PARENT "N28
PPROP "N27 "RIGHT "NIL
PPROP "N27 "LEFT "NIL
PPROP "N28 "PARENT "N29
PPROP "N28 "RIGHT "N22
PPROP "N28 "LEFT "N27
PPROP "N29 "PARENT "N23
PPROP "N29 "RIGHT "N28
PPROP "N29 "LEFT "N35
PPROP "N30 "PARENT "N36
PPROP "N30 "RIGHT "NIL
PPROP "N30 "LEFT "N24
PPROP "N31 "PARENT "N25
PPROP "N31 "RIGHT "NIL
PPROP "N31 "LEFT "N32
PPROP "N32 "PARENT "N31
PPROP "N32 "RIGHT "N33
PPROP "N32 "LEFT "N26
PPROP "N33 "PARENT "N32
PPROP "N33 "RIGHT "NIL
PPROP "N33 "LEFT "N34
PPROP "N34 "PARENT "N33
PPROP "N34 "RIGHT "NIL
PPROP "N34 "LEFT "NIL
PPROP "N35 "PARENT "N29
PPROP "N35 "RIGHT "NIL
PPROP "N35 "LEFT "N36
PPROP "N36 "PARENT "N35
PPROP "N36 "RIGHT "NIL
PPROP "N36 "LEFT "N30
    
```



The ST screen as Logo searches for a path.

Lisp and translated it. Even with the extra steps involved it took less than half the time I spent on the Basic version.

### More To Come

These two examples are simple, but they take advantage of techniques that can be extended to solve many kinds of problems. In an upcoming issue of *Atari Explorer* we will develop the maze/tree search program into a simple expert system that searches rules in a small knowledge base to answer a question.

I will also discuss several commercial and public domain artificial intelligence languages that are available to help you explore AI on your ST. ■

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# 8-Bit Tips & Tricks

## Nineteen POKEs to increase your programming pleasure

There are many interesting things that you can do to your 8-bit Atari using the simple POKE command in Basic. We have compiled a list of some of the more useful tricks below. If you have any favorites that you would like to share, please write them down and send them to Tips & Tricks, Atari Explorer, 7 Hilltop Rd., Mendham, NJ 07945.

Before you try any of these POKES, it is a good idea to find out what value is in the specified location upon boot-up. It is important to know this default value so that you can return the machine to its original state after experimenting with these POKES. To find the default, use the command PRINT PEEK (location). This will return a number between 0 and 255. When you are finished playing around with these tips, simply POKE the default value into the location in question. Under most circumstances, this will return the computer to its original condition.

•POKE 65,0: Eliminates that annoying bleeping sound made whenever files are loaded from disk or tape.

•POKE 77, n: This location determines when the computer will enter the attract mode, a safety measure which cycles screen colors to prevent "image burn-in" on the monitor when the keyboard has been inactive for several min-

utes. When the value in this location exceeds 127, the attract mode is engaged. To prevent this, place a POKE 77,0 command in a frequently accessed program loop to continually reset the counter to zero. (n = 0 to 255.)

•POKE 82, n: This location specifies the number of characters to indent the left screen margin. (n = 0 to 39.)

•POKE 83, n: This location determines the position of the right margin. (n = 0 to 40.)

•POKE 202,1: Clears Basic programs from memory.

•POKE 580,1: Forces a cold start if the Reset key is pressed.

•POKE 622,255 (XL and XE only): After issuing this command, type GR.0 Return. From then on, everything listed or printed to the screen will have a nice, smooth scrolling effect.

•POKE 710, n: Changes the background screen color. (n = any even

number, 0 to 254.)

•POKE 729, n: Determines how long to wait when a key is held down before repeating the character. If zero, then key repeat is disabled. (n = 0 to 255.)

•POKE 730, n: Determines how rapidly repeated characters appear when a key has been held down long enough to invoke repeat key. (n = 0 to 255.)

•POKE 731,0: Speaker clicks whenever a key is pressed. A value of 255 turns the key click off.

•POKE 752,0: Turns the cursor on. Any non-zero value hides the cursor.

•POKE 755,4: Turns the character set upside down. A value of 2 returns it to normal.

•POKE 756,204: Allows you to use a weird character set by holding down Control and typing any letter A to Z. A value of 224 returns the normal control character set.

•POKE 1913,80: Allows writing to disk without verify. A value of 87 disables disk write without verify.

•POKE 53279, n: POKEing a zero extends the speaker cone, a one retracts it. Rapidly alternating between the two values produces a "raspberry" sound.

•PEEK (53770): Returns a "random" number between 0 and 255. ■



By OWEN LINZMAYER



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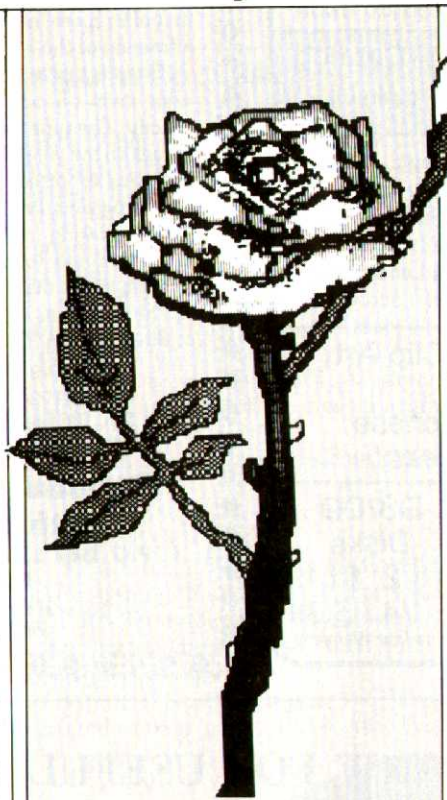
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## Degas doesn't rhyme with Vegas



# What's In A Name?

By DAVID H. AHL

The other day, after about the hundredth person asked me about our "Day-guess" images contest, I got to pondering the general decline of cultural literacy in our society, a train of thought which then led somewhat indirectly to some observations about the naming and renaming of companies and products.

For example, United Airlines used to be a proud name. When the company purchased Hilton International and Westin Hotels, the name was changed to UAL Inc. But then, after purchasing the Hertz Corp., the company paid \$7.5 million to change its name to Allegis Corp., a silly name that not even the company's own employees knew was a combination of the words, *allegiance* (loyal) and *aegis* (protection). Two months later Richard Ferris, the chairman who championed the new name, was fired, and the name was changed back to UAL Inc. Dumb.

Unless you are pulling off some kind of con, the first rule of marketing is to let people know what you are selling. Think of the industry giants—International Business Machines, General Motors, Standard Oil, Corning Glass Works, Dow Chemical, General Electric, American Telephone and Telegraph, Caterpillar Tractor, American Bakeries, and United States Steel—and you will usually find a good sensible name that tells people what the company is all about—or at least what it was about when the company was founded.

Over the years, names change due to mergers or changes in the fundamental business of the company. McDonnell Douglas Aviation makes sense, as does PPG Industries (changed from Pittsburgh Plate Glass when the company

expanded into paint and chemicals). But many name changes are the result of trying to craft a new image (even when the old one is perfectly good).

Quick now, what is the main business of AMAX, LTV, Stanadyne, Beatrice, Interco, VF, E-Systems, Unisys, Primerica, Abex, or the Omnicom Group? All but one are in the Fortune 500, have sales of over one-half billion dollars, and had names that were household words as recently as ten years ago.

On a smaller scale, in the computer field, suppose you are considering a name for a new company. You decide

that United States Software is too broad, Creative Computing has already been used, and your last name is Roeskowianski which you judge unsuitable for use as a company name. So you want to make up a new name. Beyond making sure that it describes—at least in some limited way—your product or business, what is involved?

### Choosing a Name

Choosing a name for a new company or product is a lot like choosing a name for a child. It requires a great deal of thought and even foresight. You should not use the first name that pops into your head, and you should consider the long-range consequences of your choice. We have been observing the naming process in the computer industry for a good many years now and offer the following practical tips to those who may now or someday be in the position of choosing a name.

- **Word Association.** The ideal name is composed of words and syllables that have positive connotations, regardless of context. Gamestar, for example, is a great name for a software game publisher; Don't Ask Software is not.

- **Pronunciation.** Word-of-mouth promotion is the most effective form of advertising. If a name is unfamiliar to the eye or unwieldy on the tongue, you can be sure that people will avoid using it whenever possible. So . . .

Avoid choosing or creating a word with two vowels that come together in an unfamiliar order or a word with alternating vowels and consonants. For example, where are the syllable breaks in the name Acura? Is it AK-you-ra or ah-CURE-a? In the computer field, names like Lolir (LO-leer, lo-LEER, or

## The Name Game

### Test your knowledge of names

**H**ave you been keeping up with the new names in American industry? How about just the computer field? Take this eight-question quiz and find out. There is no time limit, but no fair peeking at the answers.

1. Sequa is the name
  - a. of the boat on which Gary Hart and Donna Rice spent an evening.
  - b. chosen by Franklin Computer after it emerged from Chapter 11.
  - c. chosen by Sun Chemical after it acquired Chromalloy American.
  - d. of a computer manufactured by a company of the same name.
2. Unisys is
  - a. a videotape method of teaching people how to ride a unicycle.
  - b. the result of the merger of Burroughs and Sperry.
  - c. a potent Japanese drink which combines gin and sake.
  - d. the name of a trendy disco in San Francisco.
3. Quattro is the name of
  - a. the four-wheel drive Audi introduced in 1985.
  - b. the company that resulted from the recent merger of four Silicon Valley companies.
  - c. the name of a spreadsheet made by Borland.
  - d. the anti-particle of the quark that exists only in the fourth dimension.
4. Irma is
  - a. the name given to Meryl Streep by her parents.
  - b. the new name of International Rectifier Manufacturing Co.

- c. a Swedish manufacturer of deposited film semiconductors.
  - d. a popular PC-to-mainframe communication link.
5. HAL is
    - a. the name of the on-board computer in "2001: A Space Odyssey."
    - b. three initials that precede IBM by one letter.
    - c. a new product of Lotus Development Corp.
    - d. all of the above.
  6. McMax is the name of
    - a. a database package for the Macintosh by Nantucket Software.
    - b. a new sandwich being test marketed by McDonalds.
    - c. a speedup kit for the Macintosh by Omnis Corp.
    - d. Quality Inns' reservation system for their McSleep Inns.
  7. Gnu is
    - a. the new name of General Natural Utilities.
    - b. a custom font cartridge system for LaserJet printers.
    - c. a large African antelope with a head like an ox.
    - d. a new educational software game.
  8. Chameleon is the name of
    - a. a CRT terminal emulator program for Atari 8-bit computers.
    - b. a graphics translator program for Atari ST computers.
    - c. a lizard capable of changing its color.
    - d. all of the above.

### Answers:

1. c; 2. b; 3. a and c; 4. d; 5. d; 6. a; 7. b and c; 8. d.

LOL-er?), XYWrite (ZEYE-rite or EKS-WHY-rite?), Noumenon, and Inagem come to mind as names that do not come tripping off the tongue.

Look for a word in which the first syllable is either familiar or ends in a consonant and the second syllable begins with a consonant. Good: Artworx, Mindscape, Swiftcalc. Bad: Apogee, Setarc, Aegis (correct pronunciation is EE-jis). But resist the temptation to capitalize the second syllable, which, in our opinion, is an affectation that confuses people who then can't remember whether to capitalize it or not.

•**Phonetics.** Avoid ending a name with a syllable that fades off in speech, because it encourages people to say only part of the word. Examples of fading syllables are *-sys*, *-cis*, *-tious*, and *-ism*. If your goal is to have an assertive-sounding name and your first syllable is phonetically soft, the syllable that follows should be hard or crisp, using explosive letters such as k, q, t, and b.

Good: Sirtech. Bad: Sirius.

•**Silent letters and the pseudo p.** The p, in addition to having a strong explosive sound, can be silent or create an f sound when followed by an h. The letter g is silent when followed by n or h. Unless you are using a very familiar syllable, these constructions should be avoided. Examples of names that won't get much word-of-mouth promotion are Gnosis, Psion, Phantasie, and Psygnosis.

•**Foreign words.** Some foreign words and names are well known and can be used in the U.S. Most can't. Managers at Esprit Systems have practically given up trying to get people to pronounce their name eh-SPREE. Hyundai ran a major radio ad campaign emphasizing that their name rhymes with Sunday. And then there are names like Geopolitique, American Hoechst, Bolgla, and last but not least, *Degas*.

When used as a word meaning to remove gas from an electron tube, *degas* is

pronounced dee-GAS. When used as the name of an Atari ST graphics package, however, it alludes to the French painter and is pronounced more like deh-GAH. In neither case does it rhyme with Vegas.

### The Acid Test

A good test of a name for a product or company is to show the name to five or six people (not company associates). Ask them to say it aloud a few times. Then ask them a few days later if they can recall it. If they either have trouble pronouncing it or fail to recall it easily, start looking for another name.

If more people applied this simple test, the computer world would be less cluttered with such unmemorable names as Ishvar, Arrakis, Brataccas, Kea Systems, Quid Software, Voyetra, and Xelteck and more manufacturers would be able to take advantage of the most effective marketing tool of all time—word-of-mouth. ■

*Atari computing is for women and non-hackers, too*



## Homefront

By ROXANE FARMANFARMAIAN

**W**hy are most hackers men? That's a question I've been mulling over for some years now. Why, when someone mentions women, does the computer industry start hemming and hawing and muttering about recipe software and data entry? Or is that perhaps an outdated accusation? Are women programmers now as common as bathroom tile? Have computer widows gone the way of the dodo bird and the buggy whip?

Not quite. Be it social conditioning or genetic predilection, the fact remains: the relationship between computers and women is a many-sided thing. . . . at best. If we are to believe Sherry Turkle, MIT professor and former wife of Logo designer Seymour Papert, this relationship is a product of social conditioning.

In her book, *The Second Self*, Turkle describes tests in which girls perform as enthusiastically—and capably—at the keyboard as boys. This, of course, takes place at a stage in the child's development prior to the onset of the home ec vs. mechanical drawing syndrome, which she feels inevitably conditions girls to prefer being air-headed and frilly and boys, macho and techy.

The genetic argument can be just as persuasive—and is just as flawed. Because if women really, truly like lipstick more than mice, why are there any female programmers, systems analysts, or engineers?

There is probably some truth in both of these theories, but to find the reason for the general lack of affinity between

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***If women really, truly like lipstick more than mice, why are there any female programmers or systems analysts?***

---

women and computers, I think we have to look further.

Have you ever noticed that computing is like a drug? Some people (mostly men and boys, I admit) really get addicted to it. And, like any drug, it separates the "must haves" from the "don't cares." More than that, it creates its own inner circle of aficionados, who are both reclusive and exclusive. Be you woman or man, girl or boy, there is

never any question in your mind as to whether you are on the inside or the outside. And trying to move from the outside in is no easy matter.

But women are the ones who have gotten short shrift throughout the short history of personal computing. Why? Because many of the original mavens of personal computing were young men who were somewhat unskilled in the dynamics of social interaction and had no motivation to consider ways in which women might be included in the human/computer equation. One of the very things that attracted them to computers—the fact that they needed no social graces or interpersonal skills to succeed in the computer world—made it almost impossible for them to share this new love with members of the opposite sex.

This is not to suggest that women need a special kind of computing (certainly not the special linen counting, recipe storage, or hair color calibration variety). They do, however, respond best to a different approach than that which hooks men so effectively.

It is not that women are any more overwhelmed than men when they first sit down in front of a computer screen—nor that they are more fearful of machines in general. It is that their schedules are often different; their needs and orientations are of different kinds.

And what most girls and women fail to realize is that their non-hacker male counterparts are just as intimidated and nervous as they are the first time they face a computer. Not only that, but because computers have become so easy and so much fun to use and so useful, women get the hang of working with

---

them—and the desire to use them more—just as quickly and just as surely as men do.

### **Where We Go Wrong**

The computer is a many-wondered thing; it is much more than a hacking machine. Programming has never fit the needs and schedules of most women (How many programmers do you know who program during daylight hours?

And how many women do you know who regularly stay up all night?) But, remember, programming is only one aspect of computing—and a minor one at that.

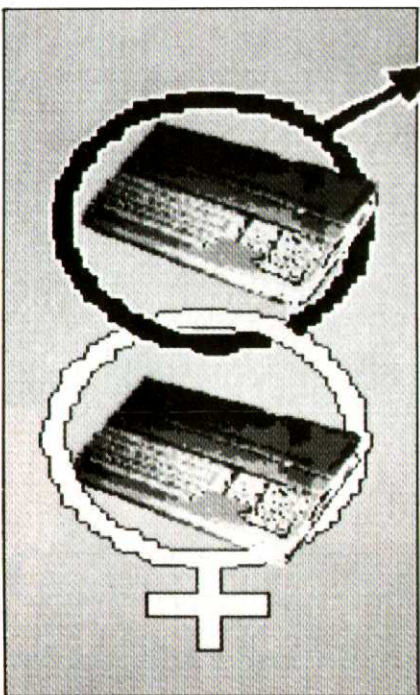
The problem is that when an Atari is brought home, it is often appropriated instantly by the guys in the house. Manuals get lost or stashed away (real men don't read manuals), backup disks of important programs emerge bearing labels filled with incomprehensible codes (1WBK388), leisure time is absorbed by the information services, etc. The entire setup becomes a great deal less than hospitable. No wonder the women of the house lose interest long before the novelty wears off the family's newest appliance.

The moral? Well, there are several.

#### Take Control

First of all, women and girls should not rely on the men (or boys) in the house to teach them how to use the computer. This is a key mindset point; being dependent is next to being intimidated, which is next to perpetual procrastination, or fear, or both. By taking command of the learning process, women can feel immediately in control. They can choose the software, read what seems important in the manuals, and learn at their own pace.

However, because the state of the art of documentation writing has not begun to approximate the state of the art technology that makes Atari computers so useful and so friendly, novices of both sexes almost always have questions for which they cannot find answers in the manuals. Taking such questions to the more knowledgeable members of the



en face when learning computing lies with the way computing is taught rather than with the computers themselves.

She uses analogies and vocabulary that are more familiar—and more relevant—to a woman's frame of reference than those used in most manuals and guidebooks. And in so doing, she manages to avoid condescension, an attitude that is all too common in material aimed at teaching women about computers.

#### Access Is All-Important

Second, the Atari should be set up neatly and logically, so it doesn't take a

lack of interest when the Atari is constantly in use and taking a turn means kicking someone else out of the way. Each member of the family should feel equally entitled to use the machine in whatever way he or she chooses. Take a cue from the way you handle TV viewing, and observe the discord that a conflict of interest causes.

Keeping a schedule also attaches importance to the involvement of female family members with the Atari. If there is a specific time set aside for them, they will be less likely to bypass their turns and will feel that the whole family is supporting their efforts to become computer literate.

Fourth, the family should be willing to consider the possibility that it is time to get another Atari. If the computer is booked during all the family's waking, non-working hours, a second system may not only eliminate congestion but provide the freedom more reticent family members need to exploit the potential of computing in their lives.

The fact that one person or group uses the computer more than another is no gauge for the long term. Given the opportunity to use the machine without the pressure of others waiting for a turn, less active members of the family may find themselves spending a lot more time at the keyboard.

Fifth, it is important to divide the family software budget evenly, so the library contains packages that are of use and interest to everyone. What amuses the guys may seem boring, loud, or just plain stupid to the girls. The women should have a voice, when the decision to buy important packages—word processing, spreadsheets, graphics programs—is made. And they should be able to choose other programs—games, utilities, educational packages—that may appeal only to them. They should be encouraged to take the initiative in choosing software that is *theirs*.

Boys will be boys, and girls will be girls. Yes, and the Atari can hack it both ways. It is sturdy enough to weather the first attempts of the novice—of either sex—and smart enough to remain interesting and useful to everyone in the family—not just the hackers.

So why are most hackers men? Beats me. If you think you know, please share your insights with me. I'll report on your opinions, revelations, and observations in a subsequent issue. Write to Homefront, Atari Explorer, 7 Hilltop Rd., Mendham, NJ 07945. ■

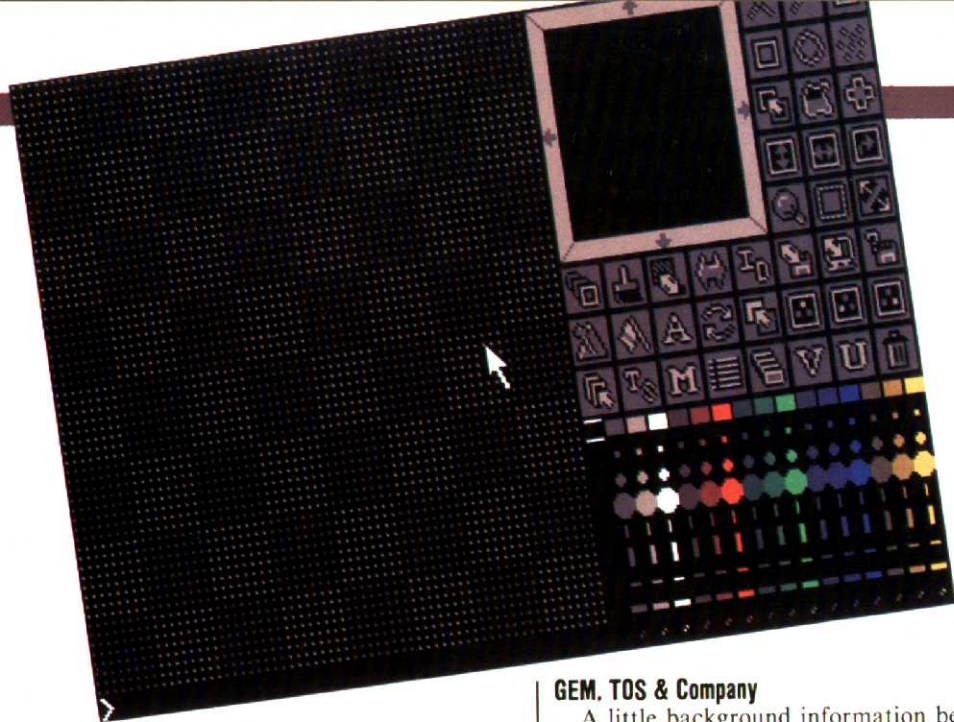
***The family should be willing to consider the possibility that it is time to get another Atari.***

family should be viewed as an opportunity to take advantage of available resources rather than a surrender of independence.

A very good guide is Deborah L. Brecher's *The Women's Computer Literacy Handbook* (Plume, 1985). Brecher bases the curriculum of the Women's Computer Literacy Project, a school she runs in San Francisco, on her contention that the greatest problem wom-

map or a code book to figure out what's where. The computer should be treated just like other common property in the house. Disks should be systematically labeled and filed—and cleanup should be as regular and equally shared as the dinner dishes. That way no one will be dependent on someone else to get the programs they want up and running.

Third, the computer needs a schedule. It is unfair to accuse the women of



# Advanced Art Studio

*Rainbird's inexpensive drawing program offers sprites and animation*

The *Advanced Art Studio* is a multi-featured program boasting a plethora of functions. With it artists can draw silicon works of art, create sprites, design screens, edit fonts, and animate characters.

Programmers will also like it because they can quickly design game maps and other backgrounds and include them in their code—for the ST or other computers!

## Getting Started

The program is copy protected, but you can make backups by following the instructions in the manual. Before doing this, however, browse through the README file on the distribution disk. It explains that the *Advanced Art Studio* disk is not a standard disk; it is formatted to contain 394K of data. To copy it you must be able to format the same way.

To that end the disk contains the special format program used to create the original *Advanced Art Studio* disk. Real adventurers can even do a double-sided extended format to produce an 804K floppy. There is only one rub—the 394K disk cannot be read by a single-sided drive, nor can the 804K be read by a double-sided drive.

The only way out, besides using the original (in a double-sided drive), is to do the single-sided format, copy the files according to directions in the manual, and run the program from a double-

sided drive. Blank disks (for artwork) can be formatted in the normal way.

Beyond that bit of protection, the program requires a password each time it is booted. This security feature asks for a word from a randomly chosen section of the manual. Enter it in lowercase, and you're all set. Mess up, and it's reset time.

## The Advanced Art Studio

**System:** Atari ST

**Required equipment:** Color monitor

**Version reviewed:** 1.0

**Copy protection:** Yes

**List price:** \$44.95

**Summary:** Moderately powerful art program with font/sprite editing and animation capabilities.

**Manufacturer:**

Rainbird Software  
P.O. Box 2227  
Menlo Park, CA 94026

**Distributor:**

Activision  
2350 Bayshore Pkwy.  
Mountain View, CA  
94039  
(415) 960-0410

## GEM, TOS & Company

A little background information before we break out the oils: *Art Studio* is *Neochrome* file compatible, making interchange with other art programs a snap—or a click if you prefer accuracy to cliches. It is capable of simultaneously displaying 16 of the 512 colors available on the ST—a range that can be tweaked by modifying palettes.

Several sample pictures, including one digitized image, are stored on the disk for you to load and learn from. These are useful, if for nothing more than showing you the potential in *Advanced Art Studio*. Any image, including the Control Screen, can be dumped to a printer via the Alternate-Help keystroke combination. Adventurous (read advanced, bored, etc.) artists can even customize the icons on the Control Screen. Just load the EDSCREEN file and click away, but remember to work on a copy; never alter the original.

The program has on-line help, but of an unusual sort. When the mouse cursor is over one of the Toolbox icons, brief instructions flash in the View Window, turning it into a Teleprompter of sorts.

## By TED SALAMONE





These messages describe the results of pressing either mouse button and may offer an additional bit of information if the function is particularly complex. You can turn the prompter off (and back on again) at any time.

The .NEO extension is automatically appended to any files stored on disk. One icon provides a disk directory; another loads or saves files; a third alters the default drive. Theoretically, then, disk and file management are easy, freeing you to concentrate on creative endeavors. Unfortunately, in my tests, the program refused to respond to the default disk drive command, forcing me to use drive A all the time.

While GEM is supported, pulldown menus are not part and parcel of *Advanced Art Studio*. However, lack of menus should not be considered a deficiency; the graphic interface (icons galore!) suffices—and then some.

#### A Screen by Any Other Name

The first step in using *Advanced Art Studio* to create graphics is getting to know the Control Screen; it is the heart of the program. Sprites and brushes are created on the Grid, brushes are selected from the Storage Window, colors are chosen from the Color Bar, and tools are selected from among the above-mentioned Toolbox icons. The one-line Message Panel flashes messages and the View Window lets you see into the current workscreen.

Don't let the word "workscreen" confuse you; work can be done on the Control Screen or on a completely blank (work)screen. Sometimes your work switches from one screen to another. For example, when you click on the magnify icon and select a section of the workscreen for magnification, the edit-

ing is done in the Grid area of the Control Screen, because the Grid shows everything nine times as large as the image on the workscreen, making fine tuning much easier.

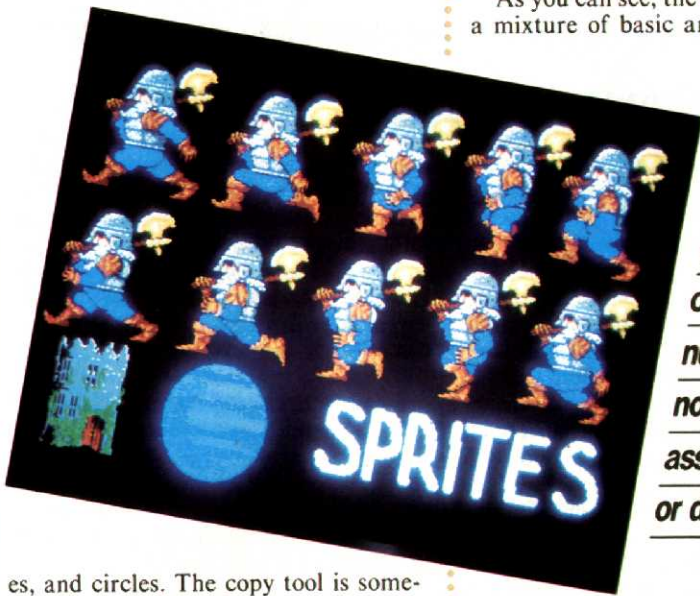
As a matter of fact, you can have as many as ten workscreens. On a 520 ST, video Van Goghs can flip between two; on a 1040 they can create up to ten. Each of these screens is accessed via a function key, the View Window, or an icon that automatically calls a workscreen.

Most of the Toolbox icons can be used two ways—by pressing the left or

the right mouse button. The left button selects the tool and leaves you on the Control Screen, ready to work on the Grid. Depressing the right button with the pointer on an icon activates the tool and calls the current workscreen, presenting you with a blank canvas stretching the entire length and width of your monitor. Another right click takes you back to the Control Screen.

#### On the Count of Three: Draw!

Drawing icons consist of the standard single-pixel draw, automatic lines, box-



es, and circles. The copy tool is somewhat restricted in that it works only with squares, which, although they can be varied in size, are notorious for capturing unwanted items surrounding the object of your (copy) desire. A lasso, which you could tighten around an image would make the copy feature more useful.

There is no provision for arcs or ellipses; nor are rays—series of connected lines—supported. The moderately creative artist can easily devise substitutes for these functions—circles, for example, can be drawn and worked into arcs, and lines can be tied together to create rays. But dedicated tools would definitely save time.

The spraygun is flexible, making it easy to "scatter" brushes and colors. The ability to increase or decrease the amount of red, green, or blue in a color is implemented with precision, efficiency, and simplicity. Manipulating palettes becomes a matter of point and shoot—an ideal way to build complementary or contrasting colors, etc.

The fill routine works two ways in

addition to the left/right button dichotomy. It works with colors, completely filling a geometric shape, and it works with brushes (patterns and shapes) to fill a geometric shape with a specified pattern and design.

A useful feature, and one not seen in every art package, is the ability to switch colors between locations. Also unusual and interesting is the function that allows you to draw any kind of triangle; and finally, an outline tool lets you add multicolored layers around an image.

As you can see, the drawing tools are a mixture of basic and advanced fea-

**Advanced  
Art Studio**  
combines a  
number of features  
not normally  
associated with art  
or drawing programs.

tures with a few omissions. Despite this unevenness, almost anything can be done with this package—it may take you a little longer than you might like, but it can be done.

Brushes can be created from the Grid or a picture, grabbed from a picture, manipulated (on the Grid), made larger or smaller, and stored for later recall. Half a dozen icons take care of all brush functions.

When working on the Grid you can choose to paint smoothly (left button brush selection) or have the brush "snap to" a grid of 8 × 8 pixels (right button select). The wildest brushes are made by clicking on the animate icon. Just think, you can create a wriggling, wiggling brush to cruise about the Control Screen!

If you like part of a picture, you can turn it into a brush. Then you can use it anytime, anywhere. Stamp it, smear it, change its palette for even wilder effects.

Brushes are available in the following

## PRODUCT REVIEW

pixel sizes:  $8 \times 8$ ,  $16 \times 16$ ,  $16 \times 32$ ,  $32 \times 16$ ,  $32 \times 32$ ,  $32 \times 64$ , and  $64 \times 64$ . If there are too many to view at one time, or they are too large to appear on-screen all at once, just scroll until you find the right one.

### You'll Flip Over This

Once you have created an image you like, you may want to reproduce it. All

really get things moving on your ST screen.

The next step is animating sprites, which are identical to brushes but given a different name simply for convenience in describing their use. First, you must create a set of sprites, say, a man with his legs in several positions, a face talking and smiling, or a rocket taking off. Then you use the set frames icon to

## *The undo function can do wonders for your creativity, because it allows you experiment with what-if graphics.*

those hours, all those clicks and strokes; you can't possibly do it again. Yet, the project needs another 23 of those cute figures to complete the set.

No sweat, just click on the window icon, and cut and paste your creation in a new location. *Voilà*, instant twin.

What's that you say? The figures are supposed to face one another, and the third should be standing on its head? No big deal. You can do a horizontal flip, followed by the vertical version. Oh no! Numbers 12 and 14 should go face down and face up, respectively. Just rotate right after copying—once for number 12 and three times for number 14.

Using the same window function, mousing Monets can clear all or part of a work area, smooth out the jaggies (anti-aliasing), or rescale a picture. Rescale is a powerhouse function that allows you to stretch, squash, enlarge, or reduce a picture or a portion of a picture in the window.

Finally, we have the undo icon, which restores your work to the condition it was in before the last command. This pragmatic little function can do wonders for your creativity, because it allows you experiment with what-if graphics.

### Time to Move On

**Animation**—the word conjures up imaginary creatures and movements that are impossible in real life. You can find it in Saturday morning cartoons and in the *Advanced Art Studio*.

In its simplest state, animation brings motion to static images. Through color cycling a waterfall appears to move, a flag appears to flutter, a rainbow twinkles. By designating a range of colors and selecting the cycle icon, you can

indicate the animation sequence you desire. That done, you click on the animate icon to set things in motion. That's all it takes to animate.

You control the speed of your animation with the metronome icon, which can also be used to alter the speed and direction of color cycling.

### And Now for Something Completely Different

By selecting the text icon you can edit fonts and add text to pictures. Sample fonts, which load as brushes tied to alpha keys, are included on the disk. Make use of them, as many pictures are incomplete without text.

Advanced users can use the Grid to design an entire font. Characters can be created and stored, though no particular attention is paid to kerning, x-height, ascenders and descenders, or other nuances of typography. In other words, fonts created with *Advanced Art Studio* should be viewed as an incidental adjunct to your graphics work, not a substitute for a desktop publishing program.

Also, font creation in *Advanced Art Studio* is more tedious than in a dedicated font editor, simply because *Art Studio* doesn't concern itself with the typography terminology and features.

Programmers can design brushes to use in game maps and backgrounds. Entering map mode means answering several questions concerning the width, depth, and output destination of the map. You can, for example, send a file to disk or to the RS-232 port for line or direct wire transmission to another computer. Other icons allow you to designate the number of lines per sprite (brush) and to set the color plane by bit. Whew!

### Impressions

Reading the manual was a mistake. More accurately, reading the manual closely before booting the program was a mistake. The manual has trouble explaining simple things; furthermore, no attempt is made at presenting a tutorial. References are circular, and explanations are overly complicated.

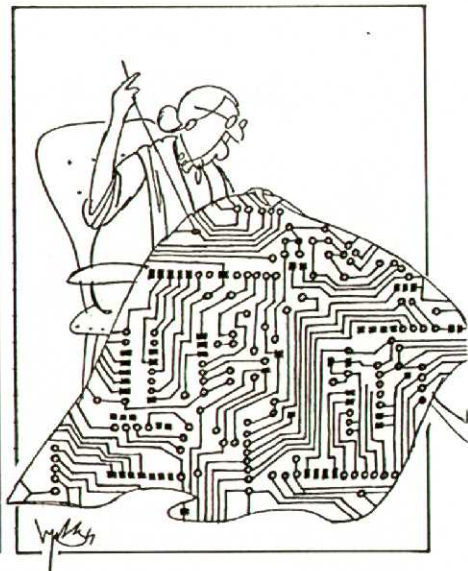
I think you will enjoy *Advanced Art Studio* more and be able to use at least as effectively, if you just boot the program and play with it for a while. Refer to the manual when the purpose of an icon isn't readily apparent or a function doesn't work as expected, but don't rely on it to *teach* you how to use the program.

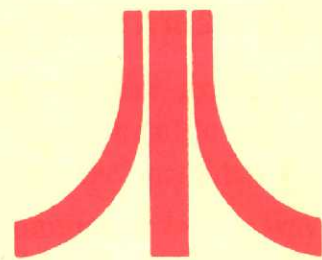
*Advanced Art Studio* combines a number of features not normally associated with art or drawing programs, including sprites and a font editor. This is, at once, good and bad. The good part is that you get good value for your dollar and plenty of room to grow as your skills improve.

The bad comes in the form of a less-than-intuitive user interface and a poor level of instruction. Furthermore, because of the protection scheme, the program cannot be loaded onto a hard disk drive. Nevertheless, the good outweighs the bad.

The program appears solid; it has never crashed and always catches my incorrect moves. Reliability counts a lot in a program with which you plan to spend countless hours creating the next MOMA exhibit.

Despite some ups and downs (mostly ups), *Advanced Art Studio* finishes with flying colors. ■





# Atari Explorer

## The User-Friendly Computer Magazine

Why did you originally buy an Atari computer? To do word processing? To compose music? To manage your business? To play games? Chances are, whatever your initial reason for buying an Atari, you've discovered that it has many additional capabilities and potential applications.

The flip side of the coin is that you've probably experienced some frustration as well. Maybe your word processing package won't do subscripts or underlining. Perhaps your database won't sort on as many fields as you need. Or, it could be that when you write a program, your whole system acts user-hostile.

Depending upon the balance between your satisfaction and your frustration, you may continue to use your computer or set it aside. But there is a better way: **Atari Explorer**.

As the premier magazine for Atari computer owners, it is our responsibility to make sure that you get the most out of your computer. To us, that means making sure your Atari does more than you bought it to do, more than friends' and associates' computers do, and more than you ever imagined a computer could do.

To make sure that you get the most out of your computer, **Atari Explorer** brings you objective, in-depth reviews of hardware and

software; up-to-date information about new products; practical tutorials; stimulating columns; thought-provoking articles; and valuable inside information.

### Hard-Hitting Evaluations

At **Atari Explorer**, we obtain new peripherals and software packages as soon as they are released. We put them through their paces in our on-site laboratory and also in the environment for which they are intended—home, office, lab, or school.

Our evaluations are unbiased and accurate. We are not afraid to call a spade a spade or a lemon a lemon. Our first obligation is to you, our readers, and editorial excellence and integrity are our highest goals.

### Practical and Stimulating

We know that some of our readers are beginners and others are experts. Thus it is our responsibility to make what we publish both comprehensible to newcomers and interesting to veterans. That does not necessarily mean that the material is simple; we know you like to be challenged. What it does mean is that we provide the inexperienced user with every possible means to seize the subject matter and make it his own.

However, we don't want the experts to be

bored, so although articles are accessible to beginners, they are theoretically non-trivial, cover topics in depth, and present information on more than one level.

At **Atari Explorer**, we are intensely interested in all aspects of computing. Ours is the magazine of pragmatic applications, communicative graphics, stunning animation, mind-expanding games, and realistic simulations. We take our business seriously, but we have fun too. We are convinced that you will, too, when you go exploring with the **Atari Explorer** family.

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To order your subscription to **Atari Explorer**, simply fill out the coupon and mail it to the address below. There is no risk; if at any time you are not completely satisfied, we will refund the unfulfilled portion of your subscription—no questions asked.

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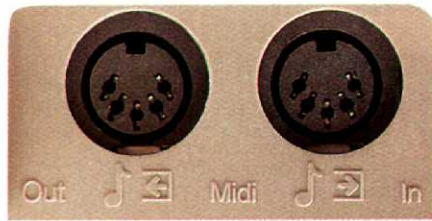
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**THE DIFFERENCE  
BETWEEN A COMPUTER THAT  
MAKES MUSIC,  
AND ONE THAT MAKES TROUBLE.**



Of all the personal computers you can buy to make music, none makes it easier than Atari computers.

That's because, unlike the others, the Atari 512-kilobyte 520ST™, 1-megabyte 1040ST™, and 2- and 4-megabyte MEGA™ computers have more of what you need already built-in.

Here's what we mean.

## MIDI. The Key to Electronic Music.

As you may already know, the MIDI interface is the key to electronic music.

If you're unfortunate enough to not be working with an Atari, you'll have to buy an interface separately.

And make sure it's compatible with the rest of your equipment, not to mention your software.

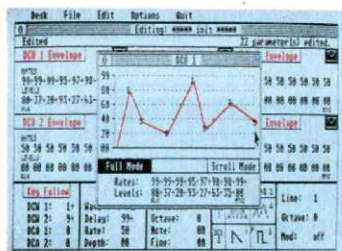
And then you'll have to make sure everything is installed correctly.

What's that like?

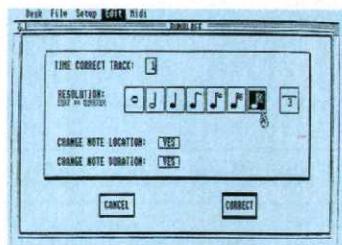
You know the song, "What are you doing for the rest of your life?"

Atari ST™ and MEGA computers, on the other hand, have a MIDI port built right into the back of the computer.

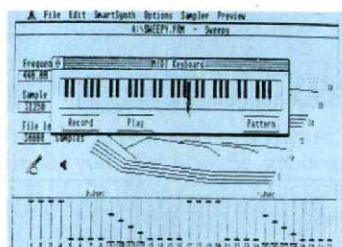
So you can connect all kinds of equipment—synthesizers, samplers, drum machines, SMPTE controllers, pitch-to-MIDI converters—as easily as plugging into an amp.



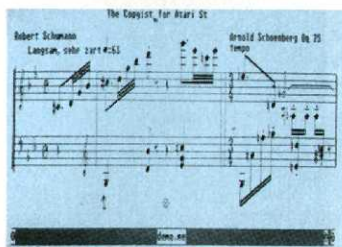
CZ-ANDROID™ Hybrid Arts™



MIDISOFT STUDIO™ Passport™



SOFTSYNTH™ Digidesign



THE COPYIST™ Dr. T's™ Music Software

## A Musician's Music Box.

No other computer company has made the commitment to music and musicians the way Atari has.

That commitment, by the way, doesn't end with our hardware.

We're working in harmony with all the major music software houses to produce the software you want to make music with.

And building a distribution network of music dealers—not computer dealers—who know electronic music well enough to help you, no matter how much you know.

## This Should be Music to Your Ears.

The Atari ST and MEGA computers are just parts of a full system. So there are lots of things you can add when you're ready.

Like our MEGA File 20™ 20-megabyte hard disk for storing your magnum opus.

And our SLM804™ laser printer for publishing it.

Plus one of the largest libraries of music software in the industry.

But perhaps the nicest thing about an Atari is how little it costs.

With what you save on an Atari, you could buy yourself a synthesizer. And some software.

Want to learn more? Write or call for the name of the Atari music dealer nearest you.



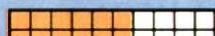
Atari Corporation • Attention: Music • 1196 Borregas Avenue • Sunnyvale, California 94086 • Tel: (408) 745-2367

# Software

Evaluations of new software for Atari 8-bit and ST computers

# Survey

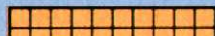
## Tracker



### EASE OF LEARNING

**System:** Atari ST

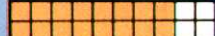
**Copy protection:** Floppy backup only



### CHALLENGE

**Summary:** Intense strategy battle simulator

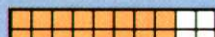
**Price:** \$44.95



### GRAPHICS

**Manufacturer:**

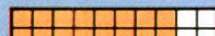
Firebird  
P.O. Box 2227  
Menlo Park, CA 94026



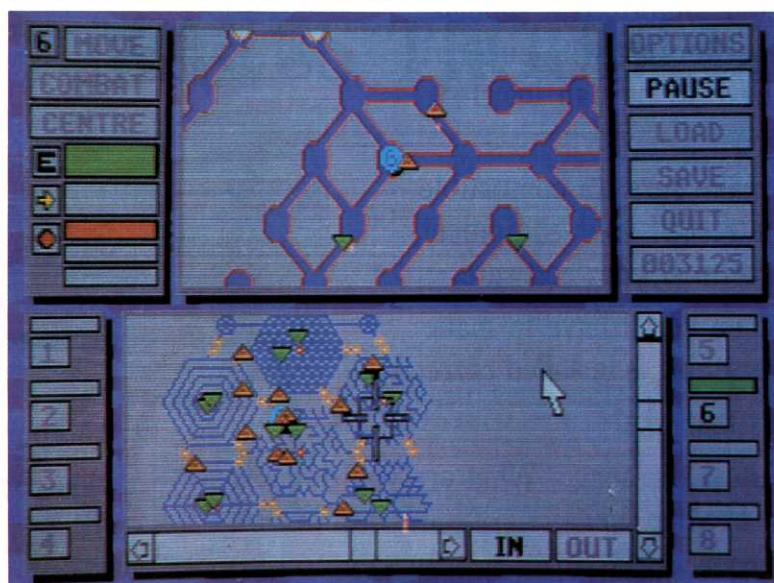
### DOCUMENTATION

**Distributor:**

Activision  
2350 Bayshore Pkwy.  
Mountain View, CA  
94039  
(415) 960-0410



### OVERALL RATING



**T**racker is a strategic battle contest that uses artificial intelligence (AI) to increase the skill of your computer-controlled adversary skill.

*Tracker* is an extremely complex game, containing elements of both arcade shoot-'em-ups and war simulations. As the attacker of the Centrepoint computer, you must take the six Skimmer Craft in your control, whittle down the on-rushing defenses, and ultimately destroy the communication computers. To play successfully, you must have patience, a mind given to strategic thinking, and *lots* of time.

Thankfully, you can save games in progress for later continuation. Also,

you can copy the master disk, but because it uses a non-standard format, you must initialize your backup floppy with a special utility included with the game. *Tracker* can not be placed on a hard disk or RAM drive.

Visually, *Tracker* is slick, offering plenty of options (solid or wireframe graphics, for example) and multiple displays. From the strategic screen, you can choose which of three weapons you will use, ascertain the current location and heading for each of your Skimmers, and discover where the enemy's communication centers and defensive craft are located.

When you enter the combat mode—a 3-D view looking out of the windshield

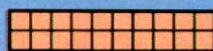
of the selected Skimmer—you can guide the vehicle (using the mouse).

The only annoyance is that once you enter the combat mode, there appears to be no way to return to the strategy screen without the ship being destroyed. There are times when you will want to alter certain offensive plans that have been previously set up, but in the current version of the game you cannot.

*Tracker* isn't for the casual gamer. It is intense and mentally challenging. Whether the program actually "thinks" and improves with time using AI is moot; the real question is whether you can learn from your mistakes and eventually defeat the evil Centrepoint computer.

—Andy Eddy

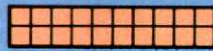
## Dungeon Master



EASE OF LEARNING



CHALLENGE



GRAPHICS



DOCUMENTATION



OVERALL RATING

Version reviewed: 1.1

System: Atari ST

Required equipment:  
Color monitor

Copy protection: Yes

Summary: Tantalizing  
graphic adventure; one of  
the best.

Price: \$39.95

Manufacturer:  
FTL Games  
6160 Lusk Blvd.  
Ste. C 206  
San Diego, CA 92121  
(619) 453-5711



SYRA'S SPELL FIZZLES AND DIES.

Almost two years ago, FTL Games (the distributors of *Sundog* for the ST) distributed a demo of an adventure game with the working title "Firestaff." While this teaser was a real eye-grabber, it looked too good to be true, and many people assumed it was yet another vaporware promise.

The program has finally been released as *Dungeon Master* and is proving to be one of the most popular games yet released for the ST. It is attracting gamers of all persuasions, not just avid adventurers, and for good reason: it is a slickly-designed program that is very easy to play.

*Dungeon Master* is a realtime, fantasy role-playing adventure; if you stand around idle, for example, the light from your torch will diminish and you'll be a sitting duck for an attack. So don't dawdle or you'll end up as a bundle of bones . . . over and over.

*Dungeon Master* boasts a well-written 46-page instruction manual, which features a background novelette that explains your quest: retrieve the ancient Firestaff hidden in the vast dungeons by the evil Lord Chaos.

When you start the game, you must swing through the Hall of Champions to assemble a party of four characters from among the 24 frozen heroes who failed in previous attempts to retrieve the Firestaff. Your characters acquire weapons and improve their abilities as they move through the more than 10 levels below the surface. FTL estimates it should take 50 to 100 hours of play to complete the game successfully, depending on your ability and adventuring experience.

The game runs most comfortably

with the mouse, but if you are so inclined, you can use the keyboard for most of the input. Control becomes second nature as you scour the castle for necessary items.

The screen displays what your party would see ahead in accurate 3-D perspective. Icons are all over the screen, for such purposes as eating (moving an edible morsel to the mouth symbol) and



examining objects (passing something to the eye box), among others.

Each member of your party has ample space in his backpack for the necessities of the trek, and that cache is accessed with a right button click or function key. Moving something, such as a sword or wand, to the right or "action" hand enables it for active use.

As with most adventures, you can cast spells, with the results displayed graphically on the screen. As you explore, you will stumble on scrolls that tell what combinations of syllables invoke certain actions or conditions—light, healing, or a special attack, for example.

To form such an incantation, you select a speaker, then click on the symbols in the spell you want to chant. Certain

spells require experience before they will work properly—practice makes perfect.

You are eased into the game smoothly and comfortably, but enough is held back to keep you interested. Many adventures throw everything but the kitchen sink at you in the very beginning—often before you even learn the rules. In *Dungeon Master*, the first levels proceed at a pace that allows you to familiarize yourself thoroughly with the user interface.

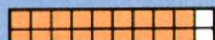
The little nuances that pop out at every turn show the care taken in programming this sensory trek into the netherworld. Digitized sounds—like the "Ooof" you hear when you slam into a wall, or a hearty "gulp" when a character eats something—are cute and realistic. Visuals consist of high quality animated graphics, which are integral to puzzle solving. Small switches, trip pads, and such, are dispersed through the castle, forcing you to scan every nook and cranny.

The original release of *Dungeon Master* contained some bugs that held the potential for stranding your party near the end of the game. To its credit, FTL promptly offered a free upgrade shortly after the program hit the shelves; simply return your original disk for an exchange.

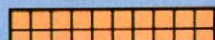
If a fraction of the software to be released in the remaining half of 1988 is anywhere as captivating and attractive as *Dungeon Master*, we have some excitement ahead of us. There is no question in my mind: *Dungeon Master* is the best, most addictive adventure game ever released for the ST. Run, don't walk, to your nearest dealer for a copy!

—Andy Eddy

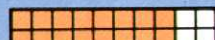
## Oids



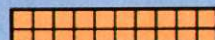
EASE OF LEARNING



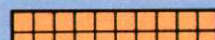
CHALLENGE



GRAPHICS



DOCUMENTATION



OVERALL RATING

**System:** Atari ST

**Required equipment:**

Color monitor

**Copy protection:** Yes

**Summary:** A challenging cross between Lunar Lander and Choplifter.

**Price:** \$34.95

**Manufacturer:**

FTL Games  
6160 Lusk Blvd.  
Ste. C206  
San Diego, CA 92121  
(619) 453-5711



With *Dungeon Master* and *Oids*, Faster Than Light (FTL) Games has asserted itself as the undisputed heavyweight champion of the Atari gaming world. These games represent a devastating one-two punch that even Mike Tyson would envy. While *Dungeon Master* has

grabbed most of the limelight, *Oids* is an equally deserving arcade blockbuster.

Simply put, *Oids* is a unique cross between *Lunar Lander* and *Choplifter*. But it's really much, much more than a combination of these two arcade classics. The object is to rescue your en-

slaved compatriots, the Oids, from the hostile terrains of enemy planets bristling with nefarious defenses.

Once you select which galaxy you wish to defend, the game starts by warping your ship to the first planet—one of 32 different planets dispersed through six galaxies. After being deposited in

Roger Damon, who over the years has given us many popular computer wargames, has now tackled his second love, bass fishing. With *Gone Fish'n* he has successfully incorporated all the highs and lows of sport fishing for bass into an enjoyable and entertaining game. If fishing is one of your passions, you will immediately identify with Roger's approach to this

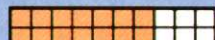
simulation. If, on the other hand, you think fishing is a waste of time, I urge you to try the game before you pass judgment.

The game opens with a weekly weather forecast, based on which you must decide whether to fish or work. Naturally, the more days you take off to go fishing, the less income you have to spend on your favorite hobby. After

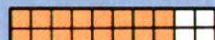
choosing which days you intend to fish, based on weather, temperature trends, and Uncle Jake's Fishing Forecast, you sit down at the kitchen table and check your maps, current radio weather reports, and the amount of money you have to spend on this fishing trip.

Before going to the local tackle shop, you can call around to the lakes under consideration to find out how good the

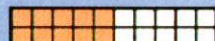
## Gone Fish'n



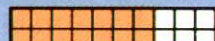
EASE OF LEARNING



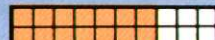
CHALLENGE



GRAPHICS



DOCUMENTATION



OVERALL RATING

**System:** Atari ST

**Copy protection:** None

**Summary:** All the highs and lows of sport fishing in an accurate and entertaining simulation.

**Price:** \$45.00

**Distributor:**

Electronic Arts  
P.O. Box 7530  
San Mateo, CA 94403  
(800) 245-4525  
(800) 562-1112 in CA





the atmosphere by the mothership, you can see the surface below and a status line which displays your score, fuel and shield indicators, and the number of ships, bombs, and on-board Oids. As in *Lunar Lander*, you must avoid crashing into the terrain by guiding your ship and taking into account the natural forces of physics—gravity, acceleration, and velocity.

You can pilot your ship using either the joystick or the keyboard. Although it takes some getting used to, I like the keyboard better, because the joystick controls aren't intuitive and the fire button is used to perform two functions. If you don't like the pre-defined keyboard controls, the program allows you to customize them, though your settings can't be saved to disk.

The craggy landscape is encrusted with fortified enemy positions, each capable of hurling lethal projectiles at your ship. A wide variety of nasty enemy bases is depicted in great detail, and the animation of their weapon systems is superb. The first few planets are relatively easy to conquer, but the more advanced ones are the product of a truly fiendish mind.

Nestled among the outposts are factories in which the Oids are held cap-

tive. You must blast open the factories to release the Oids, à la *Choplifter*. Once freed, the little critters start running wild on the ground, waiting to climb aboard your ship when it touches down. The problem is that while you are trying to rescue the Oids, the enemy is doing its best to blast you out of the sky.

It's best to neutralize any threats by strafing the terrain first; only then should you attempt to rescue the Oids. When you have picked up a full complement of eight passengers, you return to the mothership, where the Oids are deposited and your ship refueled.

Sometimes it is necessary to kill an Oid deliberately to avoid jeopardizing your ship by returning to an unusually hazardous situation. After you have saved or killed all of the Oids, the mothership whisks you away to the next planet. There is no time limit; your mission is completed if you are able to clear all the planets in the chosen galaxy.

If you ever tire of the provided planets, you can design your own using the built-in game editor. The editor is a construction set that allows you to modify existing planets or create entirely new ones. Using the play-test mode, you can even practice dealing with planets that you find especially difficult.

I am thrilled that FTL includes the editor at no extra charge, but the interface leaves a lot to be desired. Instead of using the mouse or joystick to select and drag game pieces into position, the editor relies on cumbersome arrow key combinations. One encouraging note is that planets designed by other players are now making their way onto bulletin boards and information services. These public domain files can be transferred to your *Oids* disk using the program's Library functions. Also, FTL is awarding \$100 cash prizes in a contest for the best original planets submitted each month.

*Oids* requires a considerable amount of manual dexterity and mental alertness to master. Nevertheless, it is one of the finest arcade games ever written for the Atari ST. With 32 different planets, each of varying difficulty, this game has almost unfathomable depth and challenge.

Furthermore, *Oids* is extremely flexible, allowing you to customize the controls and design your own planets. To top it all off, the 18-page game booklet is an example of the best documentation available, with thorough explanations and plenty of illustrations.

—Owen Linzmayer

fishing has been lately. Using this knowledge, you choose a lake and head for the tackle shop to buy lures and other equipment. You have only limited funds with which to purchase fishing equipment, but if you pull off a win at one of the regular weekend fishing tournaments you will have the big bucks to purchase items like a \$500 depthfinder or a \$3000 bass boat to make your fishing even more interesting.

When you arrive at the lake, you head out in search of the productive bass spots—weedbeds, lily pads, logs, and breaklines—described in the manual.

Fishing can be a very exacting science, and Damon has built all the important factors into his simulation. Descriptions of the lake bottom, its contours, the river channels, and hidden underwater stumps and drop-offs make your search for logical and likely fish hang-outs very realistic.

Out on the lake you motor your way to what you feel will be the most productive spots, drop anchor, and give it your best. You don't have all the time in the world either, as the on-screen clock ticks away, and your day ends abruptly at 9:00 p.m., whether you have caught anything or not, so don't tarry.

Once you have located a fishing spot,

you choose a lure and start casting. The retrieve is amply visible through surface and underwater views on the screen. From the underwater view you can control the speed and action of the lure, and if all goes well, see the bass strike. He is a quick little devil, and will more than likely catch you completely by surprise.

If you "set the hook" properly, you will have the time of your life trying to get the bass into the boat. By proper manipulation of the rod you can slowly reel in your catch, but if you hit on a big lunker you will hear the drag buzzing as he takes out line. If that happens, you have a real fight on your hands, and you had better know what you are doing.

The documentation is professional-looking and quite thorough, covering the basics of largemouth bass fishing, along with a number of the author's favorite fishing experiences which add flavor and a bit of humor, while at the same time giving the player a better idea of what bass fishing is all about.

To say this simulation is off-beat would be correct, but it has obviously been put together by a master of both programming and fishing, and it is certainly as innovative and challenging as anything Roger Damon has authored to date.

—George Bradford

## Warning

### ST HELP KEY

Warning: If you inadvertently copy a file over itself, it will be destroyed. When you select a file for copying and drag it to an area in the same directory, an alert box appears warning you of the name conflict. This alert box shows the old name and the new name (both the same, of course) and prompts you to enter a different name and then click on OK. Alternately, you can click on Cancel to abort the copy.

The problem occurs when you simply click on OK without changing the name; the file is copied over itself with disastrous consequences. If the file in question is a program, it will no longer execute correctly. Text files will be truncated.

This is another compelling reason to make sure that *all* of your files are backed up.

Reprinted from an article by Bob Deskin in the July/August 1987 issue of *Bytown Bytes*, published nine times a year by the National Capital Atari Users' Group, P.O. Box 1385, Station B, Ottawa, ON K1P 5R4. ■

The popular coin-op arcade game *Gauntlet* is now available for both the 8-bit and ST computer systems. Although the programs are limited by the relative capabilities of the machines on which they run, Mindscape has done a commendable job of bringing this arcade hit to the home.

*Gauntlet* is a fast-paced game of cunning and hand-to-hand combat that places you in the shoes of an adventurer delving into treacherous underground mazes in search of treasure. The computer displays a bird's eye view of the section of the maze immediately surrounding your on-screen character. Using the joystick, you maneuver your alter ego through the multi-tiered labyrinth, trying to pick up treasure, keys, potions, and food while avoiding traps and poisons. The inevitable dungeon denizens attack at every turn, so your weapon had better be at the ready.

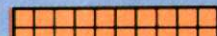
*Gauntlet* is provided on a single 5 1/4" floppy for the 8-bit, and two 3 1/2" disks for the ST. Both versions are copy protected and come with the same five-page booklet, which briefly describes the attributes of the heroes and villains. The documentation also includes paltry explanations of objects found in the dungeon and a minor error regarding the selection of characters on the ST.

You assume the role of a warrior, valkyrie, wizard, or elf, thus determining the armor, shot, hand-to-hand, and magic attributes of your character. Each player begins with 2000 health points, which are depleted during combat and replenished by eating food and drinking cider. When your health points reach zero, the game is over.

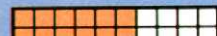
Both ST and 8-bit versions of *Gauntlet* allow for simultaneous two-player games, whereas the original arcade game was capable of handling four players. In addition to making the game much more enjoyable, cooperative play is essential if you want to explore the deepest levels of the dungeon. The ST version is unique in that a second player may jump into a game at any time. It is possible, using this feature repeatedly, to play a single game indefinitely by adding a second player every time your first character is about to die.

The object of *Gauntlet* is to earn as many points as possible by plundering the dungeon and killing its inhabitants. Scattered throughout are numerous monster generators, which produce monsters of six different types, each of which attacks in a different manner with a specified degree of ferocity. While plentiful in both versions, the monsters are far too numerous in the 8-

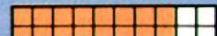
## Gauntlet ST Version



EASE OF LEARNING



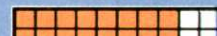
CHALLENGE



GRAPHICS



DOCUMENTATION



OVERALL RATING

**System:** Atari ST

**Required equipment:**

Color monitor, joystick

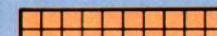
**Copy protection:** Yes

**Summary:** Not without its flaws, but reasonably close to the arcade game.

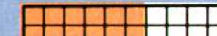
**Price:** \$49.95



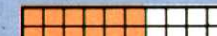
## Gauntlet 8-Bit Version



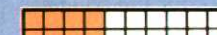
EASE OF LEARNING



CHALLENGE



GRAPHICS



DOCUMENTATION



OVERALL RATING

**System:** 800XL, 65XE, 130XE

**Required equipment:** Joystick

**Copy protection:** Yes

**Summary:** Not as impressive as the ST programming version, but a valiant effort.

**Price:** \$34.95

**Manufacturer:**

Mindscape  
3444 Dundee Rd.  
Northbrook, IL 60062  
(800) 221-9884  
(800) 654-3767 in IL

bit version, slowing the game down considerably. Because the monsters attack en masse, you are forced to resort to wholesale slaughter simply to progress to the next level.

In addition to brawn, you had better bring along your brain. Each level is a complex puzzle that must be solved before you can find the exit to the next.

There is a total of 128 levels, and if you somehow manage to complete them all, the game cycles back to the beginning. For 8-bit owners who just can't get enough, Mindscape offers *Deeper Dungeons*, a collection of 500 new levels for only \$24.95. Personally, I can't see how it is possible to survive more than a couple of dozen levels unless you are playing a two-player game. A skilled adventurer can play a single game for hours, yet there is no provision for saving a game in progress, nor is there a high score display to honor outstanding achievers.

*Gauntlet* for the ST is an impressive-looking game; the graphics are colorful and detailed. However, the screen does not scroll smoothly, but rather, jumps in blocks. On the other hand, the 8-bit version has fluid scrolling and much cruder graphics. Both versions tend to bog down noticeably when many monsters are present.

On the surface, the games are functionally equivalent, but the 8-bit version suffers from inferior sound effects, and its playability is hampered by the sluggish response when the screen is filled with monsters. Also the 8-bit version is a bit buggy; at times it ignores direct hits on monsters and refuses to allow the player to pick up objects which are plainly accessible.

Regardless, if you are addicted to the arcade game, you will probably want to own the computer version.

—Owen Linzmayer



There you sit with stark walls and wide open spaces all around you, cruising and weaving your way through the corridors in claustrophobic anticipation of what lies around the corner. If you find yourself eye-to-eye with the vapid stare and goofy features of the modern day Kilroy, a smiley face warrior, you had better be ready to blast or be blasted.

What is all this nonsense, you ask? Has Andy gone bonkers, ready for a padded room where they don't allow anything more pointed than a joystick? No, I've just gotten caught up in the tide that has swept up countless Atari Fairgoers during the past year or so—*Midi-Maze*.

Programmed by Xanth F/X (the group responsible for the famous Shiny Bubbles demo) and recently released commercially by Hybrid Arts, this innovative game had a working title of "Kill A Happy Face" for some time, which gives you an idea of the basic premise of the game.

But what is a company best known for its work with computers and music doing selling a shoot-em-up? That's where the "Midi" part of the title comes in. *Midi-Maze* is the first game program to make use of the built-in MIDI ports on the ST.

The fast movement of data, passing through the MIDI ports at more than 31,000 characters per second, enables up to 16 STs to be linked in a gaming network. One computer serves as the "master," sending the maze and player status data to the "slave" units in the network.

The resulting real-time contest is extremely fast paced and provides a kind of adversarial intelligence that is lacking in most entertainment software.

For those times when fellow ST owners are in short supply, *Midi-Maze* al-

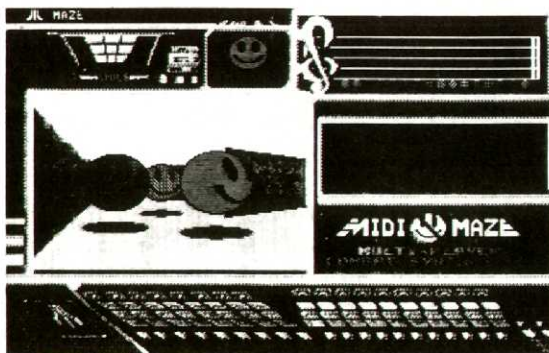
## Midi-Maze

EASE OF LEARNING

CHALLENGE

GRAPHICS

DOCUMENTATION



**System:** Atari ST  
**Required equipment:** Joystick recommended  
**Copy protection:** Key disk  
**Summary:** Interactive, multi-player maze; great fun.  
**List price:** \$39.95  
**Manufacturer:** Hybrid Arts  
 11920 W. Olympic Blvd.  
 Los Angeles, CA 90064  
 (213) 826-3777

Another smiley face shows your own status—full smile, small pout, frown, or sick-look giving a quick, visual indication of your condition.

The user interface is versatile and easy-to-use. The game is pulldown menu-driven and supports low and high resolution with no limitation on mixing machines of different configuration within the network. The score is kept both for the game in progress and on a game-by-game (or match) basis. Best of all, additional mazes can easily be created with any word processor or text editor that can create ASCII text files.

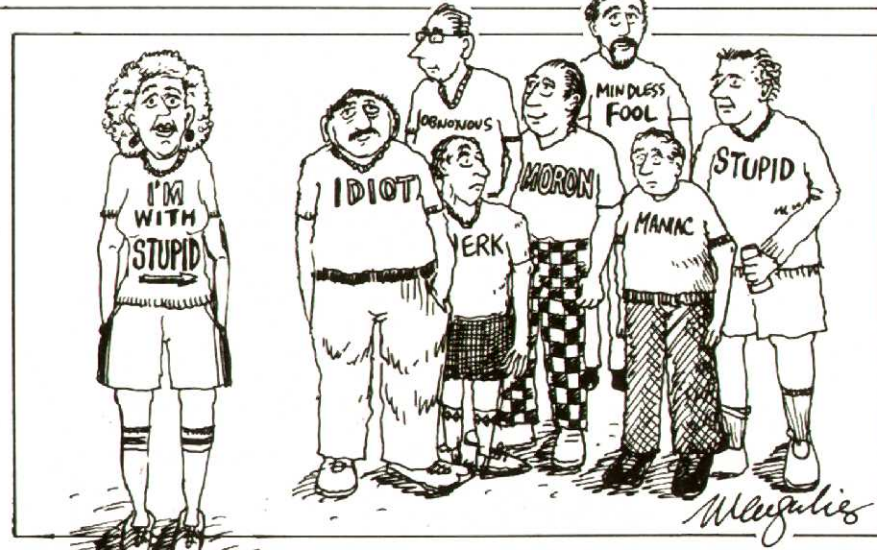
The documentation explains clearly all the functions and how to access each of them. And the program is not copy-protected, so you can make a backup disk or install it on a hard drive. The only catch is that it uses a "key disk" form of protection, which means that you have to put the original master disk in the boot drive before the game will load.

*Midi-Maze* is the start of what I hope will be a trend toward interactive gaming. It is high quality computer entertainment.

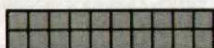
—Andy Eddy

lows you to play against up to 15 other players that are controlled by the computer.

During battle, players appear as smiley faces onscreen. Though they appear to be harmless, each packs a mighty weapon. Each team or player is assigned a distinctive color (or a different shade of grey on a monochrome display) and must try to knock out the others, with three hits in succession constituting a "kill."



## Universal Item Selector



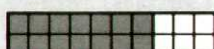
EASE OF USE



PERFORMANCE



ERROR HANDLING



DOCUMENTATION



OVERALL RATING

Version reviewed: 1.0

System: Atari ST

Copy protection: None

Summary: Indispensable replacement GEM item selector

Price: \$15.95

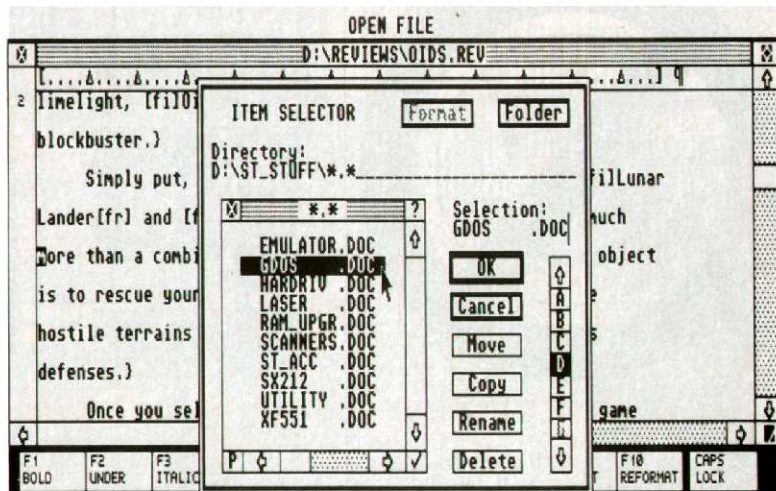
Manufacturer:

Application & Design Software

226 N.W. F St.

Grants Pass, OR 97526

(503) 476-0071



Have you ever cursed that "feature" of GEM that forces you to exit an application and scurry back to the desktop to perform simple file maintenance operations? If so, Application & Design's *Universal Item Selector* is what you have been waiting for. It is an indispensable utility that no ST user will want to be without.

When installed in the \AUTO folder or run from the desktop, the *Universal Item Selector* program intercepts and re-directs any system call to the GEM default item selector (the dialog box that allows you to choose a file to save or print, for example). An expanded and

more powerful item selector appears in its place. However, if an application, such as *Interlink*, uses its own custom item selector the *Universal Item Selector* will not be invoked in that program.

Basic features consist of mouse-selectable drive buttons to simplify choosing the path, a rapidly scrolling slider that rolls through the directory as long as you hold down the mouse button, and an expanded directory that includes item size and time and date stamps.

Advanced functions enable you to lock/unlock, delete, rename, and copy items or folders by dragging the item name to the properly tagged button.

Other useful procedures, including creating new folders and displaying the amount of free disk space, can be accomplished just as quickly.

Formatting a disk in any of a variety of track and sector configurations is also supported. Twister—a popular format that gives you more-than-normal capacity on a disk—is listed, but not implemented on the version we reviewed.

In addition to copying files, you can move them to different directories—a single process, which deletes the original after the move is completed. Chris Latham, the author of *Universal Item*

## G.I. Sound Tool

You cannot pass the entrance of an arcade without pricking up your ears at the familiar beeps, whirs, and explosions that emanate from within. *G.I. Sound Tool (GIST)* is a utility that makes it easy for ST owners to experiment with similar audio effects.

With it, you can build very complex noises by manipulating the data sent to the Yamaha YM2149 chip, the integrated circuit that handles the sound output for the ST. This chip was designed by General Instrument, thus providing the GI in the program title.

When you analyze a sound, you find various criteria contributing to its dynamics—the levels of volume and pitch and how they vary over the duration of the sound, for example. These components can be altered from the *GIST* construction windows by using the mouse to alter time parameters of the

waveform.

*GIST*—which runs under GEM and uses menu bars—shows actual values on the right side of the window to provide numerical confirmation.

*GIST* would be frivolous if there were no way of using the results of your experiments. But, each sound can be saved to disk as a C language source file, which in turn can be linked to a program using one of the driver routines provided for most of the popular C compilers. Owners of *CyberStudio* can also import *GIST* sounds into their *CAD 3-D* animations by way of the Cybermate editing language.

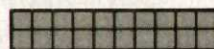
One other method of playing *GIST* sounds relies on the assistance of a MIDI-compatible keyboard. Selecting the MIDI item from the Misc menu lets you trigger the sound(s) in memory from the keyboard. While this isn't the same as using a patch program to load



EASE OF USE



PERFORMANCE



ERROR HANDLING



DOCUMENTATION



OVERALL RATING

System: Atari ST

Optional equipment: MIDI keyboard; printer for hardcopy documentation

Copy protection: None

Version reviewed: 1.0

Summary: Inexpensive software sound creation utility

Price: \$34.95

Manufacturer:

Antic

544 Second St.

San Francisco, CA

94107

(800) 234-7001

*Selector*, warns that if a name conflict occurs and you want the move halted, using the Cancel button (instead of the proper Stop button) deletes the source item as if the operation had been completed. This hazard may be eliminated in future versions.

Another feature not offered by the default GEM item selector allows you to perform global operations on items by using wildcards. For example, to delete all items with a .BAK extension, enter \*.BAK on the selection line and drag that to the Delete option. A click on the OK button confirms the process, and all backup files in the directory are removed.

I normally find documentation provided on disk a real hassle, but since it keeps the cost of a simple utility like *Universal Item Selector* as low as possible, I can accept it in this case. The nine-page text file provides concise information on how to use the program, a list of applications with known compatibility problems, and a lesson on invoking the included accessory version of *Universal Item Selector* from certain non-GEM programs that allow accessories.

*Universal Item Selector* is especially useful to hard disk users, but at \$15.95, no ST owner should be without this fabulous tool which can increase your productivity immeasurably. I hope Atari seriously considers implementing *Universal Item Selector* in any upgrade of the TOS ROMs in the ST.

—Andy Eddy

the sound into the keyboard (the sound still emanates from the ST monitor speaker), it will track the note that is played on the instrument and alter the pitch correspondingly, even providing limited polyphony (up to three simultaneous notes for chords).

My one criticism of the program regards the use of disk-based documentation. The instructions are provided in a pre-formatted text file (19 pages) that must be printed out for maximum benefit. This places a burden on the user, requiring both a printer and a place to store the documentation, because the packaging is too small to hold the hard-copy neatly. It also makes it easy to pirate the package, eliminating the need to photocopy a printed manual.

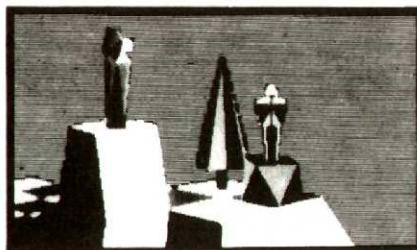
Admittedly, hardware digitizers are best for quick and easy replication of sounds, but they can be prohibitively expensive. If you have a need for low-cost audio effects and don't mind working to get the final result, *GIST* is a decent alternative.—Andy Eddy

## The Sentry

**T**he *Sentry* is a computer game for people who hate computer games. I ought to know—I can't stand most of them, but I love *The Sentry*. Don't get me wrong, I used to play computer games with all the unbridled enthusiasm of a hormone-laden teenager on the night of the senior prom.

In fact, I have played so many games that I have become jaded. It seems to me that instead of striking out in bold new directions, most game designers are content to revamp the familiar with flashier graphics, louder explosions, more tenacious enemies, etc., etc., ad infinitum. In contrast, *The Sentry* from Firebird is a refreshing example of a challenging game based on a novel premise.

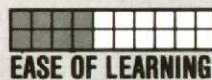
Because this game is unlike any other game around, it is difficult to describe. It has 10,000 different landscapes, each with its own peculiar arrangement of hills, valleys, chasms, and plateaus. The display is a 3-D representation of what your robot can see from its position on the terrain. Your enemy is the Sentry,



perched high atop a mountain with a commanding view of the landscape. Your goal is to dethrone the Sentry by climbing to a height from which your robot can "jump" to her square.

As in our real world, energy plays an important role in *The Sentry*. Your robot begins each game with a finite supply that can be augmented by absorbing other objects on the landscape such as trees, boulders, and enemies. To absorb an object, your robot must be in a position to see the square on which it rests. Similarly, if either the Sentry or one of her minions, the Landgazers, can see your robot, they will drain your energy one unit at a time. The game ends if you allow your energy supply to become fully depleted. You need energy to build boulders onto which you can climb to gain better positioning. Once you are up high enough to see the square on which the Sentry resides, you can absorb her and complete the landscape.

After finishing a landscape, an access code, which allows you to play more advanced landscapes, is revealed. Al-



EASE OF LEARNING



CHALLENGE



GRAPHICS



DOCUMENTATION

**System:**

Atari ST

**Required**

**equipment:**

Color monitor

**Copy protection:** Yes

**Summary:** An innovative concept in computer gaming.

**List price:** \$44.95

**Manufacturer:**

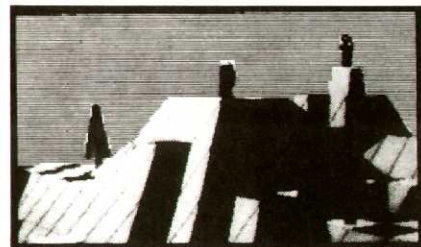
Firebird  
P.O. Box 2227  
Menlo Park, CA  
94026

**Distributor:**

Activision  
2350 Bayshore Pkwy.  
Mountain View, CA  
94039  
(415) 960-0410

though there are many different landscapes, the higher numbered terrains are not necessarily more difficult. I have conquered well over 40 landscapes and have never encountered one with more than one Sentry and four Landgazers. The folks at Firebird assure me that no landscape is impossible.

*The Sentry* is provided on a copy-protected auto-boot disk and comes



with a 16-page manual. To its credit, the documentation has plenty of screen shots and a section in which to record landscape access codes. However, like many packages originally produced in Europe, the manual does a poor job of explaining how the game is played. Don't let this discourage you; the game itself is excellent.

To excel at *The Sentry* you need strategic thoughtfulness and quick reactions to adjust to the ever-changing environment. Not designed to appeal to arcade fanatics, the sound effects and graphics are timid, but the 3-D perspective really gives you the feeling of being in another world. —Owen Linzmayer

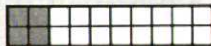
## The Celebrity Cookbook



EASE OF USE



PERFORMANCE



ERROR HANDLING



DOCUMENTATION



**System:** Atari 8-bit or ST  
(color or monochrome)

**Copy protection:** Yes

**Summary:** Lots of fluff  
around a useful program  
for resizing recipes.

**List price:** \$34.99

**Manufacturer:**

Merrill Ward  
255 N. El Cielo Rd.  
Suite 222  
Palm Springs, CA 92262  
(619) 328-8728

I have never set much store by the idea of using computers in the kitchen. If you are under 5'7" tall, imagine the top of your refrigerator for a moment (if you are taller, imagine another inaccessible surface in your kitchen). Now imagine all that dust and grease filtering its way into the secret recesses of your computer and disk drive. See what I mean?

The place where you prepare food is just not a healthy environment for even as hardy an instrument as an Atari. Therefore, I begin this review with the assumption that you will not use *The Celebrity Cookbook* as an excuse to bring your computer into the kitchen.

Volume One of *The Celebrity Cookbook* offers a total of 41 recipes—three for beverages, four for soups and sauces, four for first courses, eleven for fish and fowl, eleven for meat entrees, and eleven for desserts—contributed by celebrities, including Ronald Reagan, Jane Fonda, Frank Sinatra, and Ed Asner.

Most of the recipes look quite good, and the one I tried, Ed Asner's Deep Pot Apple Pie, was in fact delicious. But \$34.99 for 41 recipes is much higher than the going per-recipe rate, so chances are that you will not buy the

program simply for the recipes.

What you are more likely to want is the facility the program offers for resizing these and other recipes to feed, say, 37 instead of 4. Most of the good cooks I know use recipes only as general guides, and few have difficulty modifying even unfamiliar recipes to accommodate the crowd and the ingredients at hand. But I know that there are people who follow recipes slavishly and who would probably be unfazed by a request for  $\frac{7}{8}$  of a cup of something.

For the latter group, *The Celebrity Cookbook* is an answer to prayer. It quickly and accurately resizes any recipe up or down at the touch of a key. It also has provision for indicating which ingredients should be rounded up or down (to eliminate such requests as  $\frac{1}{2}$  an egg) and when, for example, cups should not be increased to pints (4 cups of flour makes more sense to most cooks than 2 pints of flour).

The Recipe Filer portion of the program, is essentially a simple word processor into which you enter your own recipes so they can be retrieved and resized as necessary. All commands are executed from the keyboard; when you are in the word processor, the mouse is inactive. You can edit a recipe after it is typed in, just as you would any word processing document. In fact, you can even use the Recipe Filer to type letters or term papers, as long as your formatting requirements are simple. And \$34.95 isn't a bad price for a word processor.

The other parts of the program—the wine directory, the “computer chef,” the bar guide, the diets of the stars, and the party tips—amount to little more than window dressing. It is amusing to read through Perle Mesta's Party Tips and the How Do You Rate as a Guest? quiz once, but they have little long-term

value.

It is obvious that *The Celebrity Cookbook* for the ST has been translated from a non-GEM environment; most of the mouse-clicking that goes on is gratuitous. The pulldown menus work as expected, but once you have selected the menu you want, you might as well park the rodent for the night.

When you have a display of recipe titles on the screen, for example, your intuition tells you to double-click on the one you want to see. In fact, a double click (or a even a single click) calls up a dialog box that asks “Do you wish to view the recipe?” Unfortunately, the only responses are yes and no; “Why else would I have clicked on it?” is not an option. If you choose yes, the recipe appears as expected. If you choose no, either you get a blank screen with the name of a recipe at the top or the program crashes—neither of which seems desirable.

You can print out any recipe in either centered or flush-left format, but don't bother to choose 80 columns when asked if you want 40 or 80 columns; you get 40, no matter which you choose.

The program is copy protected. When you first boot up, the program asks you to enter a code number that you will find at the intersection of row *x* and column *y*. The matrix from which the number comes is printed in black ink on a red card, based I suppose on the (fallacious) assumption that it cannot be photocopied. The task of retrieving the code number is made unnecessarily challenging by the fact that the programmer has confused rows and columns. “Remember, a row is vertical (up & down) and a column is horizontal (left & right).” Not where I come from.

The documentation, which is devoted entirely to the use of the Filer, is mediocre, and there are typographical errors—“Buttery Chesses,” and “Veal Cordon Bleu”—in the program itself. The manual is nicely typeset but poorly organized for the novice user.

The program runs with either a monochrome or a color monitor. In monochrome the picture on the startup screen is totally garbled. In color, you sometimes get colored text that is unreadable against the background color.

If you have a need to resize recipes quickly and easily, *The Celebrity Cookbook* is the program for you. If you are looking for lots of new recipes, a wine directory, a diet book, party tips, or a bar guide, visit your bookstore.

—Betsy Staples

First off this month, we should mention that at press time the FCC had deferred its decision on tariffs for online services. (For more information, see "FCC Proposes Surcharges" in the January/February 1988 installment of TeleTalk.) This is not to say that their plans have been derailed, and it remains probable that such a plan will go into effect some time in the future. But due to the extremely heated response of thousands of network users, the FCC has backed off to some extent, and the size of such tariffs will very likely be less than originally planned.

Thanks to all those who responded to our plea. It seems to have done at least some good. We'll keep you posted on the latest developments.

#### SX212 Modem

All of the downloads we made this month were done with the Atari SX212 modem, which performed flawlessly. The SX212 features Hayes AT command set compatibility, built-in speaker with adjustable volume for call monitoring, RS-232 and Atari SIO port interfaces, auto-dial and auto-answer capabilities, and Bell 103 and 212A compatibility for 300 and 1200 bps operation.

On the Atari ST, the modem connects through an RS-232 serial cable. In fact, the SX212 can be connected to any computer that uses a standard RS-232 serial interface.

Owners of 8-bit Atari computers should note that the SX212 also sports a custom SIO port for direct connection to an Atari 400, 800, XL, or XE series computer. This means that no expansion box is necessary. You will, however need the appropriate handlers (many of which are already in the public domain) to get the modem to work through the SIO port with telecommunications programs such as *Express* and *HomeTerm*.

Indicator lamps on the SX212 signal high speed, auto-answer, carrier detect, off hook, receive data, send data, terminal ready, and modem ready. You are kept apprised of modem status at all times, which is very handy indeed.

The SX212 supports a wide range of programmable options and S registers, which allow you to change the default settings and customize operation of the modem to suit your specific communications needs. In most telecommunications situations, the defaults will not need to be changed (or can be set using the communications software program before getting online). However, if you

### *The Atari SX212 modem and starting your own audio collection*

# Teletalk

By JOHN J. ANDERSON

are writing your own communications program or using your modem in a non-standard application, the options and S registers provide flexibility for modifying the performance of the SX212 to better serve your needs.

Specifically, these options allow you to control functions such as forcing a

carrier tone, changing the number of rings on auto-answer, customizing carriage return and backspace codes, specifying how long to wait for a dial tone or a carrier, choosing terse vs. verbose error messages, and many other features.

After more than two months of almost daily use, we can heartily recommend the SX212 as a full-featured and economical upgrade for those of you still struggling along at 300 baud.

#### Audio Online

Up toward the front of this issue there is an article on audio digitization, so we thought it would be fitting this month to explore the gamut of digitized audio available online. As mentioned in that article, MichTron's ST Replay format has established itself as the de facto standard for Atari audio, and because it requires no special hardware for playback, you can enjoy many sounds just by downloading.

By far the best source of this type of material is Library 11 (Music) of the Atari ST Roundtable on Genie. It offers a public domain sound player, as well as a host of digitized sounds. The first file you'll want to download is number 5254, PLAYIT.ARC. This archived pro-



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still struggling along at 300 baud.***

gram contains three programs: Playit, which allows you to playback sound recorded in MichTron's ST Replay format; Playedit, which allows you to append a set sampling rate to a header byte format in ST Replay sounds; and Autoplay, which allows your ST to play a selected sound automatically when you boot up the system.

Autoplay will even allow you to display a *Degas* picture file along with the sound during startup. This is a very nifty trio of programs for sound fans, and you won't find them on CompuServe, by express request of their author.

The file is ARCD, as are many of the sounds we describe here, so you'll need ARC.TTP (file number 1271) to extract programs after downloading. This is a simple process, however, and ARCing saves you connect time.

Once you have Playit, you'll want to download some of the sounds available to you in library 11. I recommend the following audio outtakes:

**Number:** 5592

**Name:** KNOCKERS.ARC (.SND)

**Approximate # of bytes:** 49,140

A little clip from the classic film "Young Frankenstein." The digitized sound sample features Dr. Frankenstein (Gene Wilder) commenting about the extremely large door knockers on the castle. The grateful voice of his assistant (Teri Garr) is also featured. The file was digitized from a laser videodisc.

**Number:** 5591

**Name:** CANT—DO.ARC (.SND)

**Approximate # of Bytes:** 50,400

Hal (of "2001: A Space Odyssey" fame) giving some bad news to Dave. "I'm sorry Dave, I can't do that."

**Number:** 5589

**Name:** PLAYGAME.SND

**Approximate # of bytes:** 23,940

This is the computer from the movie "WarGames" asking "Would you like to play a game?"

**Number:** 5586

**Name:** BOMBLAST.SND

**Approximate # of bytes:** 156,240

Sound of an A-bomb blast.

**Number:** 5585

**Name:** WISEGUY.SND

**Approximate # of bytes:** 15,120

Larry of the Three Stooges uttering the classic, "Oh, a wise guy, eh?"

**Number:** 5579

**Name:** MR—ED.ARC (.SND)

**Approximate # of bytes:** 46,620

Here is none other than that famous talking horse uttering his immortal words: "Hello . . . I'm Mr. Ed."

**Number:** 5524

**Name:** NORMALTY.SND

**Approximate # of bytes:** 129,780

Trillian from the "Hitchhiker's Guide to the Galaxy," announcing that normality has been achieved. "Hitchhiker" fans will find this one a must, even though it is a big file.

## On-Line Directory

Many Atari software publishers and hardware manufacturers have on-line representatives available to help answer questions, solve problems, and keep in touch with their customers. This support is usually provided free of charge and complements the conventional technical help hot-

lines that most firms operate.

The benefits of on-line support include direct access to top personnel, prompt and thorough replies, and savings in long distance telephone calls to company headquarters.

Printed below is a partial list of companies that may be found on the Com-

puServe and Genie telecommunications networks. The individuals assigned to these accounts will usually reply to inquiries promptly or, at the very least, direct your comments to appropriate employees within their companies.

Company	CompuServe	Genie
Antic	76703,1077	.ANTIC
Argonaut	72247,3661	—
Atari Canada	70007,1070	J.OKLAMCAK
Atari Corporation	70007,1135	NHARRIS
Atari Corporation	—	MJANSEN
Atari Developer Support	—	ATARIDEV
Atari Developer Support	—	APRATT
Atari Developer Support	—	CINDY.C
Atari Explorer	74710,13	EXPLORER
Atari Technical Support	—	DMAY
Atari Technical Support	—	DANSCOTT
Atari Technical Support	—	TOWNS
Avant-Garde Systems	73537,617	AVANTGARDE
Beckemeyer Development	74236,625	—
Brosis Software	72637,144	—
Comnet Systems	72655,1231	M.SINGER
Data Pacific	76606,666	DAVESMALL
Dolphin	73245,1001	M.GIAMBRUNO
FTL Games	76244,130	FTL
Factory Programming	—	JWEAVERJR
Focus Computer	72767,2563	—
Groundglass Systems	76410,267	GROUNDGLASS
Hi-Tech Advisers	—	HITECH
Hybrid Arts	76237,562	—

Company	CompuServe	Genie
ICD	72067,2236	ICDINC
Intersect	74615,323	INTERSECT
Interstel	73637,3032	MB
Kyan Software	73225,450	KYAN.SOFT
Magic Elf	73637,317	—
Marathon Computer Press	75766,505	GRIFJOHN
Megamax	73766,1027	MEGAMAX
MichTron	70150,366	GORDON
Migraph	—	MIGRAPH.KCM
Neocept	73637,1066	NEOTRON
Pecan Software Systems	71310,105	—
Practical Solutions	74206,356	PRACTICALS
QMI	71066,337	QMI
Regent Software	72457,3171	F.COHEN
Seymour-Radix	—	T.PAINTER
Sierra On-Line	76701,222	SIERRA
Supra	76004,565	SUPRATECH
TDI Software	75026,1331	—
The Computer Room	76625,1210	—
Timeworks	72347,3017	—
UltraBasic	72347,1643	—
Virtusonics	70007,1565	—
WordPerfect	72447,3427	JRWILSON
World Music	—	MOORE.R



Number: 5523

Name: FUNCT.SND

Approximate # of bytes: 63,000

This a file for Playit. It is a combination of the Lieutenant Yar sound file and Hal from "2001" saying "I'm completely operational and all my circuits are functioning perfectly." Works well.

Number: 5516

Name: BUGS.ARC (.SND)

Approximate # of bytes: 46,620

It's that Oscar-winning rabbit ... Bugs Bunny! "Ehhhh ... what's up Doc?" A Playit sound file of good ole Bugs delivering his famous line. Also included in the .ARC file is Tom Hudson's Bugs Bunny *Degas* picture. Throw the .SND file and the pic into your AUTO folder (along with Autoplay from the PLAYIT.ARC file) and Bugs will greet you each time you boot your computer.

Number: 5515

Name: CURLEY.ARC (.SND)

Approximate # of bytes: 80,640

This .ARC file contains three separate sound files for use with Playit (or Autoplay). Three Stooges fans will recognize all of these utterances of the genius Curley.

## For those of us who are truly hooked, digitized audio is a very rewarding part of owning the Atari ST.

Number: 5297

Name: DARTH.ARC (.SND)

Approximate # of bytes: 69,300

Darth Vader from "Star Wars." Good old Darth in the process of explaining that (we're paraphrasing) the Death Star is no match for the power of the Force! File was digitized using ST Replay from a laser videodisc.

Number: 5294

Name: STARTREK.ARC (.SND)

Approximate # of bytes: 263,340

Here is another great sound file that was taken from a laser videodisc and digitized with ST Replay. This is the famous sequence "Space, the final frontier ... where no man has gone before." A very long file but it worth it if you're a Trekkie. Digitized at 15 KHz for high quality. (15 KHz seems to be the best compromise between sound quality and size of file.) The "sequence" plays for just short of 20 seconds.

Number: 5286

Name: LYAR.SND

Approximate # of bytes: 18,900

Lieutenant Yar from "Star Trek: The New Generation" at her best, trusting that you are fully functional. Definitely a chuckle.

Number: 5255

Name: DESTRUCT.SND

Approximate # of bytes: 50,400

A digitized sound sample from the movie "Alien." "The destruct sequence is now activated." The file was taken from a laser videodisc.

You'll note that many of these files are quite large—that's a hazard of digitized audio. Download time can mount up. And if you really get into audio collecting, you'll soon find yourself pricing additional RAM and hard disk drives. But for those of us who are truly hooked, digitized audio is a very rewarding part of owning the Atari ST. ■

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### Announcing MONITOR BOX

for the Atari ST

Unclutter your desk!! Finally you can run ST color. ST mono, Atari 8-bit, IBM PC CGA, EGA, and VGA and Mac all on one monitor! The Computer Success ST monitor box allows you to hook a multiscan monitor to the ST and run both color and mono on the same screen in their proper resolutions! This is not a simulation, but the original proper resolution with a much better quality monitor and screen! Audio will be output thru your stereo system for better sound. This is a box that hooks to the ST monitor port and connects to the analog and TTL on the multisync. A switch on the box will tell the monitor to sync to mono or color. Our monitor has inputs for composite video to connect to 8-bit Ataris or even your VCR to use it as a monitor or TV set! If you have a PC or compatible also, you can use the monitor in any of the graphics modes. A cable is available to hook it to a Mac as well. For ST users save a lot of desk space.

The combination of the monitor box and monitor will save the space of 2 monitors with a better picture as well! If you still have your 8-bit, then you can save 3 monitors. If you also have a PC, save 4! You can even hook up your VCR and throw out your TV!! Note: On all above, audio must be thru a separate source, as multiscan monitors do not have speakers. For the ST, our box provides standard phono plug output to hook it to a stereo, and you will actually get better sound, and can record it. Mono is available in different shades, depending on monitor. Our monitor provides a black green on white green screen in mono. We can supply tuners or amps or any additional cables you need for your particular use as a TV, stereo, etc. You can supply your own multiscan or get ours on special now. Our multiscan does 800x560 max resolution!!

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User Friendly is dedicated to sharing the best material culled from the dozens of Atari user group newsletters sent to our editorial offices each month. These newsletters range from several photocopied pages stapled together to professionally typeset publications that rival the quality of consumer magazines.

All of the reprints found here appear with the gracious permission of their authors and the publishers of the newsletters in which they first appeared. While every attempt is made to retain the style and flavor of the original, most items are edited for length and clarity.

Note to newsletter editors: If *Atari Explorer* is currently on your user group's mailing list, please check the address. Many groups are still sending their newsletters to us by way of Sunnyvale—a route that adds weeks to the delivery time. If we are not already on your mailing list, we would like to be. Please send all newsletters to *Atari Explorer* at 7 Hilltop Rd., Mendham, NJ 07945.

#### ST Oddities by Charles F. Johnson

Some of these tips will crash your computer, so be sure to save everything important before executing them. Don't worry, none of the examples will actually harm your computer, but experimenting with them will alert you to problems that can be avoided.

The GEM Item Selector contains a fatal bug that is invoked by typing an underline character. To see it in action, load up any GEM program such as *1st Word* or *ST Basic*. Now get the Item Selector onscreen and type an up-arrow to move the cursor to the Directory: line. Now type an underline character (shift-hyphen). See the pretty little bomb icons, all in a row.

The underline bug is not peculiar to the Item Selector. It is actually a bug in one of the AES functions, having to do with editable objects in dialog boxes. For this reason, it is a good idea to stay away from the underline character entirely when using a dialog box. By the way, this bug has been fixed in the new TOS ROMs.

The Item Selector has another bug that isn't as well known, and to my knowledge has not been fixed in the new TOS. To make this bug rear its ugly head, call the Item Selector with no disk in the drive. You will see a dialog box telling you that your drive is not responding, and allowing you to Cancel or Retry. If you then choose Retry without putting a disk in the empty drive—take

Bugs in the  
Item Selector,  
tips to improve  
your game scores,  
and a user group  
for hard disk users

# User Friendly

By OWEN LINZMAYER

cover, it's bombs away.

I must emphasize that the authors of programs such as *1st Word* and *Degas* are *not* responsible for these bugs. They come built into GEM (at no extra charge), and there is really nothing a programmer can do to circumvent them short of writing a replacement file selector. (See the review of the *Universal Item Selector* in this issue's *Software Survey*.—Ed.)

Here is a highly amusing way to make *ST Basic* have a nervous breakdown. First, load *ST Basic* and when you get the Ok prompt, type: X=18.9 Return. Are you laughing yet? (I never knew 18.9 was such a complicated number.) All right, now type: X=37.8 Re-

#### Tri-State Atari Show

The Pittsburgh Atari Computer Enthusiasts are sponsoring the Tri-State Atari Products Show on April 23 and 24, 1988.

The show will be held at the Monroeville Expo Mart. Hours are 10:00 a.m. to 5:00 p.m. on Saturday and 12:00 noon to 5:00 p.m. on Sunday.

For more information, contact President Lanny Shoup, P.A.C.E., P.O. Box 13435, Pittsburgh, PA 15243, (412) 486-4133. ■

turn. Whoa! How did that happen? And now, for the biggest thrill of all, move the mouse.

Reprinted from *A.L.I.E.N. Speaks*, P.O. Box 2953, Gary, IN 46403.

#### Gaming Tips and Tricks by Keith Schafer

• *Caverns of Mars*: Press Shift-Control-Tab at the same time to move to the next level.

• *Crystal Castles*: On each level of the game (not necessarily each maze), there is a "window" from which you can skip ahead two levels. On the first board, it is on the left-hand side.

• *Donkey Kong Jr.*: Pause the game, hold down the Shift key and type BOOGA. Un-pause the game and press S to change screens. K to make yourself immune to snappers, birds, and sparks.

• *Ghost Chasers*: Hit the Start button, then type FANDA. You will start at a higher level.

• *Ghostbusters*: When asked for your name, type GOO. When asked if you have an account, type "Y" COUNT #:11111111. You will have \$246,000.

• *Jumpman*: On the first level, go to the far right and type 54354 and then the number of the level to which you want to move.

• *Miner 2049er*: At any time during the game, type 213 782-6861. Then press Shift and the number key for the level you want. You can change levels at any time during the game, but you only have to type the password once.

• *Ollies Follies*: To skip to screen 5, type FANDA; to screen 10, type FRANK; to screen 15, type NORBI; and to screen 20, type ZOOM.

• *Pitfall*: Start the game by pressing Option and you will have unlimited lives.

• *Preppie*: Pause the game while in play. Press the Reset key to restart it. All objects except your man and frog will remain still.

• *Realm of Impossibility*: When you enter a room, press and hold down the Option key to make the monsters ignore you. When you get to an exit, push against it and release the Option key.

• *Spelunker*: In sector 28, look for this string: A6 CB 30 2D, and change it to A2 07 86 CB. This will give you unlimited lives.

• *Strip Poker*: Change disk file OP1.1 to short. Change OP1.5 to OP1.1. The first girl will appear nude.

• *Threshold*: Remove the *Threshold* disk from the drive after loading. Every time the drive restarts, you will be up one level. Insert the disk when the drive

is off to start at that level.

• All On-Line adventures: When you die, press Reset, and you can continue without graphics forever.

• Anyone interested in fantasy role-playing games will enjoy a subscription

## Hard Disk User Group

Chuck Leazott, Mister Z Hissel, is the founder of the first national user group devoted strictly to Atari owners interested in hard disk drives. Published quarterly, MEGazine is the official newsletter of HDUG (Hard Disk User Group).

The January 1988 issue of MEGazine is chock-full of in-depth, informative articles for both 8-bit and ST Atari users. Membership in HDUG costs \$18 per year and entitles you to receive the newsletter as well as discounts on many popular hardware and software products. For more information, contact Network Atari at 5831 Sun Bay, San Antonio, TX 78244, (512) 662-9764. ■

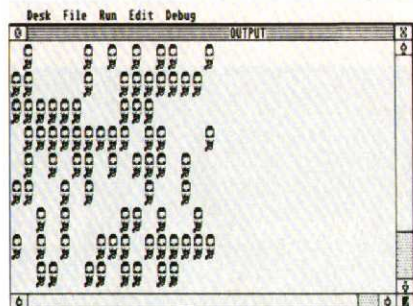
to "QuestBusters, The Adventurers' Journal," published monthly by Ad-dams Expedition, P.O. Box 525, Southeastern, PA 19939-9968, (215) 296-7003. While not an Atari-specific newsletter, "QuestBusters" contains helpful tips and techniques as well as reviews and complete walkthrough solutions to some of the most devious adventure games.

Reprinted from the November 1987 issue of the Pokey Newsletter, the monthly publication of the Western New York Atari Users' Group, P.O. Box 59, Buffalo, NY 14216.

### Attack of the Killer Bobs

The programmers at Atari who designed the character set for the ST made four characters (ASCII codes 28 through 31) that, when used together, draw a face of a man, nicknamed Bob, on the screen. The ST Basic program in Listing 1 prints Bob's full face in random locations on the screen.

Reprinted from the October 1987 issue of the Mobile Atari User's Newsletter, a publication of the Mobile Atari User Group, 124 Mackenzie Dr., Mobile, AL 36609. ■



Attack of the Killer Bobs prints Bob's face at random locations on the ST screen.

### Listing 1.

```
10 fullw 2: clearw 2: gotoxy 3,0
20 print "Attack of the Killer Bobs!"
30 for d = 1 to 900 : next : clearw 2
40 x = int(rnd*17)*2: y = int(rnd*9)*2
50 gotoxy x,y
60 print chr$(28)+chr$(29);
70 gotoxy x,y+1
80 print chr$(30)+chr$(31);
90 goto 40
```

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*A look at MIDI through the eyes of some of today's top producers and performers*

# Sound Chip

By CHARLES FARIS

**W**e recently had an opportunity to talk with five people who are involved not only in their own disciplines of music or film but in the use of MIDI in those disciplines.

Mark Droubay is a drummer with the rock group Survivor, which recorded "Eye of the Tiger," the theme song from "Rocky."

Writer/director Jeffrey Delman's credits include "The Nest" and "Dead-time Stories," a 35mm comedy/horror feature film.

Studio musician and clinician Bo Tomlyn's recent work includes Chicago 18, Barbra Streisand's Broadway Album, and "Hands Across America." He has programmed for tours of the Jackson 5, Prince, Bruce Springsteen, and Barry Manilow.

As a writer, Jimmy George has been on the staffs of Metric Music/Liberty Records and United Artists and, for the past eight years, has been a staff writer/producer for Motown. As a performer, he has been a guitar player for The Beach Boys, Leif Garrett, Shaun Cassidy, and the Jackson 5. Most recently, he was co-writer of Smokey Robinson's "Just to See Her Now" and "I Wonder What She's Doing Now" by the Temptations.

Hank Donig is a producer, engineer, and song writer. He has worked with The Kingston Trio, Kenny Rodgers, Devo, and Lionel Richie. His television credits include "Star Search" and "The Gorgeous Ladies of Wrestling."

## Mark Droubay

**Atari Explorer:** What comes to mind when you see all the different MIDI products that you need to learn for your profession?

**MD:** (HELPPPPPPP) ... It's pretty

sobering to realize that because of technology it's not so simple any more. You don't just pack the drums up in the back of your car and do it. Anyone who wants to stay abreast of the business today has to have at least some knowledge of technology. If you go to a studio you knew ten years ago and find it closed, it is probably because they didn't keep up

***"The  
creativity  
is still in my head.  
The tools just make  
it easier,  
more efficient."***



with the technology.

**AE:** You have plans to get more involved in MIDI in the future. We are doing several projects together and I noticed the you were quite intrigued with the air drums at the MIDI City Music Fair.

**MD:** Yes, I was interested from a live show standpoint, but there are many products now that allow you to do what you physically could not do before MIDI.

**AE:** Do you see yourself, as a drummer, creating more and more with MIDI?

**MD:** Yes, but you have to observe the fine line between using MIDI as a creative tool and losing the performance. The musician is a creative artist and should not lose the feel with the overuse of MIDI.

**AE:** When I use a drum machine for pre-production I usually like to use a real drummer like you or Alex Acuna to program it.

**MD:** Sure, you have to use a drummer or a musician experienced in drum techniques at the least. Too many tracks are being created by non-drummers. The sound has to come from the soul of a person. That's where I don't think we should let machines get in the way. Man will never be replaced by machines; I firmly believe that. Let me know if they make a sampler that can recreate feeling, and I'll retire.

**AE:** Then you have a positive attitude, and you are not intimidated by MIDI and computers?

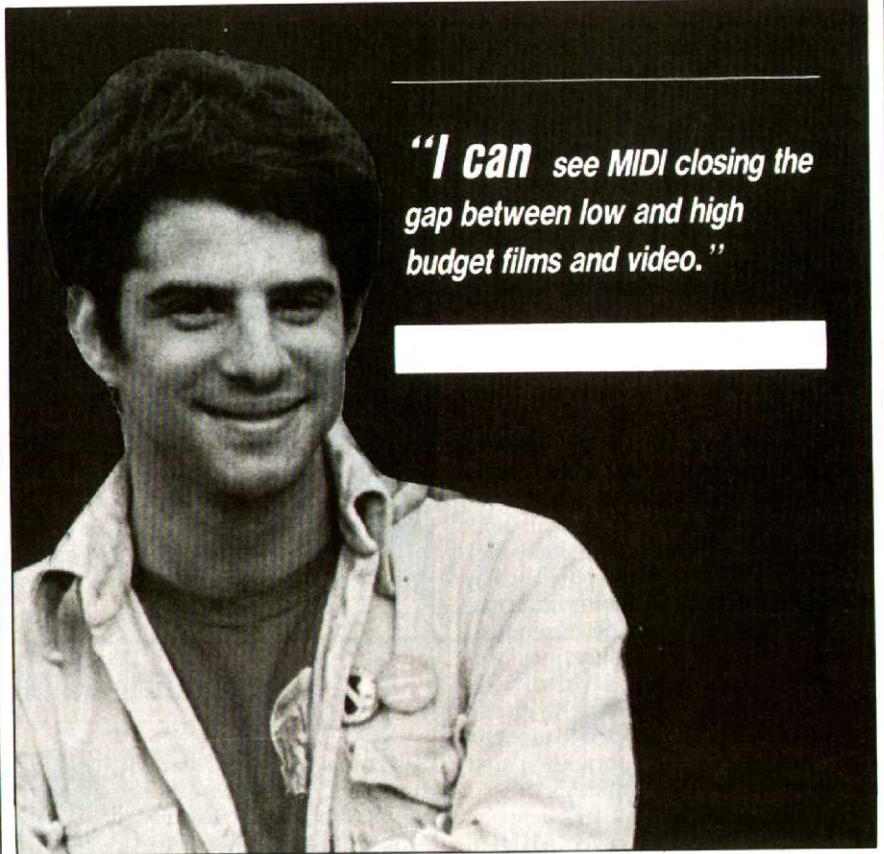
**MD:** I'm not intimidated by it at all. The creativity is still in my head. The tools just make it easier, more efficient.

**AE:** What advice do you have for the young aficionado of drums and computers about refining his craft?

**MD:** Before I was a drummer I took piano lessons for six years. Likewise, MIDI should not be a shortcut but an enhancement of a skill you already have. Machines can make it easier to make the sounds, but they can't replace the knowledge and decision making ability of a good musician. You must know *music* as well as how to *make* music with your tools.

**AE:** So you would tell them that they must have a heart as well as a brain?

**MD:** Exactly! Well put.



*"I can see MIDI closing the gap between low and high budget films and video."*

## Jeffrey Delman

**AE:** MIDI or a similar form, will dominate most of the communications media in the future. We already have SMPTE to MIDI conversion and can certainly do a great deal more for less with home editing and pre-production. Jeff, as a screen writer and director with innovative ideas, how do you perceive your involvement with MIDI in film production?

**JD:** Right now, MIDI is mainly used in the music production end of film making. I hope to see it used in many different ways in the near future. I am already experimenting with MIDI lighting boards, and I would like to see image libraries somewhat like the sound libraries that are already available. Story-boarding would be much easier with this type of tool. MIDI music and generic MIDI images would really help the creative writer who may not have the ability to create his own music or images.

I can also see MIDI closing the gap between low and high budget films and

video. Currently, one of the main differences between them is the quality of the music. To get an idea of how much sound production has to do with the impact of a movie, try watching a film with no sound. Sampling and MIDI can make a production budget go a lot further.

**AE:** It is apparent that most of the computer programs for music and film production are written by computer programmers. As a film maker, what suggestions would you make that would help you get what you need from their programs?

**JD:** User-friendliness. I don't want to have to learn how to program a computer. Make it easy for me to do my job, and I will take time to read a practical manual. The intangible electronic elements should be made as tangible as possible. The only way to do this is to have hands-on experience or consult with someone who does.

**AE:** Do you think that computers can make you an instant film maker?

**JD:** Not any more than a pencil and paper can make you an instant writer.

## Bo Tomlyn

**AE:** Bo, what would you suggest to someone starting out on a quest for information about MIDI?

**BT:** To get the most out of the retail store, you should be well armed with information, rather than expect to be educated by the store personnel.

**AE:** Where can they get this information?

**BT:** There are lots of sources out there. There are plenty of magazines that try to educate beginners as well as professionals. And there are plenty of books that are not that expensive.

**AE:** Can you suggest any books?

**BT:** Yes, most of the books published by Hal Leonard include quality information. That's a good starting recommendation. There is also an educational video tape that I am directly involved with. Since a picture is worth a thousand words, a 60- to 90-minute video tape can hold a great deal of information that can be projected with emphasis.

**AE:** Is there a video that covers MIDI in general, rather than a specific instrument or aspect of MIDI?

**BT:** Yes. There is a video tape, put together by my partner, Steve Leonard, that is nothing but MIDI. There are also private lessons, but you must try to find lessons that are not biased toward a specific instrument or brand—unless that is what you are looking for.

**AE:** How about schools?

**BT:** Well, there is Berkeley, but then you are talking about years of education.

**AE:** I would hope that anyone who was serious about MIDI would be serious enough to pursue it that far.

**BT:** Yes. Many colleges are involved with MIDI in their music departments. The college I went to in Pennsylvania was a conservative music conservatory. I was speaking to them just this morning and found that they had added two synthesizer departments on campus.

Even though some programs are still somewhat primitive, they do give you the basics. I just did a seminar for 2500 teachers in the Boston area. It is the sign of the times that a large part of that convention was devoted to MIDI and



***“The more open a hardware device is to software control, the less likely you are to find that obsolescence has crept up and overtaken you.”***

computers in music. Teachers are hungry to learn about this new technology.

**AE:** So, in essence you are telling us that it is important to learn about MIDI before purchasing a system.

**BT:** Sure. If you spend \$25 or \$100 on your MIDI education, it will pay off many times over. Not only will you benefit from the knowledge, but you will not find yourself being talked into buying a piece of equipment that is not applicable to your musical goals.

**AE:** I have noticed that some MIDI devices are not as true to the MIDI “standard” as they claim, and some slow the already inhibited baud rate

down to a snail's pace. Since there really is no standard, how can we tell if a device will clutter our MIDI data stream?

**BT:** There ought to be a little sticker like the UL (Underwriter's Laboratory) sticker we see on electrical equipment. When I see that sticker, I know that there is very little chance of this product doing great damage in the case of failure. Why not have the same type of thing for MIDI?

**AE:** But, as things stand now, how is an end user to know what can be done with a particular piece of equipment?

**BT:** Back to education. MIDI is the best thing that has ever happened to this industry, but MIDI is not flawless. You

have to respect it for what it is. If you overburden the specifications with after-touch or breath-control information on every track, for example, you are asking for trouble. If you daisy-chain too many pieces of equipment, you are asking for trouble. That's MIDI-abuse, and the way to combat it is with education.

The other side of the story is manufacturer negligence, which covers, for example, a piece of equipment that is so late that it is audibly late to the human ear or which sends information down the line that causes other products to crash.

Let's look at the situation through the manufacturer's eyes for a second. He is in a race against his competition. He puts x amount of R&D into a product, and there comes a time when he must release the product, and sometimes that point comes before the product is completely debugged. Therefore, it is important to know the update policy for any product you buy.

**AE:** But how do you know when an update has been released?

**BT:** In general, it is up to the user to research the availability of the updates. Some companies let you know, but most don't.

**AE:** Would you suggest that consumers try to be less hostile toward manufacturers? That they might be more helpful if they weren't on the defensive?

**BT:** Yes. Most of them are doing the best they can. If you want something better, you have to work with them. If we take our observations, based on actual use of the product, to the manufacturer, we all benefit.

**AE:** Would you recommend computer-related hardware or dedicated MIDI hardware for MIDI users?

**BT:** Definitely computer-related and computer-supported hardware. With the computer you have the flexibility of using the same hardware with different software packages. The more open a hardware device is to software control, the less likely you are to find that obsolescence has crept up and overtaken you.

The computer can also be used to do your taxes when you are done with your music. The ST is definitely a fantastic music computer, and I'm considering it seriously.

## Jimmy George

**AE:** Jimmy, how do you approach production with MIDI?

**JG:** Boot up and play. If you take too much time with the computer, you may lose the idea.

**AE:** What would you suggest to future Jimmy Georges, getting started today?

**JG:** Become aerospace engineers ... just kidding. I think it's important to realize that there has to be knowledge as well as talent for the craft. It is silly to think that you can take shortcuts.

**AE:** How did you learn MIDI?

**JG:** Well, I was getting bored with playing guitar, and I was exposed to MIDI in the bands that I played in. I ap-

proached it step by step and still have a lot to learn. Of course, I read the manuals and try and get products that are as user-friendly as possible.

**AE:** We've talked a great deal about user-friendliness today. What would you suggest to the programmer who wants to write good programs for MIDI?

**JG:** The best MIDI programmers seem also to be successful musicians. It is important to take the advice of the user; he knows better than the programmer what he is capable of.

**AE:** When you wrote the last Smokey Robinson hit, how did you approach it?

**JG:** Well, actually, I used a tape machine, but if I had had an Atari at the time, it would have been a great advantage.

## Hank Donig

**AE:** Hank, I've always known you as the entrepreneur of studio life, being the one and only wizard of Wizard Recording Studios, and now you are the epitome of the the couch potato MIDlot. To what do you attribute this drastic change, and why are your records and writing better than ever?

**HD:** I came to LA to be a record producer and wound up owning a recording studio that was booked so solid I couldn't use it myself. MIDI devices allowed me to create at home with no headaches. WOW! I dove in head first.

In fact, I don't have that studio any more. I have my MIDI studio in the house. At 4:00 in the morning I come down from bed with an idea and in 20 minutes, WAM!

**AE:** Do you find that there are more opportunities, now that MIDI has entered your life?

**HD:** ... more opportunities to maintain control. A few years back there was a big crunch in the record industry. All of a sudden, album budgets were cut drastically. I always felt that the best triple-scale musicians were the only way to cut a record—an expensive way to go but the only way. Well, now I have MIDI.

**AE:** Do you feel that the programs you use for the ST are easy to use and understand?

**"MIDI devices  
would allow me to create  
at home with no  
headaches. WOW!"**

**HD:** No, but I do the best I can, and it's getting easier. I strongly suggest that one get familiar with the ST and manual before approaching the software. Most developers seem to take it for granted that we know the Atari. ■

## Music Expo '88

Music Expo '88, which is "designed to be the world's largest showcase for music and music-related products," will be held at the Long Beach Convention Center April 29 through May 1, 1988.

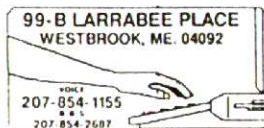
The show is expected to attract over 200 manufacturers and vendors of all manner of music-related products, including MIDI devices, as exhibitors. Demonstrations, seminars, and live performances are also scheduled. ■

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# Puzzles & Problems

## ANSWERS

Problems are on page 53.

### No Bright Eyed Girls

The probability of choosing a boy is 1 in 3 and the probability of choosing a dark-eyed child is 1 in 2. We also know that there are five dark-eyed boys, so the probability of choosing one of them is  $\frac{5}{30}$  or  $\frac{1}{6}$ . Combining these probabilities, we find that the answer is  $\frac{1}{2} + \frac{1}{3} - \frac{1}{6} = \frac{2}{3}$ .

### White and Black Balls

Since the first draw alters the sample, the second draw is dependent upon it. The sample is now three white balls and one black ball, so the probability of drawing the black one is  $\frac{1}{4}$ .

### Toss Three Coins

The first toss of the coins has no effect on the second; they are independent events. The probability of any coin coming up heads is  $\frac{1}{2}$ , of two coming up heads  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$  and of three coming up heads  $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{8}$ . The same probability exists that all will come up tails, so the probability that all will come up either heads or tails is  $\frac{1}{8} + \frac{1}{8} = \frac{1}{4}$ .

### Bar Dice

If you group all 36 possible outcomes of rolling two dice, you will see that Tom will receive a payoff from Jack on 15 of them where his die is higher, on three more where the sum is 7, and on one more where the sum is 11. Thus Tom will receive a payoff  $\frac{19}{36}$  of the time and Jack  $\frac{17}{36}$ , so the game is not fair. Without the payoff to Tom on a roll of 11, it would be a fair game.

### Math and Chem

- (a)  $0.10\%$ ,  $0.15$  or  $\frac{2}{3}$   
 (b)  $0.10\%$ ,  $0.25$  or  $\frac{2}{5}$   
 (c)  $0.25 + 0.15 - 0.10 = 0.30$  or  $\frac{3}{10}$

### Hit the Target

The probability of one of them hitting the target is Sue's probability (0.25) plus Ellen's (0.40) minus the probability of a hit by both ( $0.25 \times 0.40 = 0.10$ ) or 0.55.

### Would You Fly This Airline?

The method of solution is the same as in the preceding problem. However, the probability of both defects occurring on the same flight ( $10^{-14}$ ) is so small that it can be ignored. Hence, the answer is  $2 \times 10^{-7}$ , or roughly one chance in 5 million.

### Ned's and Robin's Children

For two children in general, there are four equally likely combinations: boy-boy, boy-girl, girl-boy, and girl-girl. In Ned's case, boy-boy is ruled out, so the probability of two girls is  $\frac{1}{3}$ . If we assume the first child in each pair is the older, in Robin's case, girl-boy and girl-girl are ruled out, so the probability of two boys is  $\frac{1}{2}$ .

### Who Will Fred Marry?

The two women over 30 are Betsy and Darcy, and the two teachers are Alice and Darcy, so Fred will marry Darcy.

## Picture Quiz

### ANSWERS

Questions are on page 48.

The computer is an ECD Master-Mind introduced in late 1976. Based on

the 6512A mpu, the machine had five system elements: keyboard, power supply (left on shelf), system unit (processor, 8K memory, and I/O—center on shelf), cassette recorder (next to TV set), and display. Price of an assembled system without the display was \$988. Oh, yes, the game being played is *Microchess*.

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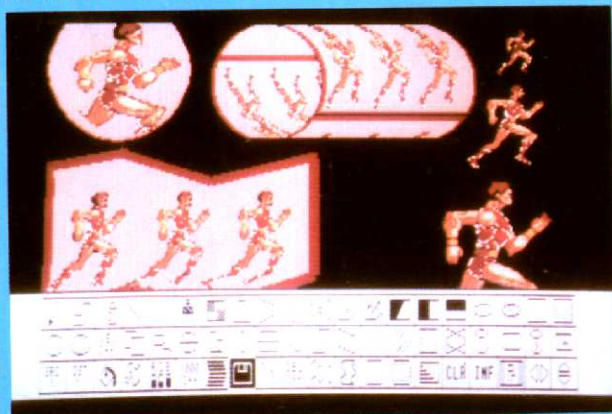
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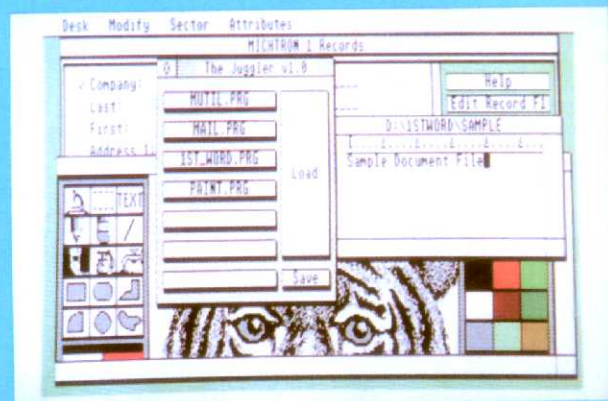
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