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EXPLORER

THE OFFICIAL ATARI JOURNAL

MAY/JUNE 1992

LYNX Special Section!

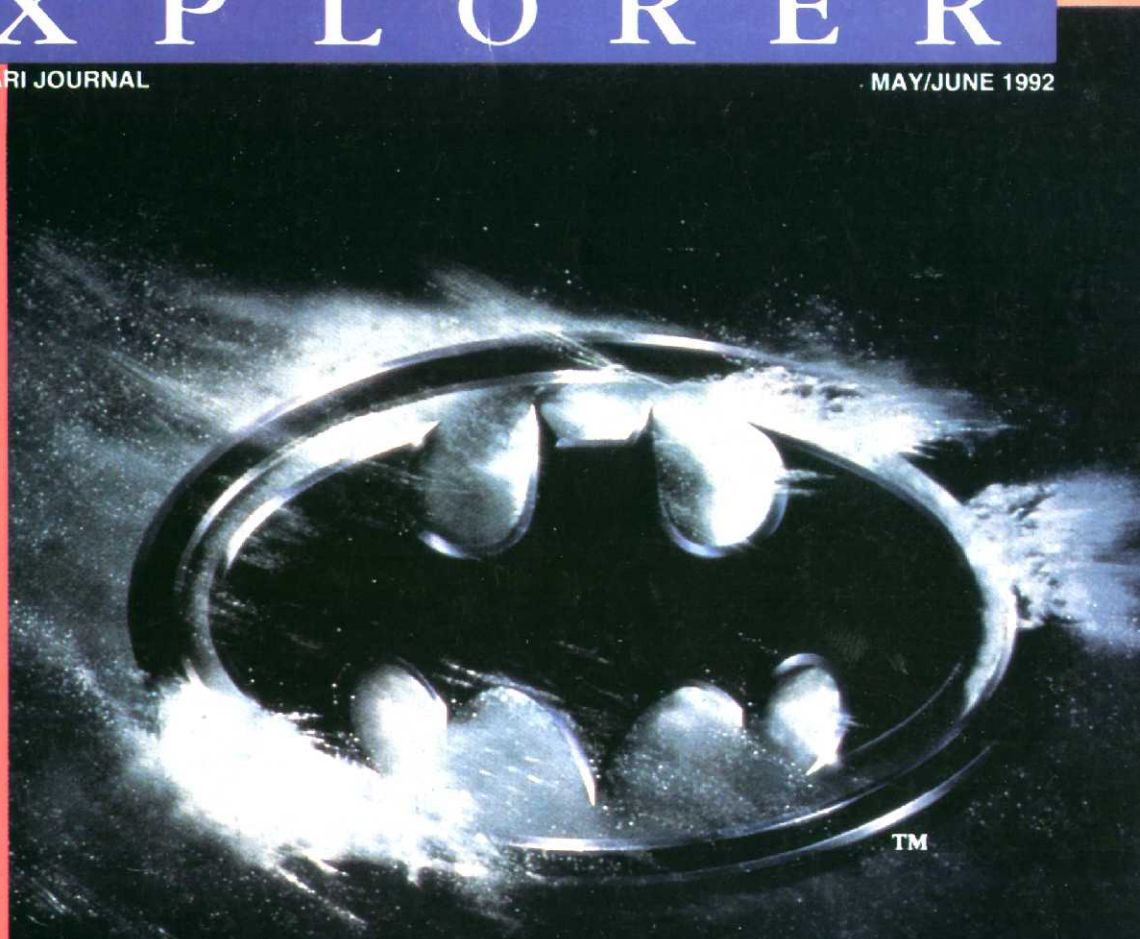
Reviews of
- Hydra
- Basketbrawl
- Rampart
- Lynx Hockey
- Lynx Casino

Craig Anderton on Hotz Translator Software

Interview with Chester Thompson of Genesis

ST EuroGames

Atari Dealer Profiles



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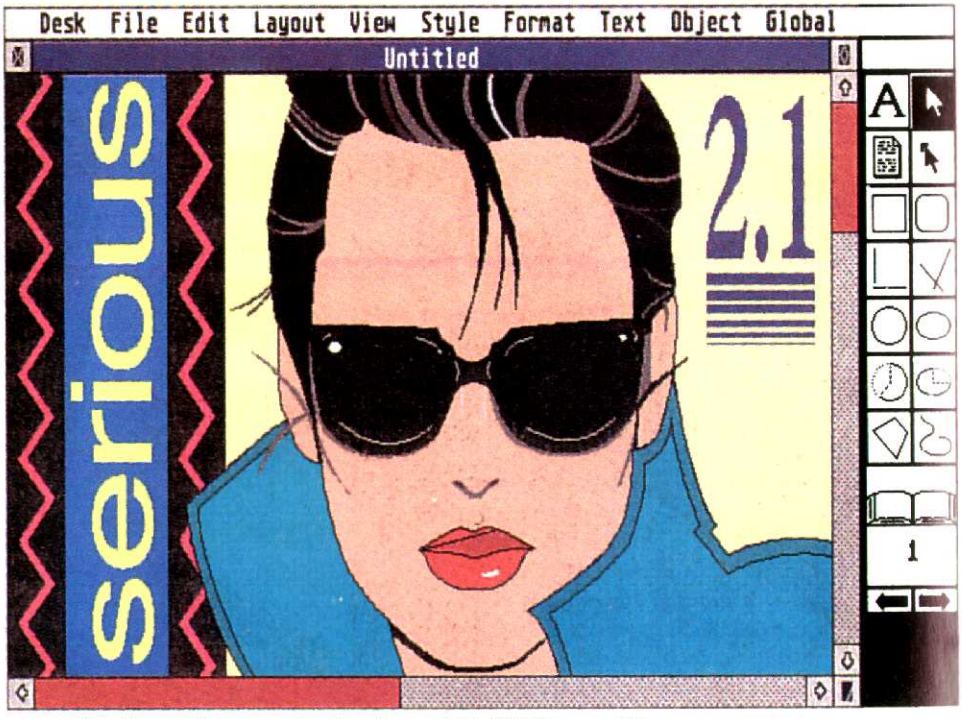

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Editor's Note

Batman Returns!

Look! Silhouetted against the moon! It looks like an enormous ... licensing coup! That's right, gamers! Coming June 20th to a Lynx dealer near you, it's the official videogame version of Warner's Summer blockbuster, Batman Returns! The plot of the movie, starring Michael Keaton as the Caped Crusader, the incomparable Michelle Pfeiffer as Catwoman, and Danny DeVito as The Penguin, is still top-secret. But our center section contains an inside scoop on the hard-hitting, rope-swinging Lynx cart, along with advance reviews of five hot new Lynx titles: Basketbrawl, Hydra, Hockey, Lynx Casino, and Rampart! Summer's already heating up with Lynx!

Musicians will want to check out our interview with Atari user Chester Thompson, drummer for supergroup Genesis, whose new solo album was written using Steinberg's Cubase. Music Editor Craig Anderton checks in with a close look at the innovative Hotz Translator—a $199 package that turns any MIDI keyboard into a powerful "hyperinstrument." And James Grunke introduces a new Dealer Resource section, profiling Atari music dealers Goodman Music and Manny's.

We've also got reviews of Arabesque—a powerful raster/vector graphics package; MiGraph's Optical Character Recognition software; and SDS' new icon editor for NewDesk! Programmers will enjoy our continuing series on Serial Programming—this month, the accent is on phone dialing. And Portfolio users will enjoy BJ Gleason's fascinating tutorial on writing professional-looking Portfolio batch files.

Explorer Online

This issue of Atari Explorer coincides with the first issue of our new, biweekly electronic magazine, Atari Explorer Online. Distributed worldwide on major information services and networks, Explorer Online carries up-to-the-minute reports on hot topics in the Atari market: from trade show lineups, to industry gossip, to new product announcements.

Edited by Ron Kovacs, whose Z*Net Newswire has long been considered the best online news source for everything Atari, Explorer Online hits hard and keeps on hitting—giving you the facts you need to make the most of your Atari investment. Utilities and Atari PD releases, new product demos, product and dealer databases, and other interactive offerings will round out the mix, making Explorer Online the best value in online journalism, today!

Best of all, courtesy of GEnie, you can download Atari Explorer Online free of charge from GEnie's ST Roundtable! This offer is good for a limited time, only—so don't delay.

JOHN B. JAINSCHIGG

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PUBLISHER/EDITOR
John B. Jainschigg

MANAGING EDITOR
Peter Donoso

ART DIRECTOR
Jesus Diaz

MUSIC EDITOR
Craig Anderton

ONLINE EDITOR
Ron Kovacs

CONTRIBUTING EDITORS
BJ Gleason
Mark Jansen
CPT. Elwood J.C. Kureth
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Letters

ST/Camcorder?

How about a good article on using the 520 ST in connection with a video camcorder?

Tom Benson
Bangor, ME

Delighted to oblige! Next issue, we'll be premiering a superb, three-article series on how to build your own budget-priced ST video digitizer. Author Paul Swanson explains video technology and ST realtime data-capture principles in clear, easy-to-follow language. Beginners will find the project easy to build, even from scratch, and Swanson is offering the system in kit form, too!

Portfolio down Under

I am writing to you as a recent purchaser of an Atari Portfolio. Atari Explorer appears to be the only magazine available in Australia which supports the Portfolio in any way. I would appreciate any information you could give on the availability of software for Portfolio. And please keep up those excellent articles!

Ross Thomas
Victoria, Australia

There are many good sources for information on new Portfolio products. First, there's the Atari Portfolio Bulletin (APB), frequently updated by Atari. For a copy of the latest issue, write to Atari Customer Relations, P.O. Box 61657, Sunnyvale, CA 94088 (USA).

Another good source is CompuServe's Atari Portfolio Forum, an official Atari Portfolio support site. CompuServe has several local access nodes in Australia. For more information on how to connect to CompuServe, write them at P.O. Box 20212, Columbus, OH 43220-9988 (USA).

Finally, there's Re:Port, the Portfolio Newsletter. Re:Port features reviews, programming tutorials, and new product info; and comes packaged with a PC disk containing free Portfolio software. For more information, write to Re:Port, 1618 S. Beech Court., Broken Arrow, OK 74012 (USA).

Name Changes

I have been a regular Atari Explorer reader for several years. But of late, AE has made some editorial changes, and one of them bothers me a great deal. In times past, you used to print the addresses of people who sent letters to the editor.

I like this, as I could often offer suggestions to help with people's problems, send them the software they needed, etc. I still keep in touch with some people who I met years ago through your Letters column. So, please, reconsider this point and start printing those full addresses!

Eric Lambeth
Springfield, MO

Formal permission is required to print the full address of a letter-writer, and unfortunately, Atari Explorer doesn't have sufficient staff to request such permission for each and every letter we decide to print.

In the future, however, we will try to oblige readers who request that their addresses appear in print. In other cases, we will be glad to forward mail sent by readers who wish to correspond with writers to our Letters column.

User-Group Permissions

I am renewing my subscription to Atari Explorer because it has been informative. I am the Cleveland Free-Net Atari SIG's Primary SysOp, and I appreciate being allowed to post Atari Explorer's articles to Free-Net. We give Atari Explorer complete credit, and provide Atari Explorer subscription information to users.

I am very excited about Atari this year, and can't wait until Atari Explorer reports about them. Meanwhile, readers who are interested in contacting the Cleveland Free-Net can call (216) 368-3888. Free-Net is a large, multi-line system with gigabytes of storage, and the Atari SIG is the largest computer SIG on Free-Net.

Len Stys
Cleveland, OH

Thanks for the kind words, and congratulations on the success of Free-Net's Atari SIGs! By the way, as of right now, it's easier than ever for telcom services to carry Atari news and information. Just download our new online edition, Atari Explorer Online, from any major information service, and pass it on!

Explorer Online is published bi-weekly, and contains a red-hot mix of news, features, interviews, articles, and programs that'll help your users get the most out of their Atari investment. All we ask is that you do not edit the upload file in any way, and that you make it available to your users at no extra cost beyond normal connect and download charges.

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NEWS & NEW PRODUCTS

MultiTOS Debuts

One of the highlights of April's ACE '92 show in Toronto was the first public demonstration of Atari's new MultiTOS—a fully-multitasking version of the ST/TT operating system. According to Director of Application Software, Bill Rehbock, who demonstrated the system to excited crowds, MultiTOS "is a high-performance, pre-emptive multitasking kernel with adaptive process prioritization, in a system optimized to favor the user-interface, and to comply as transparently as possible with current applications." In a subsequent conversation, Rehbock elaborated as follows: "Since most programs spend a relatively large portion of their time awaiting AES event input, MultiTOS is designed to reclaim CPU time that would otherwise be spent in this fashion. Thus, even without altering process priorities, MultiTOS manages to increase overall throughput. More sophisticated forms of adaptation further allow MultiTOS to adjust process priorities to optimal levels. However, if a user finds that MultiTOS' own decisions aren't working well for a certain combination of applications, a utility allows him to graphically review how much CPU time each process is being offered and how much it is using, and alter priorities at will." The result is that, from the user's perspective, MultiTOS works at rates similar to single-tasking TOS.

MultiTOS allows as many processes to run concurrently, and as many windows to be open, as memory permits. It can employ the 68030 Memory-Management Unit's (MMU) hardware-based memory-protection capability to prevent accidental memory trespass and restrict how much memory each process occupies. Well-behaved applications can set their own boundaries, using Malloc() and Mshrink() calls; while badly-behaved applications can be restricted deliberately, by the user. Even in the absence of an MMU (i.e., when MultiTOS is running on a 68000-based ST), features have been incorporated to permit indentification and graceful shutdown of rogue processes.

File- and record-locking is now automatic at the TOS level—another reason why current applications don't need to be rewritten to run under MultiTOS. Output from TOS (i.e., non-GEM) applications is piped automatically to the window-manager, and output is displayed in its own window. A variety of Inter-Process Communication (IPC) facilities are supported, including piping and forms of shared memory, as well as a brace of process spawning and child-process control options.

Though a portion of MultiTOS will be built into ROM in future Atari computers, the bulk of the operating system is RAM-loaded. According to Jack Tramiel, Chairman of Atari Corp., MultiTOS will be made available in some form for all ST systems (though hardware memory-protection will not be available on systems lacking a 68030 with MMU), and will be incorporated in future Atari products. A pre-release version of the OS has already been sent to developers, along with a reworked Developer's Kit and MiNT-kernel utilities package. Commercial release is expected in Winter. For further information, developers should contact Bill Rehbock, Director of Application Software, Atari Corp., 1196 Borregas Ave., Sunnyvale, CA 94089, (408) 745-2082.

MIST Atari Fest IV

On Saturday, July 25th, the Castleway Conference Center of Indianapolis will host the Mid-Indiana ST (MIST) Atari Fest. Sponsoring user groups for the event include Atari ST Computers in Indianapolis (ASCII) and Mid-Indiana ST (MIST). Last year's show attracted over 30 vendors and 500 attendees, and visitors raved that it was one of the best one-day shows in the nation.

Cost to vendors is just $50.00 per booth ($10.00 for user groups), for the entire day, including electricity, a computer system, and a free "business-card sized" ad in the MIST Atari Fest IV Program, as well as a display placard for the booth, bearing your company name. Interested vendors should contact Dan Ward, President, Atari ST Computers of Indianapolis (ASCII), 1752 Alimingo Drive, Indianapolis, IN 46260.

Yamaha Digital Recording System

Yamaha Corp. has announced the CBX-D5, an affordable hard-disk digital recording system offering 2-track simultaneous recording and 4-track playback (with future track expansion to be announced). The CBX-D5 contains an integral 100 MB hard disk, allowing the recording of approximately 10 minutes of stereo digital sound. Recording time can be increased by daisy-chaining additional SCSI-compatible hard disk drives. Sampling frequencies of 44.1 and 48 KHz are supported, for true CD-quality audio recording. An on-board Digital Signal Processor (DSP) stage provides reverb and modulation effects, and a Digital Equalizer (DEQ) offers multi-band paametric equalization for each channel, controllable in realtime. The unit features 16-bit A/D and 18-bit D/A converters for analog I/O, and can output AES/EBU and SPDIF, allowing pulse-code modu-

lated audio transfer to digital audio equipment. Yamaha's proprietary "Y2" (MEL2) digital audio data-transfer standard is also supported.

The CBX-D5 is designed to be controlled by an Atari ST running Steinberg's Cubase/Audio software (Apple Macintosh and Digital Performer also supported). While recording, the CBX-D5 controls its built-in hard disk, directly. However, when editing, the ST can access the CBX hard disk via its own SCSI host adapter. Overall control of the CBX-D5 is via MIDI, and the unit provides a MIDI THRU port for convenience. Cubase /Audio provides simultaneous playback/control of sequenced data, and control of CBX-D5 functions. A price for the CBX-D5 has yet to be announced.

Cubasics Newsletter for Cubase

Creative Input, of San Pedro, CA, is celebrating the first anniversary of Cubasics, the Official Bimonthly Newsletter for Cubase and Cubeat users. Cubasics features interviews with Cubase-using musicians (check out the interview with Genesis' Chester Thompson, reprinted in this issue), tutorials, new product information, commentary, and bug reports, and can help keep serious Cubase users up and running productively. US Subscriptions are $32/year (six issues, $36/year Canadian, $42/year other foreign, including postage). Creative Input, 4029 S. Pacific Ave., Suite #4, San Pedro, CA 90731.

Cell Biology Animations for ST

A large library of color animations of the important processes of cell and molecular biology has been released for distribution by Bio-Animate Productions, of London, Ontario, Canada. Each animation is many frames long and several involve striking 3D representations of chromosomes, ribosomes, molecules, etc. Developed by university faculty, the animations have already been adopted by a number of high schools, universities, medical schools, veterinary schools, and agronomy colleges.

Appropriate both for group presentation and individual review, the initial set of about 30 animations in the Bio-Animate series costs $299 CAN (single-user price; site- and school-board licenses also available.) Bio-Animate Productions, 487 Piccadilly St., London, Ont., N5Y 3G6 Canada, (519) 433-7145.

Dr. T's Audio/Video Production Kit

Dr. T's Music Software has announced availability of their new Audio/Video production kit for the ST. The combined package includes the Omega sequencer, Hitman cue-sheet production tools, and the Phantom SMPTE synchonizer. Omega features direct support for the Fostex R8 MIDI automated tape recorder. No price has yet been set. Dr. T's Music Software, 100 Crescent Rd., Needham, MA 02194, (617) 455-1454.

I-Köen PageStream 2 Guide

I-Köen Design, of St. Louis, publishers of Radical Type, the magazine for Atari and Amiga DTP, have announced the release of a 20-page quick reference guide for PageStream 2. The guide contains samples of popular fonts, character set and command tables, and other hard-to-remember details; and includes mini-tutorials on drawing tools, object effects, and other topics. ($6.95)

The company has also announced Idea Forms One: a set of PageStream 2.1 templates for a wide variety of printed matter, including stationery, manuals, periodicals, reports, certificates, calendars, and other special formats. The collection comes on three disks, and includes a 24-page manual. Idea Forms 2: Business Forms, is due out in the Fall. ($34.95). I-Köen Design, 5452 Southfield Ctr. Drive, Box 220, St. Louis, MO 63123.

Crazy Dots Adapters

Gribnif Software has announced immediate North American availability of Crazy Dots 15, a video display adapter for Mega ST's, Mega STe's, and TT's that drives a variety of VGA, multisync, and other high-end displays. Crazy Dots 15 supports resolutions up to 1,664 x 1,200 pixels, and can display up to 32,768 colors or grey levels at once. The most comprehensive of its many modes offers this full color pallette, at a resolution of 1,280 x 800.

Crazy Dots 15 is available in two models: a Megabus version that connects to the Mega 2 and 4 ST's on-board bus connector; and a VME model that plugs into the Mega STe/TT VME slot. Crazy Dots employs Tseng Labs' ET-4000 graphics controller, and includes 1 MB of display memory.

Suggested retail price for Crazy Dots 15 is set at $999.95. Owners of Crazy Dots 8 can upgrade for only $199.95. Meanwhile, Gribnif has dropped the price of Crazy Dots 8, from $999.95 to $849.95. Gribnif Software, P.O. Box 350, Hadley, MA 01035, (413) 584-7887.

Fair Dinkum's Cryptographer

Fair Dinkum has announced The Cryptographer, a utility that lets hobbyists devise ciphers and encrypt and decrypt messages. The program incorporates an "intelligent assistant" that aids in code-breaking. ($29.95) Fair Dinkum Technologies, P.O. Box 2, Los Alamos, NM 87544, (505) 662-7236.

DEALER Profiles

The Dealer Nearest You

by James Grunke
Corporate Director,
International Music Markets
Atari Corp.

As Atari continues to grow its business in important vertical markets such as music and DTP, a new class of local Atari dealer is making a bigger-than-ever impact on the marketplace. Music stores—like Goodman Music and Manny's, profiled here—are an increasingly-important factor in Atari's "dealer Renaissance." And there are lots of reasons why this is so.

In learning to adapt to the rapid pace of technological change that began overtaking the music industry as much as a decade ago, music retailers have developed aggressive and flexible systems for building a customer list, making sales, and growing with their clientele over the long haul.

Nowadays, most large-scale music retailers have blazed trails into the home market, education, institutional sales, rentals, and consultation, in addition to the core business of selling instruments to professional and amateur musicians.

In short: music stores have learned to specialize in innovation, and to provide the kind of hands-on expertise required to sell new—and sometimes intimidating—technology to a wide creative audience. That makes them natural outlets for the kind of cost-effective and innovative technology Atari offers.

Even as Atari continues to raise its profile in the music industry, many retailers are making Atari hardware and software an increasingly-prominent aspect of their business; selling Atari equipment not only to their musical clientele, but to a growing mass audience, eager to adopt Atari solutions for word processing, DTP, and other applications.

Many Atari music dealers have invested considerable energy, time, and money to develop the service and support capability needed to serve this general clientele.

We at Atari Music applaud our specialty dealers for helping us reach out to the consumer. Readers, we urge you to seek out your local Atari Music or other Atari dealer (check out our Dealer Directory, on pages 78 and 79), and see what a "one stop Atari shop" can do for you. They'll be grateful for your support.

GOODMAN MUSIC

For Goodman, Investing in the Customer is Good Business

SINCE OPENING HIS FIRST STORE IN VAN NUYS, CA, in 1977, Joe Goodman has made it a practice to adapt swiftly to changes in music technology. Now, Goodman Music's six stores form a powerful chain specializing in electronic keyboards, recording and audio equipment; an organization with the muscle to sponsor large-scale trade shows and seminars, outfit superstar road tours, and provide the systems integration and consulting expertise required by SoCal's hot recording, video, and movie industries. But the attitude that's doubled Goodman's business every two or three years is one of home-grown respect for the customer, coupled with a real delight in retailing.

The Atari exhibit, at Goodman Music's recent Professional Project Studio Show, in L.A.

"From the beginning, we've specialized in keyboards." Goodman says. "We sold a few guitars, but very early on we switched our focus to keyboards and electronics. As soon as electronic drum machines and samplers and music applications for computers came out, we turned our focus that way. At first, we made some attempts to adapt PCs for music use; but they really weren't intended for that kind of thing. Our full emergence into computers as both a strong music-store item and a full consumer item came when we became Atari dealer, just two or three years ago.

"Our initial intent was just to sell computers to professional musicians, but we quickly found out that computers and musical instruments are very appealing to the hobbyist and non-professional. Effectively, we've become a full-service computer dealer—obviously focusing on music, but serving a broad general market as

◆ by Maria Bernard ◆

well. The nice thing about selling Atari systems is that the product line makes it easy for customers to grow with us, and for us to grow with the customer. It's great when you have an entry-level product, such as the Atari 1040 STe, that someone can use as part of a $1,000 introductory home studio system; and that this product is essentially the same component that serves the needs of the biggest recording studios in the world: it's all a continuum.

"Sure, we have a lot of famous customers: on any day you'll find people like Stevie Wonder, Ray Manzarek, Paula Abdul, and Janet Jackson in our stores. And it's wonderful to see these people outfit a world tour with Atari and other equipment we provide. But, honestly, it's just as exciting to see a 16-year-old hobbyist go home with a bunch of boxes that we've taught him how to put together, and that we'll continue to service and support."

Goodman's Professional Project Studio Show, held April 11th and 12th at L.A.'s Beverly Garland Hotel, attracted almost 2,000 producers, engineers, editors, and musicians. The show featured exhibits and hands-on demonstrations of the latest multitrack and disk-based recording and computer and digital music systems, from Atari and other manufacturers. Many exhibitors at the show commented on the enthusiasm of the attendees, and their strong product knowledge. Yet Goodman is still wary: "The almost endless availability of new technologies has, in some ways, created confusion for the end user. This show makes it possible for everyone from hobbyists to top professionals to view virtually all of their options and make the right purchase decisions." And for Joe Goodman, that's an investment worth making.

▲ GOODMAN MUSIC
4227 Lankershim
North Hollywood, CA 91602
(818) 760-4430, 4636

MANNY'S MUSIC

After all these Years ... Still Growing with Atari

MANNY'S MUSIC IS A LANDMARK FOR BIG Apple musicians. Their main showroom, located in the midst of New York's famed 48th Street "music strip," still dominates the block as it has for 65 years. But over the past three years, a new department has begun to dominate the interior of Manny's, itself—a department focusing on advanced technology and state-of-the-art music applications.

Run by Peter Levin, Manny's computer department does a brisk business in Atari products, of which Manny's was, for a time, the only seller. Used to responding to the demands of eager Atari customers,

Manny's Peter Levin (right) confers with a customer. An Atari co-op advertisement is on display.

Levin's department maintains a full stock of hardware and major musical applications, including the C-Lab and Steinberg/Jones products that currently define the state of the art in Atari sequencing.

"Over the past three years, our business has more than tripled," Says Levin. "We serve a wide range of customers, from your average MIDI guy with a home studio to some of the biggest names on the New York scene. As a result, we've had to become experts not only in the music end of Atari, but in the more general sense, as well. I pride myself on the fact that people can call or come into Manny's and actually get straight answers—whether they need help choosing a sequencer, or partitioning the hard drive on a Mega STe. We've doubled the staff devoted to music computing. And our AudioTechniques facility, around the corner, offers one-stop, fully-authorized service center for the Atari line.

"We've recently expanded and renovated our MIDI room, here in the store; combining MIDI and computer equipment together so that we can effectively demonstrate different system configurations. And we've instituted a program of manufacturer demonstrations and seminars, here and at AudioTechniques, that have really helped get the word out about Atari, both about music and productivity applications. Recent seminars have featured visitors from Atari itself, Steinberg, C-Lab, ISD, Step-Ahead Software, and Goldleaf, among others.

"We're very enthusiastic about building Atari's business in the New York area." Levin adds. "We've always advertised in cooperation with Atari, and plan to do more in the future, as well as implement some other promotional ideas. Sure, money's always an issue," Levin concludes. "But that's Atari's strength: somebody on a relatively tight budget can get world-class software and a fantastic computer from Atari, and get change back on their dollar."

▲ MANNY'S MUSIC
156 West 48th St.
New York, NY 10036
(212) 819-0576 (212) 391-9250 ■

Atari ACE Canadian '92 Exposition

by Peter Donoso

ON APRIL 4TH AND 5TH, ATARI CANADA HOSTED ACE '92—the Atari Canadian Exposition—at Toronto's Airport Skyline Hotel. Produced in conjunction with the Toronto Atari Federation (TAF), the show occupied over 25,000 square feet of exhibition space, attracting a substantial group of developers, dealers, and user groups, and drawing over 3,400 visitors from Canada and the Northeast. Atari Canada itself provided the centerpiece; fielding a massive booth with numerous exhibit stations manned by Atari Canada and Sunnyvale personnel. 1040 and Mega STes, TTs, the STBook, and the Portfolio held attendees enthralled, running a multitude of business, music, home, and educational applications.

Multitasking Now!

One of the highlights of the show was the North American debut of Atari's exciting new MultiTOS. Working with a TT in the center of Atari's booth, Director of Applications Software Bill Rehbock led onlookers through a detailed demonstration of the MultiTOS' impressive features. The not-yet-scheduled-for-release MultiTOS promises to be the operating system Atari users have long been waiting for! For a full description of MultiTOS, see page 6.

Elsewhere in the Atari booth, Portfolio fans clustered around Atari's Don Thomas, demonstrating Hyperlist and other applications against a stunning background of auto-executing Portfolio graphics demonstration units. Providing sophisticated relational database-like features, Hyperlist opens the door to a whole new world of specialized applications for Atari's powerhouse palmtop.

MIDI and More

MIDI was an important focus at ACE, with several of the field's major players present. A separate hall provided ample boothspace for Steinberg/Jones, Oktal, and other companies, as well as an impressive lecture/demo/performance stage on which musicians appeared throughout the weekend. The Atari booth, too, had ample space for MIDI—displaying an ST Book, linked to Korg M1 music workstation, running a battery of impressive applications. The ST Book, which offers the power of an ST in an ultra-compact package with integral hard drive and can run up to 10.5 hours between recharges, is expected to be a favorite in the music market. Security features built into the Book insure that even if it's built-in batteries run dry, no data will be lost—an important plus for creative people on the go.

Steinberg/Jones showed off their powerful sequencing package Cubase 3.0 ($579, $100 for update), on a TT with a TTM194 19" monitor. Look for a full review of Cubase 3.0 in an upcoming issue. Steinberg was also showing Masterscore 2 ($450)—a totally re-written full-orchestral version of their powerful scoring package.

Not to be outdone, Oktal Software demonstrated the soon-to-be released Multitude Pro Score ($595) a greatly-enhanced version of their popular Multi sequencer. Premiered at January's NAMM show in Anaheim, Multitude promises to be a strong contender in the powerhouse sequencing arena.

The Atari ST Music Users of Montreal (ASTMUM) fielded their own booth, as they have at several of this season's shows, offering a variety of tapes and CDs produced by group members.

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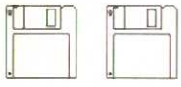

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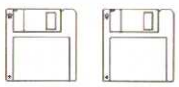

Games

#511 - Dungeon Master Maps for Levels 1-7
#720 - Dungeon Master Maps for Levels 8-14
#835 - Adventure Game Toolkit - A shareware pkg that allows you to create your own top quality adventure games. (DBL)
#898 - Chaos Strikes Back Maps for Levels 1-10
#957 - Mystic Mirror: Adv. Game Similar to Dungeon Master. 2 Players (Color)
#960 - Wheel of Fortune V3.0 (Color)
Stellar Starfighter - Shoot'em Up
#962 - Space War V1.0 - The Classic Space Shoot'em Up for 2 Players (Color Only)
#963 - Go Up V1.0: Lode Runner Clone (Mono Only)
#993 - Monochrome Games: Pac Man & Columns
#1015 - Cartographer Demo: Maps out or Edit your Dungeon Master or Chaos Strikes Back saved games. (1 Meg)
#1040 - **Sorry V1.8** - Just like the board game. For 2-4 players. (Color Only)
Valgus V2.0 - Tetris clone for 1 or 2 players simultaneously. (Color Only)
#1180 - Hac Man 2 - Professional quality Pac Man Clone. (Color/1 Meg RAM/DBL)
#1202 - Hero *Vapid's Keep* Demo (Color Only)
#1220 - Tetris - 1 or 2 players simultaneously
Best version on the ST so far!
#1222 - MORIA - Single player dungeon simulation (1 Meg RAM/DBL)
#1252 - Captive Helps Files, Gaming Digest 12/91
#1255 - Jeopardy V3, Hearts (Color Only)
#1258 - Llamatron V1.0 - Arcade game (1 Meg)
#1277 - Mystic Well: Similar to Dungeon Master (Clr)
#1285 - Compendium
#1295 - Daniel's Dungeon V3.0
#1334 - Omega: Dungeon Exploration (1 Meg/DBL)
#1353 - Klatrix: Tetris/Klax Combination (Color)
#1366 - Rolling Ronny: Super Mario type game (Clr)
#1371 - Blackjack Plus 3 Demo
#1389 - Grav: Rotate & thrust game (Color)
#1409 - Shoot'em Ups (Color)
#1410 - Strabble: Similar to Scrabble for 1-6 players 45,000 word dictionary (1 Meg RAM/DBL)
#1411 - Deathbringer Demo (Color)
#1421 - Unnkulian Underworld - Text Adv. (1 Meg)
#1422 - Baby Jo in "Going Home" - Super Mario type game with good graphics/sound effects (Clr)
#1440 - Revenge of the Mutant Camels (Color)
#1447 - Dem. Man V2.0, Oh Craps, Poker Night (Clr)
#1448 - Triples - Puzzle game (DBL/Color)
#1458 - **DUNGEON LORD** - A very well written role playing game. (Color/1 Meg RAM/DBL)

#888 - *Atari ST Subjects* (Book) Programs
#951 - DC Show It V1.1, Head Start V1.1, Little Green Item Selector V1.6C
#952 - Address Labeler V2.0 - Create, Print, and Store address labels
#988 - Fast Copy III, NX-1000 Set Up
H.P. Deskjet Print Utility V1.4
#991 - Label Printing for H.P. Deskjet & Avery 5260 Labels, Desktop Formatter, Disk Sector Edit.
#1008 - **ICONDESK** - Set up different looking icons
#1038/1039 - DC Desktop Icons
#1078 - Monitor Emulators
#1130/1332/1434 - DC P.O.W. Utilities - Handy utilities from Double Click Software.
#1174 - Address/Labeling Programs
#1175/1176/1177 - Programming in Assembly (DBL)
#1209 - German to English translator, STE Fix
#1214 - GFA Basic Programs/Files
#1253 - Diamond Back II V2.25 Demo
#1267 - Atari Advanced Hard Disk Utilities
#1300/1301 - *Atari ST Topics* (Book) Programs
#1304 - GFA Basic Utilities
#1310 - Virus Killer Programs
#1319 - GFA Basic V2.0
#1322 - KAOS Desk - GEM Desktop Replacement
#1367 - Latest Supra Hard Disk Utilities (DBL)
#1393 - Address Label V3.3, SLM804 Adjust
#1398 - Freeze Drive Terminal V2.10 Demo
#1404 - Stalker 3 Demo - Great new terminal prg
#1406 - ST Tools V1.5, Mega STE Throttle Cable
#1414 - Direct Drive V1.0 - Disk organizer & labeler
#1416 - Mega STE Config Set, Pin Head V2.1
#1420 - Super Boot V7.2 - All in one bootup utility
#1429 - Extensible Control Panel V1.0
#1435 - Make 1 Meg, MultiDesk Deluxe Demo
#1441 - Your second GFA Basic 3.0 Manual
#1442 - GFA Basic Compiler Shell Plus V1.0

Bible on Disk

King James Version (8 Double Sided Disks) $24.95

Desktop Publishing

#500/600 - Publishing Partner Fonts
#737 - Calamus V1.09 Demo - Fully functional except for Save (Mono/1 Meg RAM/DBL)
#758/759/994 - Calamus Fonts
#895 - PageStream V1.8 Demo (DBL)
#935 - *Desktop Publishing Utilities*
#1028 - ***PageStream Font Editor V0.8***
#1266 - Silhouette V1.0 Demo (1 Meg/DBL/G-DOS)
#1297 - FP Print - Speeds up PageStream output
#1319 - GFA Basic V2.0 - Now in Public Domain
#1348 - AVANT VECTOR V1.2 DEMO - A bit image vector tracer and vector grahics editor. From CodeHead Software (Mono Only)
#1365 - Arabesque Pro Demo (Mono/1 Meg/DBL)
#1427 - Calamus SL Demo (Mono/1 Meg/DBL)
#1436/1437 - Megapaint Pro Demo 4.0 (Mono/DBL)
#1438 - Genus Font Editor Demo for Calamus Fonts
#1461 - Easy Text V1.2: Budget Desktop Publisher

PageStream Fonts

#599 - Binner, Futura Black, Hal, Lubalin, Futura Extra Bold Condensed
#870 - Atari, Baby Teeth, Lucida, Old English
#1044 - Adverse, Barnum, Burlington, Oblique, Caligraphy 2, Celtic, Chancery, Chicago, Dingbat, Flash, Harloe, Olympia, Souvenir Medium, Souvenir Medium Italic
#1094 - Architect, Avant Guard, Bookman, Broadway, Chancery, Dingbat, Kibo, Oakville, Palatino, Western
#1336 - PageStream V2.1: Roosth, Saintf, Sansser, Sharkt, Style, Toulouse, Windsor, Zalesk

Adobe Type 1 Fonts for PageStream 2

#1337 - Classica Heavy, Roman, Italic, Faustus Rhyolite Vertical, Sharktooth, Windsor Demi, Zaleski Caps
#1338 - Cascade Script, Kuenstler Script Black Albatross, Kuenstler Script, Mediciscript, Kuenstler Script Two Bold, Nuptial Script
#1339 - Ashley, Miami Nights, Muriel, Park Haven, Pixiefont, Playbill, SanSerif, Style, Toulouse
#1340 - Caraway Bold, Davys Ribbons, Dragonwick, Eire, Goudymedieval, Polo Semiscript Roost Heavy, Saint Francis
#1341 - Flintstone, Franktimes, Helena, Griffdin
#1342 - Caligula, Crillee, Greencaps, Inkwell, Mira, Isadoracaps, Middleton, Rudelsberg, Wedgie
#1343 - Andromeda, Lower and Upper East Side
#1344 - Graphiclight, Manzanita, Nordic, Parismetra
#1356 - Ambrocap, Dubiel, Flinstone, Middleton

Calamus Fonts

#1150 - Architect, Broadway Engraved, Counter Point, Fancy Chancery, Swiss Medium
#1153 - Lucifer, Bodoni, Bodoni Italic, Drurylane, Drurylane Italic, Hallbats
#1179 - Complete Glib font from FontAbility
#1190 - Micron, Tiempo, Swiss Medium, Leecaps, Medici, Windzor, Zalescap
#1223 - Chicago, Cornet, Cursive, Gaudy Cond, Gallia, Gillies, Goudy, Legend, Old English
#1329 - Chili Pepper, Diane, Diego1, Fifties, Mini 6, Galliedis, Moscow Regular, Premier Light
#1330 - Recycle Book, Shalom, Tiempo 2.0

IMG Clip Art

#917 - 4th of July, Valentine's Day, Easter Day
#972 - 1, 5, and 10 dollar bills
#973 - 20, 50, and 100 dollar bills
#1213 - Office Equipment/Scenes (DBL)
#1272 - Religious oriented
#1273/1274 - Military vehicles
#1289 - Camping scenes
#1290 - Cartoon Ladys
#1312 - Religious oriented
#1346/1347 - Christmas Clip Art (DBL)
#1351 - Restaurant Clip Art (EPS Format)

Applications

#810/811 - SHEET V2.5P - Shareware Spreadsheet.
#965 - Checkbook V1.09, Almanac (Color)
#989 - Paperless Accountant
#1250 - Write On V1.1e Demo (1 Meg/DBL/Mono)
#1305 - Gramslam Grammer Checker V3.20
#1306 - Hyperlink V1.51 Demo (1 Meg/DBL)
#1361 - Book Database, Calendar Printer V1.02
#1370 - Stock Smart V3.2 - Stock charting program
#1385 - Cal V6.0 - The calendar desk accessory
#1400 - **ST Writer V4.5** -Simple easy to use word processor with extensive documentation on disk. H.P. Deskjet Driver included.
#1426 - Inventory Pro V6.0 Demo (DBL)
#1444 - **SPELL ONE V1.1** - Spelling Checker

Children's Programs

All Children's Programs Require a Color Monitor
#551 - *Kid Shapes* For ages 2-8
#552 - *Kid Shapes Plus* For ages 8 & up.
#667 - *Benjamin's ABC's* (DBL)
#699 - Kid Adder, Kid Color, Kid Story V1.4
#920 - Simply Math, Picture Puzzler
#1172 - Math Circus, About the House
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#400/800 - 3 1/2" Disk Labeling Programs
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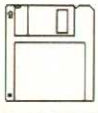
#514 - Monochrome Emulator V3.0
#688/866/1126/1345 - H.P. Deskjet/Laserjet Utilities
#768/938/1165 - **NeoDesk Icons**
#801 - *Label Printing Programs*
#829 - Vanterm V3.8 - Shareware terminal program



ST Public Domain/Shareware Disk Prices

1 - 4 Disks	$4.99 Each
5 - 14 Disks	$3.99 Each
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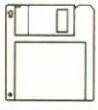

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Atari ST Topics

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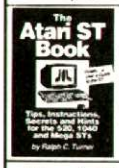

Atari ST Book

of Tips, Instructions, Secrets and Hints for the 520, 1040 and Mega ST begins where the Atari Owner's Manual left off, providing step by step instructions that helps both beginning and experienced users to get the most out of their ST's.

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Atari ST Subjects

Topics covered include: Hard Drives, Running IBM Software, Disk Structure, File Recovery, Connecting a 5 1/4" Disk Drive, Assembling your own Hard Drive, Sector & File Editing, Binary/Hex/Decimal Codes, ASCII File Problems, Escape Codes and much more!

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ST Hard Drive Cable (36")	$24.95
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Atari Mouse	$49.95
SIMMs for STE (1 Meg)	$59.95
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2.5 (520ST)	$99.95
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MasterCard

DTP and CAD

Another of the show's important focuses was on DTP and graphics. Entries to a graphics and animation contest, sponsored by TAF, were shown on a huge projection TV screen on the outside soundstage.

Inside the main exhibit hall, ISD officially debuted Calamus SL ($795, $200 upgrade for v1.9 owners)—the long-awaited upgrade to their market-leading Calamus desktop publishing system. Among many new features, Calamus SL offers an "open ended" architecture that allows modular enhancement—modules are already available for PostScript and multimedia videography, with many more on the way. SL features true 24-bit color capability, can generate separations, and impose PMS matching spot-colors, and is compatible with Cybercube Research's new color card (see below). In our opinion, Calamus has again taken the DTP high ground, offering more and better-implemented features than packages running on any popular computer platform. ISD was also showing DynaCADD v2.04.06 ($995), which can now load 3D DXF AutoCad files, and sports new features for hidden-line removal.

PHOTO: WILLIAM DOYLE-MARSHALL

(Left to right) Atari's Bob Brodie, Geoff Earle (General Manager of Atari Canada) and Paul Collard (President of TAF) pause to confer.

In a large, centrally-located booth, Goldleaf Publishing was demonstrating aspects of their Goldleaf/ComputerBILD publishing workstation line, including the amazing ImageSpeeder tower-mounted TT with built-in raster-processor output to high resolution phototypesetter. Also shown were many of the software products Goldleaf has imported to drive the workstation, including Retouche ($199) and Retouche Professional ($999 B/W, $1999 Color). These amazing photo-realistic image processing/editing programs for the Mega Ste and TT can display and manipulate up to 256 greyscales, import color, monochrome and grey scale files in a variety of formats, and can accept input directly from high-res scanners. Retouche Pro supports 24-bit color with digital lithography for color seps and half-tone reproductions, and can project and distort images onto 3-D Bezier surfaces. Didot, Goldleaf's powerful illustration package, was also shown ($199). Didot features bitmap-to-vector conversion, built-in font editing, works with both Adobe Type 1 and Calamus fonts, and can export in numerous file formats, including PostScript. CompoScript ($349.95) first demonstrated at last year's Seybold DTP show, is a second-generation PostScript interpreter, reading PostScript files and printing them on Atari and other non-PostScript laser printers. Also announced was Mac Read ($49.95), a Macintosh-to-ST file converter which transforms files from HFS MAC format to ST disk at break-neck speed

Among other DTP solutions shown at the show was Publisher 2 ST ($199, $85 upgrade for Publisher ST owners), the recent upgrade to Timeworks' Desktop Publisher, now being imported by ABC Solutions. Publisher 2 ST has been enhanced with extensive additional fonts and keyboard shortcuts, can wrap text around irregularly-shaped objects, and offers a host of other new features. Also shown by ABC were First Graph ($84), a powerful, fast, flexible, and easy to use 2-D and 3-D graphing program for all ST/STe/TTs; tbx CAD ($64), an affordable CAD program with 254 layers, infinite drawing plane, and auto-scaling/dimensioning; K Spread 4 ($179) a Lotus-compatible 256-column x 8,192-row, multiple window spreadsheet with form-generation capabilities; and Home Accounts 2 ($109), an attractive and full-featured personal accounting program.

Display Adaptors

As the built-in graphics capabilities of Atari computers continue to increase, third-party manufacturers have been quick to raise the ante—developing powerful add-on boards that offer state-of-the-art, hi-res color and greyscale capabilities that equal or surpass anything available on Macintosh or PC platforms.

Lexicor Software had a demonstration runing of their sharp new TT/Mega STe-compatible 16-bit color graphics card, using some amazingly-realistic full-blown color animations created with Chronos and Prism Paint. The Leonardo card ($599) which includes genlock capabilities with S-VGA support, opens the door to photorealistic desktop video production.

Gribnif had people drooling with their Crazy Dots display adapter for Mega STs, available in 8- and 15-bit versions ($849 and $999, respectively). Crazy Dots allows displays of up to 256 grey scales or colors from a palette of 16.7 million, and is capable of resolutions from 320 x 200 to 1,280 x 800. Also featured was Convector ($149.95), a new4 bitmap-to-vector conversion program.

Cybercube Research, Ltd. displayed the most powerful and expensive color card at the show: their VME-interfaced CyRel Sunrise M16-1280 ($1,500) hi-rez graphics card, compatible with TT and Mega STe. The card offers programmable resolutions from 256 x 200 monochrome up to a stunning 2,048 x 1,024 for

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For more information, contact your local Atari dealer, or contact us directly:

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WARP 9

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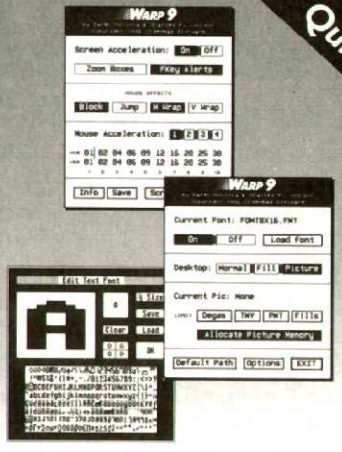

Boot up once with Warp 9, and you'll never want to be without it again. Warp 9 increases the speed of screen output dramatically - windows snap open, graphics appear instantly, and text *flies* onto the screen.

How is this possible? Most GEM programs display graphics and text by calling standard routines built into TOS. Warp 9 intercepts and handles these calls, with optimized assembly language code that is *much* faster than the built-in routines. Graphics and text still look the same, but appear with astonishing speed!

Warp 9 also includes a unique configurable mouse accelerator, desktop pictures, custom screen fonts and fills, and the Warp 9 Customizer, a program that lets you create your own fonts and fill patterns. And best of all, Warp 9 is compatible with all the programs you run. Ask your local Atari dealer for your copy of Warp 9 today!

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color, provides a 16.7 million color palette, features 32-bit frame virtual rez for video, and is NTSC/PAL compatible with genlock. Their VidiMix 16 card, price shortly to be announced, adds real-time video frame-grabbing in true color, can display video in a GEM window, and can combine Atari graphics and video to allow animation-video mixing and other effects.

New Products Galore!

Branch Always Software's Darek Mihocka elicited a lot of double-takes from showgoers with his Gemulator ($199/$299 with TOS1.4 chips), a 68000 emulator running ST software in Windows on an IBM-compatible 33Mhz 486 machine. Running in all screen resolutions, Gemulator will require a 386/486 compatible with minimum of DOS 3.3, VGA graphics card, 4 megs of RAM, and a hard drive. Included with the software will be a card for installing TOS ROMs; the program is slated to be compatible with all versions of TOS up to 2.0, offers the ST's full 8 MHz speed, and uses the PC's mouse and disk drives in Atari-compatible fashion. Joppa debuted STraight Fax ($69.95), their fax-modem program which supports a number of 2,400 to 14,400 baud modems, and allows direct scans from many popular hand-scanners. Next door, Dragonware was showing their Dragon STacy Battery Kit ($94.95), which offers up to four hours portable use from two, rechargeable, 6v, 2.2 amp, sealed lead-acid batteries, weighing a mere 2.2 lbs. The batteries are recharged automatically when the STacy is plugged in.

PHOTO: WILLIAM DOYLE-MARSHALL

The Lynx gaming area attracted a crowd of kids, and even some grownups got in on the fun!

CodeHead Technology debuted Warp 9, the new incarnation of the popular QuickST screen accelerator for ST's, STe's, and TT's ($44.95, $20 upgrade for QuickST owners). Warp 9 features desktop pictures, fills, a newly-enhanced, user-configurable mouse accelerator, and over 35 fonts. Also on display was the Genus Font Editor ($175) for Calamus fonts. And CodeHead sold out of their supply of TOS Extension Cards ($139 to $155, depending on configuration)—a system for enhancing older STs with TOS 2.06.

JMG Software showed HyperLink 2.0 ($159), the latest update of this incredible program. HyperLink's network capabilities were effectively demonstrated by a TT server and three Mega STes, linked by LocalTalk

Clear Thinking demoed Ed Hak v2.3 ($29.95), which now supports the new Atari clipboard CPX and comes with spanking-new documentation.

D.A. Brumleve was showing Kidpublisher v6.4 ($40, $5 upgrade) and debuted her latest effort, Multiplay ($40), a program that uses puzzles and games to help kids learn various math functions. Nearby, Fair Dinkum showed Crossword Creator/Word Search Creator ($39.95) two GEM-based utilities which offer automated assembly of puzzles from a given list of words. Double Click Software had a game running which was created using their still-in-development Game Workbench: a powerful, yet easy to use game development system, which promises to be able to generate arcade-quality video games.

Gadgets By Small had their 68030 SST Accelerator ($799-1,399, depending on configuration), running a Mega ST at 33Mhz with 12 megs of combined ram. The accelerator comes equipped with Atari's TOS 2.0 and offers an optional math co-processor. Units are now available and starting to ship. FAST Technologies had their TinyTurbo 030 ($599), a 40MHz 68030 which carries an 8MHz 68000 on board to solve occasional incompatibility problems, offers a cache, and can support up to 128 MB of virtual memory. An optional 60MHz 68882 math co-processor ($299) was shown installed, running ISD's DynaCADD.

Missionware Software released Flash II ($49.95, $29.95 for upgrade), the latest version of this popular terminal program, which features Xmodem, Ymodem, Zmodem, and Kermit file transfers in background mode. And Sudden Inc. had the latest release of Sudden View ($64.95, Master ver. $24.95 Student ver.), their awesome text editor which can visually reposition blocks of text, much like a paint program moves images.

Learning and Leisure

A large Lynx gaming area was host to contests and free-play all weekend, even as more serious Atari owners attended a wide range of manufacturer seminars on subjects as diverse as DTP and educational software. Everywhere, the emphasis was on the new: new products, new directions, new technology—and a new enthusiasm for the extraordinary flexibility and price-performance advantages of Atari systems.

To many of the over 3,000 attendees and press, ACE '92 was a revelation—demonstrating not only the vibrant health of the Atari market, but the fact that Atari is successfully going head-to-head with market leaders in every application area. ■

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Calamus fonts 1197: Broadway Engraved, Mini 6, Horst Caps, Fancy Chancery, Micron (Demi, Demi italic, Bold Extended Italic, Bold Extended), Shalom Old Style, Shalom Script, Shalom Stick, Windzor.

1198/1199: Glip (3 variations of Bold and Oblique, and Roman), Lee Caps, Math Symbols, Moskva, Zaleski Caps, Architect, A-Logo, Diane, Krazy Headline, Tiempo v 2.1 (4 variations of Bold, Italic, and Light), Premiere Light, Showboat **NEW!**

496 Calamus 1.09 demo (1DM)
1207 Calamus SL demo (1D) **NEW!**
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64 Human Anatomy Tutor (C)
1100 Math Circus: colorful math teacher (C)
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GRAPHICS

1116 25th anniversary Star Trek show (C)
894 Mac Nudes and PicSwitch utility
964 Women in lingerie (C)
903 Simpsons digitized sound/animation
961/962 Sexy Spectrum Nudes! (C)
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1220 GemView:Spectrum pics on mono **NEW!**

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1201 2 M.U.L.E. clones-strategy (C) **NEW!**
1067 3D Tron light cycles: great! (C)
1203 Backgammon/Bingo/Chess/Bjack **NEW!**
989 Berzerk clone with digitized sound (CJ)
1211 Boxing Champ: duke it out!(CJ) **NEW!**
1212 Bunnyshoot:kill cute bunnies-No STE(C)
987 Dungeon Adventure-awesome DM! (C)
138 Grand Prix **2.1** car racing (C)
1069 HacMan II v. **1.15** (1CD) **NEW!**
884 Hollywood Squares TV show (C)
142 HRS: Adult graphic adventure (1CD)
1219 Klatrix: Tetris/Klax combo (C) **NEW!**
1209 Llamatron: Robotron clone (CJ) **NEW!**
143 Love's Fiery Rapture adventure
895 Mini-Golf & Shanghai clone (M)
985 Name this Tune + 100 tunes (CJ)
139 Nude shoot 'em up (1C)
133 Nude strategy games (C)
876 Q*BERT arcade game clone (CJ)
124 Risk (war board game)/Tetris clones (M)
1214 Rush: Pengo clone! (CJ) No STE **NEW!**
885 Seawar: 2 to 4 player sea battle (C)
155 Strip Breakout (C)
1208 TV Toons - Awesome! (1DM) **NEW!**
878 Welltris (Tetris sequel)+Tetris clones (C)

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1077 47 Double Click utilities-priceless!
638 Gemini **1.2:** NeoDesk clone (DT)
797 IMG picture viewer/utils + screen savers
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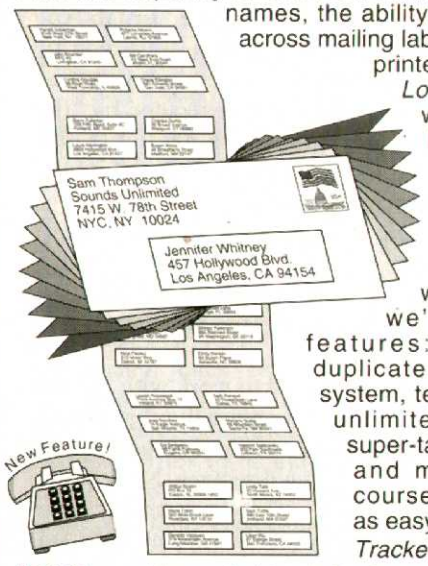

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Installing APPs & Cache Conjectures

Q: What's the ST/TT Desktop's "Install Application" option for?
A: "Install Application" lets you associate files of a particular type (identified by filename extender) with an application—usually the application used to create them. When you double-click on one of these files, the Desktop will run the associated application and pass it the name of the file you've selected. The application can then go on to load or otherwise handle the selected file in an appropriate way.

It's easy to implement this time-saving feature. Suppose you want to associate the word processor, MicroSoft Write, with the files that it creates, which normally have ".DOC" extensions. From the desktop, click once on WRITE.PRG, to select it; then click on "Install Application ..." in the Options menu. A dialog box (which varies from one TOS version to another) appears (see Figure 1).

This dialog lets you specify which filename extension (.DOC, .TXT, .GEM, etc.) you want to associate with the selected application. Click on the line next to "Document type:" in the dialog, and specify the extension ".DOC". When finished, click on "OK" or "Install." Then use "Save Desktop" to save the new configuration to disk.

To test your installation, try double-clicking a file with the extension you specified. The program you selected should run, and the document you clicked should immediately load.

Q: I have a newer TOS version, and there are some additional buttons in the "Install Application" dialog. What can they do for me?
A: In TOS versions beginning with 2.01 and 3.01, some additional options are available for installed applications.

Some programs—usually those with .TTP (TOS, Takes Parameters) extensions—are designed to accept "command line parameters" on execution. These parameters (also called "arguments") tell the program which functions to perform on designated files. The "Arguments:" field in the "Install Application..." dialog allows you to specify what arguments are given to a program every time it is run. When auto-executed by "Install Application ...," arguments are passed to the program ahead of the name of the file you double-clicked to begin the execution process.

These newer TOS versions also allow you to associate an application with a function key; simply pressing that function key runs the program. Enter the function key number for an application next to the "Install as: F" field.

Some programs are designed to work with files in the system's "current directory"—normally that shown in the currently-topped window. Other programs can only work with files in their own directory. Newer versions of "Install Application ..." let you specify the directory that should be made current when an installed program runs, whether that should be the currently-

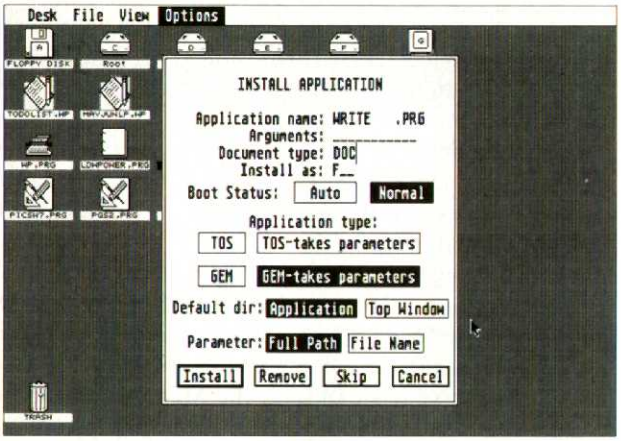

FIGURE 1. The "Install Application ..." dialog box, as it appears on a Mega STe. Here, the dialog isbeing used to install MicroSoft Write (WRITE.PRG) to run when ".DOC" files are clicked. The program will run from its own directory (the "Application" button has been clicked), and will be passed the full path name of a file, when auto-executed.

topped window, or the directory in which the program is found. Click on "Application" to set the current directory to that of the application; on "Top Window" to leave the current directory as the currently-topped window.

Some applications, mostly older ones, expect to be passed only a filename, not a full pathname, i.e. "PAULA.DOC" instead of "C:\LETTERS\PAULA.DOC." The "File Name" button, next to "Parameter:," insures the application is passed only the filename; the "Full Path" button provides the full path name. Keep in mind that if an application can only accept a file name, you may need to locate your document files in the same directory as the application. A handful of applications only accept a filename, but look for their own data files in the current directory, so if the current directory is that of the topped window, the application won't find its own data files, and may not run correctly.

Let's pull many of these features together into an example. let's say we want a copy of ARC.TTP set up to extract all the files from an archive we specify. Click on ARC.TTP, then "Install Application ..." In the "Arguments:" field, enter the argument "-X" (for eXtract). Be sure to leave a space after the "-X", so that this argument and the filename are separated when the program runs. In the "Document type:" field, enter "ARC". Next to "Default dir:", click "Top Window," and next to "Parameter," click "Full Path." Finally, click "Install."

Open a window on the archive file you want to extract. Then open a different window where you want the extracted files to be placed. The destination window should now be topped; move it so you can see the archive file in the background window. Holding down the right mouse button, double-click the left button while pointing at the archive file in the background window. ARC.TTP runs, its first argument, "-X," tells it to eXtract a file, the archive file is the one you double-clicked, and the current directory is the topped window, where it puts the extracted files. Neat, eh? Remember you must "Save Desktop" for these configurations to be available when you next turn on or reset your computer. For additional information on these Desktop features, see your owner's manual.

Q: I want to install a GEM application to run automatically when I turn on my computer. How do I do this?
A: TOS versions beginning with Rainbow TOS (TOS version 1.04), let you do this through the "Install Application ..." option. From the Desktop, select the program you want to run automatically at boot time, click on "Install Application ...," and click the button marked "Auto" next to "Boot Status:". Finally, use "Save Desktop" to save your new configuration to disk. The next time you turn on or reset your computer, the selected application will load and run, automatically.

Q: I have CACHENNN.PRG in my \AUTO folder, and the TT030 and Mega STe have "caches." What is a cache, and why should I use it?
A: In a computer, some parts are faster than others. It takes a certain amount of time to read data from a disk into memory, a smaller amount of time to read data from memory into the microprocessor, and a still smaller amount of time to read data from the microprocessor's internal cache memory into its registers, where the processor actually works on it. Generally, the faster the part, the more expensive it is relative to how much it can store; RAM is much faster to access than a hard disk, but is much more expensive per byte of storage.

One way to optimize a computer's performance is to use faster components to "cache" data from slower components.

One way to optimize a computer's performance is to use faster components to "cache" (pronounced "cash") data from slower components. The cache may be used to hold the most-recently-accessed data, the most-frequently-accessed data, or the data otherwise most likely to be needed in the future. In any case, if the cache contains the data needed next, it saves the computer from waiting for that data to be delivered by a slower device. A rough analogy is your "little black book." When you need a phone number or address, you look there first—it's handy, easier, and faster to use than the big phone book. If the number you need isn't there, you look in the phone book or your collection of cocktail napkins, which are slower to access.

When you double-click a disk drive icon, TOS (GEMDOS specifically) reads the directory of that disk into a cache. If you then double-click on a folder in that directory, GEMDOS already knows where to find it, and then reads the folder directory into the cache. This speeds disk access, because when you frequently access the same files and folders, GEMDOS needn't read directory information from disk, which would be much slower than looking it up in RAM. Since the cache is limited in size, older entries are removed from the cache in favor of newer entries. Of course, the larger the cache, the less often entries are purged from it. These directory caches are set aside when your ST starts up or resets, and CACHENNN.PRG increases the amount of memory set aside for them (See "Question Mark," March/April).

The Motorola 68030 microprocessor used in the Atari TT030 has its own data and instruction caches, which are much faster than "normal" RAM. When the 68030 needs to access RAM, whether to read data or execute the next instruction in a program, it copies the necessary data (and often, some subsequent data) into the appropriate on-board cache.

If a programmer writes routines and arranges his data so that they fit in on-board caches, the processor will use this cached information and spend less time waiting for instructions and data from RAM, thus boosting performance. This is why some programs benefit more than others from these caches. Unfortunately, some programs use tricks incompatible with the processor caches, and that's why Atari provides the "Cache" item on the Desktop "Options" menu. If a program doesn't work correctly on your TT030, try disabling the cache before running it.

The Mega STe processor cache works similarly to the TT030's on-chip caches, except that caching is not built into the Mega STe's 68000 microprocessor. Instead, the Mega STe cache uses external (but still fast) RAM. Because it's external, the Mega STe cache is larger than the TT030's, but the basic priciples of its operation are the same. Again, if an application doesn't run right on your Mega STe, try disabling the cache and see if that fixes the problem. ■

CORRECTION. Last issue's "Question Mark" indicated that POOLFIX3.PRG was required with TOS version 1.62.This is incorrect. The fix implemented by POOLFIX3.PRG is already integrated into TOS 1.62, so POOLFIX3 isn't needed on STs with this TOS version.

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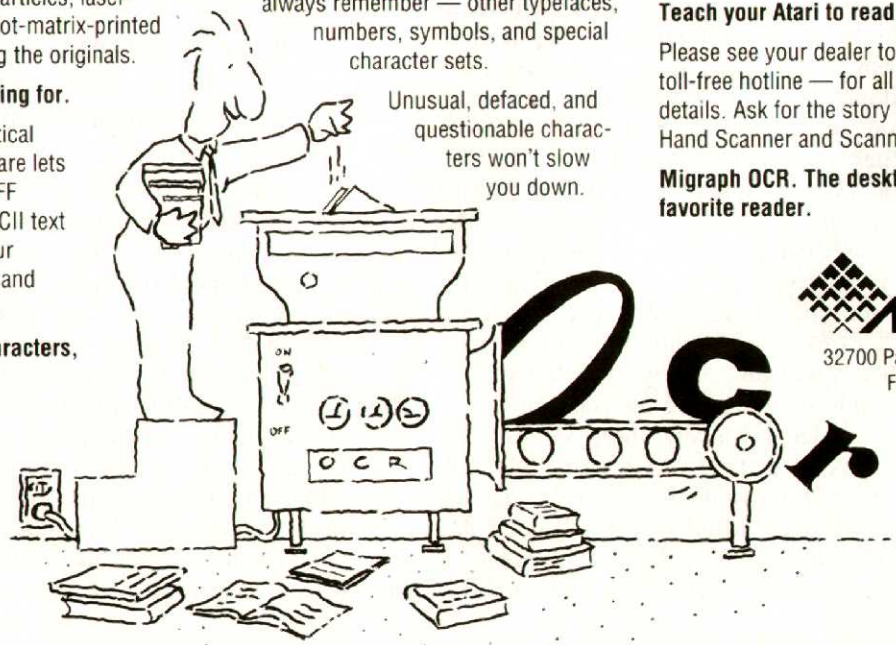

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REVIEW

Unleash your imagination with this powerful raster/vector paint program

Arabesque Professional 2.14

by Dakota Crespo

I SEEM TO BE SUFFERING HALLUCINATIONS. Every time I run this new drawing package, incredible patterns and shapes appear before my eyes. It all seems like a puzzle that's slowly beginning to come together. The pieces certainly look as if they fit, but can all these different kinds of images really coexist on the same screen?

Well, I'm happy (and, I must confess, a bit relieved) to find the people at Gribnif are at the root of my imaginings! Arabesque, yet another remarkable addition to their expanding line of products, is a raster bit-map/vector illustration software package that features some pretty amazing image-manipulation and drawing capabilities. And all this power comes together under the kind of sophisticated interface that makes working with this program a visual dream.

In working with Arabesque, I finally figured out why I keep getting this distinct deja-vu feeling. The program seems to have been assembled by cherry-picking the best features from a number of favorite graphics utilities, and configuring them all to work together.

✔ **ARABESQUE PROFESSIONAL 2.14**
Requirements: Any ST/STe/TT with 1 Meg or more RAM. Monochrome only.
Summary: Powerful bitmap and vector illustration software package.
Distributor:
Gribnif Software
P.O. Box 350, Hadley, MA 01035
(413) 584-7887
Price: $199.00

Way Tres-Cool Chameleon!

I remember when the notion of being able to view graphics in multiple formats without owning a bunch of different programs was just about the most amazing idea next to actually being able to use a computer to draw with! But with Arabesque, you can load and save pictures originally saved in .IMG, Degas compressed and uncompressed, Amiga-format .IFF, .NEO, and STAD formats, along with Arabesque's own uncompressed or compressed .ABM format. And that's just the icing on the proverbial graphic igloo!

What's really cool are all the versatile and seemingly never-ending ways you can manipulate images. Each of Arabesque's options, sub-menus, and function selectors is accessed by calling up an icon or menu box, using either the right mouse button or a combination of key and mouse commands.

Use these to change the size and shape of the whole image. Convert any image to an outline. Cut away a section and save it as a fill pattern. Apply the pattern to fit within the outlines of any one of the many 2-dimensional (or even 3-dimensional!) geometric shapes

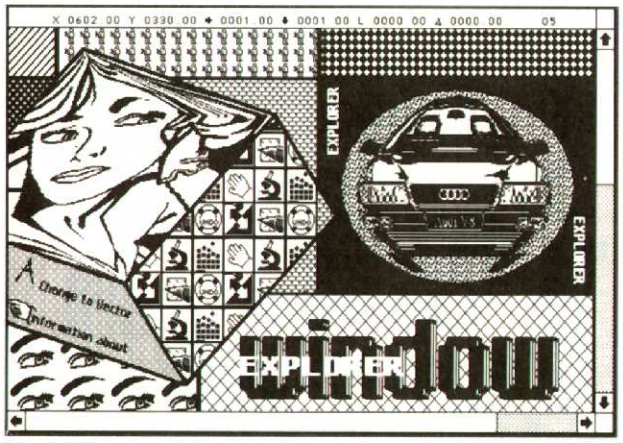

FIGURE 1. Some of the images you can create with Arabesque's powerful assortment of drawing features.

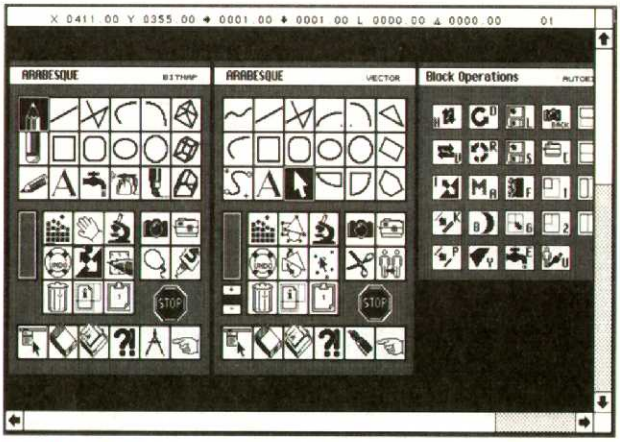

FIGURE 2. Two main "mode" menus lead to additional submenus for individual functions.

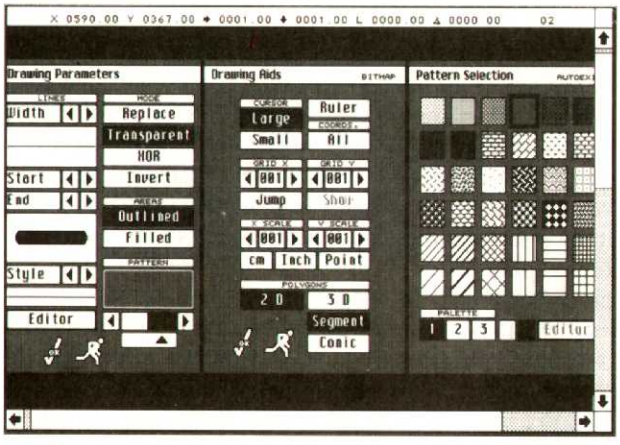

FIGURE 3. Drawing options include user-configurable line thicknesses, measurement systems, and 108 fill patterns.

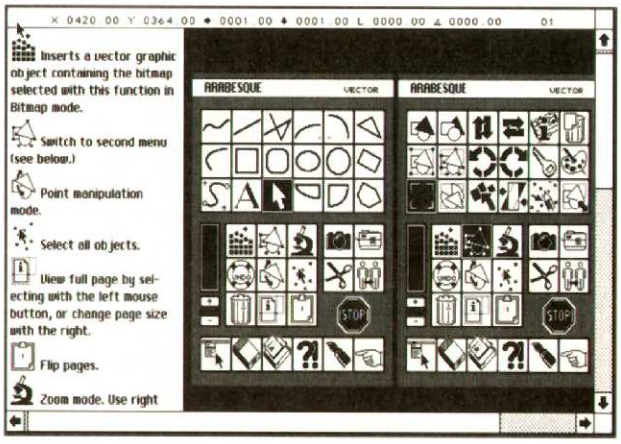

FIGURE 4. A special menu, subsidiary to the Vector control panel, performs small vector block operations.

that you can create with Arabesque's multi-featured drawing tools. Assign a pattern to a paint brush! Make multiple copies which can be mirrored, contrasted, rotated, shadowed, resized, stretched, or otherwise twisted into any shape you might imagine.

The Fill function has a unique set of options. Two of these work in conjunction with the pattern palette, the first filling the whole designated area with the currently selected pattern; the second performing a graded fill, from light to dark. Other options include the ability to fill an object with material from the cut buffer, either by cropping the material to fit, or sizing it to fit snugly within the object's outline.

The Spray Can and Paint Brush functions can be configured to vary the density and transparency of coverage, and brushes may be edited into various shapes. By gradually varying density and transparency, subtle contours and shadows can be suggested, and complex, cross-hatched patterns can be smoothly blended into one another across broad areas of the "virtual canvas."

All This, and Text II

Nor are Arabesque's features limited to treating only graphic images—the program handles text, as well. Arabesque can load up to five GDOS-compatible fonts, and impose on them such standard attributes as boldface and underlining. In addition, you can expand your font collection using a bonus program that can convert any font from Signum! (a European word processor with its own extensive catalogue of fonts) into a GDOS-compatible font. If you actually have GDOS installed, Arabesque will let you preview and preload any of the fonts stored in your fonts folder, letting you make your selections from a special dialog box.

The program can allocate up to six separate pages to hold graphics and text, and memory allocations for each page buffer can be set separately. An additional "block buffer" is also available for holding an image or portion thereof, allowing editing, moving, and pasting. Once an image or image portion is loaded into the buffer, it can be altered by any of the various block-effect

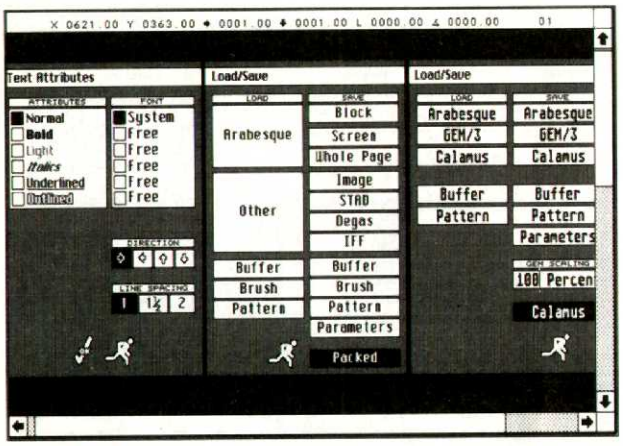

FIGURE 5. Up to five GDOS fonts can be loaded, though there's no need to boot with GDOS, itself.

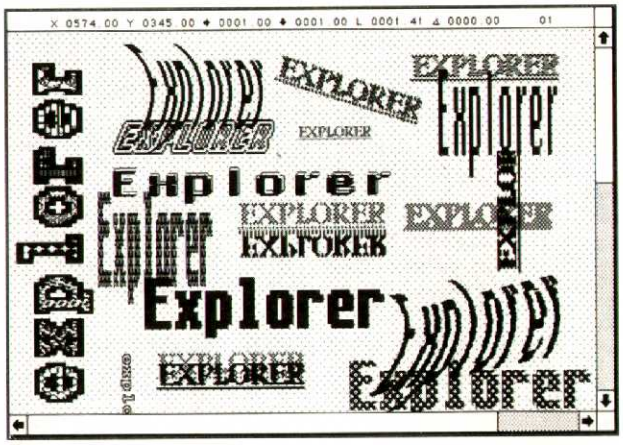

FIGURE 6. You can apply over 30 different block functions to any GDOS-compatible typeface.

functions that are available. Suppose you want to try out an effect, but you're not sure if what you see in your mind will look good on screen. Arabesque lets you use the buffer to hold your original image while you try out the effect, letting you edit without risking the integrity of a work in progress.

Vector Case in Point

So far we've been navigating through the world of bitmap images. But there's another world, a world of geometric relationships that allows re-sizing without any loss in sharpness. There's a signpost up ahead. Your next exit ... The Vector Zone!

Vector graphics are stored as outlines, much like the connect-the-dots drawings you had so much fun with when you were a child. Arabesque offers the ability to handle vector images in most of the same ways it treats bitmaps—the logical exceptions being those features that draw isolated points or irregular patterns, since pointillistic effects can't efficiently be expressed in vector form. In Arabesque's vector space, text consists of a symphony of arranged tangents, bezier curves, control, and jump points. This allows you to edit the shape of text in interesting ways.

Since vector graphics are rendered as objects, they can be positioned in front of or behind each other, without becoming inextricably commingled with one another. But though vector graphics also take less room to store, they do take longer to re-draw than bit-map raster graphics.

This time requirement can become distracting when a program automatically redraws all vector objects on-screen, each time a change is made to a picture. Instead, Arabesque is designed to redraw its screen only when you press F1, speeding the process of image-editing considerably.

A versatile set of features allows easy conversion of objects from vector to bitmap form. The reverse is also possible, though you must guide the conversion process by drawing Bezier polygons around parts of an image destined for conversion. For substantial raster-to-vector conversion projects, Gribnif recommends use of its Convector Professional program ($149.00), which offers sophisticated features for auto-tracing and post-processing of traced images.

Print options are extensive: most 9- and 24-pin dot-matrix printers are supported, as well as Atari and HP lasers.

Documentation

Arabesque is not copy-protected, and may easily be installed on a hard disk. Though the program is easy to work with, its manual is a valuable and important addition to the package—well-organized and clearly-written, it greatly facilitates understanding of some of Arabesque's more complicated features. Gribnif's support is also excellent, and the company is already working on an upgrade that will be made available at reduced cost to registered owners.

The word *arabesque* is defined as, "an elaborate intertwined design or florid ornament." Was this the guiding inspiration behind this program's development, or did the name come later? Whatever the sequence, the choice of name eloquently understates this program's extraordinary power.

By supplying you with an exciting library of options, and giving you a window on both vector and raster graphic worlds, Arabesque assumes a position of real significance among the current flock of hich-end black and white graphic programs on the Atari platform. If you've been looking for an elegant toolkit to help you on your quest for the ultimate in distinctive, elegant, and professional Atari graphics, Arabesque deserves a very serious look. ■

REVIEW

Speed up with this Shareware Utility!

Pinhead 2.1

by Gregg Anderson

PINHEAD IS A SMALL (LESS THAN 1K INSTALLED) shareware utility designed to speed up the ST's disk booting and program loading. With Pinhead installed, booting from a Hard disk is noticeably quicker and program load times are substantially improved. Loosely based on Leo de Wit's original NULLFILL utility, Pinhead first appeared as freeware several years ago and has undergone six revisions since its release. In that time, Pinhead's speed and compatibility has been massaged to where the program is almost foolproof (trust me—if I can't mess it up, nobody can). The latest release, version 2.1, is compatible with all versions of TOS, from 1.0 through 2.06.

Pinhead is most useful with versions of TOS prior to 1.4, since later versions include their own "fastload" features. The program should also be useful with older STs that have been upgraded with the new generation of 68030 boards from Gadgets by Small and Fast Technologies, bringing such machines up to TT-level load-time performance without further upgrades of the OS.

✔ **PINHEAD 2.1**
Requirements: Any Atari ST/TT computer.
Summary: Program load speedup utility.
Manufacturer:
Little Green Footballs Software
P.O. Box 1250
Pacific Palisades, CA 90272.
Price: Shareware. $15 usage fee requested.

Installation

Pinhead loads from the AUTO folder, and begins working as soon as it executes. For this reason, the utility should be set up to run as early as possible (i.e., ahead of other programs in the AUTO folder), giving it the opportunity to speed up the remainder of the boot process. According to documentation supplied with the program, only a few programs must be permitted to run before Pinhead—notably the TOS patch POOLFIX.PRG (versions prior to version 4) and the "Fatspeed" patch used with TOS 1.0. CodeHead's AUTO Organizer (from the CodeHead Utilities Disk) or other AUTO-folder "sort" utility can be used to resort the contents of your AUTO folder in the proper manner. Alternatively, you can install Pinhead by copying the contents of your AUTO folder to another directory, deleting the original files, then copying everything back in the order you wish things to execute, placing Pinhead near the top of the list.

Once installed, Pinhead works transparently—speeding up application load-times by noticable margins. Table 1 compares load-times for popular applications, with and without Pinhead installed. As you can see, the speedup is obvious, and adds manyfold to the feeling of speed you get from your computer. It's important to remember that although program load-times are minimal in comparison with the time you spend working with applications, no useful work gets accomplished while programs load. By minimizing load times, therefore, Pinhead minimizes the time you spend

completely idle, and thus has an impact on "feel" that is far larger than its absolute effect.

Though version 2.1 has been exhaustively tested with no compatibility problems showing up, the program even includes a feature that lets you list problem programs in a small ASCII file (PINHEAD.DAT), forcing Pinhead to load them in entirely standard fashion, or to employ only a limited subset of its speedup features in specific cases. The DOC file that comes with Pinhead gives very detailed instructions on this procedure.

Pinhead has been released as shareware, meaning that though you can obtain and evaluate the program free of charge by downloading it from major information services and BBS's, you are requested to send a small fee of $15 to the author (Charles F. Johnson of CodeHead fame) if you decide to use Pinhead on a regular basis.

In my opinion, Pinhead is a must have for anyone with a hard drive system (and even floppy-based systems can get value from it). The cost in RAM and dollars is small but Pinhead lets you save time disproportionate to its cost. Check out GEnie, CompuServe, Delphi, or your User Group's PD library, download and test the new Pinhead, and see the results for yourself. ■

TABLE 1. Comparative load-times for standard applications, under Pinhead 2.1. All times in seconds.

The tested system is a 16 Mhz (T-16) monochrome Mega4 (TOS 1.4) and SyQuest SQ-500/SeaGate ST296N hard drive system with ICD Advantage+ host adapter & software. Bootloaded software includes Atari TOS patches, G-Plus, QuickST 3.5, DCShower Utilities, StarScreen, and MultiDesk running UIS III, Atari's Control Panel, QuickST & G-Plus Control Panels, a Calculator, and TOS 1.4 Button Fixer.

Application	W/Pinhead	W/O Pinhead	% gain
Cold Boot:	25.3	29.3	18%
EasyDraw 3.0	5.0	6.0	20%
Calamus 1.9	6.0	7.0	17%
PageStream 2.1	5.2	26.1	402%
WordWriterST	1.9	3.0	58%
TouchUp	8.3	9.6	16%
TimeWorks' DTP	8.5	9.8	15%
Word Perfect	2.6	3.7	42%
Degas Elite	3.3	4.8	45%

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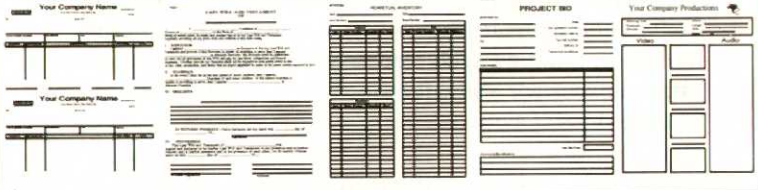

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FAST Technology's 25 MHz accelerator lets you put your ST's pedal to the metal!

FAST Turbo 25

by Joe Mirando

WHEN THE ATARI ST WAS FIRST RELEASED IT was among the fastest microcomputers available. But it is a truism in the computer world that no matter how fast a computer is, someone will create an innovative, indispensable program that will slow it down to an unacceptable speed. While faster computers are now available from Atari, developers have made other options available for those who wish to make stock STs perform at similar, state-of-the-art speeds.

One way to speed up your computer is to use a software-based accelerator, like CodeHead's Quick ST 3.0. Software accelerators replace parts of the ST operating system with their own optimized routines, allowing substantial increases in throughput for applications to which these localized improvements are relevant. Applications that employ "unimproved" parts of the OS will not show greatly-improved performance.

Hardware-based accelerators, on the other hand, speed up computing functions across the board, usually by replacing the ST's stock 8 MHz 68000 with a faster version. Commonly, a 16 MHz component is installed, making internal microprocessor operations twice as fast. System-wide processing speed is also improved, though by a smaller percentage, since memory access, video, and other components remain tied to the system's overall 8 MHz clock rate. To paraphrase an old adage: a computer is only as fast as its slowest chip.

✔ FAST TURBO25 ACCELERATOR
Requirements: Any 8 MHz ST or STe
Summary: 25 MHz Accelerator board
Manufacturer:
Fast Technology
P.O. Box 578, Andover, MA 01810
(508) 475-3810
Price: $379.00 (STe adapter, $ 49.00)

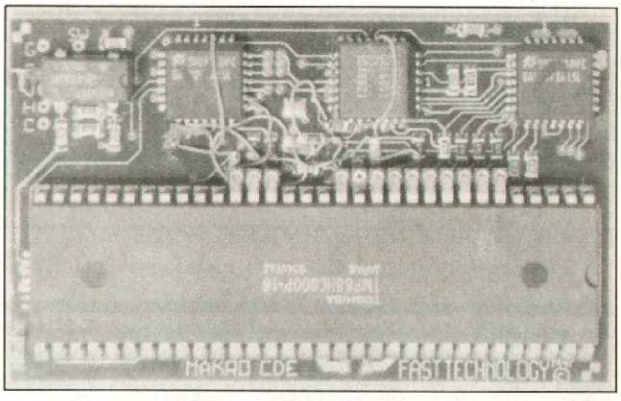

PHOTO: ERIC P. STEINER
The STe version of Fast Technology's Turbo 25 board.

Enter TURBO25

With Fast Technology's TURBO25 accelerator, the ST's standard 8 MHz 68000 microprocessor is replaced with a 16 MHz component—but one running at 25 MHz. Assisting the processor is a specially-designed RAM buffer that acts as a high-speed instruction cache. The cache allows the microprocessor to run at the fastest speed possible by feeding it instructions at a higher speed than conventional RAM.

Installation of the accelerator in a 1040 or Mega ST involves removing the original 68000 chip by desoldering it from the motherboard, replacing it with the TURBO25 board. While this is not a difficult modification, it should not be undertaken by the novice, particularly since Atari may not be able to repair or replace a machine damaged in the course of such severe modification. Fast Technology can install the product, if needed. STe owners have it much easier, since the STe has a socketed microprocessor. A special adapter,

available from Fast Technology, is used to mate the connector on the TURBO25 board with the STe's CPU socket.

Once the accelerator is in place, a number of options are available. Several means are afforded to allow users to switch between standard 8 MHz operation and the accelerated 25 MHz mode, insuring compatibility with game, graphics, and other software that disagrees with processor acceleration. By connecting a line from the TURBO25 to the ST sound chip you are able to switch between 8 and 25 megahertz through software, provided in both desk accessory and executable program form. Software switching is entirely transparent, and can be done "on the fly." The only drawback is that the accessory version of the switcher is inaccessible from within non-GEM programs.

By connecting a two-position switch to the Turbo board you can enable hardware switching. This is somewhat more unwieldy, requiring that you turn off your computer or hold down the reset button, flip the switch, then restart.

Also available to all TURBO25 owners is the ability to use Atari's new TOS version 2.06, incorporating the new GEM Desktop. Models earlier than the STe were not designed to accommodate these larger chips but Fast Technology has devised an easy way of utilizing the TURBO25 accelerator to allow any ST/Mega owner to use the new operating system without the need for a special interface board.

Performance

Although performance will vary depending on the actual task, math routines run approximately 2.6 times faster than on a standard ST. Access to memory is 1.85 times normal. And graphics and text output can be increased anywhere from 1.5 to 3 times. Because most computing actually combines computation, memory access, and output, most "real-world" uses will show increases somewhere between these values.

For example, ARC compression of a 127 K file to a RAM disk on an un-accelerated ST takes 39 seconds, while the same operation on an ST using the TURBO25 accelerator does it in 14 seconds (2.78 times standard speed). Similarly, re-scaling a full page image in a DTP program at "standard" speed takes 83 seconds while the accelerated ST does it in 31 seconds (2.67 times standard speed).

Fast Technology's TURBO25 provides a reliable way to obtain improved speed from an Atari ST. ■

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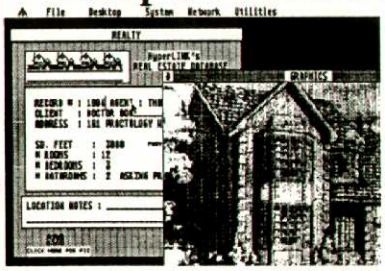
Example #3 : Real Estate DBase



As a simple example of a Relational Data-Base not just limited to text, HyperLINK can be set up to "link" any given field in a database with an associated graphic file. In the Realty HAP for instance, there is a link from the database to a picture of the house indicated. This is just a sample of how Multi-Media can be used.

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REVIEW

NIE makes icon-editing a snap!

Newdesk Icon CPX Editor

by Peter Donoso

IN ORDER TO LET USERS DIFFERENTIATE QUICKLY among system resources, the original ST Desktop environment automatically assigned one of a small variety of built-in icons to each general class of device and file. Now, Atari's Newdesk desktop environment, available on Mega STe's, TT's, or any ST upgraded to TOS version 2.05 or higher (for example, with CodeHead Technologies' TOS Extension Card), extends this concept by putting icon assignments and icon forms entirely under user control. You can assign different icons to each class of device or file, or attach a specific icon to any desktop object.

To permit this flexibility, Newdesk stores only a limited set of basic icon bitmaps in ROM. Additional custom icons are loaded automatically from a file called DESKICON.RSC, a default version of which is distributed with Atari system software. Unfortunately, DESKICON.RSC is not a standard GEM resource file, and until now, few tools have been available to modify it—none of them easy to use.

✔ NEWDESK ICON CPX EDITOR
Requirements: Any Atari ST/TT computer with TOS V.2.05 or higher and Atari's Extensible Control Panel.
Summary: Desktop icon editor in CPX form.
Distributor:
Software Development Systems
806 Redondo Avenue, Suite 404
Long Beach, CA 90804
(310) 595-9799
Price: $29.95

The NIE Solution

Enter Software Development Systems, whose Newdesk Icon Editor makes it easy to design custom icon sets. NIE is a CPX program, designed to work with Atari's Extensible Control Panel. Installation is as simple as copying the file NEWDESK.CPX to your CPX directory, and "reloading" with the Configure CPX.

NIE allows direct access to DESKICON.RSC and NEWDESK.INF, which collectively store icon bitmaps, file-linking information, and related data. When you first access NIE from the Extended Control Panel menu, it searches for both files in your root directory, and loads the information they contain into its main editor window.

Any icon can be selected for viewing and editing by using the accompanying scroll bars, and you have the option of toggling between edit mode and desktop view, which displays the icon as it will appear either in a window or on the desktop. Both the Data and Mask parts of any icon can be edited, one pixel at a time, then saved, along with an accompanying filename and extension.

Additional icons can be added to DESKICON.RSC, up to a maximum of 200, depending on size (current TOS versions reserve space for only 4,192 bytes of icon data—Atari is currently working on a patch). NIE can import icon sets in a number of formats, including its own .ICX format, DC Desktop's .ICE format, and NeoDesk 3.0's .NIC.

To the right of the window is an icon bar that elicits a wide variety of editing, file-handling, and other

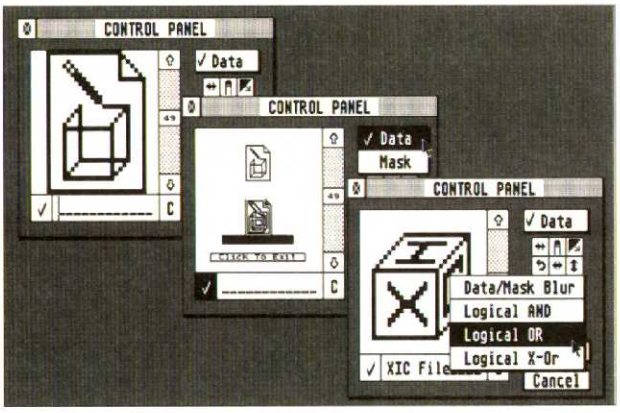

FIGURE 1. The Editor offers various options for editing both the Data and Mask fields and shows how the icon will look on the desktop.

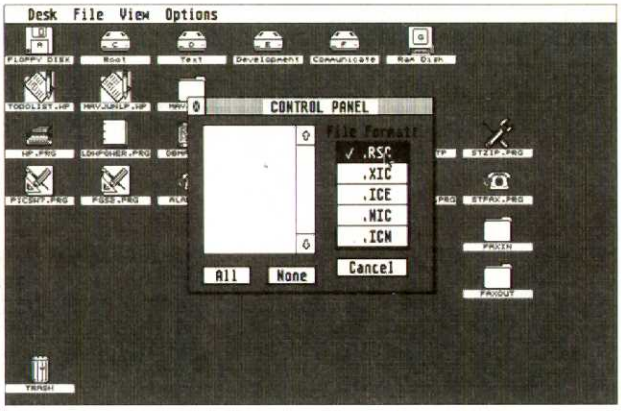

FIGURE 2. Icons can be saved in a wide variety of formats, including NeoDesk 3. And the CPX clipboard can even be used to transfer icon images.

functions. The program supports convenient editing of data and mask information, and can display an actual-size image of your icon-in-progress, in both normal and selected forms.

The most recent revision of NIE automatically creates a backup of DESKICON.RSC, each time you save—so if you accidentally corrupt internal linkages, you'll always have an original file to fall back on. The weakest point of the program, unfortunately, is its manual, which though it covers program features adequately, does not include a step-by-step tutorial for beginning users. Given the complexities of the icon resource format, we hope this will be corrected in a future upgrade. ■

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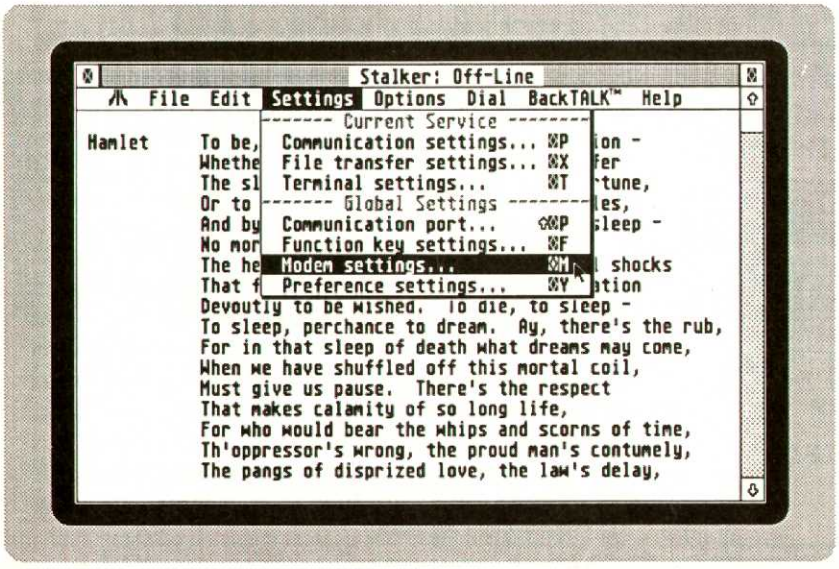

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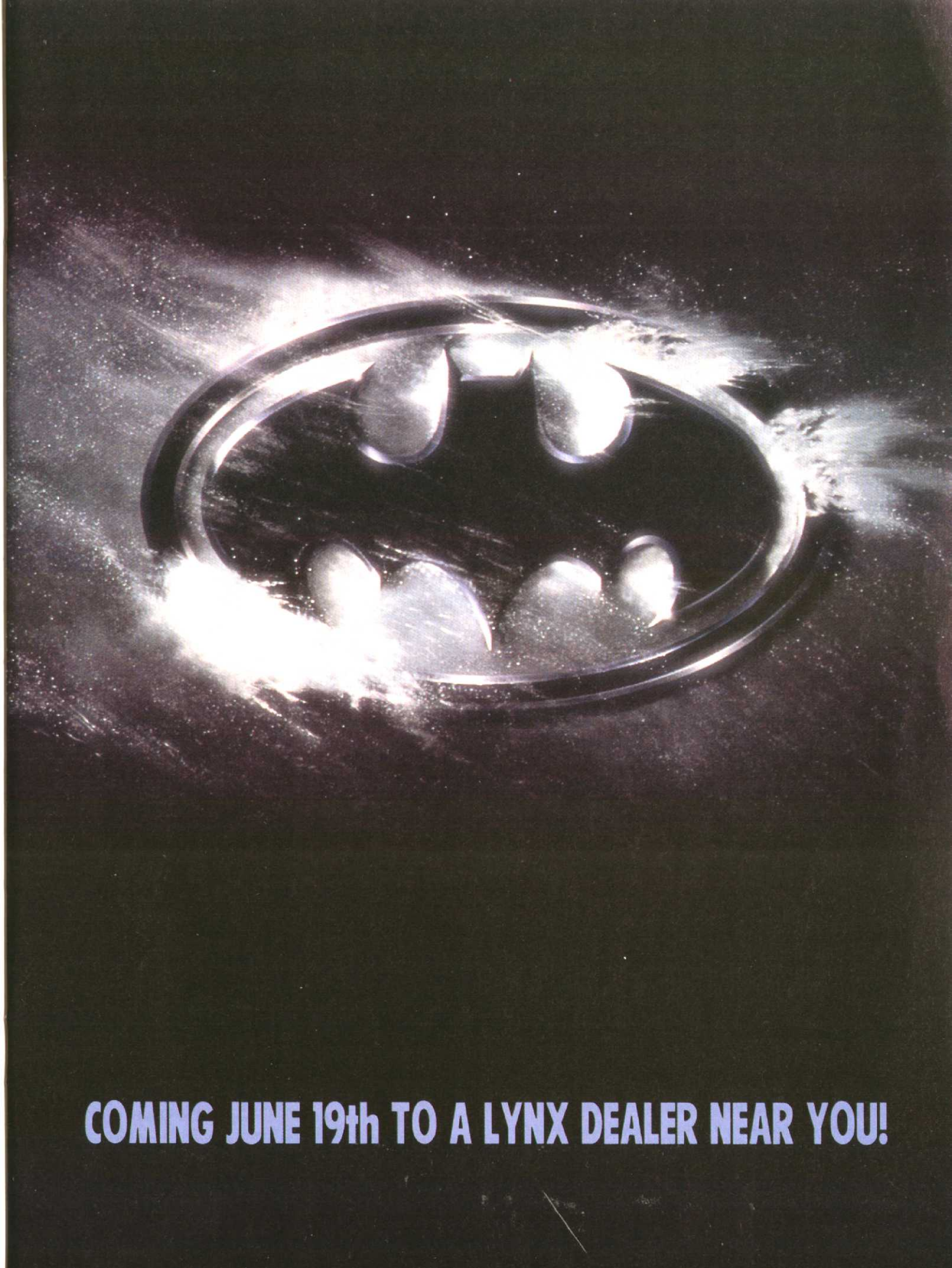
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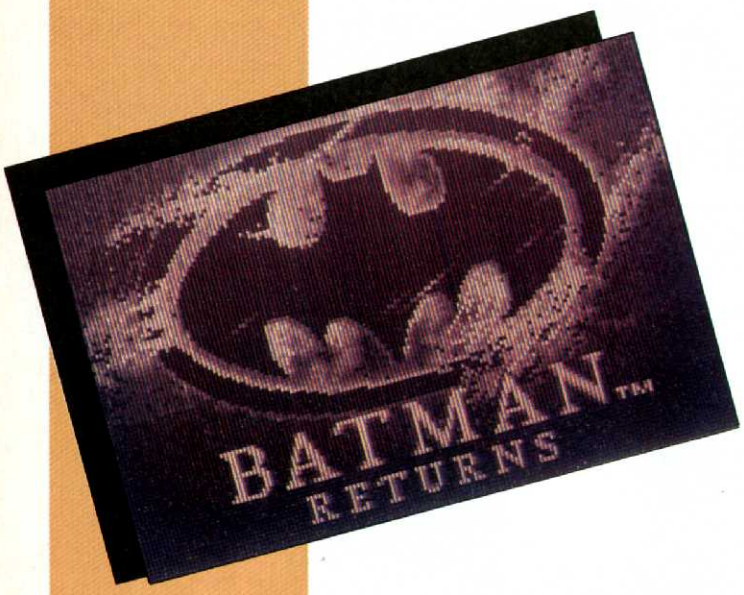


Batman

ATARI WELCOMES THE CAPED

Plug: *Batman Returns, starring Michael Keaton, Michelle Pfeiffer, and Danny DeVito, opens nationwide, June 19th, at selected theatres near you! And while you're waiting in line to see Batman, Catwoman, and Penguin slug it out on celluloid, you can get psyched for the film by plugging Atari's hottest new property—Batman Returns for Lynx—into your portable game system!*

Produced by Atari Entertainment in cooperation with Warner's, Batman Returns for Lynx will be on dealer shelves the day of the premiere. Based closely on the plot of the movie, the game is one of the most complex and realistic that Atari has ever produced. Though hardly larger than a movie ticket, its 256K card contains detailed animations, backdrops taken directly from the film, thrilling sound effects and music, and some of the hottest gameplay that's ever cramped a trigger-finger!

Though full details are still under wraps, we were able to speak with John Skruch, Director of Entertainment Software Development at Atari's Sunnyvale headquarters and Producer of Batman Returns for Lynx, about the intense labor of producing the game in keeping with Warners' exacting and ambitious plans for the future.

Atari Explorer: What can you tell us about the scenario of Batman Returns for Lynx?

John Skruch: Not much! Until the premiere, on June 19th, we're strictly limited by non-disclosure agreements. Because the game closely follows the plot of the movie, talking about specifics would let the cat out of the bag! In fact, because of this close association, we'd like to think the game and the movie enhance one another, mutually. Though it's not necessary to see the movie in order to play Batman Returns for Lynx, many of the subtle fine-points of background, animation, characterization, and scenario can only be fully understood by someone who has.

Moreover, in designing the game, we really tried to bring out the major conflicts in the film—at least insofar as these can be expressed in a videogame action format. Thus, somebody who's played the game should be able to "get into" the movie at a deeper level. Needless to say, we're real enthusiastic about the film. Our design team is already planning a field trip to see it on opening night.

AE: What about the game's overall format?

JS: Batman Returns for Lynx is a classic action game that pits the Dark Knight against his arch-enemies, Catwoman and Penguin, in four, horizontally-scrolling waves. By "classic," I guess I mean about four things. First, the game was designed to make use of standard Lynx control systems, meaning that anybody who's played Lynx versions of games like Rygar, which involve a realistically-animated figure that runs, jumps,

Returns

CRUSADER TO THE SILVER LCD!

throws objects, etc., should be able to "play into" Batman Returns without having to learn anything new.

Second, like all really good action games, we designed Batman Returns around classic play-elements that will appeal to the intermediate-to-advanced Lynx gamer. The foundation of the game is the hero's battle against apparently-overwhelming odds. It's important to recognize and understand the enemy, and to develop strategies for dealing with each scenario. And the game requires some learning: there are situations you can survive one way or another, but if you choose the wrong strategy, things will backfire, later on. You'll have too few weapons to overcome a level boss, or too little energy to survive threats you'll encounter, later in a wave. Overall, it's a difficult game to master. In fact, review copies of the game will have "trapdoors" built into them, to make it possible for reviewers to experience each level by deadline time.

Third—there's Batman. Truly a hero in the classic mold. We've worked very hard to portray Batman in a fashion consistent with the movie's vision. Our animators and programmers have worked overtime to flesh out movement and other important details of the game so that some of Batman's inherent mystery and drama comes across. For example, as Batman walks, his cape curls around his shoulders and lower legs; when he leaps, it billows out around him like a pair of wings. The cape and cowl are important parts of Batman's mystique, and are supposed to strike terror into the hearts of criminals. We think we've put this idea across, very well. The end of the game is also a real tour-de-force of classic animation—and is truly worth the effort players will expend in trying to reach it.

AE: Who was involved in designing Batman Returns? Did you have to bring extra hands on-board for such an ambitious project?

JS: We sure did. The programmers were Eric Ginner and Jerome Strach, who programmed Ms. Pac-Man, Checkered Flag, Shanghai, and, most recently, Rampart. The visuals team was headed up by Susan G. McBride, who's worked on Klax, Rampage, Warbirds, and others. Helping her were Melody Rondeau—a really able cartoonist—Eric Elliott, Robb Mariani, Philip Temple, and Eric Blumrich. Mariani was flown in from Atari's Chicago Entertainment Headquarters, and Temple and Blumrich were brought in on contract for the project. All made important contributions. Sound and music are by Bob Vieira, who's contributed to many of our top-selling Lynx games.

AE: What was the design process like?

JS: We first undertook to do Batman Returns back in September of '91. But because of the movie's tight production schedule, we didn't get a preliminary synopsis until November. At that point, we were able to begin figuring out some conceptual things, and when stills and a shooting script began showing up in January, we were ready to start programming. There was some free time early in the production cycle, but our programmers used the time to program Rampart, so it was win-win.

Once programming started, the only problems we encountered were the inescapable ones brought on by designing a game on a movie at the same time the movie is being made. For example, one of the reasons it took so long for stills and visual materials to reach us is because, according to union and individual contracts, each actor portrayed in a publicity shot must approve of its use before the photo is distributed.

Other problems were the result of the kind of editing that goes on when movies are being shot. Editing is an important part of the creative process—and it's common, when producing major motion pictures, for whole scenes to end up "on the cutting-room floor." Every few weeks, we'd receive another stack of adds and cuts for our shooting script. In one instance, we had to design a new wave to replace one based on scenes that didn't make the final cut of the film.

Because we'd elected to have the game ready by the time the movie was released, the schedule was so tight that we had to work 12-hour days during the week, and 10-hour days on weekends, for months. We had to make special arrangements to keep the air-conditioning at Atari's Sunnyvale headquarters turned on, over the weekends.

All in all, however, we found the experience of working on Batman Returns to be totally exhilarating. It's going to be a blockbuster of a film, and we really feel we've designed a game to do it justice. ■

LYNX

Games for Summer

Just in time for Summer CES.

Atari is heating up the screens with a crop of new releases! Hoop it up with Basketbrawl, for awesome, in-your-face action! Hit the sky with Hydra, for high-tech combat! Check out Lynx Hockey, for the finest in sports simulation (broken teeth included!) Settle back for a round of castle-building and bombardment, with Rampart! Or break the bank with Lynx Casino. These are just some of the new Lynx hits that'll be burning up your screen, this Summer!

LYNX

Basketbrawl

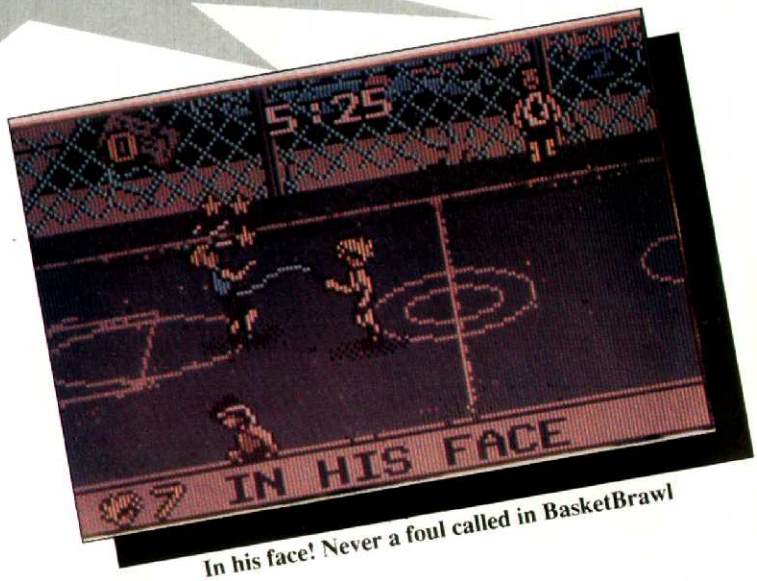
B-Ball for Nasty Boyz!

Okay, "Home!" Grab those Nike Airs, strap on that Kevlar vest, and let's shoot some hoop! Basketbrawl, newly ported to the Atari Lynx, combines the skill required of a first-rate sports simulation with the lightning reflexes demanded by the best Ninja-streetfighter games. On the one hand, you shoot hoops, and on the other, you shoot ... well ... guys on the other team! Or kick them, or stab them, or just give them a few good-natured roundhouse kicks to the head!

Pick your player from among the ten rough, tough streetfighters offered. Each character has a different combination of power, shooting skill, speed, and stamina—so depending on what kind of game you plan to play, your choice may be important. Player characteristics can be enhanced by picking up a wide variety of powerups that appear on the court, during the game.

The object of Basketbrawl is to lead your team to victory through a tournament series of fifteen games against five other local street-gangs. Points are scored by shooting baskets—but beyond that, there are no rules. Need to get that ball away from their center forward? Pick up a knife and stab him, or swing a length of chain into his teeth. Boxed in? Pass the ball to a teammate, by way of an opponent's face. Naturally, the other side is equally capable of mayhem (and competes with you for power-ups!), so while the playing field may be violent, it's still level.

If the opposing team doesn't provide enough action to keep you on your toes, spectators have a tendency to throw knives at random, or simply stride out on the court and start pounding somebody. There's even a violent referee! Luckily, though the weapons look pretty lethal, there's no such thing as a fatal wound in Basketbrawl. If a player gets too badly messed up, he just goes down for a while before rejoining the game.



In his face! Never a foul called in BasketBrawl

Even though Basketbrawl involves fighting as well as running and hoop-shooting, the programmers have designed a sophisticated, context-based system that lets you manipulate your player fluently after only a few minutes of practice. A code system lets you return to any level you've already visited, without playing through prior levels. Finally, the animation is realistic and colorful, and a funky score adds to the fun of play! A winner! ($34.99)

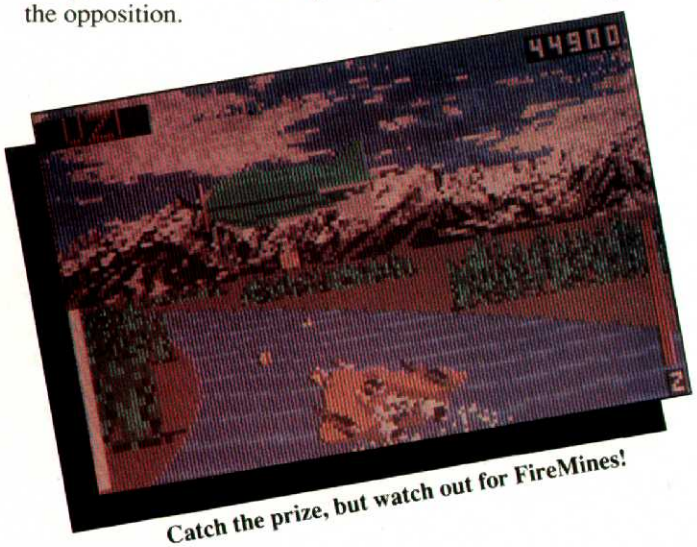
LYNX

Hydra

High-tech Air/Sea Combat!

Hydra is a heavily-armed surface-effect vehicle that can skim the surface of the water, or fly above it, all at lightning speed. And as its secret-agent pilot, you'll need all that speed and power, just to survive! Hydra pits you against hundreds of enemies in nine land-and-water missions on three increasingly-challenging levels. Your ultimate goal: to deliver secret military equipment to different parts of the world, gather enough money and fuel to keep going, and blast your way from one end of each terrifying course to the other.

Controls are simple: on water, the Hydra speeds up when you push down on the joypad, bringing its nose up to proper hydroplaning angle. Push left or right to steer, and use Button A to fire your pulsed laser—something you'll have to do frequently to bore a path through the opposition.



Catch the prize, but watch out for FireMines!

When you press Option 1, the Hydra takes to the air, becoming an altitude-limited surface-effect vehicle that's fast and nimble. Here, all four directions of the joypad are engaged, so you can climb, bank, and dive to find your quarry and avoid your enemies.

Courses are laid out down rivers and canals, across sea-lanes, and down narrow tunnels—so there's plenty of terrain to navigate between start and finish. Enemies range from the merely obnoxious: robot droids that float into your path—to the truly menacing, complete with rockets, lasers, and other offensive weapons. And all the time, your competitor—the pilot of the Black Hydra—is breathing down your neck.

If you survive the course, you'll get a bonus round at the end. You'll also get to purchase weapons and power-ups at the base store—a rough-hewn hangout run by one of a variety of seedy characters, with names like Ziggy and Bingo. Available power-ups include cannons, nukes, extra fuel, shields, homers, boosts, and a super-power "six-way shot" capability. As each course offers a unique combination of obstacles and threats, it makes sense to develop a strategy to match the firepower you purchase to the challenges you'll face. This, in turn, means that you have to play certain rounds with emphasis on earning enough money to afford the weapons you'll need in the upcoming scenario.

Animation is hot, employing the Lynx's versatile "zoom" capabilities to create the impression of real 3-D depth. Sound effects are great, and the music, complete with fuzzed drum tracks, is right out of a spy flick! ($34.99)

Lynx Casino

Win Big! No Ante

Ever wish you could take a thousand bucks and head to Vegas? Thrilling games of skill and chance, tacky carpets, and lounge lizards of every description make Lynx Casino the next best thing. Whether your game is Craps, Blackjack, Video Poker, Roulette, or the slots, there's something in Lynx Casino for the gambler in all of us.

The real point of Lynx Casino is that it presents accurate and exciting reproductions of five favorite casino games. But the programmers have lavished time and effort creating an environment that makes the games themselves even more fun to play. Lynx Casino lets you walk around the gaming floor of a humorously-depicted gambling den, complete with potted palms, an Elvis impersonator, and other menaces to navigation. If you walk up to any of the casino denizens and press the A button, they'll even talk to you!

The dice are cast! A winning throw in Craps.

But hey, the play's the thing, right? The games in Lynx casino are all faithfully-duplicated simulations of their casino equivalents, and all worth playing. You start the game with $1,000 in your pocket, and the cashier will extend credit twice, at $500 per marker. The object, of course, is to leave the casino with more money than when you entered. But that's easier said than done.

Lynx Blackjack is played with a six-deck shoe, so card-counters should leave their brains at the door and stock up on guts. You can play one or two hands against the dealer. Dealer draws to 16 and stands on 17, and doubling, split, and insurance options are supported.

Craps is played on an attractively-detailed felt and supports a large number of options. Your wagers are made transparently, by placing chips either in or between the labeled ranges on the table. If you've never played Craps, complete rules are available in the manual (very complicated!). Roulette is similarly complex, but is also charmingly and completely simulated.

Finally, for gambling at lower stakes, there's Video Poker and the slots. Poker is played with a unique, 53-card deck containing one Joker, and Joker is wild. The slots, of which there are several, accept bets up to $5. Animation is great, and the machines sport a statistical payback of 97%, just like the real thing!

If you're planning a trip to Vegas or Atlantic City in the near future, you may want to use Lynx Casino as a training aid. Otherwise, it's just plain fun ... and that's no gamble! ($34.99)

LYNX

Lynx Hockey

He shoots. He scores!

If sports simulations are your thing, Lynx Hockey is the game for you. From the zing of skates on ice to the fist knocking out your front teeth, every aspect of pro hockey has been reproduced.

High-stick your way to the Stanley Cup!

Essentially a simulation, Lynx Hockey lets you manage any of 22 teams in four divisions, each with its own initial combination of scoring, passing, defense, defense speed, checking, checking strength, goalie speed and intelligence, and even fighting ability! Several options are offered for regenerating team stats at random, and ranking teams in skill-order, prior to team selection. A password option lets you restore any desired set of team stats during a subsequent play-session.

Each game begins with a face-off, where you control your center. The goal is to maneuver into position and swing at the right moment, slapping the puck to your nearest defenseman. Practice makes perfect!

Then the game begins in earnest. The designers of Lynx Hockey have worked out a simple system that prevents you having to control the positions of all players on your team. Option 1 is used to switch control between the two players nearest the puck, letting you coordinate passing and other moves fairly easily. The joypad is used to direct the player you're currently controlling. When on offense, button B is used to pass, and button A to shoot for the goal (high or low, depending on whether you press it once or twice). On defense, button A is used to check, which can cause your target to fall to the ice. Button B has a secondary meaning as well: when pressed, it indicates that you're ready to fight, if the opportunity should present itself. The goalie is always controlled by the Lynx, which necessitates aggressive play.

When you choose to fight, the Lynx presents a closeup of the two players involved, who proceed to slug it out in true Hockey fashion. The joypad is used to move your combatant and duck, and option 1 and 2, and the A and B buttons, are used to select from jabs, roundhouse punches, uppercuts, and the infamous "low blow." Losers spend three minutes in the box.

In case of a tie game, shootouts are authorized, wherein each team takes turns taking five shots at the other's goalie. Among other options, Lynx Hockey can be played with or without Rules; which, when implemented, impose standard penalties for offsides, two-line passing, icing, and delay of game. ($39.99)

Rampart

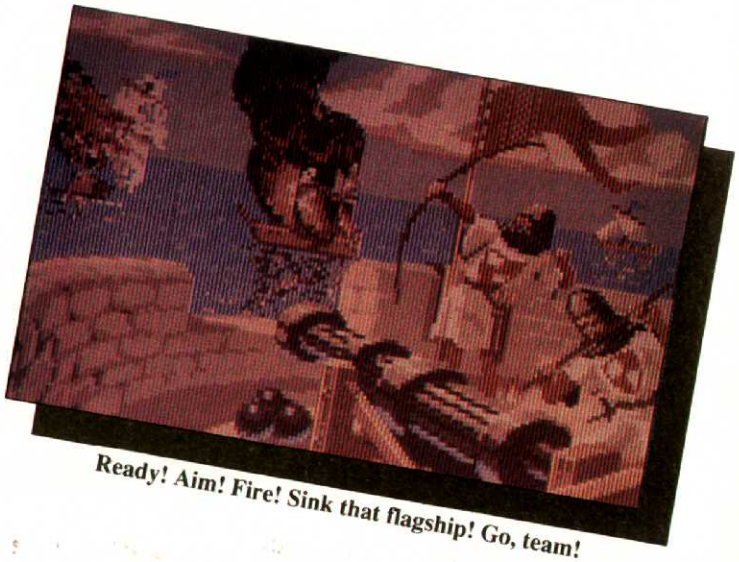
Tetris meets Sea War

Rampart, new for the Atari Lynx, combines the challenge of several classic games into one exciting scenario. As the commander of a group of castles under assault from the sea, your first job is to select which castle you'll use to mount your brave defense. Selecting the right home castle for each harbor scenario is important, since the positions of the enemy ships determine their accuracy in tossing cannonballs in your direction, and suggest the eventual shoreline destination from which their assault forces will disembark. It's also more difficult to rebuild your ramparts between rounds, if your home castle lies too close to water or one of the screen boundaries.

A square rampart of stone and mortar is constructed around your keep, and the game begins. Each round of Rampart has several phases. In the first phase, you get to place a limited number of cannon around your existing ramparts. In the second phase, a digitized cry of "Ready! Aim! Fire!" unleashes a devastating barrage in the direction of your ramparts, blowing sections of them to smithereens as the enemy forces sail ever closer to the strand. You, in turn, get to aim your cannon at the approaching ships, and blow them out of the water!

The third phase involves repair. Your primary goal is to rotate and place Tetris-like sections of the wall so that they fill the breaches in your primary rampart. Once you've repaired your walls, you can surround additional castles—giving them some protection, and insuring that you have place to locate further cannon. Surrounding territory also helps you earn points. Played at the highest level of sophistication, Rampart offers much of the momentary thrill and challenge of Tetris, along with the speculative strategy and territorial considerations that underlying the Japanese game, Go. The result is profoundly addictive!

Each harbor scenario offers a different set of firing vectors, keep placements, and enemy configurations, so there's enough variety here to keep you busy for a long time. And if you've got what it takes to win all the harbor battles, try defending your entire island against simultaneous attack against all your ports! Decorative graphics appear between the phases of each round; and digitized voices, sound effects, and a martial score add spice to the extraordinary challenge of play. ($39.99)



Ready! Aim! Fire! Sink that flagship! Go, team!

Atari SLM605 Laser Printer

A smaller footprint and added features make Atari's new laser a worthy successor to the SLM804

◆ **Photographs by Stan Schnier**

ATARI'S SLM-SERIES laser printers are engineered on a unique and sensible principle: that if you already have a powerful computer with powerful software to run on it, your printer doesn't need to be "smart." Lasers from other manufacturers incorporate their own microprocessors, huge amounts of memory, onboard PostScript interpreters, and other facilities—all at added cost. But Atari's own lasers—the SLM804 and its recently-introduced replacement, the SLM605—are "bare bones" laser engines, employing a sophisticated blend of host-computer hardware and software innovations to produce the same industry-standard 300 dpi documents as their more expensive competition.

Considerably smaller and lighter than the SLM804, the new laser measures a scant 16.1 inches wide by 15.4 inches deep (not including paper tray), and stands only 8.5 inches high, making it perfect for home or small-office installations, where desktop space and headroom are at a premium. Paper is fed from an external cassette that is quickly accessible for refills. Four paper sizes are supported: American Letter and Legal, and European standards A4 and B5; and the tray will accept up to 150 sheets of standard thickness. A support can be extended from the end of the tray when using sheets greater than 11" in length. Two paper paths permit face-up or face-down collation of output.

Unlike the SLM804, which was controlled entirely from within the host computer, the 605 features onboard front-panel controls for selecting manual feed and paper size, and for engaging a special, manual-feed-only "thick paper" feature, that allows feeding of heavier-than-normal stock. Because the SLM605 retains full compatibility with the SLM804, manual feed can also be engaged in software. However, the advantage of the front-panel control is that it offers the possibility of interrupting an ongoing print job to perform selective manual feeds.

SLM605 maintenance is very simple. The drum assembly and drum counter module must be replaced every 10,000 pages (i.e., every three to six months of normal use), and used toner—which collects in the drum module—is automatically disposed of at this time. Toner replacement is straightforward, and a wide range of manufacturers produce low-cost, compatible toner cartridges required. The moving parts of the SLM605 are largely contained within a modular "developer unit," which can be replaced entirely, should problems occur.

The SLM605 comes with an SLM page-printer controller, which interfaces between the laser printer and the DMA port on any ST, STe, or TT computer. To use the laser with standard applications, a software interface is provided that causes the printer to emulate a popular Diablo 630 letter-quality printer. A wide variety of font files, including standard "typewriter" typefaces such as Courier, are enclosed on disk.

In use, the SLM605 is effectively silent except when printing is taking place—a real advantage in a small office. When

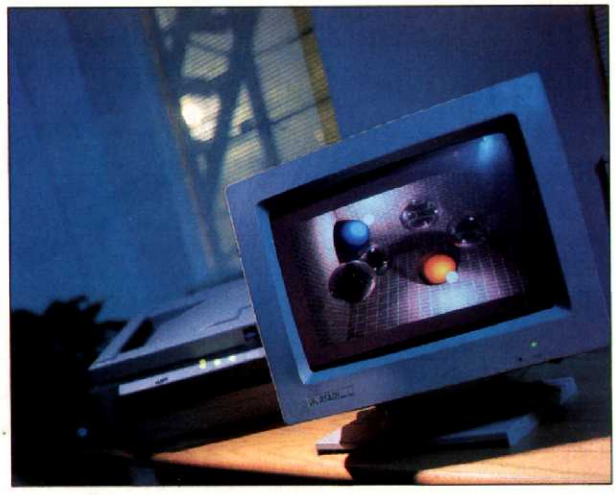
BY AE TECHNICAL STAFF

the command is given to print, the laser "cycles up" into print mode: a process that adds about 5 seconds to the time it takes to print the first page. Thereafter, six pages can be printed, per minute.

Print quality, as expected, is very high. The SLM605 uses a 300 dpi standard laser engine, producing black, high-resolution text, graphics, and halftones. The printer is ideal for correspondence, presentation work, the production of camera-ready copy for xerographic or one-color lithographic reproduction (ideal for newsletters), and for generating quick, high-res proofs of publication pages that will later be output to Linotron or other ultra-high-resolution page printer. Perfect for home, office, or studio, the Atari SLM605 laser printer provides reliable, high-quality output for any application. ■

Atari PTC 1426 Color Monitor

Perfect for TT030 productivity and graphics applications.



THE PTC 1426 IS A multisync monitor that can display all of the TT's resolutions (ST and TT modes) up to medium rez (the TT's special high-resolution black and white mode can only be displayed by full-page paper-white displays in the Atari TTM series). As an added plus, a switch on the back of the 1426 turns it into a full-service PC-compatible VGA display, for sharing with an IBM compatible computer.

The monitor features a 14-inch diagonal, dark screen, with 90-degree deflection and a small 0.29 mm dot pitch, allowing the clear display of both text and graphics across a wide viewing angle. Aside from the large size of the display, however, the unit is economically-sized: measuring only 14.2" x 14.6" x 15.2" inches. It comes with an integral pedestal that can be adjusted both horizontally and vertically for optimum viewing.

Among the PTC 1426's advanced features is its built-in "Quickswitch" system, which brings the picture into view within seconds of turning the monitor on, but which does not draw power when the monitor is off. Power switch, brightness, and contrast controls are front-mounted, for easy access. In the rear is an easily-reached horizontal-phase control, for picture centering. The input cable is integral, and plugs into the TT's monitor port.

As demonstrated by our photo, which shows a ray-traced image displayed in TT medium resolution mode, the PTC 1426 is the monitor of choice for doing serious graphics, animation, or DTP work on Atari's high-end computers. Thanks to its sophisticated screen-masking system, colors are vibrant and resolution sharp. Indeed, the PTC's resolution and color-quality are so good that the monitor can well serve double-duty for use with general productivity software. This is particularly appropriate since the TT allows color-control of virtually every aspect of its user interface and windowing system; and many productivity applications allow users to configure the color of additional screen elements, icons, etc., for maximum clarity and efficiency. ■

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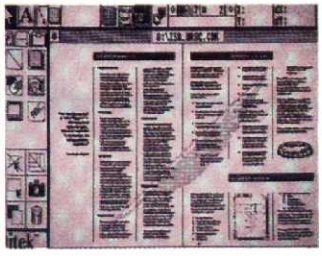

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HOTZ MIDI Translator Software

by Craig Anderton

Software reviews are usually not too difficult to write. The product does something similar to what has existed before (sequencer, sample editor, librarian, etc.), so all that's needed is to explain what makes it different, and compare the product's strengths and weaknesses to those of similar products on the market.

The Hotz MIDI Translator isn't so simple, as this program has virtually no resemblance to anything else in the world of music software. In a nutshell, the software turns an Atari computer into a device that can totally redefine a MIDI instrument's output: the keys you press can be constrained to notes comprising a specific scale or chord, or select a new set of scales and chord notes to constrain other keys. I realize that may seem pretty abstract for now, but we'll give some practical examples of what this means after going through a little history.

Translator Origins

In 1988, the Hotz MIDI Translator (also called the "Hotz Box") surfaced as a very expensive ($5,000) hardware/software combination. Dispensing with the "keyboard controller" metaphor almost entirely, the hardware was designed from the ground up to control MIDI instruments. It contained six groups of touch-sensitive pads that generated MIDI note data, and eight small groups of pads that sent controller data. However, the hardware was only half of the equation; the Atari ST ran software that "translated" data generated by the controller in a variety of unique ways.

Many musicians, myself included, had a hard time grasping the concept behind the Translator. Jimmy Hotz, inventor of both the hardware and software (with programming by Tom Bajoras), would give demos at industry trade shows where he would compose entire orchestrations on the fly, using just the Translator and bunch of MIDI sound generators—and never hit a wrong note. Some people thought the Translator was just a mapper; others thought it was simply some kind of fancy algorithmic composer. Yet it always seemed that there was a lot more going on than was obvious to the casual observer.

Due to the product's high cost (and other factors), the Translator hardware has thus far made it into the hands of only a few musicians. I was very fortunate to be one of those few, because Jimmy wanted someone to write an introductory manual "for normal human beings" and I accepted the assignment. Learning this very deep device was not an easy journey—while I

CONTINUED ON PAGE 70 ▶

Photograph by Mike Fulton

Jimmy Hotz demonstrates the Translator at Anaheim's January NAMM Show.

INTERVIEW

WITH

Chester Thompson

Drummer Chester Thompson, a thirty-year veteran of the jazz and pop scene, has collaborated with new-music luminaries such as Frank Zappa and Weather Report, and has maintained a high profile as the touring drummer for Phil Collins' solo concerts, as well as with the supergroup, Genesis. Now, with a new album, Make a Joyful Noise, *climbing the charts, Thompson talks about the tools of his trade: among them, Steinberg's innovative Cubase sequencer and the Atari STacy.*

This interview is reprinted from Cubasics: the Official Bimonthly Newsletter for Cubase and Cubeat Users. For more information about Cubasics, see News and New Products, in this issue.

CONTINUED ON PAGE 75 ▶

by Geoffrey Ryle/*Publisher & Editor, Cubasics Newsletter* ▲*Photograph by* Mike Fulton

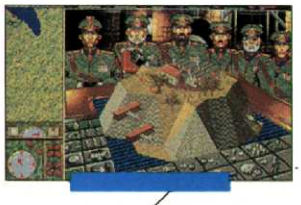
CAPTAIN MIDNIGHT'S GAME ROOM

ILLUSTRATION: JEFF CLAPP

These days, many of the hottest new ST titles originate in Europe, with France and England being the largest producers. Many of these games find their way to American shores, however, through the efforts of Atari dealers who import them in their original versions. This time around, we've reviewed two innovative games from Europe: Populous II, from Britain's Bullfrog Software, and Another World, from Delphine. We've also glanced at EA's first PowerMonger data disk, and their "PowerMonger Strategic and Tactical Guide." **by DREW KERR**

Another World

Populous II



PowerMonger

Eurogames!

Populous II

(Bullfrog/Electronic Arts)

POPULOUS II, SUBTITLED "TRIALS OF THE Olympian Gods," offers an exciting alternative to the unnamed world of its illustrious predecessor—a world totally entrenched in Greek and Roman mythology. The manual features an introductory comic strip, featuring the bawdy exploits of Zeus. It seems the randy sod sowed some wild oats, and you're one of them—offspring of Zeus and a mortal woman.

Being an uppity sort, you demand your rightful place on Mount Olympus, but Zeus isn't budging so fast. "You must prove your worthiness by defeating the 32 divine opponents who rule the 1,000 worlds of Populous II," he proclaims. And the final conflict will pit you against Father Zeus, himself (Oedipal, huh?)

Instead of original Populous' huts, middens, and castles; Populous II has you and your followers walloping around in togas, building Greek temples and palaces. Instead of blue and red bars indicating Good and Evil populations, you have a neat-looking Roman coliseum in the upper-right-hand corner of the screen which fills up with spectators to indicate relative population strengths.

But even given these cosmetic differences, players of the original Populous should find Populous II quite similar in feel. Raise and lower land, grow that manna, move your people to the papal magnet, and kick Evil butt! Still the name of the game.

Last time out, however, the range of catastrophes that you could rain down on your opponent was limited to earthquakes, volcanos, swamps, floods, knights, and Armageddon. This time around, Bullfrog really pulls out all the lightning bolts. As Populous II progresses, the number of "divine intervention effects" at your disposal increases dramatically. They're divided into several categories, so pay attention!

▲ People Effects: Raise/lower land, place papal magnet, turn your leader into Perseus (a strong, skillful warrior, like the mythical Greek), lay plague, and of course that old favorite, Armageddon.

▲ Vegetation Effects: Grow forest, renew land, place swamp, plant fungus (ooh!), and turn your leader into Adonis (he splits up like vegetation!).

▲ Earth Effects: Build roads, city walls, earthquake, batholith (underground movement of rock, for you non-geologists), and turn your leader into Heracles (double his strength).

▲ Air Effects: Command lightning, whirlwinds, storms, hurricane winds, and turn your leader into Odysseus (speed).

▲ Fire Effects: Call up fire columns, a rain of fire, volcanos, and turn your leader into Achilles (a fast runner with a head of flames!!).

Populous II, the sequel to Populous, from Bullfrog/EA.

▲ Water Effects: Call forth basalt (stops land expansion), whirlpools, baptismal fonts (when a walker falls into one, they change allegiance), tidal waves, and turn your leader into Helen of Troy (this beauty attracts followers into a watery grave). I'd buy this game for the special effects alone!

The other twists are also quite ingenious. Create a "face" for your character before putting him into play. Choose a scholar's hat and wise eyes for clever combat, or a warrior's helmet and angry eyes for a ruthless battle experience. Your choice has a direct affect on the nature of the resulting course of play. A limited type of "computer assist" is also available—you can delegate the task of raising and lowering land to create Walkers (called "sprogging") to the machine, while you concentrate on the details of conquest.

Each time you conquer a world, you earn a varying amount of "experience," determined by how badly you beat your opponent. Each unit of experience, represented by a lightning bolt, can be put towards new divine intervention effects.

As in original Populous, you can also play customized games, altering the powers of Good and Evil for your own fun, though the catastrophes you can cause are limited to the ones you've earned in your regular (conquest) games!

Bullfrog has added keyboard shortcuts to save you a lot of mouse clicking. For example, F10 is "pause" and F7 will "take a snapshot." You can also use the directional arrows and numeric keypad to travel across the land easily.

Populous II's documentation takes for granted that players are already familiar with the Populous universe, and (alas!) the original's informative tutorial is conspicuously absent from the manual. Nevertheless, Bullfrog manages to give you enough information (60 pages worth!) to get you off and running in no time!

The game is available in one of two varieties, so pay attention! The 512K version, configured for those of you with 520ST/single-sided disk drives, was the first

one shipped, so examine the box carefully! This version is not installable on a hard drive, has no music, and offers limited sounds and graphics. All this, however, has no effect on actual gameplay!

If your computer can handle the 1 MB version, go for it! It's got superior noises: Battles ("Oof!! Uhhh!" CLANG!); deaths ("ahhh-hhh!"); slurpy swamps; timpani banging as you move your papal magnet; flares of trumpets when you turn your leader into a hero—in short, all the noises we're grown accustomed to while playing a great game.

While Bullfrog/Electronic Arts has thus far released the ST versions of Populous II only in England, a utility called 60MHZ.PRG has been included for play in the US and Canada (or wherever 60Hz line-current is used). This program must be copied into your \AUTO folder and executed before POPULOUS TOS.

Final Verdict: Still one of the greatest computer games of all time, with enough curve balls to satisfy even the most maniacal aspiring deities. The last word in god games!

Another World

(Delphine/U.S. Gold)

DELPHINE SEEMS TO BE A FRENCH VERSION OF Sierra, releasing high-quality adventures such as Future Wars, Operation Stealth, and the recent Cruise For A Corpse. Not content with simply doing the same old thing, Delphine tweaks each new product to make its interface more interesting and scenario more captivating.

Another World is a real doozy, but you know that already if you've seen the demo from the UK's ST Action magazine. The game marks the return of designer Eric Chahi, who opened many eyes with Future Wars.

The opening sequence is a virtual replay of the demo and is absolutely stunning. Its smoothness easily tops the beginning of the Thunderhawk sim. Your car pulls up to a laboratory on (what else?) a dark and stormy night! The sampled sound is simply amazing—you hear feet rustle on the gravel and squeak across a room.

The second scene opens on your laboratory, where as Lester Chaykin, scientist extraordinaire, you're seen, sitting at your control panel, experimenting with a lot of scientific diagrams and 3-D models. In one of those coincidences that kick off endless TV series from the 60's, you lift your can of soda to your mouth just as a severe lightning storm hits the lab—Wham!

You're gone. But no, you're not space dust. Instead, you've been transported to ... another world! At this point, the game really begins. After you get by an exhausting, complex protection scheme, involving matching numbers and symbols on a wheel, believe me when I say this game starts immediately!

Instead of moving your character with the mouse, you operate him totally by joystick, a much preferred (and welcomed) method of control! The system is impressively flexible, allowing you to walk, run, jump, kick and punch.

Delphine's Another World features beautifully-rendered, atmospheric graphics.

The game begins as you re-appear with a poof in an underwater cavern. Don't even wait a few seconds—jam that joystick north so you can swim quickly to the top. Once you're on dry land, you're definitely on alien terrain, with all kinds of icky things watching you and oozing out of both ground and water. No time to stand around admiring the scenery—these creatures haven't had a meal in ages, and you're the main course unless you move it!

Take my advice: run to the right, and I mean run! These snake-like things wiggling out of the ground have poisonous tendons. You'll run right into a ferocious beast, so do your best Jesse Owens jump to exit, stage left ... and fast! Run to the edge of the cliff and jump onto the hanging vine while the beast tries a Wile E. Coyote in mid-air ... and down he goes!

Another World is not a game for the slow of hand. You're eventually captured by marauding villains, and it's up to you to escape with your new alien buddies to get back and finish that can of Coke! The programmers have even spared you the pain of endlessly starting from the beginning of the game every time you "die" by incorporating a clever code system for each section of the adventure.

Graphics throughout the game are beautifully-rendered, though this is largely through the use of shading, the suggestion of contour, and appropriate color choice than any extraordinary detail. Given the quality of animation in the game, however, the use of simplified graphic forms is expected. It's hard to move great numbers of bits around, fast.

Final Verdict: One of the most accessible adventure games to come around in a long time. Features state-of-the-art graphics and a player-movement scheme that's easy to master and satisfyingly responsive. A real winner!

Do Military-Oriented Games Promote War?

A NEW TOPIC HAS BLOSSOMED IN GENIE'S Scorpia Gaming Roundtable, about the morality of wargaming.

The questions are similar to those frequently asked about television: "Do violent TV shows influence behavior?" "Does the use of violence in entertainment desensitize people to violence in the real world?"

On one side, you have the gamers, who think like historians. They feel that wargames are models of actual situations and that learning more about tactics is an enjoyable and harmless pursuit.

On the other side of the coin are those who say, "War is not a game, and how can you make entertainment out of such a gruesome activity?"

Personally, I'm not much of a wargame fan, but I do love military simulations, which are closely related. I decided to go directly to the developers themselves to hear what they had to say about the variances between reality and simulation wargames and get their outlook on the controversy surrounding whether or not they feel their games glorify violence.

Flight of the Intruder, from Spectrum Holobyte.

I had a chance to talk to Marisa Ong of Spectrum Holobyte and Jim Day of MicroProse. Though their points of view are similar, they reveal some subtle and important differences.

Capt. Midnight: Where do you draw the line between a game and a simulation?

Marisa Ong: I'd have to say that all (Spectrum Holobyte's) simulations are games, but not vice versa. The main difference when we design simulations is that we are attempting to emulate something that is "real-world" within the limitations of a small computer. Of course, we make concessions in our sims for playability and just plain fun.

Jim Day: When it comes right down to it, all simulations are games. Don't let anyone tell you otherwise. Some are just more real than others. True military simulators are just more serious than the simulators in the entertainment market.

Let's be realistic here for a moment. Real simulators are not all that fun. They are not intended to be fun—simulation is serious business. However, our simulators are really games, and therefore need to be fun. To what degree realism is modified depends on the subject matter and the company's overall philosophy.

A game must be designed with this important consideration in mind. "Real" becomes what the customer will expect as "real," not necessarily the cold, hard truth. The motion picture industry is a good example of this philosophy. How "real" do we think movies are? Yet, the public thinks they are real, so the approach does work. The software business is no different from movies. We entertain and provide a vehicle for the player to escape into a different world.

DK: How do you handle death in simulations?

MO: We handle death in games mainly by not allowing the player to restart his character. In both Flight of the Intruder and Falcon, if you die while in your plane, that pilot's history goes down with the plane. There isn't any "restart" button in our simulations to let you undo your mistakes. On the other hand, we don't want to unnecessarily penalize the player so you can choose to "Abort Mission," which will save anything you did in this mission and prevent your pilot from dying.

In terms of other pilots dying, we always stress in our documentation and game design the seriousness of war and war machinery. We don't believe in a jingoistic gung-ho attitude, but rather one that tries to show players how much hard work and training goes into being able to do this job.

JD: There is death in war, therefore there is simulated death in military simulations. You cannot get away from it. What you can do is abstract it to the extreme. Some companies do a very good job at this; others don't even attempt to downplay this aspect.

We at MicroProse take this responsibility very seriously. That is the main reason you hardly ever see any "human" targets, just structures and equipment. Sure, you know that humans are out there somewhere, but you still do not see anyone getting blown apart. We attempt to avoid the grim aspects and emphasize the more upbeat and entertaining parts. Even the player's simulated death should be presented in an abstract manner. This is very easily handled through text or symbolic visuals. No tombstones, hearses, and flag-draped caskets should appear. How much fun can that be? **—DK**

Powermonger Data Disk: World War I

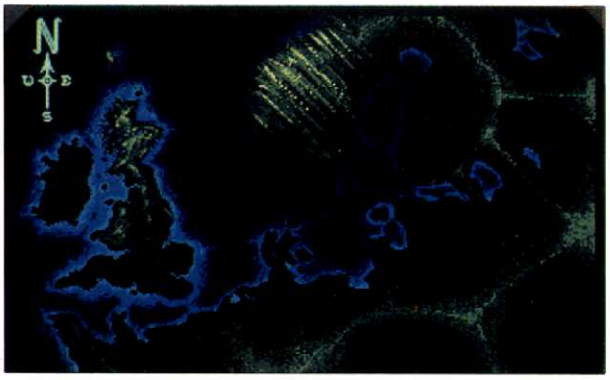
(Bullfrog/Electronic Arts)

PROMISED FOR SEVERAL MONTHS, THIS IS THE first in what will supposedly be a series of add-on disks for Powermonger. As you may remember, the superb Powermonger is sort of a spiritual sequel to Populous, with emphasis on inventing weapons and military attack. You must have the original Powermonger disk for this operate properly.

Setup is pretty easy: first boot up the World War I disk, then follow the prompts to insert your Powermonger disk, and then your World War I edition once more. The copy protection is the same as the original.

As a matter of fact, the World War I edition seems to be very much a continuation with a different backdrop. Instead of your captain being a medieval warrior chap, he is now a menacing Colonel Klink replica, complete with monacle. Your men march in militaryprecision, and instead of bows, boats and ploughs, you're armed with guns, rifles and tanks. Forget about sheep, we've advanced to deer in this era. Where there were workshops and huts, there are now bunkers and factories.

And that's about it for the great data disk. The graphics are pretty much the same, maybe even a tad more blocky. I'd advise you to turn up the brightness on your monitor because the shades are rather dark and confusing.



Powermonger, from Bullfrog/EA.

You should also beware of snipers. They hide in the bunkers just waiting to pick off your men. So if you hear gunshots from nowhere and your men are dropping like flies, search around for the hidden enemy rascal.

Final Verdict: A somewhat disappointing add-on to a great game. If you've already managed to wage the last island campaign successfully in the original Powermonger, and you still have the thrill of war coursing in your veins, this may quell your hunger for more territory to conquer. If comparisons are to be made, Bullfrog did a much better job of World War I for Powermonger than they did with the Promised Lands data disk for the original Populous. ■

Powermonger Strategic and Tactical Guide

Michael Humes. Electronic Arts, $12.95

WHILE WE'RE WAITING FOR CLAY WALNUM to come out with his Master Powermonger book, England's Electronic Arts has come out with their own Powermonger guide, a scant 80-page volume which is aimed at further nuturing those of you who feel there's always room for learning new ways of conquering your foes!

In short, this is a strange guide, since it is not written like a how-to, but rather in the form of an Old English diary kept by an unidentified employee who keeps referring to the Powermonger himself as "my lord." A little difficult getting used to.

If you are a Powermonger player, then you know the object of the game is to cut across a series of islands that form a square to get to the one in the bottom right-hand corner. That's supposed to be the toughest land of all to win. The guide does not take you through every single island; just the ones that form the best route to the end.

The manual often states the obvious, and doesn't seem to offer much additional information in the way of strategy. There is a two-page break on multiple captains and carrier pigeons, and several on recruiting, bowmen, transferring troops during battle, food, and equipping inventions. The rest is a lot of Old English yap which helps to set the scene.

This book may be a little too pricy for the 80 pages it delivers. Still, until Clay Walnum delivers the goods, it may suffice. (Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA 94404.) **—DK**

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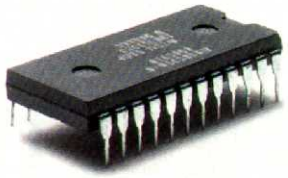

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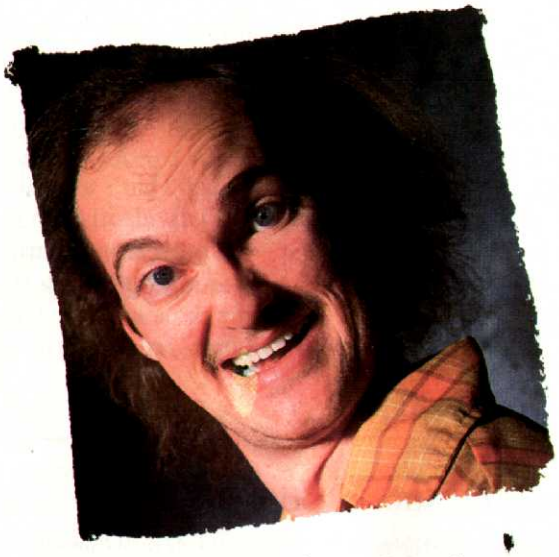

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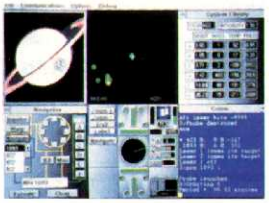

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REVIEW

A Powerful, Practical OCR for Home or Office

MiGraph OCR

by John L. McLaughlin

THOUGH PAPER PROVIDES A CONVENIENT AND tangible medium for human communication, it's not great for talking to machines. Scanning has solved the problem of how to get images from paper into computer memory. But because computers store images and text in completely different ways, images of text, such as a scan of this magazine page, require further processing before the information they contain can be used by word processors, spreadsheets, and other "text-handling" applications.

MiGraph OCR (short for "Optical Character Recognition") provides the missing link—converting scanned text to ASCII files that can be used directly by a wide variety of applications. The program can accept previously-scanned monochrome .IMG or TIFF files; or process input directly from a MiGraph or compatible hand-scanner.

✔ **MIGRAPH OCR**
Requirements: Any ST/STe/TT computer with 2 MB or more RAM and hard disk. Hand- or full-page scanner optional.
Summary: Sophisticated, trainable optical character-recognition (OCR) package, capable of making short work of data-input.
Manufacturer:
MiGraph, Inc.
32799 Pacific Highway S.
Federal Way, WA 98003
(206) 838-4677
Price: $299.00

The OCR Process

MiGraph OCR begins its job by methodically chopping up a scanned image: first into discrete lines of text, then into masses identified as words and subdivided into characters. This, alone, is a fairly complicated process, involving raster image-processing (to remove spurious background shading and stray pixels, improve contrast and separate characters, etc.) and geometric analysis (to correct for text misalignment).

Next, using a font-recognition engine licensed from Omnifont (world leaders in OCR software design), MiGraph OCR turns the bitmapped image of each character into a vector expression describing its shape in terms unrelated to size or resolution.

Characters are recognized by comparing their vector descriptions against a dictionary of character forms in different fonts and point sizes—a process that yields a far higher percentage of "hits" than prior OCR techniques involving bitmap comparisons. Additional refinement is obtained by referencing against a user dictionary, created by "training" the device on text with particular characteristics. This training is remarkably effective and doesn't require a lot of user time. Only five or six passes on mid-sized text samples are needed before marked performance improvement is realized.

As a last step, MiGraph OCR performs a complex lexical and syntactic analysis, using one of four supplemental dictionaries based on the Proximity/Merriam-Webster Linguibase. This further assists the program in making intelligent "guesses" about characters whose forms remain ambiguous.

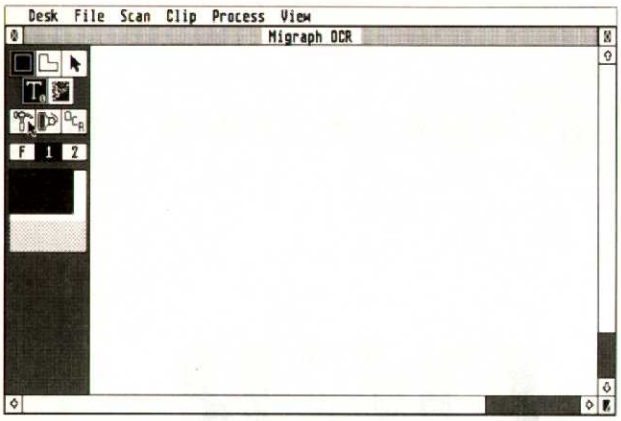

FIGURE 1. MiGraph OCR's main work screen, showing the iconic controls that manage the program's main functions. Once defaults are specified, operation is point-and-click.

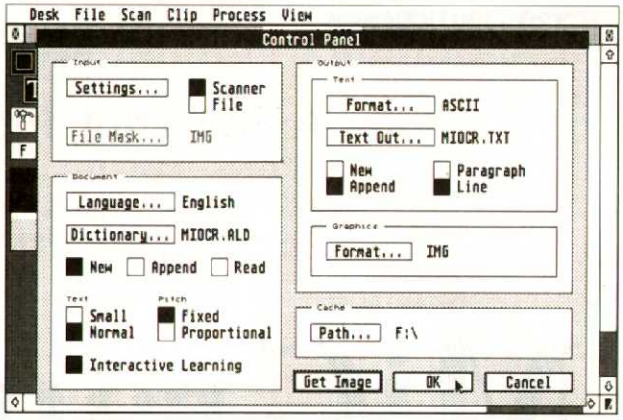

FIGURE 2. The control panel, where the behavior of main program functions can be specified. The program is presently set to accept input directly from an attached hand-scanner.

Using OCR

Installing MiGraph OCR is simple. An INSTALL program is included on the main disk that lets you specify the folder into which you want program files stored. The utility also lets you identify which of the four supplemental dictionaries you wish installed: versions for English, German, French, and Dutch are included on two support disks. A minimum of 2 MB free space must be available on the target partition.

OCR's main control screen (see Figure 1) is simple and well-designed, and a little random button-clicking quickly reveals how most of the program works. Nevertheless, to help get you started, the manual includes several step-by-step, hands-on tutorials. The general control panel (see Figure 2), accessed by clicking on the "hammer" icon, lets you specify input source (scanner or file), output format, and set refining parameters for the OCR process. Selecting "scanner" as the input device causes the appearance of a secondary scanner configuration dialog (see Figure 3) which lets you define resolution, area, and direction of input scans.

Select "Get Image," and you're flying. If you've elected to scan, the hand scanner is activated and managed automatically—all you have to do is move it down (or across) the page. OCR performs best when presented with a straight scan, so a scanning tray is recommended. The only glitch I noticed was caused, as it turned out, by the fact that I was running MiGraph OCR on a Mega STe at 16 MHz, with blitter and caches enabled. Apparently, some combination of these features throws off the sample timing, so that illegible scans are produced. The fix, at least until MiGraph issues an upgrade, is to use the Control Panel to turn off all enhancements while scanning is in progress. They can (and should) be turned on afterwards, since OCR processing benefits from the increased system throughput.

Once scanning is complete, the scanned image appears in OCR's work window (see Figure 4). Your first job is to assess the quality of the scan, to determine if it is appropriate for OCR processing. Because low-quality scans produce a large number of errors, it's best to repeat doubtful scans at this point.

The next step is to select regions of the scanned image for input to OCR. This is done in very straightforward fashion, by dragging rectangles or drawing polyline boxes around desired portions of the image. Multiple regions can be sorted so that they are processed in any desired order. An added plus: to avoid having to make duplicate scans of the same material, MiGraph OCR also lets you define the graphic regions of any scan, saving them as .IMG or TIFF files.

Initial OCR processing is unattended. If automatic processing has been selected, output text is then saved transparently to the designated file. Otherwise, the interactive learning phase begins.

During interactive learning (see Figure 5), the system presents you with problem areas of your scan, in greatly enlarged form, and asks you to correct or approve of its interpretations. The process is easily managed, though it can be time-consuming if many problems exist. When correcting a problem, it's important to determine whether it's a result of poor scan quality or from an unfamiliar font or point size. When scan-quality is at fault, you should correct the problem in text, without updating the user dictionary.

When legitimate training situations are encountered, on the other hand, you must be careful to enter corrections accurately. This is important both because you will be influencing OCR's future performance on similar text samples, and because training is normally carried out as a function of doing real work with the system. This can occasionally cause problems: for example, if you mistype a correction, OCR will nevertheless apply your "fix" to similar ambiguities throughout the document. Unfortunately, there's no way

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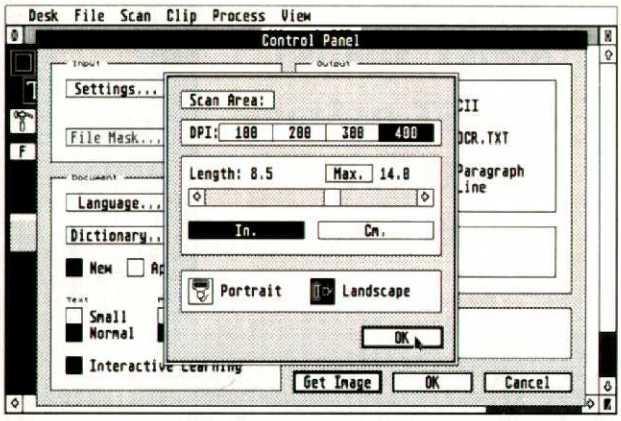


FIGURE 3. The scanner control-panel. Input scans are being taken at 400 dpi over a five-inch spread, in landscape mode. OCR automatically rotates scanned text for further processing.

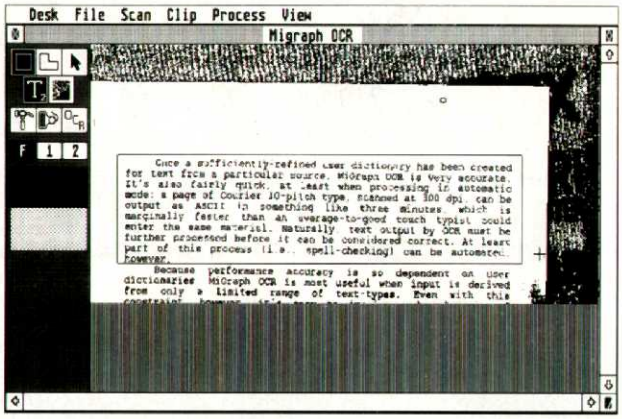


FIGURE 4. A scanned text-sample, ready for OCR processing. The area to be processed has been boxed to distinguish it from other components of the scan.

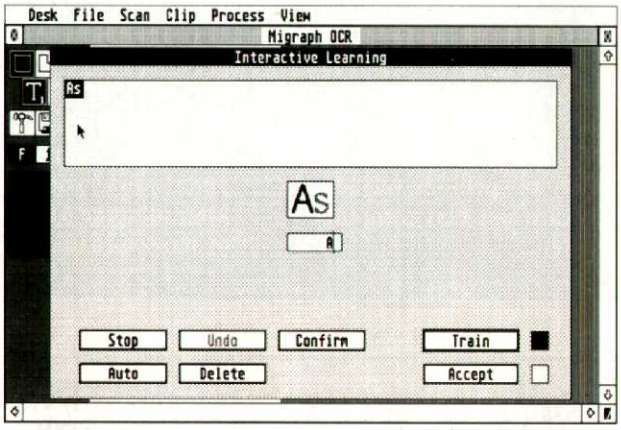


FIGURE 5. Interactive learning, in progress. OCR has correctly identified this character as a capital 'A,' and awaits confirmation.

to "edit" the updated dictionary after a training pass, nor to return to a problem area during a pass, to re-enter a correction. While it's naturally possible to prevent updating the user dictionary after a training session, a fair amount of training can still be rendered void by a few typographical errors.

Not that this is a particularly burdening concern. Entering a correction is usually a matter of typing a single letter, though occasionally, the program will present you with groups of several adjacent letters for identification. Very rarely, the program will assume that two adjacent characters are one, and will not accept multiple characters for insertion. Overall, however, the process is very easy.

Through careful training, dictionaries can be developed and refined for each type of text you regularly use as input. As noted above, these can add remarkably to the accuracy of OCR's interpretation—bringing it up to 99% in many cases.

While I've described using OCR to process only a single scanned unit of text, it's also very easy to append the results of several OCR sessions to the same output file, creating a single result document that can be imported to a word processor. Alternatively, however, I've had good luck employing utilities such as WizWorks!' Scan-Lite to conjoin several scans into one uniform image before importing into OCR. Certainly, for serious applications, a flatbed full-page scanner would be a great convenience.

Performance

Once a sufficiently-refined user dictionary has been created for text from a particular source, MiGraph OCR is very accurate. It's also fairly quick, at least when processing in automatic mode: a page of Courier 10-pitch type, scanned at 300 dpi, can be output as ASCII in something like three minutes, which is marginally faster than an average-to-good touch typist could enter the same material. Naturally, text output by OCR must be further processed before it can be considered correct. At least part of this process (i.e., spell-checking) can be automated, however.

Certainly, the program will perform most consistently well when confronted by only a limited range of text types. Even so, it's easy to imagine a broad range of applications for a program as powerful as MiGraph OCR. Particularly intriguing is the idea of using MiGraph OCR to convert faxes, received via fax-modem and converted to .IMG format, to ASCII files—providing a wholly "paperless" solution to fax correspondence in the computer context.

Only one significant feature is lacking: the ability to queue multiple files for input and unattended processing. Hopefully, this feature will be added in a future upgrade, since it would make the program highly competitive with Kurzweil and other dedicated OCR systems, particularly in the small office environment. ■

Batch-File Menus & File Selectors

Part 3 of a series / by BJ Gleason

So you want to create custom applications for the Portfolio but don't know how to program? Well, if you know how to write a simple batch file, these tricks will let you produce applications that look so good, users will think they came built right into the machine!

BATCH FILES ARE TEXT FILES THAT CONTAIN A SEQUENCE OF MS/DOS commands. When you run a batch file, DOS executes these commands one after another, just as if you typed them in at the keyboard. Taken at face value, the Portfolio's batch-file capability is a handy tool for automating backup, file transfer, and other simple "housekeeping" operations. But there's hidden power in the Portfolio's batch-file command language: power that can make your batch files look and work very much like application programs. And with the right set of utilities, you can extend this power even further.

In this article, I'll present two new programs for the Portfolio that will allow you to embed menus and file selectors into your batch files—giving your homebrew efforts a real Portfolio look and feel.

MENU

This program invokes the Portfolio's built-in menuing capability to put custom multiple-choice menus in your batch files. The program listing itself, written in Turbo Pascal 6.0, is shown in Figure 1., and can be downloaded in executable form from CompuServe's Portfolio Forum (Data Library 8).

As you can see, MENU is a very simple program. It reads the menu choices as parameters from the command line into a zero- terminated string with an ASCII zero between each menu choice. While this is being done, the program also calculates what the longest string is so that it can determine where to place the menu on the screen. The string is then scanned to convertany underscore characters to spaces. The parameters are then placed into registers and the Portfolio's built-in menu command is called. Finally the menu choice is returned to DOS.

Turbo Pascal programmers might wish to enhance MENU by removing the code used to center the menu, and adding additional parameters that would allow placing the menu anywhere on the screen. If you are interested in even more advanced programming in Pascal for the Portfolio, see the file TPU6.ZIP, also available on CompuServe. TPU6 is a Turbo Pascal 6.0 unit that will let you add menus, boxes, and more to your Portfolio programs. Additional ref-

☛ Programs presented in this series are available for download from CompuServe's Atari Portfolio Forum (GO APORTFOLIO at any CompuServe system prompt)—an official Portfolio support site. For more information about joining CompuServe, call (800) 848-8199 and ask for Operator 198.

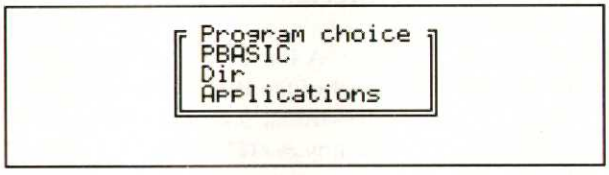
FIGURE 1. Turbo Pascal 6.0 source code for MENU.PRG, a program that lets batch files access the Portfolio's sophisticated, built-in menuing functions.

```
program menu;
{
     this program is invoked from  the command line:
          menu title item1 item2 .... itemN
      You can then choose one of the items.  The program will
      set the DOS variable ERRORLEVEL, so that you can then
      perform an action in a BATCH file with the statement:
          IF ERRORLEVEL=2 GOTO :PROG2
      returns 0 if escape is pressed, otherwise the item number
      the menu will be automatically centered on the screen.
      Written by BJ Gleason
      Copyright 1992, BJ Gleason
}

uses dos;

var
  menus : string;
  l,x,y : integer;
  regs : registers;

begin
   { read the parameters from the command line }
   { add them to the menu string }

   menus := '';
   l := 0;
   for x:=1 to paramcount do
    begin
      menus := menus + paramstr(x) + chr(0);
      if length(paramstr(x))>l then l:=length(paramstr(x));
    end;
   menus := menus + chr(0);

   { convert the _ to spaces }

   for x:=1 to length(menus) do
    if menus[x]='_' then menus[x] := ' ';

   { now call the internal ROMBIOS Menu functions }

   regs.ah := $0f;
   regs.al := 65;
   regs.bh := 0;
   regs.cx := 0;

   { center the menu on the screen, based on the longest
     menu item, and the number of choices.  }

   if l<36 then x:=(40-(l+4)) div 2 else x:=0;
   if paramcount<6 then y:=(8-(paramcount+1)) div 2 else y:=0;

   regs.dh := y;
   regs.dl := x;
   regs.ds := seg(menus);
   regs.si := ofs(menus)+1;
   regs.di := $0ffff;
   { call the Portfolio's Internal ROM }
   intr($60, regs);
   inc(regs.ax);
   halt(regs.ax and $0ff);
end.
```

FIGURE 2. Segment of a batch-file, demonstrating how to use MENU. Note that an underscore ('_') character is used to separate words in the argument defining the menu title.

```
MENU Program_Choice PBASIC Dir Applications
     if errorlevel=3 goto :cApp
     if errorlevel=2 goto :cDir
     if errorlevel=1 goto :cPBASIC
     if errorlevel=0 goto :finished
```

FIGURE 3. The menu displayed by the MENU call in Figure 2.



erence material on Portfolio ROM routines and other technical details can be found in the Technical Reference Guide, available from Atari.

Using Menu

To use MENU, place the file MENU.PRG in your SYSTEM directory, and add the following line to your AUTOEXEC.BAT file: **PATH=\SYSTEM**. The PATH expression defines a "search path"—a list of directories that DOS will search if commanded to execute a program not found in the current directory. By storing MENU.PRG "on the search path," therefore, you insure that your batch files can access the program from anywhere on the system.

To access the program, put the following command line in your batch: **MENU title choice1 choice2 choice3** ... where "title" is the title you wish to appear on your menu, and choice1, 2, 3, etc., are the choices you wish to offer your user. Titles and choices may be more than one word long, but because the space character is reserved to separate arguments, words in a multi-word argument should be separated using the underscore ('_') character. The program will automatically replace these underscores with spaces.

Your menu can contain an unlimited number of choices. Though only six can be displayed at once, the arrow keys can be used to scroll the menu and reveal additional items. To select, just scroll the cursor to an item and press Return, or press a corresponding letter key. (If more than one menu item begins with the same letter, the cursor will jump from one to the next each time the appropriate key is pressed—you'll have to press Return to select the one you want.) Pressing Esc will exit the menu without returning any selection.

MENU returns the number of the selected item (or 0 if the Esc key was pressed) by setting the value of the ERRORLEVEL system variable. This value can then be accessed by your batch file to determine what kind of subsequent action must be taken. Figure 2 shows a segment of batch-file code that demonstrates how to use MENU to create a personal menu of applications. Note the order in which the ERRORLEVEL values are evaluated, following menu presentation: from greatest (last menu item) to least (the 0 value, returned when the user presses Esc). This order is necessitated because the batch-file conditional expression "IF variable=value ..." is considered true if 'variable' is greater than or equal to 'value.' Thus were we to consider possible return values in ascending order, the first action (in this case, terminating execution as if Esc had been pressed) would always be per-

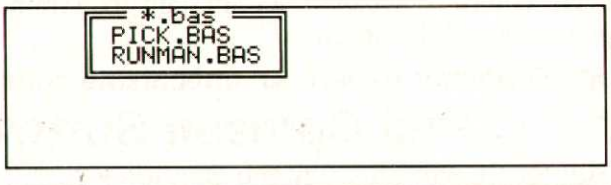
FIGURE 4. ERRORLEVEL values set by GETFILE, on exit.

```
ERRORLEVEL = 3     Error Setting Environment Variable
             2     Esc Pressed
             1     No Matching File Found
             0     Okay: %FILENAME% contains filename
```

FIGURE 5. Segment of batch file that uses GETFILE to display a menu of available .BAS files, then passes a selected file to the PBASIC interpreter for execution.

```
:cPBASIC
     GETFILE *.BAS
     if errorlevel=1 goto :fileerr
     cls
     pbasic %FILENAME%
     goto :done
```

FIGURE 6. File menu produced by GETFILE, as shown in Figure 5.



formed by the batch file.

Menu will not automatically clear the screen, so you might want to insert a CLS statement before or after the MENU statement to keep the screen neat. On the other hand, if you leave the CLS statement out, you can have overlapping windows, which look very professional.

GETFILE

While I was working on the MENU program, I called Don Messerli, author of the PGX Animation package, and asked him to contribute a program to this column. He wrote a special version of MENU that lets you present your user with a menu of filenames for selection. Like MENU, GETFILE can be downloaded from CompuServe's Portfolio Forum. The executable program should be placed in your \SYSTEM directory, and your PATH specification amended as shown above.

GETFILE only needs one parameter: a pathname that identifies the directory whose contents you wish GETFILE to display. The pathname can be terminated with '*.*', causing all files in the target directory to be displayed, or with another file mask expression. For example, to tell GETFILE to display a menu of all .BAS files in the directory C:\PROG, you would call GETFILE with: **GETFILE C:\PROG* .BAS**.

GETFILE's file-selection menu works just like MENU's, allowing the user to review filenames by scrolling, prior to selecting with Return, or to select a file in one pass by pressing an appropriate letter key. When the user has made his selection, GETFILE creates and sets the environment variable %FILENAME% to reflect his choice. GETFILE also sets the ERRORLEVEL variable to one of four values, depending on conditions (see Figure 4). Figure 5 shows a segment of a batch file that uses GETFILE to acquire a filename that is then passed to the PBASIC interpreter for execution. The menu it displays is shown in Figure 6.

Internal Apps

A batch file can invoke any or all of the Portfolio's built-in applications. The command APP, used by itself, invokes the internal application menu. Individual applications can be accessed by appending a slash to the command APP, followed by an appropriate letter: 'W' for the Worksheet, 'E' for the Editor, 'A' for the Address Book, 'S' for Setup, 'D' for Diary, or 'C' for the Calculator. Thus, to call up the Worksheet, you would

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use the command: **APP/W**.

This is a powerful feature, giving you the ability to write batch files that transparently exploit the power inherent in the Portfolio's system software. Figure 7 shows how you might use MENU, GETFILE, and the internal application "hooks" to create a specialized front end for Portfolio applications. It also demonstrates some cosmetic features, such as overlapping windows, that can help make your batch files look like real programs. To make the batch file run a bit faster, remove the REM statements.

As you can see, with just a little work, and learning a few new DOS commands, you can create batch files that look and feel as if they were built into the Portfolio's ROM! And using the Turbo Pascal Unit, you can add these features to your own Pascal programs.

Contest Time!

Now that you have had some experience creating snappy batch files for the Portfolio, why not share them with me and the rest of the world? The Atari Portfolio Forum on Compuserve is running a "Portfolio Internal Application Contest" in August. You are invited to enter a batch file, worksheet, address file, or text file that you created that makes the Portfolio more productive for you. Stop by the forum for complete details and a list of the fabulous prizes. I hope to see some really impressive batch file-based applications! ■

CORRECTION: Our last column identified Don Thomas, of Artisan Software, as author of the shareware program PGF_MAKR.PRG, which manipulates and displays Portfolio .PGF files on the Atari ST, and allows sections of ST monochrome images to be translated to .PGF format. This is incorrect. Though Thomas wrote sections of PGF_MAKR in its current revision, the body of the code was composed by Bruce Coleman.

FIGURE 7. A batch file that creates a customized front end for Portfolio applications. This example uses MENU, GETFILE, and the internal application "hooks," as well as the public-domain program, VOICE, which gives the Portfolio speech capability. VOICE is available on CompuServe's Portfolio Forum.

```
@echo off
cls
:again
REM the main menu
menu Program_Choice PBASIC Dir Chkdsk Apps Voice_Demo Off
if errorlevel=6 goto :choice6
if errorlevel=5 goto :choice5
if errorlevel=4 goto :choice4
if errorlevel=3 goto :choice3
if errorlevel=2 goto :choice2
if errorlevel=1 goto :choice1
if errorlevel=0 goto :finished
goto :done
:choice1
REM PBASIC - use GETFILE to select the program
getfile *.BAS
if errorlevel=1 goto :done
cls
pbasic %FILENAME%
REM goto :done at the end of each choice
goto :done
:choice2
REM display the Directory listing
cls
dir /p
pause
goto :done
:choice3
REM display the results of CHKDSK
cls
echo on
chkdsk
pause
@echo off
goto :done
:choice4
REM call the internal applications menu
app
goto :done
:choice5
REM the portfolio speaks to you!
Voice
goto :done
:choice6
REM turn the Portfolio off until a key press
off
goto :done
:done
REM jump back up to the beginning again
goto :again
:finished
REM use the menu to see if the user really
REM meant to press the <ESC> key.
menu Exit? Yes No
if errorlevel=2 goto :again
if errorlevel=1 goto :bye
goto :again
:bye
REM I guess they meant it....
cls
```

Working Better with Atari's Palmtop PC

TWO SWIFT! NEW PRODUCTS

by John B. Jainschigg

SWIFT! CORPORATION OF VIENNA, AUSTRIA, has sent us two new packages for the Atari Portfolio, both written by talented programmer Werner Zemanek. Swift! BASIC is a precompiling BASIC interpreter with a built-in, syntax-checking editor, while Swift! Link ST is a parallel-interfaced file-transfer system (including cable) that facilitates the movement of data between Portfolios and STs.

Swift! BASIC, which comes with extensive English-language documentation, is clearly intended for American and British distribution. Swift! Link ST—which is documented in German—is more problematic, though we would welcome its translation and distribution in English-speaking countries. Dollar prices have not as yet been set for either product. For further information, write Swift! Inh. Heinz van Saanen, Goldeggasse 29/AII, A-1040 Vienna, Austria.

▲ SWIFT! BASIC

Atari's PowerBASIC is a true compiler: converting BASIC program listings, composed and stored as ASCII files, into machine-code modules that execute in the presence of a runtime package. PBASIC, the 'freeware' BASIC created by BJ Gleason, is a true interpreter: reading and executing ASCII listings directly, line-by-line. In contrast with both American products, Swift! BASIC is neither compiler, nor interpreter, but a hybrid of both. Called a "precompiling interpreter," Swift! Basic translates BASIC code into an intermediate "pseudocode" on entry. Modules of this "pseudocode" can then be executed using a "runtime" version of the interpreter/library package.

Because program execution still involves some level of interpretation, Swift! BASIC is not as fast, nor quite as memory-efficient as PowerBASIC. Its runtime interpreter, moreover, is framed as a .COM file, so cannot be left in memory-card RAM as can PowerBASIC's runtime package. Swift! BASIC is substantially faster, however, than any standard interpreter, while offering many of the classic advantages of interpretive BASIC environments. Among these, Swift! BASIC offers the convenience of in-line syntax checking, which falls out naturally as part of the precompilation process.

The Environment

Swift! BASIC is distributed on a Portfolio memory card. The interpreter/development environment is set up as a .RUN file, and executes from card RAM, directly. Requirements for system memory are thus quite small—the manual indicates that as little as 1K of free system RAM may suffice for simple programming. The downside, however, is that the card may not be removed from the Portfolio's drive while using the development environment, except when loading and saving programs.

Unlike other BASIC programming systems for the Portfolio, which exploit the presence of the built-in editor, Swift! BASIC provides its own environment for program-entry and debugging. Frankly, the editor is not a great improvement over the built-in software. Somewhat EMACS-like, it employs Ctrl-Key combinations to access most text-manipulation functions. The editor incorporates a concise set of cursor-movement and block (cut and paste) commands. It can import and export ASCII blocks, list defined blocks or listings to a printer, and can save programs in ASCII, in normal precompiled form for execution by the runtime interpreter, and in an executable-yet-unreadable encrypted form, intended for use in distributing proprietary applications.

Every time a line of code is entered or edited, Swift! BASIC precompiles it and notifies you with a

beep if it contains errors. This in-line error-checking can be a real advantage, both for beginning programmers and for those who find they cannot always type with perfect accuracy on the Portfolio's keyboard. As a second level of fallout from the precompilation process, the system maintains a list of labels and variable names, which can be checked and searched at any time: useful for keeping large-scale projects under some semblance of control. Precompiled modules, as it turns out, are somewhat larger than their ASCII equivalents.

The Swift! Dialect

Swift! BASIC is a modern, structured BASIC that uses labels in place of line numbers. All standard control and looping structures (IF/THEN/ELSE/ENDIF, WHILE/WEND, DO/LOOP, FOR/STEP/NEXT, etc.) are supported, and a non-standard, but useful CASE expression set is also offered. This latter locution is marginally more efficient than IF/THEN for adjusting program flow based on the value of a single key variable.

Procedures are supported, and are defined in the familiar manner as blocks of code beginning with the word PROC and ending with RETURN. Parameters may be passed to procedures when called, and interestingly, the system discriminates between procedures that bear the same name, but are written to expect different numbers of parameters. The procedures FOO(X) and FOO(X,Y) can thus happily coexist in the same program, which some would consider a weakness, and others a strength.

Functions are also supported, though they are not defined using the classic DEF FN expression, but instead, much like procedures beginning with the word FUNC. Functions in Swift! BASIC may be several lines long, and may call themselves (recur) up to the limit of available memory (hence stack space).

Variables in procedures and functions are automatically treated as local, and additional local variables may be defined within them, using a LOCAL statement.

Data Types

Swift! BASIC offers a wide variety of data types and tolerates several systems of numeric representation. Types comprise byte, short integer, long integer, and single, double, and extended-precision floating-point; and literal numeric values may be entered in decimal or hexadecimal format (with leading '$' sign). Limited type-casting is supported explicitly. Functions are included to convert integers to and from strings in binary format (e.g., "10010101"), and a wide-variety of Boolean and bytewise operators are offered (e.g., LSH, ROL, etc.), facilitating hardware manipulation.

Another area in which Swift! BASIC excels is in file handling. Easy-to-use, explicit commands are offered for creating and renaming files and directories and copying files from within a program. An interface to DOS's Fsfirst/Fsnext feature is offered, making it simple to access directories. Screen control is well-supported, with functions for plotting points, drawing lines and boxes, animating 16 x 16-bit "sprites," dumping the graphics screen to printer, and more. Additionally, access is given to many of the Portfolio's special features, including power status, system language selection, refresh options, and cursor control.

Documentation is fairly comprehensive: a 99-page, indexed manual covers details of the language in a fashion sufficient to get experienced BASIC programmers up to speed, though beginners will require additional tutorial material.

▲ SWIFT! LINK ST

Atari's PC file-transfer software, which permits bidirectional communications between Portfolio and a desktop PC, has been available for some time. No equivalent package, however, has been created for the ST (though several excellent RS-232 serial file-transfer packages are available, among them Artisan Software's TransporT). The main advantage of parallel file-transfer over serial is that the Portfolio contains a built-in file-transfer subsystem designed to work through the parallel channel. The subsystem provides error-free binary transfer capabilities and allows master/slave control of the entire file-transfer process from the desktop system.

Now Swift! Link ST makes Portfolio-to-ST parallel file transfer a reality. Swift! Link comes in a neat binder along with a concise, 13-page manual (in German), and Centronics parallel file-transfer cable. The package can be run either as a program or as an accessory, simply by changing the filename from SWIFTLNK.PRG to SWIFTLNK.ACC.

Using Swift! Link ST is easy enough, even if you don't read German. Just install the Portfolio's Centronics parallel interface adapter (available at your Portfolio dealer or direct from Atari). Then plug the marked end of the cable provided with Swift! Link into the adapter's Centronics port, and the other end into the ST's printer port. Turn both systems on, and access the Portfolio's Setup feature. Activate the Swift! Link program or accessory, and wait until a small dialog box appears that tells you to (translation mine) "put the Portfolio in File Transfer mode (Dateienübertragung, believe it or not), select the Server option (Bedienen), and look for the 'Waiting for Connection' prompt (Auf Verbindung warten)." Once this appears, click on Okay, and you're rolling.

Using Swift! Link

Accessing Swift! Link brings up the window shown in Figure 1. On the left side are displayed files in

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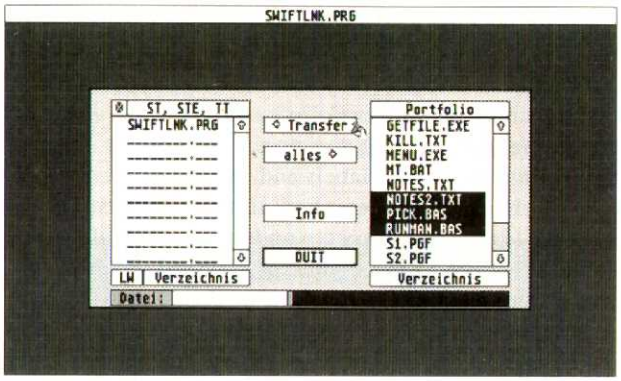

FIGURE 1. Swift-Link ST's main work screen, showing ST files at left and Portfolio files at right. Just click to transfer!

the ST's current directory, and on the right, files in the Portfolio's current directory. Changing directories on either side is as easy as pointing and clicking, though the buttons labeled 'Verzeichnis,' at the bottom of each directory window, may be accessed in order to enter directory names and wildcard expressions manually. The 'LW' button under the left-hand window can be used to bring up a subsidiary mini-dialog that lets you select a new drive on the ST.

Transferring a file or files from one system to the other (from and to the directories displayed) can be as simple as selecting the desired items, and clicking on Transfer. Arrows notwithstanding, transfers can proceed in either direction, though not simultaneously (the system prevents you from selecting files in one window when files are already selected in the other). Entire directories, moreover, cannot be transferred, though all files in a window can be selected for transfer by clicking on the Alles button. Arrows again notwithstanding, when Alles is clicked, all files are selected from the window in which any one file is presently selected.

By double-clicking on a filename, Swift! Link lets you assign a new name to the transferred copy of a file. Actual file transfers are carried out fast and smoothly. The name of the file currently being transferred is shown in the blank space next to the word 'Datei:' at the bottom of the screen, and progress of transfer is indicated by the meter-bar to the right. Swift! Link will not let you accidentally copy one file over another, but pops up a dialog box allowing you to authorize the overwrite, change the name of the transferred file, or abort the transfer.

Additional utilities include patches to modify Atari's FT.COM parallel file-transfer program to run on an ST under the popular PC-Speed and AT-Speed emulators, with the cable provided with Swift! Link. All in all, Swift! Link ST is a well-designed, functional product that should find its niche easily in the U.S. Portfolio market, should its publishers arrange for the creation of an English-language version. ■

AN INTRODUCTION TO PHONE DIALING

Part 3 of a series / by John B. Jainschigg

THE FIRST STEP IN PHONE communication is ... dialing the phone. Sensibly enough, therefore, your Hayes-standard direct-connect modem contains a full-featured tone-pulse phone dialing subsystem. To initiate a data call, all you have to do to is send the modem an appropriate "command string," (e.g., "AT DT 555-1212") and let it do its stuff. Dialing and connection are automatic.

An additional feature—exploited by many "Rolodex"-type programs—lets you use the modem's dialer to initiate voice calls on an attached telephone. Normally, the modem's dial-connect algorithm can't be interrupted. But by appending a semicolon (';') to the dial string (e.g., "AT DT 555-1212;"), you can tell the device to start dialing, then return immediately for further commands. At this point, you can lift the receiver of the phone, wait for dialing to finish, and bring the modem offline with an "AT H".

Sounds simple, right? The only hassle is that you have to wait for dialing to conclude before issuing that "hangup" command. But since the duration of dialing can be predicted from the contents of the dial string, popular phone-base programs implement this useful feature in elegant and transparent fashion.

Not!

Actually, phone-base packages tend to do a pretty lousy job with modem-based autodialing. Most handle the matter of that tricky "AT H" by imposing a uniform delay that can be tweaked by lucky users until the system works most of the time. Some programs (anybody remember "DeskCart"?) don't even bother with user-configurable delays. Instead, they make you manually send an "AT H," by clicking an on-screen button. And of course, if you don't own a Hayes-compatible modem, you're out of luck.

My question is: if you're autodialing voice calls, why use a modem at all? Instead, let your Atari ST dial direct, by generating the required tone-pairs with its GI sound circuitry! Each key on a 12-key telephone keypad produces a pair of tones: the lower tone indicating row, the higher, column. Play the proper tone-pair into the telephone mouthpiece, and you've dialed the associated number.

The program in Figure 1 is a 12-number audio speed-dialer, set up as a desk accessory. Only two functions are really significant: do_dial() provides row and column tone-data for each character in a phone number string; and tone() actually manages GI-chip tone production. The program expects to find a data-file called DIAL.ASC on the root directory of your boot disk. DIAL.ASC can contain up to twelve comma-separated name/number pairs, each on a line by itself (e.g., John Smith,555-1212(Return)). The names will appear on the dialer's control panel buttons, and can be dialed with a single mouse-click. Just turn up the volume on your monitor, and hold the mouthpiece of your telephone close to the speaker.

How did I figure out what frequency-pairs to use, you may ask? I just wrote a little program that let me play notes on the GI chip, picked up my telephone receiver, and played around with it until I'd identified the row and column fundamentals. The phone system tolerates the result.

Next issue, we'll continue in this vein, developing a really reliable, really transparent modem-based data-and-voice autodialer subsystem. ■

FIGURE 1. The DTMP tone-dialer accessory, written in Mark Williams C. Compilation and other instructions are included in the first comment section, below.

```
/*********************************************
        AUDIO TONE-DIALER ACCESSORY
Mark Williams C. Compiles with:
cc filename.c -o filename.acc -VGEMACC
requires ASCII file "DIAL.ASC" on root of boot
disk. File has format:

Name,123-4567(Return)
Name,1(123) 456-7890(Return), etc.
*********************************************/

#include <aesbind.h>
#include <gemdefs.h>
#include <obdefs.h>
#include <osbind.h>
#include <ctype.h>
#include <stdio.h>

#define BUFLEN          1024L /* Length of disk buffer */
#define DS1             1     /* Index of first dialer string */
#define DONE            13    /* Index of CANCEL button */
#define DLINES          12    /* Number of dial strings */
#define LONGDLY         10    /* Tone dur. in 1/60th sec. units */
#define SHORTDLY        4     /* Intertone dur. as above */
#define WRITE           0x80  /* GI chip Write command */
#define ENABLE          7     /* GI register 7 (enable register) */
#define AVOLUME         8     /* GI channel A volume reg. */
#define BVOLUME         9     /* Channel B ditto */
#define APITCH          0     /* Channel A pitch register */
#define APERLEN         1     /* Channel A period length reg. */
#define BPITCH          2     /* Channel B pitch register */
#define BPERLEN         3     /* Channel B period length reg. */
#define SMRECT          0,0,0,0   /* Small rectangle */
#define BIGRECT         dial[0].ob_x,dial[0].ob_y,\
                        dial[0].ob_width,dial[0].ob_height
#define delay(a)        {int i = a; while(i--) Vsync();}

char buf[BUFLEN];       /* Disk transfer buffer */
long count;             /* Character count */

char dum[] = "";        /* Dummy string */
char *ptr[] = {         /* Array of pointers to phone numbers */
dum,dum,dum,dum,dum,dum,dum,dum,dum,dum,dum,dum
};

OBJECT dial[] = {       /* Dialog box OBJECT structure array */
-1,1,14,20,0,16,0x21100L,120,16,264,288,
2,-1,-1,28,64,0,"",16,48,240,16,
3,-1,-1,28,64,0,"",16,64,240,16,
4,-1,-1,28,64,0,"",16,80,240,16,
5,-1,-1,28,64,0,"",16,96,240,16,
6,-1,-1,28,64,0,"",16,112,240,16,
7,-1,-1,28,64,0,"",16,128,240,16,
8,-1,-1,28,64,0,"",16,144,240,16,
9,-1,-1,28,64,0,"",16,160,240,16,
10,-1,-1,28,64,0,"",16,176,240,16,
11,-1,-1,28,64,0,"",16,192,240,16,
12,-1,-1,28,64,0,"",16,208,240,16,
13,-1,-1,28,64,0,"",16,224,240,16,
14,-1,-1,26,66,0,"Done",104,256,64,16,
0,-1,-1,28,32,0,"Audio Dial",96,16,80,16
};

char fname[] = "x:\\dial.asc";/* Name of data file */

/*********************************************
        IMPORTANT STUFF STARTS HERE
*********************************************/

/* Set GI chip and generate tone pair */

tone(a,b)
int a,b;
{
/* Enable channels A and B (reset bits 0 and 1 of GI register 7) */

Giaccess((char) 0xFC,WRITE | ENABLE);

/* Medium volume on A and B (set bits 0-3). Avoids distortion. */

Giaccess((char) 0x0D,WRITE | AVOLUME);
Giaccess((char) 0x0D,WRITE | BVOLUME);

/* Set pitch and period length for channels A and B */

Giaccess((char) a & 0xFF,WRITE | APITCH);
Giaccess((char) (a >> 8) & 0xFF,WRITE | APERLEN);

Giaccess((char) b & 0xFF,WRITE | BPITCH);
Giaccess((char) (b >> 8) & 0xFF,WRITE | BPERLEN);

delay(LONGDLY);         /* Wait */

/* Turn off channels A and B */

Giaccess((char) 0x00,WRITE | 8);
Giaccess((char) 0x00,WRITE | 9);

delay(SHORTDLY);        /* Wait */
}

/* Find character in string, return pointer */

char *index(s,c)
char *s;
char c;
{
while(*s != '\0'){
        if (*s == c)
                return(s);
        s++;
        }
return(NULL);
}

/* Find index of character in string */

int ind(s,c)
char *s;
char c;
```

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```
{
char *p = index(s,c);

if (p != NULL)
        return((int) p - s);
return(-1);
}

/* Dial number string */

do_dial(s)
char *s;
{
int row,col,p;
static int rt[4] = {178,160,145,131};    /* Row tones */
static int ct[3] = {104,92,83};          /* Column tones */
static char kpd[] =
"11112ABC3DEF4GHI5JKL6MNO7PRS8TUV9WXY****0000####";

while(*s != '\0'){
        /* if character is on keypad */
        if ((p = ind(kpd,toupper(*s++))) >= 0){
        /* figure there are 12 characters in a row */
                row = (int) (p / 12);
        /* ... and 4 characters per key (mostly) */
                col = (int) ((p % 12) / 4);
                tone(rt[row],ct[col]);      /* play tones */
                }
        }
}

/*********************************************
   IMPORTANT STUFF ENDS: COSMETICS BEGIN
*********************************************/

/* Draw and manage dialog box */

void do_de_dial_thang()
{
int ret;

form_dial(FMD_START,SMRECT,BIGRECT);
form_dial(FMD_GROW,SMRECT,BIGRECT);
objc_draw(dial,0,MAX_DEPTH,BIGRECT);
do{
        ret = form_do(dial,0);
        if (ret != DONE)
                do_dial(ptr[ret - DS1]);
        } while (ret != DONE);
form_dial(FMD_SHRINK,SMRECT,BIGRECT);
form_dial(FMD_FINISH,SMRECT,BIGRECT);
}

/* Read data file into buffer and set pointers */

int readin()
{
int i,fhandle;
char *point,*s = buf;

if ((fhandle = Fopen(fname,0)) < 0)
        return(-1);
if ((count = Fread(fhandle,BUFLEN,buf)) < 0)
        return(-1);

Fclose(fhandle);
buf[(int) count] = '\0';

for(i = DS1;i < DONE;i++){
        if ((point = (char *) index(s,',')) == NULL)
                break;
        dial[i].ob_spec = (long) s;
        *point++ = '\0';
        s = point;
        if ((point = (char *) index(s,(char) 13)) == NULL)
                break;
        ptr[i - DS1] = s;
        *point++ = '\0';
        if (*point == (char) 10)
                *point++ = '\0';
        s = point;
        }
return(0);
}

/* Main routine */

main()
{
extern int gl_apid;
int menu_ID,mbuf[8],flag;

/* Register accessory */

appl_init();
menu_ID = menu_register(gl_apid," AudioDial ");
fname[0] = Dgetdrv() + 'A';
form_center(dial,
        &dial[0].ob_x,&dial[0].ob_y,&dial[0].ob_width,&dial[0].ob_hei
ght);

/* Read in file of names and numbers */

flag = readin();

/* Manage accessory */

for(;;){
        evnt_mesag(mbuf);
        if (mbuf[0] == AC_OPEN){
                if (flag)
                        form_alert(3,"[1][Sorry bud. Can't find
DIAL.ASC.][Darn!]");
                else
                        do_de_dial_thang();
                }
        }
}
```

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CONTINUED FROM PAGE 42

don't consider myself stupid, I certainly felt that way many times while learning the unit (and still feel stupid sometimes when working with some of the more esoteric features). However, the more I played with the Translator, the more I realized that it was a significant development.

To bring the musical benefits of the Translator to a wider market, Hotz Instrument Technologies recently released stand-alone Atari software for $199, suitable for use with any standard five-octave MIDI keyboard. Although not as good a controller for the Hotz software as the Translator keypad, a MIDI keyboard is still sufficient to open up some fascinating new musical worlds. Indeed, the better class of keyboard controllers are beginning to incorporate user-interface features that may rival the Hotz controller technology—if not in sensitivity, then at least in flexibility and ease of use.

So What Does it Do?

The Translator software streamlines the music composition and playing process. All musicians are familiar with one of the biggest problems with music-making: your hands don't always seem to be able to keep up with your musical ideas. You may not have the physical dexterity to play fast runs, or if you hit a wrong note, this may distract you sufficiently to break your concentration.

The program transparently reconfigures the notes on your keyboard as needed so that any key you play is certain to produce a note (or notes) pertinent to particular scales and chords, as selected by other keyboard keys (called "zoom" keys) or via MIDI program changes. It is therefore impossible to hit a "wrong" note. This is quite different from a conventional keyboard, where many of the keys are not used when playing a particular scale, and if played, will sound wrong (to complicate matters further, these keys may become needed when modulating to a different key or playing a different scale).

At this point, the warning flag goes up: hmmm ... another piece of algorithmic composition software that restricts you to boring perfection. Not so fast. With the Translator, you can think of note relationships in terms of intervals—for example, the seventh of a scale can always show up on the same key regardless of the scale, so that if you hear a seventh in your head, you can instantly find the right note without having to think about the particular scale in which you are playing. (And if you don't hit the right note, at least it will sound okay in the context of the rest of the piece.) The concept of reconfiguration suggests that the Translator is some kind of mapper, but a mapper is a relatively static device. The Translator performs a dynamic kind of reconfiguration, as explained next.

Banks and Cells

The software provides three independent data processors (the Upper Bank, Lower Bank, and Zoom Bank) that perform the actual keyboard data translation. Each bank follows specific configuration instructions as to which notes will be output from the Atari for a given input note. The program divides a five-octave MIDI keyboard into five zones (first and second octave black keys, first octave white keys, second octave white keys, the remaining black keys, and remaining white keys). Each zone can be assigned to any of the three bank types, and can send data out over any of the 16 MIDI channels.

The upper bank contains the collection of chords used in a particular composition. Each key of a zone assigned to this bank triggers a note from the chord that is currently selected, with (as expected) higher notes giving higher pitches. The chords can be selected from a database of 128 "core" chord types, which run the gamut from simple majors and minors to chords like Maj7b5sus4. You can also program your own chords if the program's chord database lacks a chord you need (although that's hard to imagine).

Generally, the lower bank, which is more useful for playing single note solos, translates keys from assigned zones to notes that fit within a specified scale. There is a database of 128 scales, which like the chords run from the conventional to the esoteric.

The zoom bank is the most powerful Translator bank, since selecting a note assigned to the zoom bank automatically selects new upper and lower bank data (and optionally outputs the associated upper bank chord), according to pre-programmed instructions..

Let's use an example to tie this all together. Suppose you want to play a simple blues that follows an E major - A major - B major - A major progression. You would program one note in the zoom bank group of notes so that it would load an E major chord in the upper bank and appropriate scale in the lower bank. Another note would load an A major chord in the upper bank and appropriate scale in the lower bank, and yet another note would do the same thing for B major. So, you could play a single note melody on keys assigned to the lower bank, background chord notes on the keys assigned to the upper bank, and as you select different zoom bank notes, the notes assigned to the upper and lower bank will instantly transpose to the chords and scales you programmed.

For songwriting, this offers exceptional flexibility: choose the chords you want to use with the song, then play chord notes and melodies on the different keyboard zones. Each zone can be assigned to either the zoom, upper, or lower bank.

The complete set of upper, lower, and zoom bank data creates what's called a Setup. The Translator provides 32 such setups.

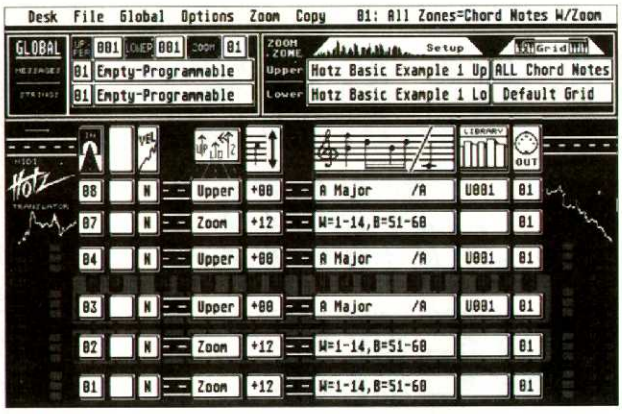

FIGURE 1. The Hotz translator software's main screen. Zones 1, 3 and 7 are assigned to the Zoom bank; zones 3, 4, and 8 are assigned to the Upper bank.

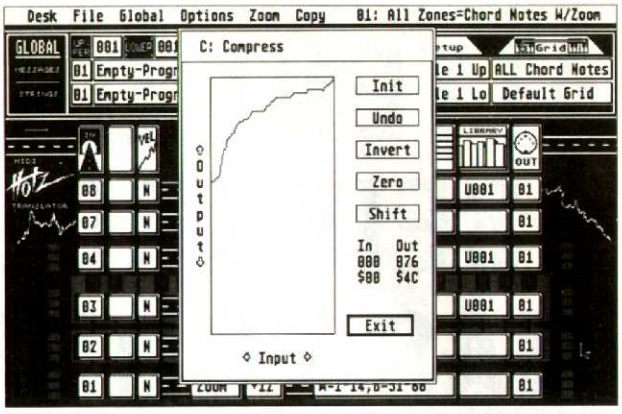

FIGURE 2. Clicking on the velocity icon brings up a velocity curve selection screen. Of available curves, Compress was selected for editing. A new curve was drawn with the cursor.

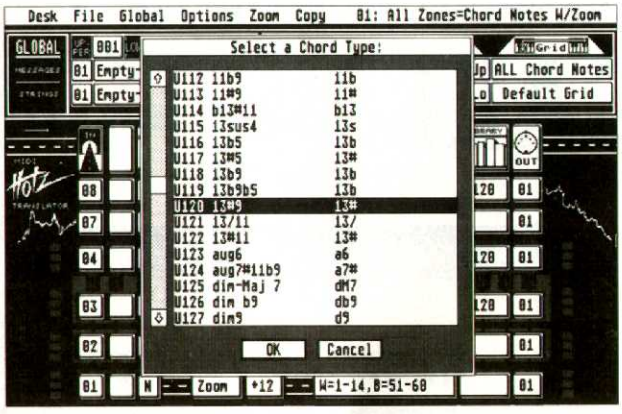

FIGURE 3. To select an Upper bank chord, click on the Upper bank strip under the G-clef staff of notes. A database of 128 chord and scale types appears. Here, chord 13#9 is selected.

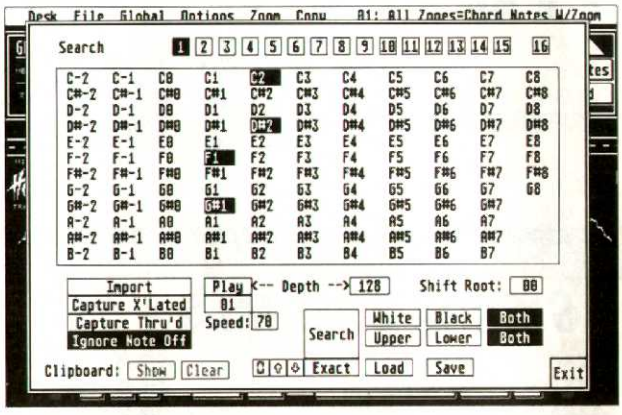

FIGURE 4. Searching for notes played into the Translator. Clicking on the search note matrix, as in this diagram, produces a list of chords and/or scales that contain the notes.

Now Add a Sequencer ...

One of the software's outstanding features is that zoom bank keys can be linked to program changes. Thus, if you use the Translator in conjunction with a sequencer, playing zoom bank keys can output a program change into the sequencer. On playback, the sequencer replays these zoom bank key changes and reconfigures the upper and lower banks to do instant transposition as you play along.

Having all transposition occur automatically is a very liberating experience. You tend to spend more time on the rhythm and phrasing of notes rather than worry about following along with the chord progression; as mentioned earlier, the interval relationship between notes becomes more important than their "absolute" position in a scale.

Although running the Translator and a sequencer on the same Atari is not really practical, you can often use a keyboard's on-board sequencer to record the Translator software output if an additional stand-alone sequencer is not available.

Going Deeper

All the above is significant, but the program offers a staggering number of additional features. For example, each zone can have its own velocity curve, as chosen from 36 different types (or create your own). Each zone can be individually transposed. Any type of data can be saved, from a complete global setup, to something as small as an individual zoom cell.

Of particular interest is the Search function, which analyzes a series of notes you play into the Atari, and shows the chords or scales within the database that contain the played notes. When you're composing a song, this is a very handy feature, since you can play a melody line and find what chords would fit behind it. It's also great for education: if you come up with some nifty chord and don't know its name, use the search function to find out what you've created (e.g., a Gmin7sus4).

Controller data can be translated into other data, such as mod wheel messages into controller 7 messages or several different controllers ... and more, but the word count is already getting out of hand, so let's wrap up.

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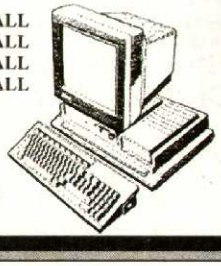

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If you think you've "seen it all" when it comes to MIDI, rest assured that you haven't seen this. A teacher who saw the Translator told me that "this is what my jazz harmony class has always needed." One person uses the Translator to trigger sound effects for video. I use it as a composition machine. Interestingly, the Translator does not force you into a particular musical style, as some "algorithmic composition" programs do. Ten different people using the Translator will generally end up making ten different types of music, which is close to a practical definition of the word "instrument."

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Although the Translator may not be for everybody, it is a fascinating piece of software that will educate you concurrently with providing a new way of making music. At $199, it is affordable enough to merit serious consideration in your music or recording setup if you want something truly different, interesting, fun, exciting, and ultimately, challenging. It is certainly one of the most innovative MIDI applications I've ever seen; it never fails to amaze me whenever I boot it up. ■

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CONTINUED FROM PAGE 44

CUBASICS: How long have you been playing drums?
CHESTER THOMPSON: Oh I guess about 30 years now, most of that time working, anyway.

CB: Did you start out playing in bands or as a session player?
CT: Not really. I'm afraid that kind of thing only happens in L.A. I grew up in Baltimore, and started a Junior High band. At that period we would practice at someone's house, you know, dealing with playing Jazz, right from the beginning. By the time I was 13, I was playing steady weekend gigs around town. It just basically went on from there. By 15, I was involved with a couple of Jazz bands where we were playing covers, but just sort of with a Jazz orientation. I did what there was to do in Baltimore. Then I moved out to L.A. for the [Frank] Zappa gig.

I have no idea how many albums I've played on now. I used to know every single one; I even knew the dates. And after a while, it just got to be so many I just don't know anymore. I still have to laugh when I hear something and think to myself, "Hey, I wonder who that is?" And then I find out it was something I played on.

CB: You've played with some great musicians over the years, and now you find yourself doing the "one-man-band" routine for composing. What was your first introduction to MIDI?
CT: Well, I don't know. I mean, I had the Syndrums, which from a percussion point of view, was the start of the whole madness. In those days I had one of the first Mini-Moogs and was pretty fascinated with that whole thing, which was all still pre-MIDI. When MIDI happened, I was already dealing with synths, and just kind of fell right into it.

CB: What was your first drum-machine?
CT: Well, I really balked at drum-machines when they first came out. The very first one that I invested in was when Roland put out this pair of products, the Drumatix and the Bass Line—these matching grey boxes. They were pretty slick. It was pretty much like the TR-808 sounds, you know, the synthesized sounds. But you could link them together, and man—I came off of my next tour with a whole catalog of material from working with those things. That was still before MIDI. You basically had a sync pulse that ran between the two. I used a real prehistoric keyboard ... I can't remember what it was exactly; I know it was something that could read the sync pulse. After that I got a TR-707, and then the TR-505, because it fit better in the suitcase. I've used an SP-12. But I still don't own a MIDI drum machine, you know. I prefer to do it myself.

On the last tour with Phil [Collins], I took along a Korg M1. Finally here was the whole studio in one package. Because since the beginning, I have always been into taking a writing rig out with me on tour. I would have a lot of time on my hands, and it would keep me out of the bars at night. So the M1 was pretty cool to have along this last time. I would just use the drum sounds in that. What I would end up doing at the end of the tour I had pretty much a whole album's worth of material.

So I bought a STacy, and then I discovered Cubase. I just dumped everything out of the M1 into the Atari, because that was the problem with the M1: it was a great "notebook," but to actually try to make the stuff into something final really became sort of frustrating. This material eventually worked its way onto the current album, Make a Joyful Noise.

CB: This is your first solo album?
CT: Yes it is.

CB: When did you first start putting together the material on this album?
CT: Well, the title song, "Make a Joyful Noise," was written the year my son was born in 1979. I've done demos of it at various times, and it's kind of grown into what it is now. Everything else was, in fact, written while on tour with Phil Collins in 1990. I had to actually choose from a catalog of stuff, but I only really wanted to use what was most current.

CB: Did you co-write any of these songs with anyone?
CT: Yeah. Well, first of all I did cover one tune, "Amazing Grace," which is one of my favorites, a spiritual. As a result of working with other keyboard players, a couple of arrangements got changed enough where they became another song, you know? That happened on three of the songs. I was too burned-out on a lot of the material. So I had outside arrangements done on a few things. I was at the point where I had heard it so many times that I was just not objective anymore.

CB: How has Cubase helped you get to this point of releasing your own album?
CT: Well basically it is the perfect pre-production situation. I only tracked one of the songs with the sequencer, though. Funny enough, it's the one that's getting all the airplay, locally anyway. Mike Rosen, who used to be over there at Steinberg/Jones, helped a lot on that one. I did all the programming originally. But when we tracked it I had him come in and he did some synth programming for us. He also acted as sort of a watchdog over the whole thing, you know? MIDI can still be a pain sometimes. And on that particular song I wanted someone to sort of function as a specialist on it.

But for the most part, I would just dump what I had into Cubase to begin with. And then I had all the wonderful things I wanted to do: check a key change here, play with the melody here, completely invert the

order of it there. I mean, I did about as thorough a preproduction job as you can imagine. Every song got completely turned inside-out. Several songs I thought the order of which would be right turned out not to be, and was actually better another way around.

It's fantastic, you know, 'cause I'm not a real keyboard player. I can write the stuff; I understand harmony enough and I have the ear. I've studied a bunch and I know what I'm going for. I can spice up the chords pretty much. But still, Cubase is an especially valuable too while working with the other arrangers, because we would play directly into the sequencer. Then we were totally free to turn it around, and do anything we wanted with it. What a luxury! I must admit, though, that the first couple of times I sat down with the software, I found it a little overwhelming. I had a session with Mike Rosen, when he was still working at Steinberg, which was pretty informal. We sat down for about an hour, and he said, "check this out; and check this out!" Suddenly it all clicked, and I was able to go from there with the manual.

The thing that I find with many of the products out there on the market, there are different names for the same thing depending on which company's product you were using. Semantics is a real problem. But once I was familiar with what they were saying, the whole thing just flowed together so easily; it was amazing. The thing still does way more than I've ever used it to do. My head right now is far more into production; I'm becoming more and more fascinated with, not so much movie scoring, which would obviously be fun to do, but the whole mood thing where you can manipulate moods with music; that's my current fascination. And again, because I'm not the kind of player that can sit down and whip through it on the keyboard, I find that Cubase more than makes up for what I can't do.

Drum parts are really fun, because I actually do play into it. I start off by programming a pattern and repeat it for the whole length of the song, just so I have it there to work with. And then after I'm done with most of the parts I go back and plug in my KAT MIDI drum set to play my parts in without quantizing. Cubase locks it down real good. And if there's a bar that's kind of wierd, I can play with it and manipulate it, you know, if I have to move a note a pulse this way. Sometimes it's been the case where just moving a note a few pulses can make it work. The tune I did that on, called "Homeland," has a pretty intricate rhythm part. I mean it would be pretty impossible to play live without three or four percussionists. But the drums that came in after that were still done through Cubase, including the drum parts I played in on my MIDI pads.

In fact, I've produced some stuff for a friend of mine back in Baltimore who's doing his own album, and we sort of slaved over the tune and actually had the keyboard player track everything through Cubase. I'm finding more and more that some of the better players are not the best for sounds. They're so locked into playing, which is wonderful; but except for the guys that really live in the studio, they don't always choose the best sounds. To have that performance really accurately-recorded, so I can later choose the sound I want, is kinda nice. So I've been doing that more and more.

CB: You say you only tracked one of the songs with Cubase. Did you use Cubase on the other tunes at any time?

CT: All of the preproduction and all of the writing was done on Cubase. Like I've said before, I'm basically a live player, and a firm believer in the chemistry that happens between live players. There are some guys that can do it all totally by themselves, and track everything—maybe only hiring a guitarist or something—and it comes out wonderful. That's not really me. I've got bits and pieces of stuff I've done all collected on the D partition of my hard drive; I've got that sucker almost filled up. But again, for me the real value of Cubase is as a composition and arranging tool. There would be so many times that I would be working with arrangers, like the kind of keyboard players that would play a chord and they wouldn't even know what it was—they just had that natural thing—and on more than a few occasions where things got so dense. Then somebody with a super ear would hear one wierd note, and it's like, "Man, where is that coming from? What part is that in?" Because some of the stuff we had was so dense before we finally actually cleaned it up. But the Score Editor is just the absolute best for that. On a number of occasions with different arrangers we would get in there and say, "Where is the note?" We popped it up on the screen in Score Edit—no more mystery: it's there.

I have found that to be one of the most valuable things of all. And in a lot of cases I've actually passed out parts, you know? I tend to write things real rhythmically; more syncopated, probably, than what the average keyboard player is used to. There have been times where they could not figure out what I was doing. I would just feel totally uncomfortable, and I would just pop ot in the Score Editor, and print it out. That thing tracks so accurately that they were finally able to see where I was coming from, and it cleared the air.

I understand that Steinberg is makin some changes and improvements in the Score Editor, and I welcome that. Because I'd like to make more use of it. The thing I really love about Cubase is, even if I've been away for two months and I haven't had it with me, I can come back and even if I don't remember what I did, there are so many other ways to do the same thing. It's the first time I've ever run into something that works on intuition. It adapts, you know. Whatever way works best for you, there's a way to get in there and do it that way. That's what knocked me out more than anything.

I have yet to learn the keyboard commands. I know that's something I have to get into. Those are

such great shortcuts, The mouse after a while, it's like, you go mouse-crazy.

CB: I see you've connected a normal mouse to your STacy.
CT: Oh yeah, the trackball ... forget that thing.

CB: When you are creating and manipulating your rhythm parts on Cubase, are you using the Drum Editor a lot of the time?
CT: Yeah, quite a bit. I've got a couple of my own maps that I've made, like for the M1 beause that was the main instrument I was using. Now I've got a couple other sound sources, like I'm doing some stuff with E-mu's Procussion module. Actually, I'll be doing the NAMM show in Anaheim (For a report on January NAMM, see Atari Explorer, March/April 1992, page 17) for them, composing some stuff now to do there. I'll end up using Cubase there at the trade show. I'll be playing most everything totally live, but for a couple of things I'm going to be doing some pretty outlandish percussion. They want to show off the Procussion, so I'll play live along with some pretty intricate patterns.

CB: When did you first hook up with Phil Collins and Genesis?
CT: In 1976, that was the tour that became Seconds Out. The album they were promoting at the time was Wind and Wuthering. The first rehearsals I did with those guys were about December, fifteen years ago. I just got a phone call one day from Phil and he said, "I've heard you play with Weather Report and Zappa, and I need someone who can play double drums." He had already gone out and gotten a bunch of albums I've played on, and played them for the band. They said, "Okay, fine; He's got the gig." So, by the time he called he said, "The audition has already been done. If you want the gig, it's yours." So, I just went in and showed up for rehearsals and went for it. They weren't real used to bringing in new people. And I had to learn a 2-1/2 hour show in ten days. That was a little intense. This upcoming tour, we're going to have six weeks of rehearsal time.

I'm definitely gonna travel with Cubase. I was talking to Tony Banks about the production for their new album (We Can't Dance). I love Tony's writing. It's so wierd, you know, because he's done so many solo albums and they just never caught on the same way like the Mike & The Mechanics stuff, and Phil's stuff. But I was pretty amazed at this heavy Cubase conversation we got into. Apparently, all his preproduction stuff for his contributions to the genesis album were worked out on Cubase as well. So we were both comparing notes on how we use the thing. He sort of works the same way. He'll sit there and figure out what he needs and uses Cubase for that. If he needs it to do something else, it's easy enough to figure out how to make that happen. Cubase makes that real easy.

CB: What other equipment do you use in your own studio with your STacy?
CT: Well, I got this Canon BJ10E bubble-jet printer that's real quiet and works fast. I had to use one of the DIVERSES printer drivers to get it to work. I tried one of them and it printed garbage, but the other worked fine. That was the only thing that kinda bugged me, but I guessed it turned out to be a problem with the Canon itself. According to its manual, it wants to be seen as an IBM-type printer. But it just did not happen with any of those drivers in Cubase. The new Canon now has an Epson driver as well. But this works real great now. The only thing I hope for is that the DIVERSES driver is changed so that it knows the Canon is a single-sheet printer, not a tractor-feed continuous sheet. It prints the first page just fine. But then I have to go in and set up for page two in Cubase. Even though I have an automatic sheet feeder attached to the printer, this particular printer driver doesn't see that.

The bubble-jet, in the world of portable computers, has become a major force. Now, whether or not that's the situation in Europe, I don't know. It's such a different world over there. If it's become popular there, then I'm sure they'll write a driver for it. In fact, I ran into someone recently who was a real computer whiz. He was the kind of guy who could probably get into Cubase and write a driver for it. The printer drivers can be created on a word-processor if you know what you're doing. But that's where my gadgetry tends to draw the line. I keep saying that one of these days I'm going to take a computer course, and actually get into some programming. But I'd rather be making music, to be honest. But to really sit down and learn a computer language and that sort of stuff ... I like the idea but I'm far more impressed with things that computers can do as a tool. That takes so much time and energy, that I'd rather spend that time making music.

My master keyboard is the Korg M1, and I use the Wavestation quite a bit. I use a Roland S-550 sampler, and I have a Dynacord ADD-2 drum sampler which is really a killer unit. Basically all the different interesting sounds we came up with for the album, like different blends of synths, I recorded onto DAT and then fed them into the sampler. That way, between my different keyboard friends around the world, I've come up with a pretty decent library of stuff that I recorded into the sampler and manipulated. My road rig is going to be a totally different story. In my studio I write with everything I've got. On tour I'm going to take out the Roland 200 keyboard, the little MIDI controller, and a Roland SoundCanvas. It's a bit limited, but it's a writing tool. I'll come home and do the orchestration and arranging on Cubase. But it will set up quick, and more importantly pack up quick.

I'm thinking about getting one of the new Atari notebooks. I love the STacy, but it's a little heavy to be dragging around on one-nighters. ■

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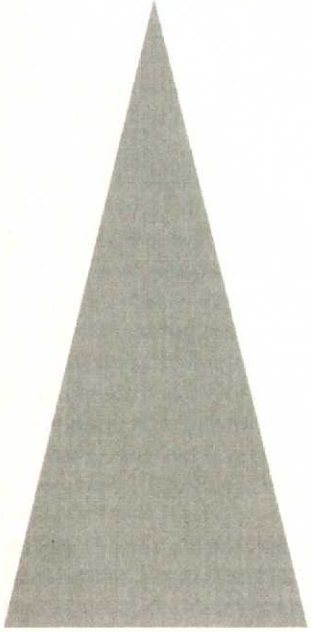

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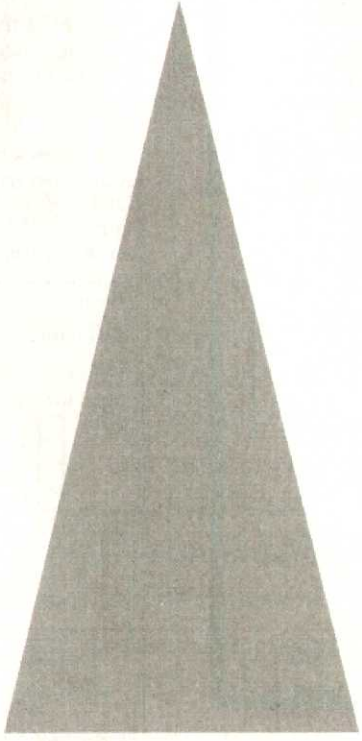

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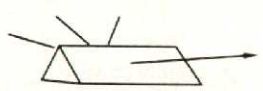

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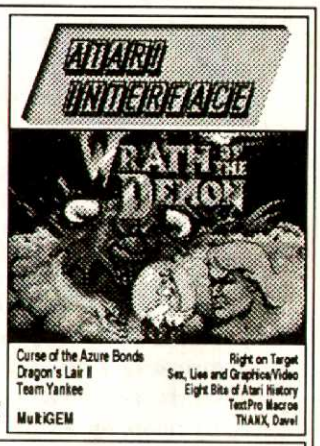

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