

CURRENT NOTES

Helping Atari Owners Through the World of Computing

Vol. 15, No. 1

Jan/Feb '95

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Upgrading to a Falcon

CD-ROM for Atari

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Modeling & Rendering

Edith Professional

Expert Programming

Competition

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- Advanced 'C'. Approx. 340 pages. Price \$5
- 68000 Assembly Language Programming by Lance Leventhal. Approx. 450 pages. Price \$6
- Radio Shack Dictionary of Electronics (1974-75 edition). Approx. 650 pages. Price \$1.00
- Fundamentals of Structured Programming using Fortran with SF/K and Watfiv-s. Approx. 350 page. Price \$2.00
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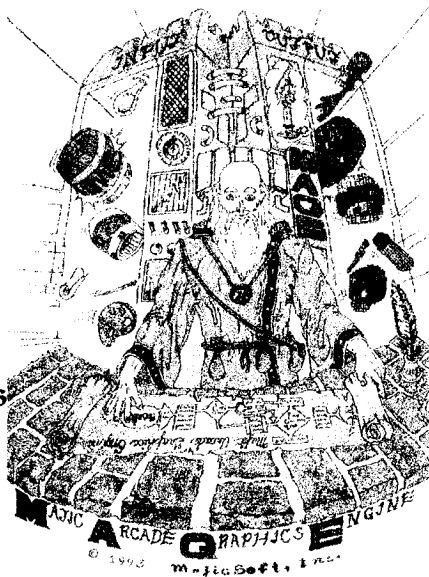
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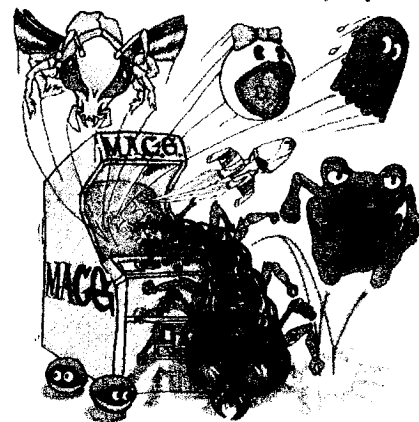
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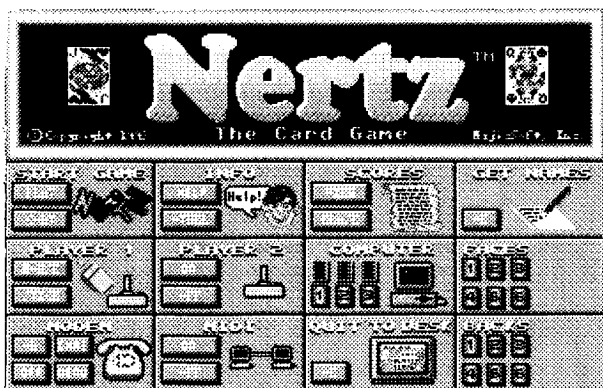
Thurg-N-Murg: One or two player platform arcade blast.

Suggest retail is \$59.95. Order soon, get FREE shipping!

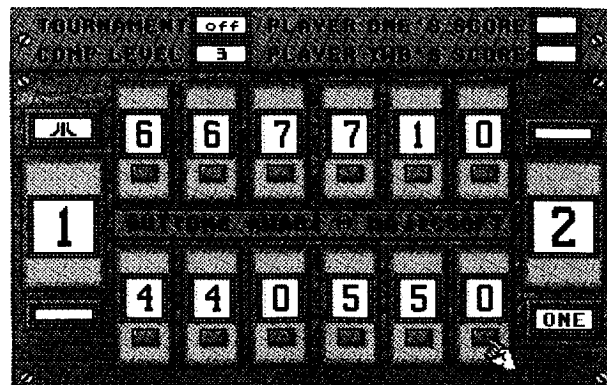
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MajicSoft - 348 Meredith Square - Columbia, SC 29223 - 803-788-8177

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Update: Atari by Joe Waters

Jaguar News

Atari has announced four new titles for the Jaguar. *Doom* (\$69.99) and *Dragon: The Bruce Lee Story* (\$59.99) are available immediately. *Checkered Flag* (\$69.99) and *Club Drive* (\$59.99) will be available before Christmas. Atari expects to have 20 titles out for the Jaguar by Christmas.

Atari said initial production of its new *Alien Vs. Pretator* game, launched Oct. 21 in stores worldwide, has nearly sold out. Atari is working with suppliers to get additional quantities to stores for the holiday shopping season. "In Less than three weeks, over 50% of our installed base purchased *Alien Vs. Pretator*," said Atari. "We have also seen a strong increase in sales for the Jaguar system coinciding with the release of this game and the launch of our expanded advertising program."

Beginning in early December, Japanese consumers will be introduced to the new Jaguar system. Mumin Corp, a Tokyo-based wholesale of personal computers and game machines, said the Jaguar will be sold in all 25 Toys 'R' Us stores for 29,800 yen. Software for five games will be available within this year for 6,000 yen each.

Atari Rebuffs Dorfman Article

Dan Dorfman released a USA Today story on November 7th that was very critical of Atari. Atari responded to the charges the following day. Commenting on Dorfman's report, Sam Tramiel, Atari President, said, "It is disruptive to the market to have a short position fund manager such as Mr. Sass put out a self-serving report with critical information omitted and not even bothering to call the Company to confirm. It is further disturbing that Mr. Dorfman condones such behavior and comments on such positions."

Among the many charges Atari rebutted was the following:

"Dorfman says that Sass sees a big write-off of the Jaguar system as well as write-offs in Atari's PC business. The facts are that Atari is out of the PC business and took write-offs in this area in 1993. There are no more write-offs in the PC business for Atari. The Jaguar is the leading technology in the interactive game market. Atari sees a very promising future for this platform, which includes the introduction in the near future of a CD peripheral and the possible entry into the interactive cable market."

Atari Announces Third Quarter Results

Net sales for the third quarter of 1994 were \$7.1 million, as compared to \$4.4 million for the same period of 1993, an increase of 61%. For the nine months of 1994, sales were \$23.4 million as compared to \$20.3 million for the same period of 1993, an increase of 15%. A substantial portion of the 1994 revenues were derived from the Atari Jaguar 64-bit multimedia system. As a result of the limited software library available during the third quarter and the company's increased marketing expenses to promote Jaguar, the company incurred a net loss of \$3.9 million, as compared to a net loss of \$17.6 million for the third quarter of 1993. For the nine months ended 1994, the company incurred a net loss of \$8.2 million as compared to a net loss of \$26.2 million for the same period 1993.

Commenting on the report, Sam Tramiel, President, said, "The company continues to focus its efforts on making additional software titles available for the Jaguar. Although late in delivering titles, the developers have passed through the learning curve of harnessing the Jaguar technology and expect a continuous flow of software titles to be available throughout the current Christmas selling season and beyond."

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***Moving? Be sure to send us
your new address!***

The Cover. With winter upon us, now's the time to stay inside and master some new tricks with your Atari computer! Photo by Joe Waters.

Atari Industry News and Announcements

GEnie to Provide Full Internet Access by Year End

ROCKVILLE, MD, October 13, 1994 – GEnie announced today its plan to release Phase I of its Internet Access Service by year-end 1994. The GEnie Internet Access Service will enable subscribers to access the wealth of information and numerous discussion groups available on the Internet from GEnie.

Services will include E-MAIL, FTP, USENET, Outbound Telnet, Gopher, and WAIS. GEnie will also establish a GEnie Information Server, accessible to Internet users interested in learning more about GEnie Services. Pricing information, access numbers, a list of services, and details of special offers will be available, as well as a signup module.

GEnie's INTERNET RT on page 1405 has extended its helpdesk hours to help GEnie members learn to navigate the 'Net. Helpdesk hours are now 8 pm to 1 am Eastern time daily. And for ongoing help with the INTERNET, check out the INTERNET RT bulletin board. Category 2 is especially for newcomers. Don't forget to take a look at the INTERNET RT software library, which has thousands of files to help you find your way around the Internet.

FTe Announces MIO II, "Sweet 16" and Product Distribution Changes

Fine Tooned Engineering (FTe) announces MIO II, the first IDE hard drive interface for the Atari XL/XE computer line. The MIO II, unlike its predecessor, does not include serial or parallel ports. It does include a power supply and all necessary cabling to hook up an IDE drive. The power supply is switchable for 110 or 230 volt operation. The price is an amazingly low \$99.95 and it includes a money back guarantee if you're not satisfied, for any reason.

Initially, the MIO II will have a limit of nine 16 megabyte partitions. The design only uses 8-bits of the drive in the initial release, so only half of the IDE drive will actually be used. It is possible to use ALL of the drive, but that would delay the product.

FTe is also releasing a 65816 upgrade for the XL/XE called the "Sweet 16" board. The "Sweet 16" is a plug-in replacement for the Atari 6502C microprocessor. Projected price will be \$69.95 and it has been fully tested with the MIO, MIO II and Black Box.

FTe has decided to turn distribution of their classic ICD/OSS/Newell products over to B&C ComputerVisions. These products will not be remanufactured and the remaining stock will be available through B&C on a first come, first serve basis. FTe will continue to take phone orders for the MIO II's, MARS 8, and Sweet 16 boards. Any orders directed "to FTe" will be processed "by FTe." B&C should only be contacted for ICD/OSS/and Newell products "not yet" ordered.

Both the MIO II and the "Sweet 16" are projected to be available by Christmas. As the products improve over time, FTe intends to "take care" of the first customers who "made it happen." FTe does like to push the envelope and that means full 16-bit access for the MIO II, unlimited partitions, and a gracious trade-up policy. On the other hand, the MARS 8 has been delayed due to "creeping featurism" (a MyTek expression).

[Fine Tooned Engineering, PO Box 66109, Scotts Valley, CA 95067. Phones: (408) Get-REAL, Orders; (438-7325); (408) 438-6775, BBS]

Ice-T Released

Ice-T is a new terminal emulator for the Atari 8-bit computers. It will work on all 8-bit models with a minimum of 48K. Its major feature is its speed. It can keep up with 4800 baud with no data loss, and is useful enough for 19.2K—all without the screen-flicker of FlickerTerm.

Features available with *Ice-T* include: 80-column VT-100 emulation (including graphics set, double-height/width letters); Fine Scrolling; Backscroll (1 page of history); Print Screen (text only); Extremely bare-bones, but functional X-modem downloader.

If you have Internet FTP access, you can download a copy of *Ice-T* by FTPing to atari.archive.umich.edu. The file is in atari/8bit/Telecomm/icet.arc.

This program has been in work for the last two years and represents a great deal of effort. The requested shareware fee is \$15 (US).

If you do not have Internet FTP access, you can receive the disk direct from the author. Please send \$18 (\$15 shareware fee plus \$3 for the disk and postage), in cash, to the address below. If you are worried about your money getting lost, you may send a check, but you'll have to add \$5 to cover the bank's handling fee. (All of the above applies to US Dollars only. How to handle other currencies is a mystery at the moment.) You will promptly receive a copy of *Ice-T* with, hopefully, your name in the title screen.

[Itay Chamiel, 9-A Narkis St., Jerusalem, 92461, Israel. Internet: bruck@brachot.jct.ac.il]

Atari 8-bit Omnibus

Years ago we looked forward with eager anticipation as each new issue of *Antic* and *Analog* hit the newsstands. Page after page of programs and news, but even better were the ads. Dozens of companies with new and exciting hardware and software all clamouring for my attention.

The shrinking 8-bit market has kept most advertisers from any large scale advertising in recent years. Several months ago, I decided to change that. I wrote to all the ven-

dors and developers listed in Michael Current's list, offering them free advertising in *The Atari 8-bit Omnibus*. And, page by page, the *Omnibus* filled. Ads came in all shapes and sizes, from professionally laid out full page ads to a torn piece of notepaper with a handwritten scrawl.

And now it's complete. Find out about *Lemmings* and *Operation Wolf* clones for the 8-bit. Slave a PC to your 8-bit. Make your original 800 compatible with the XE—even down to memory banking! And many, many more offers, featuring software and hardware, showing that the Atari 8-bit is still a fine machine.

On November 1, 1994, the *Omnibus* began shipping. This 24-page book is only \$5 US per copy, shipped worldwide. Orders for five or more copies are only \$4 US each, when shipped to a single address.

To order, send your cheque or money order payable to David A. Paterson to:

[Atari 8-bit Omnibus, c/o D.A. Paterson, P.O. Box 342, Cote-St-Luc, QU H4V 2Y5, Canada]

PC Xformer 3.0 - The Atari 130XE Emulator For MS-DOS Compatible

PC Xformer 2.5 - The Atari 800XL Emulator For MS-DOS Compatible PCs

PC Xformer 2.5 is a free emulator for MS-DOS users who wish to run their old Atari 400/800 and Atari 800XL software on their PC. The file XF25.ZIP has been released to the online services Compuserve, Delphi, and GENie, and the Internet. The ZIP file contains the *PC Xformer 2.5* emulator, and various sample Atari 800XL programs and demos.

Also available now is *PC Xformer 3.0*, the world's only 130XE emulator for MS-DOS, Windows 3.1, OS/2 Warp, Windows 95, and Windows NT.

PC Xformer 3.0 is a powerful 32-bit version of *PC Xformer*, which runs up to 8 times faster than a real 130XE (on a Pentium) and is the only 8-bit emulator ever to fully support display list interrupt, player missile graphics, and GTIA graphics. *PC Xformer 3.0* is available for only \$29.95 U.S.

PC Xformer 3.0 includes over 40 pages of documentation covering the use of the emulator as well as Atari Basic, Atari DOS 2.5, MyDOS, graphics modes, sound, error messages, and a complete glossary of Atari 8-bit terminology.

PC Xformer 3.0 includes over 1 mb of pd and shareware Atari 800, Atari 800XL, and Atari 130XE software ready to run on the emulator.

Both *PC Xformer 2.5* and *PC Xformer 3.0* run on a minimum configuration of an MS-DOS (or compatible) based PC, 640K of RAM, and a VGA card. *PC Xformer 2.5* is a 16-bit program which runs on 286, 386, 486, and Pentium processors, while *PC Xformer 3.0* only runs on 386, 486, and Pentium processors.

Features. Many of the limitations of our old ST Xformer emulator and other clone Atari emulators have been eliminated in *PC Xformer*. *PC Xformer* is written mostly in machine language and takes full advantage of the PC hardware.

Features common to both *PC Xformer 2.5* and *PC Xformer 3.0* include: 48K Atari 400/800 emulation; 64K Atari 800XL emulation with "RAM under ROM" memory; allows user installable patches to the OS and BASIC; displays all ANTIC text and graphics modes, including GTIA modes; 256 color GTIA color palette; displays player missile graphics (no collision detection); horizontal and vertical fine scrolling; supports display list interrupts, IRQ, and NMI interrupts; reads and writes to ST Xformer and SIO2PC generated disk images; reads MS-DOS files directly from within Atari DOS; switch Atari BASIC on/off with one keystroke; switch between Atari 400/800 and Atari 800XL emulation with one keystroke; joystick emulation using the keyboard cursor keys; full speed emulation on a 386/33 or faster; slow and fast modes of emulation to take advantage of fast PCs; compatible with all VGA cards.

In addition, *PC Xformer 3.0* adds features including these: 130XE emulation with 256K of extended XE memory; player missile graphics with full collision detection; on-the-fly disk image swapping; 4 voices of sound, printer, and modem support; real joystick support; 386 optimized code for faster speed; over 1 megabyte of sample Atari 8-bit programs; over 40 pages of 8-bit Atari reference documentation.

Here is a list of processors and the approximate speed of emulation relative to an Atari 800:

286/16	0.3
386SX/20	0.5
386DX/33	1.0
486DX/33	2.0
486DX/66	4.0
Pentium/90	8.0

486 and Pentium users can use the slow/fast option to slow down the emulator to normal Atari 800 speed or let it run as fast as possible.

PC Xformer 3.0 can be ordered for \$29.95 U.S. directly from Branch Always Software at the address above, or from your favorite Atari dealer.

[For more information, a product catalog, or to place an order, contact: Darek Mihocka, c/o Branch Always Software, 14150 N.E. 20th St., Suite 302, Bellevue, WA 98007 U.S.A. Phone: 206-369-5513, Fax: 206-885-5893; Compuserve: 73657,2714; GENie: BRASOFT]

Papyrus Gold from Oregon

Papyrus Gold is THE writers tool we've all been waiting for! *Papyrus* goes way beyond the standard definition of Word Processors and Desktop Publishers to define a new class of application: the Document Processor. Powerful features like drag and drop editing, tables and embedded spreadsheets, automatic Table of Contents and Index creation, vertical and horizontal character micro-spacing, American English and British English dictionaries, embedded graphics, drawing tools, Popup Style lists and complete SpeedoGDOS support put *Papyrus* in a class by itself.

And the printed output... well, it's a work of art! From a letter to your Mother to embedded spreadsheets and graphics

for that quarterly report, *Papyrus* has the power and flexibility to fulfil every writers requirements!

Papyrus Gold is compatible with any Atari ST/STe/TT or Falcon 030 with a minimum resolution of 640x400 (ST mono) or higher. It requires at least 2 mb of memory and 2 floppy drives or a Falcon 030 with 4 mb of memory and GDOS 1.1 or SpeedoGDOS. The recommended configuration is 4 mb of memory, a hard disk, and SpeedoGDOS 4.2.

Papyrus retails for \$249.95 and is available now. A fully functional demo disk is available for \$5 applicable towards purchase; competitive upgrades are also available. Call Oregon Research at (503) 620-4919 for a more information.

Screenblaster II

Screenblaster II is the resolution enhancement system for the Atari Falcon030. Combining powerful performance, easy installation, and an affordable price, *Screenblaster II* can increase the resolution displayed on your monitor (number of pixels) over 300%.

Screenblaster II is simply plugged in between the computer and the monitor adapter plug. An additional control cable is inserted into one of the paddle ports. That's it! Hardware installation is complete in seconds. Then, with the *Screenblaster II* software, it is possible to select one of many extended resolutions from an easy-to-use GEM menu, including 768x576, 800x600, 1024x768, 1152x832, and 1280x960. The preset menus support VGA, SVGA, Multiscan, and Atari monitors.

Version 2 includes an entirely new, mouse-controlled Resolution Menu that lets you select the resolution and number of colors at bootup or from the desktop. The menu has user definable options for controlling the menu's operation and behavior.

The new Video Mode Generator lets you edit resolution menus to customize the menus for your monitor. You can even create new resolutions! Fast and easy to use, the Video Mode Generator gives you the most your Falcon030 and monitor have to offer.

Screenblaster II also includes *Screenblanker*, a configurable screen saver for your Falcon030 with *Screenblaster II*.

Screenblaster II is now available for \$99.95. Upgrades from version I are available from COMPO Software for \$25.00. The upgrade includes the *Screenblaster II* software and the new *Screenblaster II* manual (hardware is unchanged).

[COMPO Software Corp., 104 Esplanade Avenue Suite 121, Pacifica CA 94044 USA Tel: 415-355-0862; Fax: 415-355-0869; GENie: COMPO]

TrueImage Processing

TrueImage is a brand new 24-bit Image Processing package for the Atari ST, STe, TT, and Falcon 030 computer. Using the same EFMS image loading system as *TruePaint*, *TrueImage* can import and export images in a wide variety of popular formats. *TrueImage* can load and convert between bitmap, color, and grey scale formats and has an impressive

array of palette manipulation, dithering, halftone and error diffusion effects.

True Image also stores all pictures internally as 24-bit files, so even if you perform manipulation on a mono monitor, you can still import the picture into a DTP document and have a service bureau print it out in full colour!

True Image has powerful masking capabilities to allow you to cut, copy, and paste/combine portions of several images into a beautiful composite. A wide array of effects and filters are also available for image manipulation and picture enhancement including: Sharpen, Blur, Diffuse, Emboss, Mo-saic, Find Edges, Add Noise, De-Speckle, Invert, Threshold, Brightness, Contrast, etc.

True Image is compatible with all Atari ST/STe/TT and Falcon030 computers with at least 2 mb of memory and a floppy drive. A 4 mb of memory and a hard disk is recommended. *TrueImage* is available now and retails for \$99.95. For more information call Oregon Research at (503) 620-4919.

New Jaguar Titles

Dragon: The Bruce Lee Story - Combat Simulation

The Legend Fights On . . . The spirit of martial arts Master Bruce Lee lives on in *Dragon*: a dangerously life-like combat simulation based on his biographical film. Apply discipline and a devastating array of age-old fighting techniques to subdue opponents more cunning than the real Bruce Lee ever faced. Unite your spiritual and physical strength to confront The Phantom, the mythical samurai which has plagued your thoughts and dreams, in a ject kune do duel to the death! [1 or 2 players] \$59.99 (Atari/J9036) [TEEN]

Kasumi Ninja - Arcade Fighting (digitized)

All hell is about to break loose . . . Stop the Evil Ninja Lord Gyaku from opening the Dragon Cloud temple's portal to Hell and unleashing his demon minions upon Kasumi island and the world. Battle it out in this bloody brawler in one-player story mode or two-player versus mode as one of the eight all-time greatest warrior-fighters. Gain fighting skill and master special moves from bout to bout as you journey through the Underground Labyrinth to the Dragon Cloud temple where you'll face your ultimate opponent: the Evil Ninja Lord Gyaku himself! [1 or 2 players] \$69.99 (Atari/J9012) [MATURE]

Checkered Flag - Virtual Speedway

This ain't no drive to Grandma's! Get ready to burn rubber! Race for the Checkered Flag behind the wheel of a turbo-powered speedway racer in real-time, 3D-rendered action. Choose from 10 high-performance tracks and see the speedway from six distinct views. Alter features and attributes on your racer to improve your times or even change the weather conditions. Action so realistic you'll swear you feel the wind in your hair as your tires screech around the curves. Keep your sweaty palms on the controller! [1 player] \$69.99 (Atari/J9007)

Zool 2 - Sidescrolling Adventure

It's Krool & unusual punishment! Zool and his daring and lovely sidekick Zooz face a challenge that would wilt the knees of even the toughest Ninja. The Nth Dimension is under attack from the evil forces of Krool. Our heroes must restore the Nth Dimension to equilibrium and exile Mental Block and his mind-numbing cronies before imagination is wiped out of existence. Zoon, the two-headed intergalactic wonder-canine, will help, but you'll need skills from the Nth Dimension to save imagination! [1 player] \$49.99 (Atari/J9042)

The Round Table Announces the "Fanzine:" Calamus User

Calamus users will be interested to learn of the arrival of an independent magazine totally dedicated to this "Great Professional" desktop publishing program.

This magazine is available on a quarterly basis, in A4 mono format with a minimum of 14 pages in each issue. The aim of this magazine is to help you, the user, to gain the most from your investment. *Calamus User* will act as a platform for users to help to offer others and exchange ideas, whilst keeping them informed of the latest events in the *Calamus* and DTP world. "News Desk" will contain the most relevant and up-to-date information on product announcements within the DTP world to keep you abreast of this fast moving market.

Each issue has an in-depth review of a forthcoming, new or existing product that will enhance the use of *Calamus*. Many reviews will be written by experienced users who rely on the best products for their livelihood.

Technical tips will tell you what the manuals don't. This will be done by experienced users and you will learn all there is to know about *Calamus* DTP. The *Calamus User* is available now, four times (quarterly) a year for the price of \$22.00 postage paid to your address.

For more information about this new magazine or if you need a subscription, please send checks, made payable to Dave Trutzenbach, to The Round Table, 31 Muskingum Drive, Shamong, NJ 08088. You may also leave email on our BBS "The Round Table" (609) 268-7524.

Crawly Crypt Collection Vol. 1 CD-ROM

The Crawly Crypt Corp. is proud to announce our first product for the Atari ST/TT/Falcon and TOS compatible line of computers. *The Crawly Crypt Collection Vol. 1 CD-ROM* is packed full of Public Domain and ShareWare software. Compiled from the vast archives of the Crawly Crypt BBS, this disc is filled with not only the best new software, but also lost treasures, and the Must Have Classics that belong in every software collection.

Some of the features of the Crawly Crypt Collection include: most files uncompressed and ready to run; No duplicate compressed versions or other fillers; includes 150 MB of Falcon enhanced software; Includes 50 MB of STe/TT enhanced software; industry standard ISO 9660 format. Atari/IBM readable.


For a complete listing of files included on the disc, or for online ordering, call the Crawly Crypt BBS at +1 (417) 624-1887.

The *Crawly Crypt Collection* is available now from your favorite Atari Dealer, or you can order direct by sending \$39.99 (includes shipping in North America) to: Crawly Crypt Corporation, PO Box 23, Webb City, MO 64870, USA. Orders outside North America, please make payment in US\$ and include an additional \$5 to cover international shipping.

TraceTech's Falcon030 Toolkit



Trace Technologies is proud to introduce the F030TKIT, a must have collection of utilities for all Falcon owners! Here is a multifaced utility package that (1) addresses changes in TOS4's GEMDSO to improve software compatibility, (2) gives you quick and easy access to a floppy disk formatter with flexible options such as number of tracks, DD/HD format, faster I/O, etc., and (3) allows you to setup your F030's hardware and system software with simple user preference selections. (If you haven't picked up the FastPath utility yet, it is only \$10 when ordered with the F030TKIT.)

The F030TKIT is \$30 (which includes S&H); orders outside the U.S. add \$5. For priority mail in the U.S. add \$3. Trace Technologies, P.O. Box 711403, Houston, TX 77271-1403.

EXTRA!!! The Times EXTRA!!!
Qwikforms CD-ROM

Qwikforms CD™--130 forms and layouts for PageStream--plus every product that we have ever made for the ST, and more. A total of 5392 images in IMG format, 722 EPS (Illustrator) images, and 557 Type 1 fonts (with AFM files for PageStream 2.2). Plus 700 business letters in ascii TXT format, 230 Calamus fonts, 164 GDOS fonts, 142 PI1 (Degas) images, 196 GIF images, 112 spreadsheet templates, utilities, classics, and a few surprises for a total of 18,281 files and 274 mb (equal to 391 720kb floppy disks). ISO 9660 format (ST and IBM). \$59.95

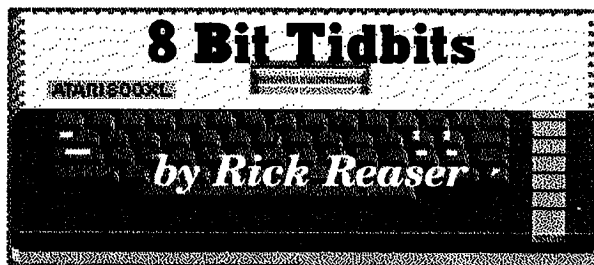
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Cliptomania III™--10 more disks of hi-res (300 dpi) clip art in IMG format for use with PageStream, Touch-Up, Calamus, Publisher, etc. Categories include Computers, Graphics, Home, Houses, Military, Science, Signs, Sports, Vacation, Wheels, etc. 377 images, 28 page directory--\$39.95

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All other-\$5.00



It Finally Happened!

13 Nov 94 – This month, the 8-bit coverage in *Current Notes* will be light. The unthinkable has finally happened. Two of our contributors did not submit their articles on time. Needless to say, I am disappointed. Most months, since I started this routine, I have barely skated by, not having much “on the shelf” in the event that a writer didn’t come through. I finally got bit.

What we really need are more 8-bit writers. Hopefully, more of you will volunteer in the future, to help keep the 8-bit platform alive. I am still seeking reviews of *FlickerTerm*, *PabQWK 2.0*, *QWK8*, and *Ice-T*. Hopefully, reviews of *Djinni*, the Complete and Essential Map, Atari 8-bits on the Internet, the latest version of *BBS Express Pro* and *PC Xformer 3.0* are already in the works by someone. Please volunteer to share your experiences with our readers!

Elsewhere in this Issue

Current Note's most prolific 8-bit writer, Frank Walters, shares some insights into boolean bit manipulation with Atari BASIC, aided by a little machine language magic.

Don't forget to check out the exciting product announcements for *PC Xformer 3.0*, *Ice-T* and some other neat stuff in the front of the magazine.

Errata

In last month's issue of the Oct/Nov '94 of *CN* on page 55 there is a missing comma in the Quote Data Listing. The last data entry on line 1000 should be “17, 8908”.

Sound Tracker Update

Bill Kendrick tells us a new Public Domain version of *Sound Tracker* has been released, and it includes an older MOD to MD8 converter. The newer MOD to MD8 converter must be purchased. The PD version is available at the University of Michigan Atari Archives.

FidoNet

If you haven't tried it out lately, you really ought to. Things are still going strong on that front. My local BBS, PC Heaven (1:102/137) changed phone

numbers to (310) 515-3673. It's hard to believe no other 8-bitters in the Los Angeles basin participate in FidoNet besides me.

Best Catalog Release Slips

Revision 10 of the new Best catalog has been delayed once again—probably until spring. Brad Koda tells me he bought yet more pallets of 8-bit stuff from Atari, to include a lot of piece parts, which need to be added to the catalog. He also described several of the photos that will appear in the new catalog. Brad has obtained a 8-bit prototype with an arabic keyboard.

[Best Electronics, 2021 The Alameda, Suite 290, San Jose, CA 95126-1127. Voice: (408) 243-6950 1-5PM M-F; FAX: (408) 243-8274.]

GENie and CompuServe News

The Thursday GENie 8-bit RoundTable is still going strong. The file area has been a little slow. Craig Thom has been faithfully posting the comp-sys-atari8 digests to file area though. As mentioned elsewhere in this issue, GENie intends to provide full Internet access to GENie members.

CompuServe has been fairly slow on the 8-bit front lately. The weekly Conference Online (CO) has pretty much died out. Bob Puff and Bob Woolley are still quite active in the message area. The file area has had little activity besides the comp-sys-atari8 digests.

B&C ComputerVisions Publishes New Catalog

The new B&C catalog dated 10/01/94 is out. It covers:

8-bit software	ST hardware and books
8-bit public domain software	ST public domain blowout
8-bit APX software classics	ST software
8-bit printer specials	ST public domain software
8-bit hardware and books	Jaguar
8-bit ANTIC software specials	Lynx and supplies
8-bit cassette tapes	Portfolio and supplies

The format is pretty interesting. Each section is a different color and the whole catalog “comes apart” so you can discard the parts that cover Atari systems you don't own. Needless to say, the catalog is packed with interesting items and some great deals.

[B&C ComputerVisions, 1725 De La Cruz Blvd. #7, Santa Clara, CA 95050-3011. Voice: (408) 986-9960; FAX: (408) 986-9968.]

Atari Omnibus

I received Dave Paterson's *Atari 8-bit Omnibus* in November. It was quite a nice piece of work. There were several vendors in it that I had not seen ads from for quite sometime. It was a neat idea and has provided me several leads for things I hadn't seen

before. For further information, see the product release in the front of the magazine.

Computer Software Services Christmas Sale

Bob Puff plans to have a Christmas sale again this year, similar to last year. Apparently, his R:P: Connection interface that was announced last Christmas has been put on "semi-permanent back burner."

[Computer Software Services, P.O. Box 17660, Rochester, NY 14624. Voice: (716) 429-5639 10-6 M-F; FAX: (716) 247-7158; BBS: (716) 247-7157 300-9600 bps.]

New Atari Classics Publishes First Issue

I received my first issue of the *New Atari Classics* magazine published by Jim Hood (and Bob Woolley) of the San LeandroComputer Club. It was good effort, though somewhat late in fruition. I thought there were some pretty good ads in the publication, which ran 40 pages. The first issue was sent first class. Jim hopes to have his 2nd class permit processed in time for issue two. The paper and printing seemed to be higher quality than the old *Atari Classics*. Missing from the first issue was a masthead, which will be added next time. There were essentially six feature articles in this issue. Hopefully, the *New Atari Classics* will continue to roll off the presses in the future.

[Atari Classics, 5507 Langford Ct., Concord, CA 94521-1614]

New American Technavision Prices

ATV recently sent out a 94/95 price list effective 11/01/94. There were several new items and some great new prices. XL/XE power supplies have been slashed to only \$9.95, while the old 400/800/810/1010/1200XL/XF551 "bricks" are going for \$4.50. ATV also has brand new 1010 cassette recorders for \$18.95! Infocom text adventures list for \$4.00 each. Some of the prices are absolutely unbelievable.

[American Techna-Vision, 15338 Inverness St., San Leandro, CA 94579-2016. Voice: (510) 352-3787; FAX: (510) 352-9227.]

New DataQue Product Information Release

Chuck Steinman released a new price list and "catalog" in October 1994 for his line of Atari 8-bit products. It is available on GENie. Here are the products offered by DataQue: 4 Megabyte Bank Select Cartridge; 16K standard EPROM cartridge; Numerous TransKey options; Battery Backed ZRAM; Programmer's PAL; Turbo-Calc 1.0i; Various Turbo-Calc Source List Options; 6502/65816 PC Cross-Development Pkg; 8-bit Survival Kit; Maze of AGDAgon 1.02 Disk and Cartridge; 6ft Atari-8 TriLink GameLinkII Cable.

[DataQue/Lex-Tronics, 1623 West Fourth St., Mansfield, OH 44906-1701. GENie: DataQue.1; Compuserve: 71777,3223; (419) 529-9797, 1 pm-5:30 pm M-F.]

Atari 8-bit MIDI Demo Tape

David Ewens from England's TWAUG sent me a fascinating tape of MIDI music created with a 130XE. I was very impressed at how professional and good sounding it was. It seems that Darek Fern, who owns Micro Discount in the United Kingdom, has been experimenting with hooking Creative Labs MIDI Blaster to his computer. The results are astounding. He gets 128 different instruments plus 60 drum sound effects on 16 tracks, with 16 bit digitization in full stereo. I listened to the tape several times and couldn't believe my ears. Hopefully, we'll get some more information on this development shortly. In the meantime, you contact Darek directly at: Micro Discount, Attn: Darek Fern, 265 Chester Rod, Streetly, Birmingham B74 3EA, United Kingdom.

That's all for this month. Please do your part and write for *Current Notes*. Contact me via email or snailmail at one of the addresses in the masthead, if you want to contribute.

Multimedia for You!

The image shows a grid of 12 software products from CyRel. Each product has a small icon and a title. The products are: Audiance (Desktop Image Manager), RUN ME FIRST! (Insert into the Floppy Disk Drive and double-click on RUNME1ST.PRG!), GEM-View 3.8 (File & Image Viewer), CYREL CATALOG DISK, CATS (Cats in the Hat), CYREL M16 Palette Master, CyRel Serial Mouse Manager, INSHAPE (Modules & Shifter), CyRel Sunrise (MMS-1280 Drivers & Utilities Disk), and TT-Artist 1.3 (Digital Screen Saver for GEM).

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Also coming in November: The amazing SKYLINE CD for all Atari Computers has a SRP of just US \$39.95* or Cdn \$49.95*.

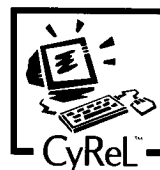
For more information, ask your favourite Atari Dealer or contact Cybercube.

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AtariWorks Data Base



Address Books and Mailmerge

by Michael 'Papa' Hebert

This issue's column marks a departure from my previous reviews of *AtariWorks*. I feel the best way to illustrate the ease and power of the *AtariWorks Data base* is to actually show you how to build one. In this case, it is the ubiquitous address book. As promised in the last issue, I will show you how to correct the two most common errors in constructing an *AtariWorks* Address Book Data base.

Address Book #1

Start *AtariWorks*, select the Data base icon and click on New. The New Field Name dialog box will pop open in the middle of a data base Form window. Press [Escape] to clear the dialog, type Category as shown in figure 1, then press [Return] or click on Add Field. The dialog box will remain on screen. Press [Escape] again, type Last Name and press [Return]. Continue this procedure using First Name, Address, City, State and Zipcode as the field names. After naming the Zipcode field, press [Return] then click on Done to exit field naming mode. The dialog box will disappear, replaced by the fields you have just named.

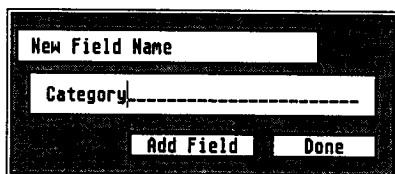


Figure 1

The next step is to size the Field Data boxes and relocate the fields. Referring to figure 2, drag the right end of each Field Data box to the approximate width you want, then click on the Field Name and slide the Field into position. They may be located anywhere on the Form window but should, of course, follow some logical pattern.

Now you have a simplistic, but usable, Address data base. It can be improved with the addition of a few fields. To add another field simply position the mouse cursor anywhere within an unoccupied part of the Form window, press the left button and drag out a

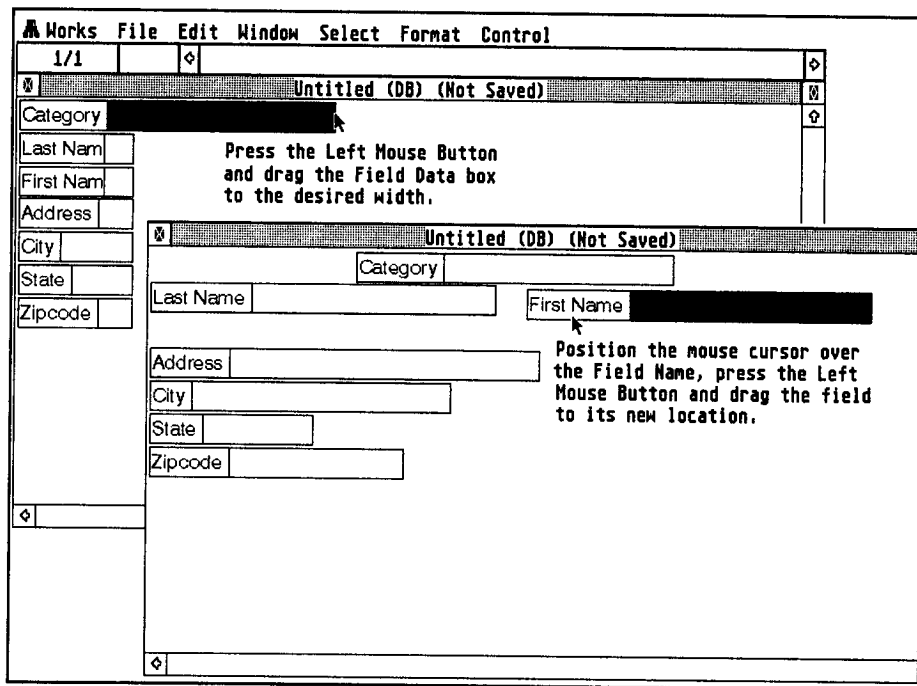


Figure 2

new field. When you release the mouse button the Add Field dialog box pops open automatically. Enter the field name and press [Return].

Referring to the top of figure 3 you will see that I have created a field, entitled Company, which will be used for Company names. You can add new fields to a data base at any time. The order in which data is entered into the fields will be the same as the order in which the fields were created. In this case, the data for Company name would be entered after the Zipcode. I want to enter it in logical sequence immediately after the First Name field. Obviously, the fields must be re-ordered.

Doubleclick anywhere within an unoccupied portion of the Form window and it will change to a List window. Scroll to the right until you find the column entitled Company. Position the mouse cursor on the field name, press the left button and simply drag the Company field to a position between the First Name and Address fields. That is all you need to do to re-order fields in *AtariWorks*. Clicking on Form under the Format menu bar selection will return you to the Form window.

Re-ordering the fields affects the order in which data is entered and the order in which fields appear

Works File Edit Window Select Format Control

1/2

A:\ADDR_1.STD (DB) (Saved)

Category

Last Name First Name

Address

City State Zipcode

Company

Works File Edit Window Select Format Control

1/1

A:\ADDR_1.STD (DB) (Not Saved)

Name	First Name	Address	City	State	Zipcode	Company
Doubleclick in any unoccupied part of the Form Window. It will change to a List Window like this one. Position the Mouse Cursor on the Company Field Name, press the Left Mouse Button and drag it between the First Name and Address Fields.						

Figure 3

in the List window. It does not change the location of the field in the Form window. Look at the bottom part of figure 3 and you will see that I have repositioned the Company field, added fields for Home and Work phone numbers and three more fields for various comments I may wish to store.

The address book is now ready to use. Unlike most other data base programs, *AtariWorks* does not require assignment of field attributes such as Text, Number, Date, Calculated, etc. before you can use it. *AtariWorks* Data base automatically assigns Text as the default field attribute. This allows you to enter any character you can type from the keyboard with the exception of [Tab], [Return] or the cursor keys. Looking over the data base, there are three fields that you might wish to assign Number attributes to; Zipcode and the two phone number fields. If these are changed from Text to Number attributes the second most common error in *AtariWorks* address data bases will be made. If the Number attribute is assigned to these fields the only characters that may be entered are numbers. You will not be able to enter extended zipcodes like 12345-6789 or 12345 6789 because

spaces and dashes are not permitted. You cannot enter a Canadian postal code because it contains letters as well as numbers. A phone number with parentheses, spaces or dashes, like (800) 555-1212, cannot be entered. For address book data bases leave all fields with their default Text attribute.

The sharp-eyed among you are probably wondering what happened to the first most common error. It's already built into the data base but it won't show up until we do.

Mailmerge Documents

These include letters, labels and envelopes. In other words, any document in which we embed names and addresses from the address book. Mailmerge documents are created just like any other document except for two differences. First, you must have the required data base (or data bases – you can use more than one) loaded into memory. Second, instead of typing in name and address information, you position the text cursor where you want the information to appear. Then click on Begin Merge under the Edit menu bar selection in *AtariWorks Word Processor*. The Item Selector Box shown in figure 4 appears. Highlight the appropriate Field Name by clicking on it,

then press [Return] or click on Merge. Reposition the text cursor for the next bit of info that is to be merged, click on Begin Merge and so on until you have installed all the necessary placeholders. A sample is shown at the top of figure 5.

Clicking on Print under the Word Processor File menu will print a copy of the mailmerge document with only the name and address from the current data base record. Selecting Print Merge will cause successive printouts with different names and addresses, beginning with the current record and proceeding to the end of the data base file.

Begin Merge

Select Database

ADDR_1A.STD

Select Field

Category

Last Name

First Name

Company

Merge Cancel

Figure 4

Figure 5

If you click on Show Data under the Word Processor Edit menu, the information contained in the current data base record will appear instead of the place holders. This is shown at the bottom of figure 5 along with an example of what will happen if the Company name field happens to be blank. This might not be a problem if you are manually merging names and addresses one by one since you can easily edit the blank line out. For automatic mailmerge it creates an unacceptable situation. This is the first most common error in most *AtariWorks* Address Book data bases. Fortunately, it is an easy one to correct.

The Better Address Book

AtariWorks not only allows you to create new data base fields any time you want, it also permits renaming existing fields. You can click on a field then select Rename Field under the Edit menu or just simply doubleclick on the field name. Either way, you will be presented with a dialog box prompting you to Enter New Field Name. The first step in

fixing the flaw in the address book is to rename the Company field to Address 1. Address becomes Address 2, City becomes Address 3, State becomes Key 1, Zipcode becomes Key 2, Home becomes Key 3 and Work becomes Voice. Two new fields are dragged out named FAX and Data. In the List window they are repositioned to appear before the three Comments fields. As a finishing touch I have enabled Bold attributes for Field Names and turned Border Name off. The final product is shown in figure 6.

If a company name is used, it is recorded in Address 1, the street address or PO Box in Address 2 and the City, State Zip in Address 3. If no company name is used, the street address goes in Address 1 and City, State Zip in Address 2 with Address 3 remaining blank.

Back in the mailmerge document the original placeholders are deleted and the new placeholders created with Begin Merge just as in the previous example. The sample mailmerge with and without company name appears as shown in figure 7. The extra space that is created by the absence of a company name has now moved between the address block and the salutation where it

no longer poses a problem for automated mailmerge operations.

What are those three Key fields for? They are "free-form" fields for entering data that will be used to perform relational search operations. The *AtariWorks* User Manual gives very clear instructions and an example for setting up a relational search - I won't

Figure 6

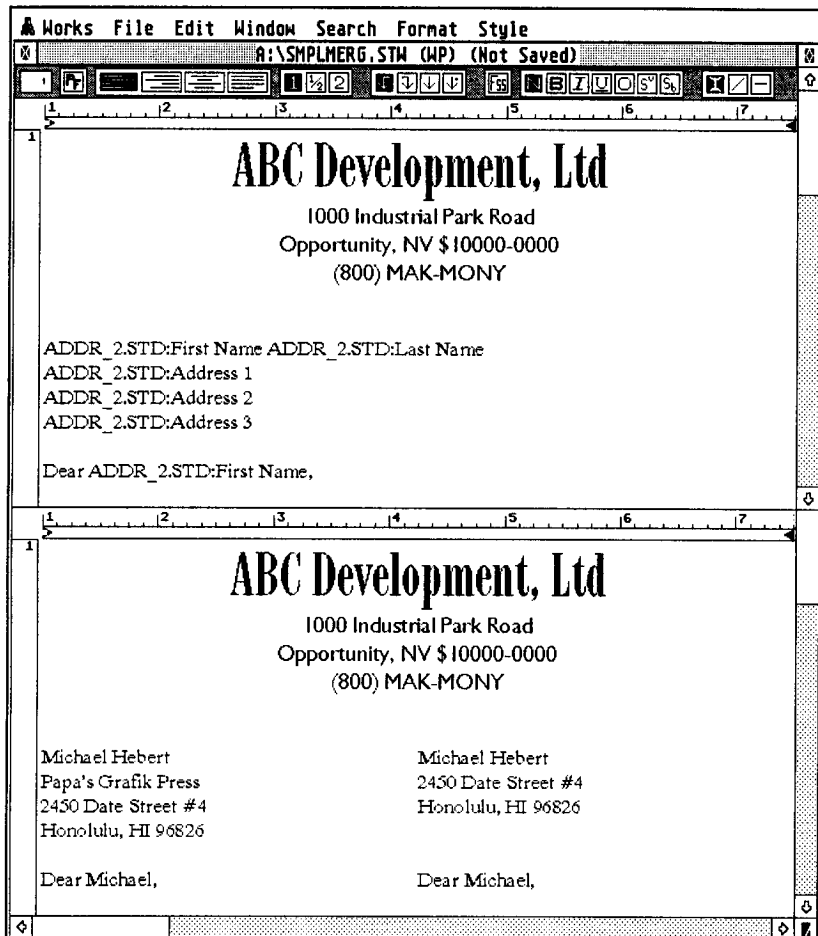


Figure 7

repeat it here. You can use any data you like in the Key fields. The only, and very important, thing to keep in mind when using Key fields is that the data entered into them must be consistent throughout all records in your data base; i.e. zipcodes in Key 1, membership expiration dates in Key 2 and so on. For specialized address data bases the Keys should be renamed to reflect their intended usage.

What? No Check Register Data Base?

Not in this issue—the Address Book Data base article has taken more space than I had anticipated. Of course, I could leave out the screenshots, but I don't think you would like that. In the next issue, I'll show you how to set up the Check Register data base and, space permitting, as a spreadsheet file also.

Since this is being written before the Holiday season, and you may not be reading it until after the season, I hope you have(had) the very best Thanksgiving and Christmas ever. The Warmest of Wishes to you and yours this fine New Year.

'Papa'

Current Notes Jan/Feb Disk-of-the-Month

(This disk, which includes 1.6 MB of pd software, is mailed to all CN disk subscribers. It is available separately for \$5 plus \$1 S&H. CN disk subscriptions are \$48/year. Order from CN, 122 N Johnson Rd, Sterling, VA 20164.)

ATZENTAZ – Complete p phone/address catalogue program, which is designed to provide ease of use and maximum functionality to both the beginner and the experienced user.

CALC150 – Amazingly versatile 4-in-1 calculator from Germany (with German docs, but most operations are not hard to figure out).

DESKCLOC – Displays the time in the menu bar, either as an ACC, or as a PRG in multitasking environments. It will update the time in a tear-off menu in Geneva.

GHOSTLNK – Allows your ST to access any drives on your IBM PC. It requires a NULL modem cable from your ST to the PC. Includes both ST and PC programs.

KLICK – German utility lets you choose different sounds for keyboard click and bell.

LHARC310 – Latest version of the excellent LHarc file compression utility. Includes shell program for quick and easy point and click compression/decompression.

M_SPOOL – Auto folder program and CPX that gives you a print spooler and print to disk capabilities.

MESSMAUS – Click the right and left mouse buttons at the same time to see the pointer's coordinates.

PENPAL12 – Easy to use text editor automatically reformats text as you type and includes most standard editor features, including cutting/pasting via the clipboard.

POCKET – Pocket Watch is a German time-, date- and alarm-clock utility.

POINTER2 – Pop-up windowed utility to convert a unit from one mathematical base to another.

SHOWTIME – A clock that displays in the upper right corner of the screen and shows the amount of memory available at the same time.

SLIDE_IT – Slide puzzle game contains two built-in slide puzzles: the alphabet from A–O and the numbers 1–15.(C)

ST_CLOCK – Full-screen clock (when run in ST High Res) that displays the time in hours, minutes and seconds as a huge wall clock, with cities around the world listed at the left.

START305 – Version 3.05 of Start-It, a Boot Manager program that lets you use windows, dropdown menus, buttons and the file selector to manage your booting up process.

TSWP – Utility from Germany lets you put write-protection on any disk or drive in your system via an auto-folder TSR and a CPX module that runs in the Xcontrol Panel.

Upgrading to a Falcon

By John Godbey

For several years I was the happy owner of a Mega 4 STe. "Happy," of course, is a relative term. The Mega STe was a good Atari computer; it ran nearly all of the kinds of software I wanted to use and it never gave me any problems. The detachable keyboard and raised function keys were so convenient that I cannot understand why Atari doesn't make all of their computers with those features.

On the other hand, the video display left something to be desired. I wanted to be able to do things on my home computer, like quality CD-ROM photo displays, that I couldn't do on a Mega STe. I thought long and hard about switching to a clone. I finally decided to stick with Atari. There were several reasons for my decision, but one of the main ones was that I wanted to be able to continue to use the software I liked.

So I traded my Mega STe for a Falcon. Out of the box, many of my favorite programs would not run. It has taken me quite a while, and a lot of time logged onto Genie, to get my programs working. In this article I hope to save other users some time (and perhaps help others decide if the upgrade path is the way to go) by detailing what I have learned about running "old" software on the new Falcon. (Note: Some programs seem sensitive to memory and TOS version. For reference, my Falcon has four megs of RAM, and TOS 4.04.)

Logging onto GENie

One of my most used programs, and one of the first I tried to use on the Falcon, is Gribnif's *STalker* (version 3.02). When I loaded it on the Falcon, it wouldn't dial numbers properly, and it wouldn't print. This was not an auspicious beginning for my Falcon. I wanted to try to get *STalker* to work first, on the assumption that if I could log onto the online services, I could gather information about other programs that were giving me problems. Starting with *STalker* turned out to be a good choice, for in getting it to work, I solved problems with a number of other programs.

I began by calling Gribnif. They suggested that the dialing problem could be fixed by going to the Modem Settings Menu in *STalker* and deselecting "Modem Sets DCD Properly." They had no suggestion for the printing problem.

The suggested fix worked, and I logged onto Genie and began searching the various libraries and bulletin boards for help with the Falcon. I located several programs and patches that fixed my *STalker* problem. To get the *STalker* to dial properly, the following two programs need to be added to the Falcon's auto folder: BMAPFIX2.PRG (GENie file #30081) and FPATCH2.PRG (GENie file #30045). FPATCH2 should be the first to run in the auto folder. Apparently, the Falcon uses different communication chips than earlier Atari computers. These programs emulate the missing chips, which is required when running older communication programs.

Once I booted with these programs, I re-selected "ModemSets DCD Properly," and had no more dialing problems. (Gribnif also recommended that Falcon owners use serial port two under the Settings Menu.)

Some messages on GENie suggest that both BMAPFIX2 and FPATCH2 can be replaced with FSERIAL.96B (GENie #32362). Unfortunately (for me), the instructions to this program are in German and I was never able to figure out how to use it. If you know German, give it a try.

STalker's printing problem was solved by Charles Johnson. He has given Atari users a program called TOS4_FIX.PRG (GENie #32987). This program was written to fix printing problems that arise when using TOS version 4 with some older programs. Johnson was specifically interested in fixing problems when some of his own programs--*Maxifile* and *Desk Manager*--are used with a Falcon. It seems to fix the printing problem with TOS 4 and all older programs, and thus makes *STalker* print properly, too. This program should be in every Falcon's auto folder.

With these three programs in the auto folder, the major Falcon "incompatibilities" are solved. I will now turn to some more minor problems with running older software. With all of the programs discussed below, when I say that they work, or don't work, or work only under certain circumstances, the programs were tested with the three "fixes" discussed above in the auto folder. (FOLDERXXX.PRG and CACHEXXX.PRG work with the Falcon as with older Atari's, and if you used them before, you will want them with your Falcon.)

Video Modes

Old ST and STe users, familiar with only three video modes, will initially find the Falcon's 35 built-in resolutions bewildering. My recommendation is to begin by setting your Falcon to the 16-color, 80-column mode, since this gives a good trade-off between a colorful display and a quick, steady display. Move to a higher color display only when needed for a graphics program. Some of my favorite programs, however, refused to work in the 16-color mode:

Calligrapher, my word processor of choice, will only work in the two-color modes. In higher color displays the screen will not display typed letters, even though the typed letters will print properly.

Pagestream is another program that seems to work properly only in the two-color mode. (Soft-Logik refuses to say if *Pagestream* for the Atari will ever be upgraded. A version of *Pagestream* that would work in the Falcon color modes would certainly be a wonderful addition to the Atari software world.)

LDW Power Spreadsheet works in the 16-color mode, with one strange exception: it will not display graphs in color. It, apparently, thinks it is in ST High resolution. In order to get the graphs to display in color, it is necessary to set the Falcon to its ST Medium emulation mode.

Other Programs

The following programs will all work, as detailed:

Imagecopy 2 was supposed to work on the Falcon without any problem. I never had any problem displaying or saving images, but it took me several weeks to figure out how to print with *Imagecopy2* on the Falcon. Here is what I discovered. Under the Printer Type Menu, under "Output," select BIOS. Nowhere in the manual does it state that Falcon output must be BIOS; but it must. Once this change has been made, the program works perfectly.

Hotwire v. 3.0 will work on the Falcon. Just remember to install it as an application, and assign it the F10 Function key. However, there is an incompatibility between *Hotwire* and *AtariWorks*. If you have *AtariWorks*, you should get a copy of the Codehead's *AW_PATCH* (GENie file 30335). Run this, and your copy of *Hotwire* will be modified to work with *AtariWorks*.

Only the latest version of *Warp9* will run on the Falcon. If you have an earlier version, get in touch with the Codeheads about an upgrade.

I have been unable to get *Stalk the Market* to run in any Falcon video modes. In order to use it the Falcon must be set to its ST High video emulation.

The *CodeHead RamDisk, v.2.3*, will only run as a program.

Extendos will work, but you must change its configuration file. You must add 8 to the SCSI port

number you specify in the CD.BOS file. The manual is mis-leading on this. On page 11 it explains how to set the file up for a TT030, but does not explain that exactly the same procedure must be used for the Falcon.

Only the most recent version of the *Universal Item Selector* will work. If you have an earlier version, update to the latest version from A&D Software.

Without a Problem

The following programs have all worked for me without a problem.

Data Rescue v. 1.1

dBMan, v.5.2

Diamond Edge v. 1.03

High Speed Pascal v. 1.6

Marcel v. 2.1.2

OutBurst v. 3.1

Starbase, v. 1.21

X-Boot v. 3.1

DC Xtract v. 2.2

Diamond Back v. 2.42

EL-CAL, v. 2.21

LookIt! v. 1.2

Multidesk v. 3.4a

The Recipe Box, v. 3.5

STraight Fax v. 2.2

Won't Work

My biggest disappointment is with *TouchUp* (v.1.69). Although most of the graphics part of *TouchUp* will work on the Falcon, you cannot use its scanning feature. According to Migraph, *TouchUp* will not be upgraded so that their scanner will work on the Falcon.

Games

I am not a big games player, so I can't give you much first hand experience with games. However, there is a file on GENie (FALGAME4) that lists about 500 games and details to what degree they work on the Falcon. If you are interested in games, you should also check the new Tbad catalog. It lists a number of games that work on the Falcon.

Many old games require an ST emulator to work. I downloaded *Backward II* from GENie. (For a discussion of this program, see Scott Chilcote's article in the May, 1994, *Current Notes*.) The last two games I have bought are *Lemmings* and *WizKid* (I said I wasn't a big gamer). I tried *Backward II* with both of them. I was unable to get *Lemmings* to work, but *WizKid* works without a problem.

Conclusion

Most of my non-game programs work on the Falcon. A few require the two-color video mode, or one of the ST compatibility modes. These, however, are minor inconveniences. In general, the most recent versions of productivity and software will work on the Falcon.

If anyone has any questions or comments about any of the programs I have discussed here, I can be reached on GENie as J.GODBEY.

Wolfenstein 3D

At Last! A Show Piece for the Jaguar

Review by Joe Waters

The Jaguar Arrives

Just four weeks ago, an Atari Jaguar arrived in this house and life has never been the same. To be sure, there are some games out for the Jaguar that are no better (in fact, playability could be worse) than the standard fare you can find on your Atari computers or on popular game systems. But there are games arriving now that show off the features of the Jaguar and they are, indeed, pretty spectacular.

A Peek at A vs P

In this review, I will tell you my experiences with one of these new games, *Wolfenstein 3D*, released by Atari. But before we delve into *Wolfenstein*, you should know about *Alien vs Predator*, for this was the game that made me sit up and take notice of the Jaguar. We have a large, 25" color TV in our family room. Just 10 feet away is an old comfortable couch with an antique blanket chest, which serves as our coffee table, right in front of it. The Jaguar sits on the chest and the player sits on the couch. The cable that connects the Jaguar to the TV stretches across to the TV. A potential foot hazard, to be sure, but this cable is easily disconnected from the Jaguar and kept by the TV when the game is not in use. I mention this scene, because as one sits on the couch, with that large picture screen right across the room, it adds to the sense of the gamer that "you are really there" in the midst of the action.

The Jaguar graphics and sound effects can be truly extraordinary and, in *Alien vs Predator*, they are. It's just as if you were watching a movie and wandering around right in the middle of the story. Nowhere is this more evident than with *Alien vs Predator*. You can choose to play the part of the Marine, the Alien, or the Predator. I started as the Marine, who has just found himself released from a prison cell on a huge spacecraft only to find the craft mysteriously quiet and empty. Well, not entirely empty.

You control the marine's movements and, as you move forward, you see the scenes before you unfold just as if you were that marine walking through the ship. One of the first things you find is a corpse, from which you grab a weapon and some ammunition. (You have to acquire further ammunition and weapons as

you search through the ship.) The ship is dark, quiet, and menacing. The background "music" fits the scene exactly and adds just the right touch to the dangerous situation you face. Needless to say, you do encounter unfriendly Aliens, who *do not* go down with a single shotgun blast.

I can't tell you all about *A vs P*. It is a big, complex game. Not only can you play any of the three characters, but there are also three ships linked together to explore, each with a very different look. There are many floors in each ship and many items to be acquired before you achieve your ultimate objective.

You can even crawl through the air ducts! The reports on *A vs P* by the experienced gaming crowd are all favorable. This game will, undoubtedly, encourage some observers to purchase the Jaguar just to play the game.

Wolfenstein 3D

Instead of playing *A vs P*, I have been playing *Wolfenstein 3D* for the past month. This game is very similar to *A vs P* in that you, the hero, in order to accomplish your mission, must search through a labyrinth of rooms, destroying any enemy you encounter, picking up weapons, ammunition, treasures, and food and medical kits along the way. Although the graphics and animation are excellent, as are the sound effects, they may not be on a par with *A vs P*. But, for an old, not-too-experienced adventurer like me, *Wolfenstein 3D* seemed more playable, more like a game I might actually be able to finish! So, this is the game I tackled. And I am delighted I did. I've become very familiar with it and have enjoyed many hours searching out the enemy, and the secret rooms!

In *Wolfenstein 3D* you are faced with six individual missions. Each mission is in a different location and has a different objective (see table 1). Each "location" has several "floors" with different room layouts on each floor. Thus, to complete a "mission," you must complete several levels. To go from one level to another, all you need to do is find the elevator and get on it. You encounter the really nasty fellow (the one you're supposed to terminate) only on the last level of each mission.

Table 1: Wolfenstein 3D Missions

Mission	Title	Levels	Location	Objective
1	Dresden Strike	3	Castle outside Dresden	Terminate Hans Grosse and escape
2	A Dark Secret	4	Castle Erlangen	Terminate Trans Grosse and escape
3	Operation Eisenfaust	4*	Dr. Schabb's Research Laboratory	Terminate Dr. Schabbs and escape
4	Trail of the Madman	5	Mountain Fortress	Terminate Ubermutant and escape
5	Confrontation	6	Castle Heidenheim	Terminate Death Knight and escape
6	Hitler's Last Stand	6*	Castle Wolfenstein	Terminate Hitler

* An additional "secret" level can be reached if you find the elevator in the hidden room.

Controls

Before describing the game play, a few words about the Jaguar game control and its use in *Wolfenstein*. On the top left of the control is a "joypad." This little device, which is like a large plus sign, controls your direction. Press the top and you go forward, press the bottom and you go backward. Press left to swing left and right to swing right. Simple enough? In the center of the control is a "Pause" button and an "Options" button. On the right are three "action" buttons labeled A, B, and C. The A button is for Opening doors; the B button is to Fire your weapon; the C button is for speed (press it while moving forward and you go faster). These controls are configurable and you can change what each button does if you like. The A button, used in conjunction with the joypad, has a second function. By pressing "Left" and A, you "slide" left rather than "turn" left. This is a handy skill to master since you will definitely want to use this technique as you approach corners behind which an enemy may be waiting to gun you down.

The controller also has a numeric keypad below these top controls. Jaguar games generally come with an overlay, which is placed over the keypad and defines what each key does. For *Wolfenstein*, the top three keys enable the "Save Game" feature. That's right, even though this is a cartridge game, you can save your games! In fact, when you start the game, you can play a "new" game, continue from the "last" game, or restore any of the three potential "saved" games. Of course, there is a limit to how many changes can be saved and, for the *Wolfenstein* cartridge, that limit is 100,000 changes. Now, let's see ... if you saved Game 1 ten times in an evening, and Game 2 and Game 3 also 10 times that evening, that would be 30 changes. You can do that every night for over nine years before you run out of changes on the cartridge.

Automap Feature

A very important key is located right below the Save Game 2 key—the View automap key. You can press this key at any time and you see a map of all

the rooms you have explored. As you explore the rooms in each level, the map slowly fills in, giving an overhead perspective of the floor plan and showing walls (including the appropriate color) and doors. It is very easy to become disoriented and forget where you have or have not been, and checking the map is very helpful in finding your way around. If, however, you are one of those who have trouble reading a road map and translating items on the map to their positions on the actual road you are traveling on, this map feature may not be so useful.

Figure 1 shows a complete map of Mission 4 - Level 4. This gives you an idea of what the map feature looks like and also shows some of the complexity that room layouts can assume. Rest assured that this is not a particularly complex level, in fact, it has only two secret rooms (more on secret rooms below).

Rooms

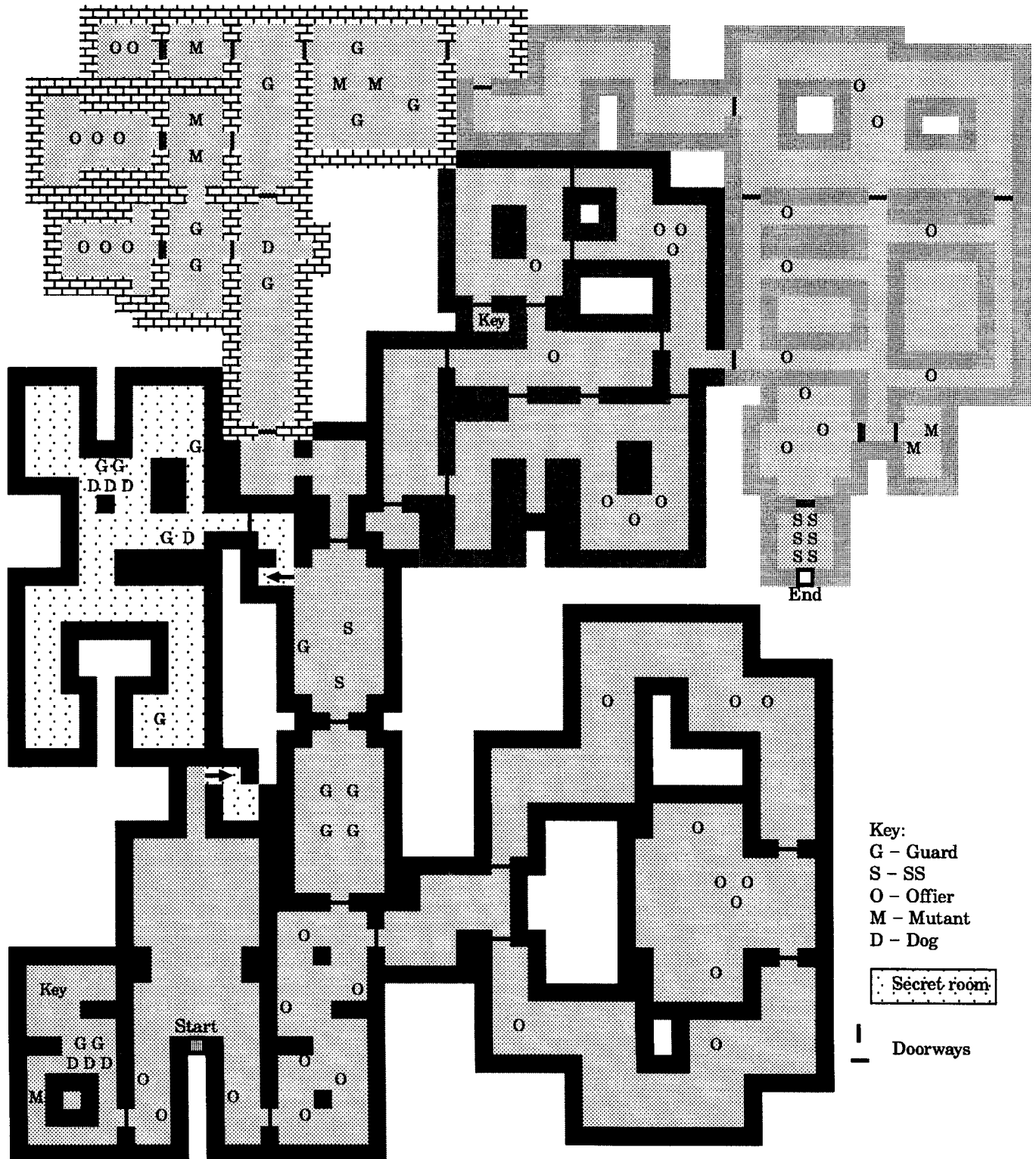
As you travel through each level, you see each room in a 3-dimensional perspective. Rooms are various sizes and shapes, and as you move around the room, you see what is in the room. Rooms have very colorful, textured walls, but very little furniture. Occasionally you will see a table or a lamp or a potted plant or a barrel. These items have no effect on the game other than decoration. You can not go through them, you can not blow them up, they conceal no secrets. The walls, which may be red bricks, masonry blocks, wood panels, stones, and other structures, are adorned here and there with pictures or various flags. As you move forward, the far wall gets larger, just as it would in real life. You can move right up to the wall surface and examine each brick in detail if you want. As you move along the wall, the bricks glide past you (or fly past, depending on your speed).

Doors are clearly marked and recognizable. To enter another room, you simply go up to the door and press the "Open" button. All the doors are "sliding" doors that slide into the wall. They do not stay open forever, however. After a few seconds, they will close. The sounds of doors opening and closing are realistic and clear.

Figure 1

Wolfenstein 3D

Room Map for Mission 4 – Level 4



On upper levels, you will find some doors that are locked and cannot be opened without a key. The game has two kinds of keys (gold and blue) and these will always be available somewhere on the level, and not in a hidden room. If you see a key on the floor, just run over it and you pick it up. Note that it is not unusual to find a lot of enemies guarding rooms that have keys.

The Enemy

Now, if all you had to do was run through these rooms, the game would soon grow old. But, it is not so easy to run through these rooms. There are "enemies" in these rooms, who will shoot you as soon as they see you. The easiest are the "guards," who can be brought down with a single (well-placed) shot. Guards react slowly and have to stop and take aim with their pistols before taking a shot. But do not delay too long. About 11 shots and you're done for and it will only take that Guard seven seconds to fire that many. Two guards can complete the job in four seconds.



"S.S. Guards" are more dangerous. They wear a vest and carry a machine gun and take more than a single shot to bring down. Usually (but not always), they will yell "S-S" when they see you, which gives you an audible warning. However, when they fire, they let off four shots in rapid succession. After you down your first SS guard, you can pick up his machine gun (by running over him), thus, replacing the pistol with which you started the game. You also pick up additional ammunition (10 bullets) by just running over your fallen enemies.



"Officers" didn't get their positions by being stupid. They are silent until they spot you. It is hard to surprise them. They are fast and wily fighters, moving left and right as they fire. However, they carry only a pistol and wear only a light vest and, thus, can take less damage than the SS Guards.



"Mutants," although not even mentioned in the tiny *Wolfenstein* game manual, are very dangerous opponents. They don't say anything (except when dying). They sneak up on you and, with deadly accuracy, can rapidly end your quest.

Not all of your enemies are humans. You also have to watch out for German Shepherd guard dogs. Trained to kill, these little pets can be brought down with a single shot. But they jump around and dodge so well that hitting them, particularly at a distance, is harder than you might expect.



In each mission, you have to terminate a particularly nasty enemy. These guys are an entirely differ-



ent dimension from any of the enemy you will face in trying to reach them. Not only are they three times bigger, they come at you armed to the teeth with all weapons blazing. You will find it impossible to bring these guys down unless you are in perfect health and are equipped with powerful weapons of your own. And just to make things a little more complicated, some of these characters walk around *carrying* the key you need to open the locked doors you must pass to get out of the level. You can't advance by avoiding the enemy; you have to conquer him to get that key!

Weapons

I've already mentioned that you start the game with a simple pistol. When you "terminate" your first SS Guard, you acquire his machine gun. With this gun you can carry up to 150 rounds of ammunition. As you fire the weapon, you use up your ammo. Additional ammo is acquired from your fallen enemies and by discovering ammo boxes, which contain 40 bullets. Find enough ammo boxes and you can carry up to 150 bullets. There are also huge "ammo packs," which will allow you to carry extra rounds. Once you have discovered and picked up an ammo pack, you will be able to carry a maximum of 350 bullets.

There is even a more powerful "Chaingun" to be found during your quest. With a rotating barrel, like the gatling gun, this weapon will clear a room very quickly, but it does use up a lot of bullets. By the way, you can only carry one gun. Therefore, as you pick up a machine gun, you lose your pistol. When you find the chaingun, you lose your machine gun.

In addition to the gun, there are two other weapons that you can carry along, once you find them. One is a flame thrower, powered by gas, which shoots a burst of flame. You find ammo for this by picking up extra gas cans. If you are beset by many enemies, use the flamethrower. The second big weapon is the rocket launcher, which can plough through several enemies at once. This weapon is also very useful when you have to tackle one of the super killers found at the end of each mission.

Health

If you are hit by an enemy bullet, it will affect your health. Of course, you are a big strong super hero kind of guy and one bullet is not going to bring you down. You start the game 100 percent healthy. On the lower left part of the screen, an indicator shows the percentage of health you have remaining. The game is over when that number reaches zero. If you are hit, you lose 7 points. If one or more enemies are upon you, each firing one or two shots a second, it won't take long before you are *very* unhealthy!

However, take heart. If you are wounded, you can regain your strength. You will find "dinners" lying around, and eating them (by running over them) gives you an additional 10 health points. You can also find First Aid Kits. These will increase your health points by 25. When you bring your total back to 100, neither the dinners nor the First Aid Kits can provide any additional benefit.

Treasures

Scattered throughout the castle rooms are various "treasures." You can spot them easily since they look like gold and jewel-encrusted items (crosses, crowns, treasure chests). These items will give you a bit of a bonus and increase your health by 4 points, even if you are at 100. Given a choice, then, you should always use the dinners and med kits to get your health up to 100 and then go for the treasures, which will bring your total *over* 100. You can increase your health this way to a maximum of 200 points. There is an additional item, called a "one-up," which will bring your health to 200 per cent. However, you won't find any of these by just cruising through all the rooms. These are only found, and rarely so, in secret hidden rooms.

Secret Rooms

Now what would a castle be like if it didn't have a few secret rooms hidden behind walls here and there? *Wolfenstein* has lots of secret rooms. Just go up to the right wall panel, press the open button, and listen to that wonderful sound of massive rock rolling backwards to reveal a secret room! These are the most likely places to find exotic weapons, lots of ammunition, medical kits, and treasures, including the elusive one-ups.

There's only one catch—which panel is the right one? The manual gives you some hint: "Pushwalls are usually in alcoves, corners, or the ends of hallways. (But not always!)" The hint is correct; you will find some secret rooms in alcoves or at the ends of hallways. But you will also find them right in the middle of a wall.

There are various tactics you can use to find secret rooms. You might try just running right along the

wall while you hold the "open" button pressed. This will be successful and you will find some secret passages. But, not all secrets can be opened this way. For some, you simply have to stop in front of the wall and then press the "open" button. I have developed a technique that has proven reasonably successful. If I face a wall directly, that is, at a 90 degree angle, and press the forward button, nothing happens. After all, I am facing the wall. But if I turn a little to the right, say 85 or 80 degrees, and press the forward button, I will move along the wall towards the right. The sharper the angle, the faster one moves. If I do not continually hold down the forward button, but press it intermittently, I then jump along the wall toward the right. By pressing, and releasing, both the forward button and the open button, I move along the wall in a jumping jerky motion rather than as a smooth continuous run. If you plan your movement to include at least one stop at each wall "panel," you will be reasonably successful in uncovering secret rooms.

Once you find a secret room, do not assume there are no additional secret rooms to be found within the first secret room. Sometimes secret rooms can be nested three or four deep! Keep searching.

Finally, as an extra special bonus, you may find that some secret passages actually lead to an elevator. If you take that elevator, you will find yourself dropped off on a secret level! In Mission 3, a hidden elevator will take you to level 5 and, when you finish that level, you will find yourself deposited right back on the level you just left. The same thing happens on Mission 6. You can find a hidden elevator that will take you to level 7. If you don't find this elevator, you won't get to level 7, since the game ends when you complete Mission 6, Level 6.

Strategy

There are many different ways to play this game. You don't have to find any secrets. You could just race through each level, killing whatever gets in your way, until you find the elevator and move on to the next level. There are med kits and treasures in the open rooms and you can restore your health as you move along. But it will be difficult to get through the tougher enemies without plenty of health and weapons.

As you start with Mission One, Level One, you can clear the level of enemies, find whatever treasures you can, and then advance to the second level. As you start the second level, you might plan to press the "Save Game 1" button and save your status at the beginning of this level. If you are wiped out in trying to conquer level 2, the game will start again at the beginning of this level. But, you will only have 100 health points and a pistol. Any "extras" you brought with you from level 1 are gone. If, however, you have

saved your status at the beginning, can always restart "Game 1" and you will be at level 2 with the health and weapons you brought from level 1. Using this technique, you can advance through the levels becoming more powerful all the time.

When you get better at killing the enemy without taking shots yourself, you might feel more confident about starting any level with a pistol and making it safely through. But you will have to take time to find some secret rooms to build up your arsenal as you advance.

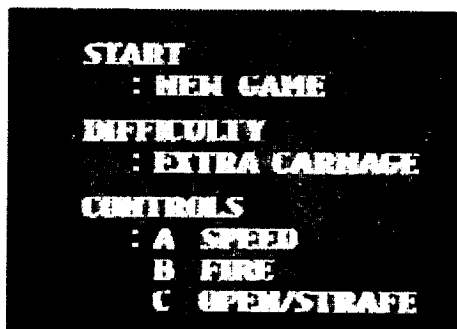
It may be useful for you to develop a pattern when searching for secret rooms so you know what you have checked or not checked. When entering a new room, I first made sure all the enemy were taken care of. Then, to check for secrets, I started at the door I wanted to enter next and moved systematically around the room in a clockwise fashion. That way, when I finished searching all the panels in the room, I would be right back to the door I wanted to continue with anyway.

If you are fully stocked up with health and weapons (there is a maximum of ammo that can be acquired for each weapon), you can go through all the rooms and not worry about secrets. When you get to the elevator, if you have been seriously drawn down in health and/or weapons, you could then go back and find some secret rooms to restock before moving onto the next level. By the same token, if you reach the elevator and have the maximum of everything, why bother going back and finding anything? Just go on to the next level.

Score

As you leave each level in the elevator, you are presented with a score for the percent of enemy killed, the percent of treasures found, and the percent of secrets discovered. It is possible to get 100 for each of those categories. If you do, all you get is a smile and a "thumbs up" from the face on the screen. Initially, you may be dismayed at all the things you, somehow, missed! Those secret rooms can be tricky to find.

The summary screen also shows your time and a "PAR" time. You may very well wonder how anyone ever made a "PAR" of 45 seconds when it just took you 20 minutes to finish that level. Well, it can be done, as reported by some of the denizens on GENie. But to reach PAR, one has to know the layout cold and simply race from the beginning to the elevator without bothering to find any secrets, pick up any treasures, or kill any enemies.



Cheating

If you don't want any help, skip right now to the next section. If you do want some help (i.e. you would like to cheat), there are some special secret codes you can enter into the controller that you may find handy. When the cursor is at

NEW GAME, push buttons 1,3,7,9 simultaneously. Now you can choose which Mission and Level to play. While playing any level, you can press 4,7,8,6 to skip to the next level. If you think you need full weapons and ammo, press 4,9,9,6. There is even a code for "God" mode where you are indestructible. But this really ruins the game, so I will let you find that one on your own if you have a mind to.

Summary

If you have a Jaguar, and you like adventure-type shoot-em-ups, you will not be disappointed with *Wolfenstein 3D*. Should you buy a Jaguar to play this game? Maybe. I've certainly gotten a lot of enjoyment out of this single game and all my adventures to date have just been on the "Easy" level.

the CRAWLY CRYPT COLLECTION

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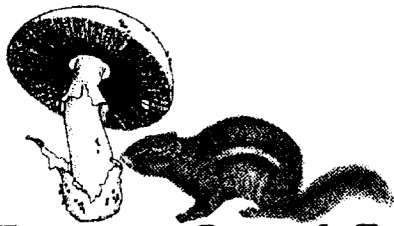
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Modeling, Rendering and Staying Sane

Running Out of Ram by David Barkin

Greetings! Merry Christmas! Happy Chanukah! Happy New Year and to all those left out; Seasons Greetings! Time to take a break from talking about Image Processing and examine what can be *combined* with Image Processing.

As I look at high-end software and hardware, the trend is, unmistakably, unification. Thus, image processing, desktop publishing and modeling, are all producing results that compliment and interact with each other.

Modeling and Rendering

Modeling and Rendering — these are programs which I've successfully avoided for over seven years. My only previous experience with them was *CAD 3D*, no doubt a fine program. The whole concept of a true 3-dimensional space drove me screaming up the wall. In essence, when using a regular

paint or drawing program you are drawing in two dimensions. If, for example, you wish to draw a cube, in such a program, perspective must be kept in mind. After all, this is in substance, the same method one would use as if drawing on a piece of paper. In modeling, however, you are creating objects in a true 3-dimensional world. Thus, the objects created have a built-in perspective just as real objects in a real world do. Why this should be so difficult for me to master is a reflection of a particular type of brain as opposed to the difficulty of using a computer. I have no problem in walking and running in a 3-dimensional world; why should I have such a problem with Modeling?

The above is not being written to discourage people from getting such software. If I can learn such a program, anyone can. This is not false modesty but plain rendering of the facts.

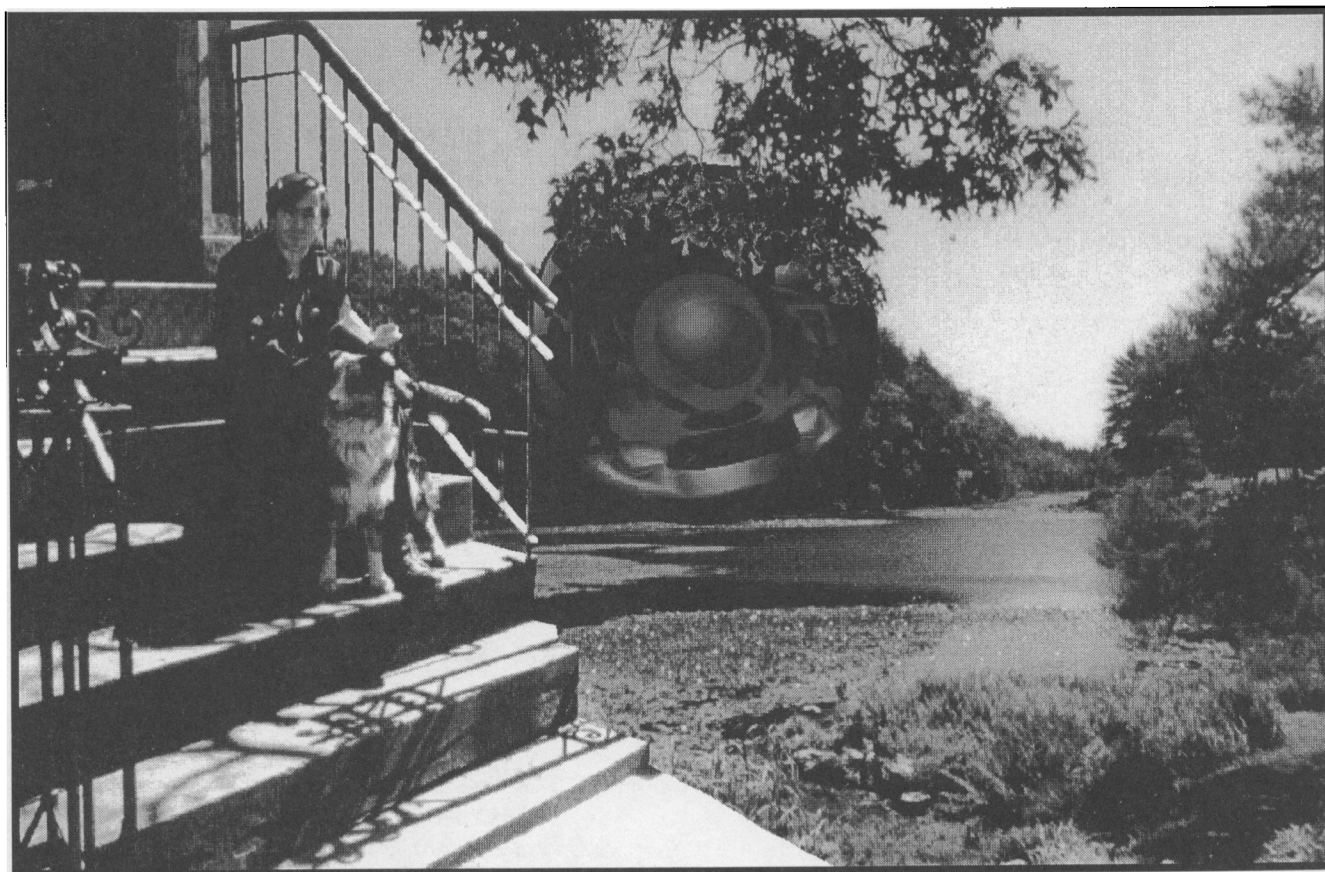


Figure 1. Combining the output of *Inshape* with a photographic collage from *Das Repro*. This rather fanciful picture of the author and his dog is an example of combining the results of high-level graphics programs. The result is a true 24-bit .TIF file, which is, in fact, a photograph.

Creating Objects in the 3-Dimensional World

The objects created in this 3-dimensional world are mathematical constructs. Creating a cube entails going to the object selection dialogue, picking "cube" and, in the resulting dialogue, typing in the three dimensions of height, width and depth. Finally, you specify the location of the resulting object. The location is specified in terms of an arbitrary zero point. Programs differ in how the above is done and in the sophistication of the result. *Inshape*, distributed by Cybercube, demands that *all* movement be done by typing in exact locations. *Xenomorph* allows use of the mouse and so on. Objects that are created can be combined with new objects. Spheres, columns, tubes, etc. Once created, the planes (which are the various sides of your 3-dimensional object) can be further modified. The planes consist of individual points, which can be moved to new locations, thus stretching or shrinking or

bending the resulting shapes. The better programs, such as *Inshape*, give the added option of doing this modification using bezier curves.

In the course of these constructions, the user is working with wire frame models. How they appear to the user is determined by the location of the "camera." This camera is actually the position, in space, of the user. Furthermore, you, the user, determine this location and are free to constantly change this location. Since these are "real" objects, the location of the user is critical to the final outcome of your work. The result of the final rendering is done based on the position, angle and *distance* from the object of the camera.

Rendering

Oh, yes, rendering. A wire frame object may be interesting but it has its limits as a salable object. We see the results of rendering all around us.

The bizarre posters, science fiction animations, even furniture advertisements are actually often produced in modeling programs. There is now an entire industry of computer modeling studios devoted to this output. Aside from commercial posters and advertisements, Architects are no longer using "an artists' conception" of their proposed Dog Run Towers building. No, they are going around pedaling their work by presenting the proposal as a color "photograph" of the amazing new building. Various video companies are selling simple or complex animations to the commercial video industry. A one minute animation may be sold at from 100 to 2,000 dollars *a minute* to these small entrepreneurs who are out filming weddings, confirmations and so on. Other companies are renting out their computers to the modeling industry. In other words, rendering is the transformation of our wire frame objects into a full color facsimile of reality.

This is accomplished by the user assigning colors and textures and surfaces to his wire frame construction. With sophisticated software,

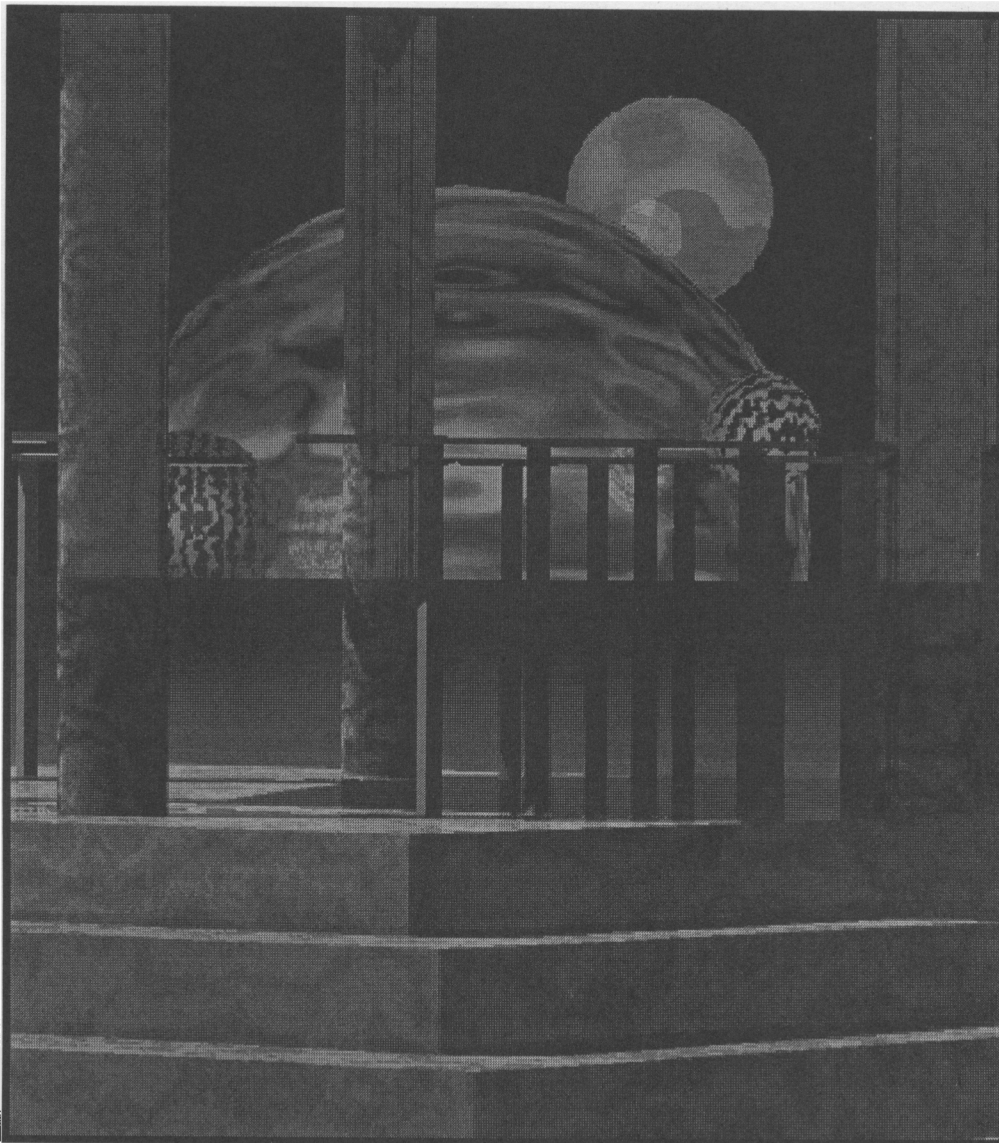


Figure 2. The last issue of *Current Notes* featured this image on the cover. Normally, I like to blame Joe Waters for problems with my work. Unfortunately, in this instance, Joe's responsibility is limited to trusting me that the image would come out perfect. Ha, I showed him not to be so naive in the future.

the user has complete control over this process. To complete the realistic nature of this process, the user also controls and creates "light sources" and positions these light sources, specifying their intensity, location and direction. In other words, once you have created your object(s) you create and position your viewpoint and the position and direction of your lights. You then "render" your creation whereby the assigned surfaces, shadows and light are created and the result *can be* a real photograph of an imaginary world. In fact, these programs allow the creation of the background, sky and ground on which your constructions are placed. Programs like *Inshape* even allow the addition of real photographs to be added to the objects you have created. Thus, you can wrap a photograph around a column, and when rendered, the photograph is wrapped around your column.

When I say that you can determine the appearance of surfaces I mean their transparency from completely opaque to completely transparent. You can preset the degree of reflection, the very smoothness and roughness of the surface. Keep in mind that the position and intensity of your light source(s) will also affect the final image. What's really a pity about this article is that my examples are so poor in terms of what a really skillful person can create. Readers will have to bear with me on this. Both my dog and I intend to apply ourselves to becoming more skilled at this task.



Figure 3. Two different skies. One of them is from a real photograph; the other is from a rendered sky in *Inshape*. Send me a large amount of money and I'll let you know which one is the real sky.

Animation

Finally, once a construction is completed, not only can it be rendered, but it can be animated. This is to say, a "scene" is created and by moving the camera a specified amount, rendering each new frame with each change of location *and/or* moving the objects between rendering each frame, a sophisticated animation will be the result. If one owns a Genlock, you can hook your computer to a video machine and turn your animation into a video, which, in turn, can be added and edited to regular video output.

The Price of Modeling

Modeling is probably the most expensive graphic software in the industry. Those who are licking their lips over acquiring these programs should now sit down and pour themselves a good stiff shot of 100 proof scotch mixed with a strong beer for more efficacy. On the IBM and Mac, professional level modeling software runs around three grand. A "good" modeling program comes in around \$1,000. Equivalents to existing ST/TT/Falcon software will run around three or four hundred dollars. *Inshape* version 1, which is really an introduction to modeling, lists for \$180 for the Falcon and \$280 for the TT, although the versions are very similar. Falcon owners will have to acquire a math co-processor.

Xenomorph is under a \$100. Surprisingly, there is a full featured, although very difficult to use, PD Modeling program, which is available for free. "Persistence of Vision" is very powerful for its price (\$0) and, despite its difficulty, can give you an idea of what this process is all about. The professional version of *Inshape* is about to be released. The beta version, which I've seen, can render frames in three minutes on my TT. The price will be around \$450 and will allow TT/Falcon owners to compete in the real world. This price of \$450 is comparable to the \$1,000 program on the IBM. However seeing a beta version of a program is only a clue to its final capability. When *Inshape 2* come out, I will drop everything to review it.

The Bad News

So much for the good news about modeling. The bad news is that, at the moment, no program for the Atari line of computers allows professional animation work. *Xenomorph* is quick and easy to use. The output of a 640 by 480 image may take as little as 15 minutes on a TT. Unfortunately,

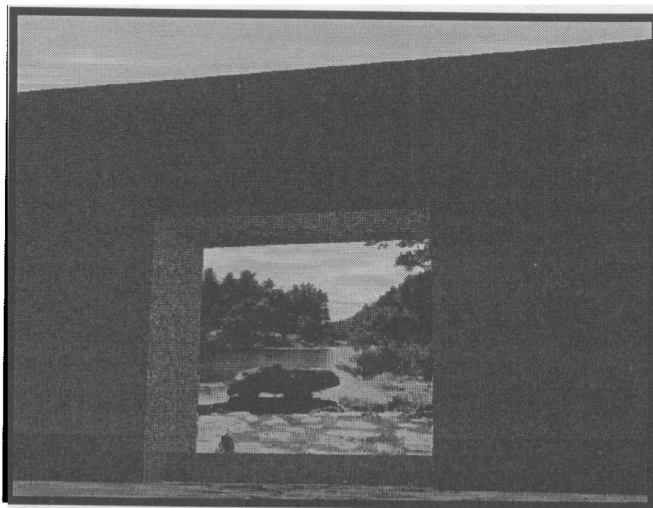


Figure 4. An example of combining a 24 bit photograph from within the rendering part of the program *Inshape*.

Xenomorph has the habit of leaving out parts of your creation in the final rendering. The same results in *Inshape* may take four hours although the results are of a higher quality than other programs. Keep in mind that results mentioned are produced with Falcons or TT's, armed with math co-processors. Attempting to do professional animation work (more than one frame) with regular ST's without such a co-processor will take many, many moons. *Inshape* will not even run on any computer except a TT or a Falcon. Since a 640 by 480 picture represents one frame of an animation, how long will *Inshape* take to produce a one minute animation? Since *Xenomorph* has the annoying habit of leaving out part of the final rendered image, the resulting animations are going to be useful only to the animator.

In other words, at the moment, these modeling programs are useful for the creation of incredibly sophisticated posters. One might ask, how useful? Since the output of Modeling/Rendering programs can be saved or converted to 24-bit .TIF files, the answer is very useful.

Combining Program Output

At the start of this month's column, I talked about combining the output of various programs. When working with powerful Image processing programs there is tremendous flexibility in manipulating your work. Professional programs such as *Das Repro* and *Das Picture* and even *True Image* give the user enormous power in changing and combining existing photographs. By combining the output of such programs as *Inshape* with the power of these image processing programs, incredible results can be obtained. Finally, loading these results in powerful desktop publishing programs, they can be further manipulated. Figures one and four are examples of combining different types of graphics into one sophisticated image. Examples of this type of production are now visible in every aspect of high-end graphic work. Other high-end software, such as *Das Vector*, can be used to combine photographs with complex vector designs.

Summing Up

So where do we go from here? Before ending this article, let me make a couple of points clear. Modeling and Rendering are two separate processes. *Inshape* combines both of these functions in one program while others, such as *Xenomorph* and *Persistence of Vision*, will only render the results from objects imported from modeling programs. For true professional level modeling and rendering, our platform still has a way to go. For one thing, even the best programs on the IBM and Mac are not true CAD programs. But both platforms have programs, unlike the Atari, that can import files from such high-level CAD software as *Auto Cad*. Modeling programs, while having aspects of CAD programs, are not geared toward architectural design. To make a long story short, we will have to wait and see whether *Inshape 2.xx* has these professional level features. Certainly there doesn't seem to be anything else arriving. One hopeful fact is that the Atari platform does possess some very powerful CAD programs. *Dyna Cad* may very well be the best CAD program for any personal computer platform.

For the creation of incredibly powerful images, all of the mentioned software is capable of high-level output. As I've said, this assumes you also own an image processing program and, for that matter, a good desktop publishing program, to alter and modify the results. The only one of the Atari programs which I've used extensively is *Inshape*. One of the big pluses of *Inshape* is its comprehensive manual, complete with a long tutorial section. But *Inshape* is very weak in terms of ease of use. *Xenomorph*, while a render only program, allows use of the mouse for positioning objects. With *Inshape*, every new location must be typed in. In terms of speed, there is no comparison, *Xenomorph* is much quicker. Since I've gotten into this subject of rendering I've learned that there are different internal equations which are used in the actual rendering. *Inshape* uses the most highly accurate one, which is also the slowest. Version 2.xx will give the user access to more of these options.

Finally, more must be said about the program *Das Vector Professional*. This unique and extremely powerful program doesn't seem to fall into any easily identifiable niche, and it deserves a full review. I've never used this piece of software and as soon as I acquire it, I will not review it; instead I prefer to disappear into some kind of computer limbo. There is a very severe limit on the amount of information I'm willing to share, so cackling and chuckling, I'll remain in my little den of iniquity, combining vector, raster and rendered images.

At any rate, all of this makes the Atari platform a very cheap alternative for professional graphic work. I say this without reservation, despite this existing weakness in the modeling/rendering field. I've compared the speed and results of the Atari platform with the Mac and IBM and, to quote a friend of mine who works with an IBM 486 DX running at 66 Mhz using *Quark*, "I can't believe how fast your computer runs, just waiting for screen redraws on my machine makes me scream." Until next month...

Interested in a CD-ROM Drive?

Here's What I Found Out!

by Dale N. Ashby

As a producer/engineer and musician, I enjoy using my Atari 1040ST for all my computer needs. (four MB RAM, TOS 1.4, 2400-baud modem, 24-pin printer, Video Key, ICD FAST KIT, 127 MB Maxtor hard drive, ADSCSI+ host adaptor, 50-pin Centronics SCSI connector.) I became interested in CD-ROM as an investment in the future and perhaps a way to keep my Atari system viable a while longer. After I read about the "GEMini Atari CD-ROM disc," I grew even more curious!

Knowing very little about CD-ROM, I began my self-education quest armed with recent articles from *Current Notes*, *Keyboard*, and *ST Informer*. I also made use of the USENET buy/sell listings and the telephone. As I cross-referenced my materials, I realized my interests in CD-ROM would require multimedia level 1 & 2, CD audio, Kodak Multisession Photo-CD, CD-Interactive and Music Sampler compatibility.

I have heard from several sources that CD-ROM is here to stay for at least the next ten years. However, an article in *Videography* (May, 1994) says, "The new Nintendo/Silicon Graphics Inc. (SGI) media environment, for instance, uses a silicon cartridge that is two million times faster than CD-ROM. The storage capacity of this environment has doubled in the last two months and the price unit has dropped more than half. By the time it hits the market, it will set a new standard overnight." I don't know how long CD-ROM will be around, but since I decided to get one, I wanted to select the most compatible I could.

Keyboard (August, 1993) offered many articles on CD-ROM and proved to be the most informative as to what to look for and what to avoid. From their analysis I was able to craft a list of ten desirable features and I used this list as a guide during my study. Their research suggests that (CD-ROM) manufacturers "use drive mechanisms made by one of only a handful of companies including Sony, Toshiba, NEC, Pioneer, Texel, and Chinon." However, *Keyboard's* "poll of the major (music) sampler manufacturers showed (primary) support for CD-ROM drives that use either Sony or Toshiba internal drive mechanisms; only one synth company, Roland, reported compatibility with an NEC drive." The article went on to say that NEC was working to rectify this issue. I called a technical support person at NEC on 4/18/94. He said to check

with the synth companies I was interested in as to the suitability of interfacing any particular sampler with any particular NEC CD-ROM drive.

I wanted to speak with Atari people actually using CD-ROM drives so I called It's All Relative and spoke with Greg Kopchak, author of *Photo Show Pro*; Anodyne Software, and spoke with Roger Burrows, author of *ExtendOS 1.1*; and Walnut Creek CDROM, producer of the *GEMini Atari CD-ROM disc*. Everyone was friendly and helpful! It should be noted each of these companies use the Toshiba XM-3401 CD-ROM drive. At this writing, it seems to be the industry standard with the fastest double speed access time of 200ms.

I did not consider triple or quad speed units at this juncture because of the higher cost, unknown market/technology trends and as Roger Burrows of Anodyne Software says, "If you can afford it, go for the fastest. But I think the speed difference from single to double is enough for most of us poorer folk." *Current Notes* (March, 1994)

I placed a call to Howard Peters of ICD and asked him if ICD recommended any specific CD-ROM drives to interface with their ADSCSI+ host adaptor. He explained that this port supported any CD-ROM drive that was SCSI2 compliant. He also mentioned I might want to take a look at *ExtendOS 1.1* when considering which CD-ROM driver to use. In addition, he gave me something to think about by noting that due to several variables, not all CD-ROM discs can be read by any one particular maker of CD-ROM drives. I asked him where I should look to buy a CD-ROM drive. He suggested *Computer Shopper* and to look for a dealer with a good return policy, just in case. I took Mr. Peters' advice and bought a copy of the "bible" known as *Computer Shopper* (April, 1994) and began shopping.

In addition, I checked with dealers of computer peripherals on the buy/sell area of USENET. One of the larger dealers, Wee Yung of TRUC offered this observation, "Many people are unsure of which way to go at this time. The CD-ROM drives that are moving are Toshiba models and NEC triple speed models. The Toshiba drives are selling because they have a good track record."

I even thought of buying an internal drive and assembling my own CD-ROM. After weighing the pros

and cons, I opted for the convenience of a "plug and play" external unit.

At the end of a good study, I came up with the following CD-ROM contenders:

Sony CDU-561:300kb/sec, 295ms, 256K, CD-XA, MultiSes, MPC2, SCSI2, \$375

Toshiba XM-3401:330kb/sec, 200ms, 256K, CD-XA, MultiSes, MPC2, SCSI2, \$425

Toshiba XM-4101:300kb/sec, 320ms, 64K, CD-XA, MultiSes, MPC2, SCSI2, \$325

(These external units are assembled and sold by the same 3rd party vender.)

As for the Toshiba models, the 3401 has: a larger transfer rate, a faster access time, a larger buffer size, an enhanced drive mechanism and dust protection system, an auto lens cleaner and a caddy. The 4101 does not offer these characteristics but its auto eject drawer sports a loading tray instead of a caddy. Excluding caddy, they also measure up to the following features.

10 Desirable CD-ROM Features to Look For:

1. Double speed
2. SCSI2 compatible
3. HS, ISO 9660 Level 1 (PC and Atari compatible)
4. HFS, ISO 9660 Level 2 (MAC compatible)
5. MPC, MPC2, CD-XA (Multimedia Level 1 & 2), Kodak Multisession Photo-CD and CD-Interactive compatible
6. CD Audio Specs: 20Hz-20kHz, +-3dB, THD .02%, S/N 84dB, stereo line level RCA phono and headphone jacks
7. Auto eject drawer with loading tray
8. Two 50 pin female Centronics SCSI connectors
9. Push button SCSI ID switch and easy termination via external plug
10. External metal case, power supply, cooling fan.

This was a difficult challenge because I was attempting to understand and shop for several complex products while guessing at the future. Ultimately, I could not convince myself to spend the extra \$100 dollars required to buy the best drive in my study. The SONY CDU-561 also has good specifications but, on a tight budget, I had the total cost of the project to consider.

I chose the XM-4101 for its many compatibilities, loading tray and cost, and I purchased the following:

- | | | |
|----|----------|--|
| 1. | \$325.00 | Toshiba XM-4101 External CD-ROM Drive, 3rd party vendor supplied |
| 2. | \$25.00 | 50-pin male to male Centronics SCSI connector cable, 3 ft. long |
| 3. | \$18.00 | Federal Express, 2 day shipping, required by vendor |
| 4. | \$19.99 | ExtenDOS 1.1 Atari CD-ROM software driver, postage included |
| 5. | \$30.00 | GEMini Atari CD-ROM disc, postage included |
| | \$417.99 | (Total cost) |

Of course, this does not include about 200 hours of research time and about 50 long distance phone calls. But the knowledge and experience were worth it!

All products arrived quickly. My associate and fellow Atarian, Bill Jones, helped with the installation and also set up *ExtenDOS 1.1* for me. First, with the power off, we opened the ICD FA-ST KIT, removed the two terminator resistor packs from the Maxtor Hard Drive and closed the kit. Next we plugged the cable into the connector on the ICD FA-ST KIT and into one of two connectors on the Toshiba. We also selected an appropriate SCSI ID number via push button and terminated the Toshiba by inserting an external plug into the other connector. The well-written *ExtenDOS 1.1* manual allowed Bill to quickly install the software driver. We powered up, rebooted and away we went!

My new CD-ROM system worked right the first time. However, I had a problem with the CD-Audio outputs. While listening to my first CD Audio disc we noticed a strong AC hum coming from my studio speakers. Having isolated the problem to the Toshiba, we decided to open the case. On close inspection, we discovered that the 3rd party vendor had assigned the audio leads to the wrong positions. After we set them correctly, only clean, clear music could be heard!

I know that while I'm using my Atari 1040ST I can only read Atari specific CD-ROM discs or general PC text files and clip art. However, if the time comes and I have to change platforms, I can choose a PC or MAC and still take my CD-ROM drive with me. I hope the many compatibilities of my Toshiba will help keep it from becoming an attractive door-stop no sooner than necessary!

By the way, going at it full time, it took me 20 days to go through the *GEMini Atari CD-ROM disc*. I estimate I found at least 1000 files of interest to me. I recommend this software collection to everyone!

Due to the constant change in technology, this is not a definitive study. It is meant only as a guide; your needs and situation may be different. Prices, fea-

tures and specs are subject to change without notice, so do shop around!

Since I completed this work, more articles and products for Atari based CD-ROM are appearing and prices continue to change every month. Therefore, I include the following information in order that you may check the data for yourself.

Sources:

Anodyne Software, Roger Burrows, Author: Exten-DOS 1.1 software. 6 Cobbler Court, Ottawa, Ontario, K1V0B8, CANADA (613) 523-7498

Dirt Cheap Drives. I bought the CD-ROM drive and SCSI cable here. 1110 NASA Road One, Suite 304, Houston, TX 77058 (800) 473-0960

ICD, Inc., Howard Peters (Atari Tech. Support). I bought the FA-ST KIT here. 1220 Rock Street, Rockford, IL 61101 (815) 968-2228, M-W-F, 10AM-2PM, C.T.

It's All Relative, Greg Kopchak, Author: Photo Show Pro. I bought ExtenDOS 1.1 and GEMini disc here. 2233 Keeven Lane, Florissant, MO 63031 (314) 831-9482

NEC Technologies, 1255 Michael Drive, Wood Dale, IL 60191 (800) 632-4636, (800) 388-8888

Toshiba America, 9740 Irvine Blvd., Irvine, CA 92713 (714) 583-3000

TRUC, Wee Yung, Dealer of computer peripherals on buy/sell area of USENET. 16429 Bixler Ave., Paramount, CA 90723 (310) 602-2076

Sony Corporation, 15 Essex Road, Box 919, Paramus, NJ 07652 (201) 368-5000

Walnut Creek CDROM, Producer of the GEMini Atari CD-ROM disc. 1547 Palos Verde, Suite 260, Walnut Creek, CA 94596 (510) 674-0783

Computer Shopper, April, 1994, Page 454

Current Notes, February, 1994, Pages 57, 58, March, 1994, Pages 7, 56, 57

USENET, Buy/Sell Listings, April 15, 1994

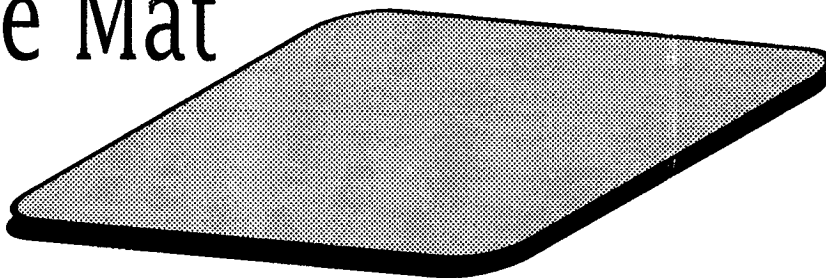
Keyboard, August, 1993, Pages 35-42, 44-46, 94

ST Informer, March, 1994, Pages 22, 23, 51

Videography, May, 1994, Page 100

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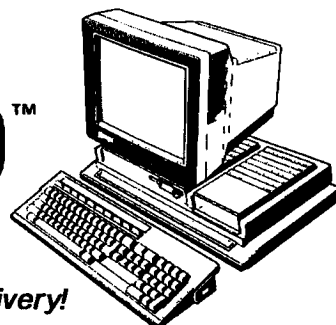
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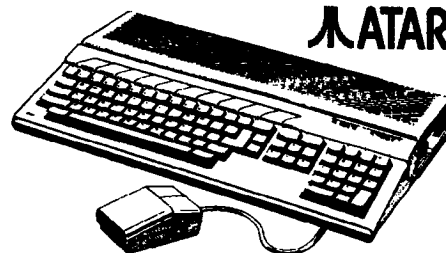
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Try a Ten-Pack From MajicSoft!

Part I: ST Invaders, Dropix, and Hopper

Review by Sam Van Wyck

Some Are Old, Some Are New. A Few Are Borrowed...

Good things come in small packages. In the case of MajicSoft's *Arcade Hits - Volume I*, the package contains ten good things.

With *Arcade Hits*, MajicSoft has recreated the look, the sound and the feel of six truly classic games. Five of these closely follow their arcade or eight-bit beginnings; one is from the ST-era and three are more or less unique.

In this and two subsequent issues, we will review three of the games and toss in the odd tenth as a bonus somewhere along the line. Your reviewers had a great deal of fun with this latest effort from MajicSoft and we hope you will, too! Step right this way, folks; it's nostalgia time!

ST Invaders

ST Invaders is a remake of the original *Space Invaders* with a couple of new twists to make things interesting. Stacked columns of "beasties" move horizontally across the screen, dropping bombs and other nasty debris while the player's defensive cannon attempts to blast them from ground level. Playing this version is every bit as simple as it was in the original. The cannon moves right and left and the fire button fires it; nothing terribly complicated here.

Missing (and often sorely missed!) are the shields that allowed the player to shelter from the storm of bombs and debris falling from above. Of course, in the original these were eventually worn away leaving no defense except to be somewhere else when the bombs fell, so the parallel does hold up after that point.

Adding to the challenge are the target's varying flight patterns. In some screens, they simply march horizontally back and forth; but, in others, they tend to zig-zag a bit. Add to this the fact that the player's cannon does not fire from a level plain but changes altitude as it moves and one finds targeting that last, fast-moving zogoid a matter of both skill and luck!

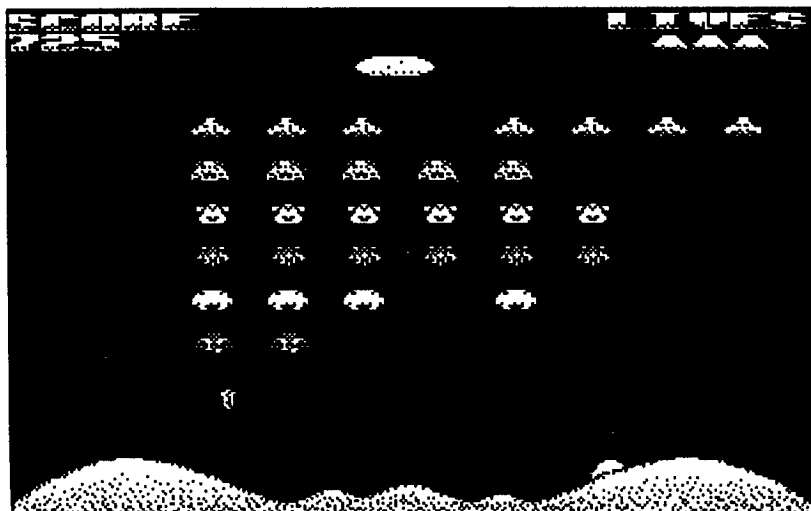
No *Invaders* clone would be complete without the occasional mothership

In this issue we are reviewing three of the new MajicSoft pack *Arcade Hits—Vol. 1*. A total of ten games are included on two disks. Some are familiar as you will discover when you read the accompanying article. A few are new and will be reviewed in the following two issues. Watch for the exciting details of *Thurg-N-MurG*, *Sleuth* (remember *Shamus?*), *Super Dark Pearl*, *Kid Krazy*, *Evader*, *Blastron* and *Kid Kong* (as in *Donkey...*), soon to follow!

crossing the top of the screen. The quest for the mother-ship bonus often proved a fatal distraction in the original arcade game and its lure remains undiminished in *ST Invaders*. It is SO easy to concentrate on lining up a shot at the top of the screen while ignoring a fatal bomb cluster at the bottom!

Still in the manner of the original, *ST Invaders* makes each successive wave more difficult than that preceding it. Additional lives are earned at some point, but just where is not stated in the documentation, and this reviewer was too busy to stop and note the score when it happened!

The game needs few controls. [F1] toggles between Child and Adult mode (and we will leave it to the reader to decide whether it is the child or the adult that requires the slower, easier game). While sound presence and levels are controllable on other games in this series,



Invaders: A screenful of Beasties moves ever lower. The mothership above can be zapped for extra points. The same strategies that succeeded with the original arcade version are effective here.

here there is none. The effects themselves are rudimentary, but adequate, and lack the repetitive bass boom that announced the ever-closer approach of the bad guys in the original.

For some, the lack of complexity may make *ST Invaders* a short-lived phenomenon. However, this very simplicity makes the game a natural for group play, say at a party where nobody wants to spend a lot of time learning an involved set of rules. Here it's merely, "Keep shooting 'till you die!" High scores are saved to disk and there is no distinction made between scores earned in "childish" or "adult" modes.

The game action, scrolling and colors are absolutely top grade and make full use of the ST computer's capabilities.

Dropix: Tetris with a Twist!

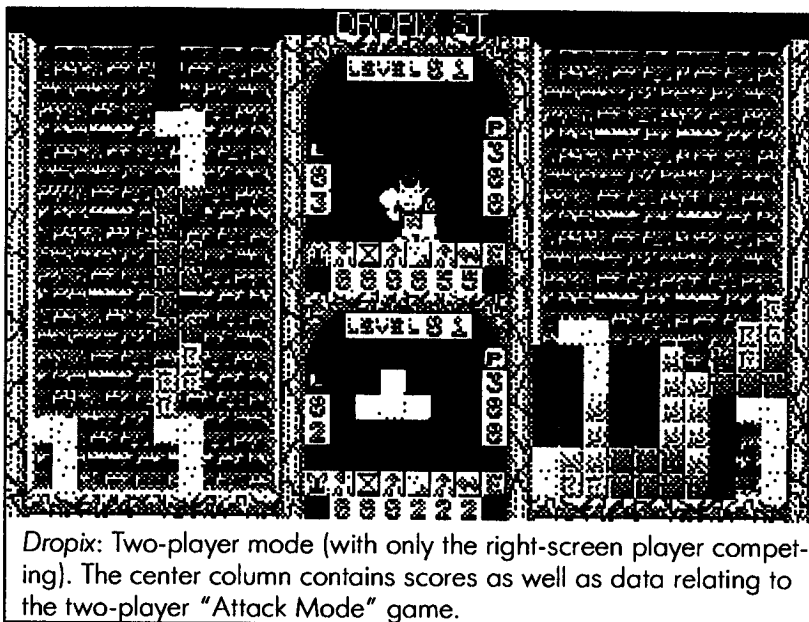
If shooting's not your game, perhaps shape shifting might be more to your liking. In *Dropix* as with the original *Tetris*, various three and four-block shapes drop from the top of an 18x10 matrix. The object is to rotate the block so that it will fit, ultimately, into a complete row of ten blocks. When that happens, the row disappears and bonus scores are earned. If the matrix fills to the top, the game is over. After filling several rows, score is calculated and the contestant advances to the next, more difficult level.

The basic, single-player game plays smoothly and is operationally faithful to the original. Anyone familiar with *Tetris* will find that *Dropix* plays like an old friend.

Unlike *Tetris*, however, *Dropix* adds another dimension: a two-player option. The screen actually consists of two fields, each complete with a never-ending stream of multicolored blocks. In dual mode, the sequence of blocks is random (or at least dissimilar) for both players. The one finishing the level first is awarded a "time bonus" depending upon how long it takes the slowpoke to catch up.

Three unique block types show up occasionally. These are Bombs, Weights and Power Blocks. Bombs destroy every block they contact after coming to rest. Needless to say, these are invaluable for clearing those pesky "OhDarnits!" that occasionally happen to ruin an otherwise flawless stack sequence. Weights also modify the completed stack by crushing the column upon which they land so as to eliminate any spaces. Again, these can make up for a whole series of bad plays. Unfortunately, they are few and far between.

The Power Blocks do nothing for the player of a solo game. It is when two players are head to head that these become useful. Whenever a row containing a Power Block is completed, the player gains five Attack



Dropix: Two-player mode (with only the right-screen player competing). The center column contains scores as well as data relating to the two-player "Attack Mode" game.

Points for each one. What do Attack Points do? Very simply, they allow one to attack the opposition's game, placing all sorts of delightful obstacles in the way of success. For instance, one may:

CONFUSE JOYSTICK: The control directions are reversed for a short period of time.

INCREASE LINES: Add one more to the number of lines needed to complete a level.

INCREASE GRAVITY: Briefly causes the poor opponent's pieces to fall at maximum speed. Needless to say, it doesn't take very long to "fill the tank!"

PUSH LINE: Takes the player's lowest line of blocks and adds it to the opponent's stack. Result: more room on one side, less on the other.

FREEZE: Freezes the opponent's play for a short time. A quiet, restful fall of snowflakes graces the screen during the inactive period.

PUSH DOUBLE: As with PUSH LINE, this little penalty gives the opponent two extra rows of blocks which are deducted from the stack of the donor.

VAMPIRE DRAIN: It takes a lot of Power Points to accomplish many of the preceding tricks. The VAMPIRE DRAIN allows one player to steal up to 200 of the opponent's point stash.

END LEVEL: Ends play for the player invoking the move but not for both. Player #2 then plays a lot of frantic catch-up while Player #1 collects beaucoup Wait Bonus points.

Let's face it, players; this is *Tetris* designed by a sadist! Of course, one doesn't have to play in attack mode but how tempting it is to activate the FREEZE option (just this once, of course) when behind by a few hundred points! The "screw your buddy" competitive play here is reminiscent of the card (and computer)

game *Mille Bournes*, if anyone remembers that old classic.

Again, the color, scrolling and interface are flawless. The sound is useful but not intrusive. The only quibble is that the textured background sometimes seems to confuse the eye making it difficult to plot exactly where the blocks will drop. Both *Tetris* and *Dropix* might profit from an optional grid background to aid in eyeball alignment. An easy play "Child Mode" is available from the keyboard. Starting level, music or sound effects and joystick sensitivity are all selectable.

Why Does a Frog Cross the Road? To Play Hopper, of Course!

Call it what you will, *Hopper* or *Frogger*, it's still challenging and still fun for the big kids and the small! Here's ol' Kermit trying to cross the busy highway to get to the river. Once there, he must then hop from moving log to log, or turtleback and ultimately into one of the openings on the other side. If he falls in, he disappears forever along with one life. Stepping on a crocodile gets him invited to lunch; and another good frog done gone!

The goals are similar to the original. There is a time bonus to reward the quick of eye and sure of fist and to punish the laggards. Occasionally, bonuses appear at the goal line along with hazards to be avoided. A competent player must be able to use both retreat and advance.

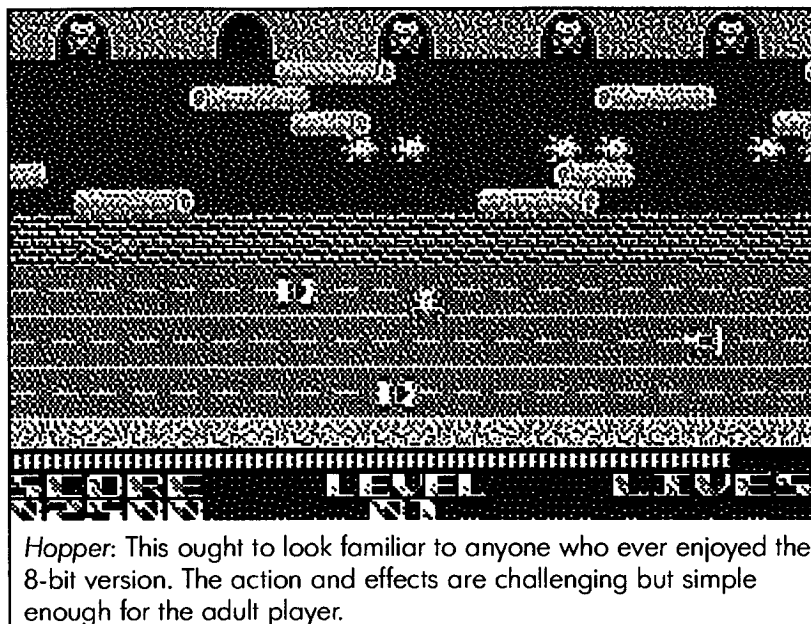
The play, control, color and sound are not only faithful to the original game, they are also faithful to the high standard set by MajicSoft in the two preceding games. Requirements for play: one joystick and one kid, old or young.

In General

MajicSoft has managed to group a delightful mix of old and new games in this package. We can tell you now that the seven remaining programs are every bit as well developed and as entertaining as those mentioned above. If nostalgia's your thing, there are three more to come that will surely delight. For those desiring a new challenge there are four originals.

Several of the *Arcade Pack* games were designed using MajicSoft's *M.A.G.E.* (*Majic Arcade Graphics Engine*). Game designers are invited to inquire about this product. Considering the quality of the games it creates, we are happy to add our encouragement as well.

It should be noted that the games are incompatible with the *Warp 9* screen accelerator. The two disks are not copy protected and the whole thing can be run from a hard drive. MajicSoft has designed them to run on all



Hopper: This ought to look familiar to anyone who ever enjoyed the 8-bit version. The action and effects are challenging but simple enough for the adult player.

Atari 16-bit machines in either low or medium resolution.

MajicSoft is located at: 348 Meredith Square, Columbia, SC 29223. Phone: (803) 788-8177.

Questions, comments and even compliments may be directed to the writer via *Current Notes* or Genie at S.VANWYCK1.

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Amateur in the STicks Henry K van Eyken

Edith Professional Text Editress Extraordinary {A biased review by and for dummies}

On being reviewed:

*'Oh wad some power the giftie gie us
To see oursels as ithers see us'*

-- Robert Burns

Edith will surprise most Atarians with a host of features not ordinarily encountered in their lives with computers. In fact, I found Groenink's "editress" overwhelming at first, if not downright intimidating. It strikes me as being more than a tool; it comes on as an intellectual exercise, as well. Clearly, a sympathetic reviewer of this product should be versed in the traditions and trends in the art of programming, to which I lay no claim. But fate has its quirks and I am now faced with the task of doing justice to the program's author as well as to my readers. Fortunately, it is a task worthwhile!

The Two Faces of *Edith*

There are two, rather different *Edith*'s in circulation. Version 1.0 is a 70K freeware version (previously shareware), whereas the subsequent 220K versions are far more elaborate and identified as "professional." A demo version of *Edith Professional* is also freely available. Readers are well advised to obtain a copy of each.⁽¹⁾

I met *Edith*'s author, Annus Groenink, earlier this year and he struck me as a knowledgeable and skillful professional.⁽²⁾ And a courageous one to boot, for he expresses more unconventional ideas per kilobyte of code (ideas still novel to ordinary users, that is) than other mortals in the biz would dare to send off to the marketplace; and then call their package "user friendly."

Neither version of *Edith* is likely to be perceived as friendly by the casual browser. To install a copy of the professional version and then simply try one's hand at writing some text in the hope of becoming quickly familiar with the product's special features is bound to cause grief. For example, pressing the keys of the numerical key pad may produce unex-

pected and, hence, disconcerting results. This makes it essential to quickly get reasonably well acquainted with *Edith*'s manual. Unfortunately, that booklet's structure and terminology do little to swiftly dispell the uninitiated's discomfiture. All of which brings up the question: who or what is *Edith Professional* for? And if for professionals only, what kind of professionals? In short, why should one bother with it?

For Whom and to What Purpose?

The manual is not tersely explicit on these points, but then again, an editor of either gender is different things to differently engaged people. One might be primarily a writer or a notetaker, or mainly a planner, or a programmer, or, perhaps, much engaged in the manipulation of tabular data. Moreover, an editor arouses different sentiments in people with different keyboard habits.

The author makes known his intention as to provide "a comfortable and universal program which can be adapted to a spectrum of personal tastes." In so doing, he states he "combined and generalized a number of traditional user interface paradigms such as *selections*, the *cut & paste* system, the *trash can* and full visual representation. For example, the *clipboard*'s dialog provides visual, mouse based access to the text blocks, bridging the gap between what the user has in mind and the way software allows the user to perform those actions." It is best to have these points detailed by the author himself and, as promised in an earlier "Atari in the STicks," Mr. Groenink has undertaken to write an article about *Edith*'s man-machine interface. It ought to give the reader some insight about current European views of professional software design.

Edith's all-inclusiveness will hit many potential users hard and that serves neither author nor the advancement of computing among the laity. *Edith*'s author, like the author of that venerable, but now outmoded editor, *Tempus*, is primarily a programmer and has especially endeavored to streamline *Edith* for work done by programmers. *Edith*, therefore, should be judged accordingly, a service I will not provide. And as for bursts of writing and note-taking, I have become accustomed to my current accessory, *Edit* Plus 'n' EdHak*, with its trusty and efficient immediacy. Nevertheless, putting any personal biases aside, *Edith* can only be viewed as a useful contribution to Atari computing, for it can do things other editors available to everyday computists can't.

Edith Professional tackles big jobs. Revealing here is a statement in the manual about its limitations: Problems in loading, processing or displaying text may arise if (a) a file

⁽¹⁾ a. A. Groenink, "*Edith*" v.1.0. *Current Notes* Disk of the Month, Oct./Nov. 1994 and GENie ST Libr. 28851: EDITH.LZH (This version is labelled shareware, but has been declared freeware since.)

b. "*Edith*: Professional Desktop Text Editress." Demo version not on GENie at time of writing. Commercial version distributed in North America by ABC Solutions.

⁽²⁾ vE, "Tiptoe, Through the Tulips." *Current Notes*, June 1994, p.22.

has more than two million lines, (b) file size exceeds 16 megabytes, (c) text buffers are pasted in such a way that the result exceeds 256 columns, (d) tab characters are used near the limit of 256 columns. Clearly, these are not limits most of us would worry about, but they do indicate that *Edith* was not conceived for merely churning out a couple of paragraphs. In fact, *Edith* thrives where complicated jobs beg for ways to make life simpler; filtering, simultaneously manipulating many blocks of text, massive search-and-substitution work, TeX formatting, handling programmer's code, and their likes in complexity. Tasks, I am inclined to view, as will (and should!) penetrate the life of everyday computists.

I have tried my hand at some of these (using a four-meg STe) and have come to value this "editress." This amateur has some good, practical uses for *Edith*. Moreover, there is much to be learned from it and thereby advance one's insights, judgments, and skillful use of one's computer. It is likely that we shall make increasingly better use of *Edith* as familiarity deepens. But more importantly still, I see *Edith Professional* as a bridge that lets valuable techniques trickle down from academe to ordinary people. These are techniques worthy of exploration and refinement, some of which may be helpful in an age of crushing information overload that also besets individual citizens, a point I hope to elaborate on some other occasion. *Edith* is no ordinary editor and I hope that this kind of product will further evolve and thereby establish itself among such big-time, compelling softwares as wordprocessors, database systems, spreadsheets, graphic packages, those sorts of thing.

What level of competency does *Edith* require? The manual primarily expects readers to cope with language such as this,

"Push Position (Alternate P, F9): Push the text position on the position stack. The positions saved on the stack are displayed on the scroll bar as black strokes."

Luckily, it explains (much later!) that

"While writing somewhere in a text, it often happens that you remember something that you should add somewhere else. The natural thing to do is press Alternate P, go there, make your changes, ask yourself 'What was I doing before this?,' fail to remember what you were doing, in total despair, try Control P and simply continue your work."

Now, there is a situation most of us can identify with. And you will adore *Edith* when, after some dumb stroke at the keys you lose text, you can recover it by pressing "Undo." Too bad that many statements in the manual (which I hope he will take a hard second look at) are so cryptic that I had to spend much time on trials and errors in attempts to fathom their meaning.

Edith works hard to make up for our, the users,' deficiencies. Ever began a search for a word without first homing in

on the beginning of a document? Then have an advance peek at figure 1b: notice the box "Home." Ain't she sweet?

Edith takes special cognizance of the Gemini desktop, which, besides allowing drag-and-drop manipulation of "objects" (read files and programs) has a command-line window on tap. I may well be naive, but this amateur has very little use (at this time) for the command-line and, hence, prefers the less RAM-consuming and friendlier *Teradesk*.⁽³⁾ *Edith* may be used either as an accessory or as an application. May I suggest you (initially) avoid using *Edith* as an accessory. And certainly if you use Isakovitch's accessory-loading accessory *Chameleon*.

The Proof of the Pudding

... is in the eating. Accordingly, I shall proceed as a user ("one user," to be sure) more than as a critic and try to be reader-friendly by rapidly informing you about some of what you probably have been missing. Take, for starters, the "project file," a menu item available for the convenience of those who need to edit a particular set of files repeatedly. The project file, which one may opt to have created automatically upon leaving *Edith*, lists the names of files that will all be loaded the next time *Edith* is called. The project file may also be written manually, and if it contains more files than there are text windows available, six, they will be put in a queue.

Edith offers two modes for scrolling through text. Besides the conventional use of the vertical scroll bar, one may also jump directly from one point in the text to another by holding down the right mouse button. There is no horizontal slider bar, not even optionally as we have in the wordprocessor *That's Write*. It is not essential, of course, but personally I deplore its absence.

An important step beyond convention is made in the marking of fragments of text destined for deletion or copying or replacement. With *Edith* one can individually mark by inverse video any number of scattered segments of text. Or mark all identical words or phrases in one shot and, before deleting or replacing them, except any particular instance. Or mark a whole paragraph by clicking only on its first character (which is referred to as "selecting the South-East quadrant"). An elaborate scheme for handling searches, substitutions, and "tagged wildcard expressions" is available for automating alterations in a given text. Turn to figure 1 for a demonstration of *Edith Professional* tackling a fairly complex exercise in text manipulation.

Figure 2 shows how a clipboard dialog panel may assist in the visual manipulation of text fragments by the use of three auxiliary text buffers. The illustration also shows a trashcan that permits recovery of discarded text, as well as a shredder.

⁽³⁾ a. G. Steffens and S. Eissing, "Gemini." Copy with English documentation is found as GE ST Library: GEMINI_E.ZIP

b. vE, "Teradesk at Tuxedo Junction." *Current Notes*, Nov. 1993, p.20.

TERADESK File View Options 10:29 am

Viewer

No.	File Name	Type	Address	YVMMDD	Bytes	Access	Lib
34074	SUKP0_1.ZIP	H	GRMEYER	940930	72960	73	2
	Desc: Sircware Virus Killer						
34069	PGP261ST.ZIP	H	M.EASTER	940929	265216	52	2
	Desc: PGP 2.6.1 MIT, full doc & lic						
34059	IQ415107.LZH	H	IDL	940927	10368	33	2
	Desc: IAUTODOS-IDL AUTOFOLDER OS V1.07						
34058	IQ370151.LZH	H	IDL	940927	19584	55	2
	Desc: IDIEM-IDL VIEW V1.51 FILE ANALYZER						
34057	IQ380157.LZH	H	IDL	940927	28672	52	2
	Desc: IDISK-IDL DISK V1.57 SECTOR EDITOR						
34056	IQ320112.LZH	H	IDL	940927	39424	36	2
	Desc: IED-IDL EDITOR V112 TEXT EDITOR PLUS						
34053	FASTBOOT.LZH	H	T.PATRICK5	940926	31488	24	2
	Desc: Turbo25 25Mhz Fast Disk Boot Sector						
34047	MDIAL103.LZH	H	A.FASOLDT	940926	61824	59	2
	Desc: V. 1.03 of MultiDialog; English						
34042	DF.LZH	H	A.FASOLDT	940926	11776	20	2

Figure 1A—In the beginning ... By the end of September 1994, the GENie ST library listed 1893 records of utilities. In this sample project we evaluate some of the power of *Edith Professional* by converting the file to the format shown in Panel F. First step is to turn the two-line records into single-line records. To accomodate the extra line length we doubled the ruler setting from 72 characters to 144 characters.

EDITH File Edit Text Search Options Windows Config 10:30 am

EDITH File Edit Text Search Options Windows Config

No.	File Name	Type	Address
34074	SUKP0_1.ZIP	H	GRMEYER
	Desc: Sircware Virus Killer		
34069	PGP261ST.ZIP	H	M.EAST
	Desc: PGP 2.6.1 MIT, full doc & lic		
34059	IQ415107.LZH	H	IDL
	Desc: IAUTODOS-IDL AUTOFOLDER OS		
34058	IQ370151.LZH	H	IDL
	Desc: IDIEM-IDL VIEW V1.51 FILE A		
34057	IQ380157.LZH	H	IDL
	Desc: IDISK-IDL DISK V1.57 SECTOR		
34056	IQ320112.LZH	H	IDL
	Desc: IED-IDL EDITOR V112 TEXT ED		
34053	FASTBOOT.LZH	H	T.PATRA
	Desc: Turbo25 25Mhz Fast Disk Bod		
34047	MDIAL103.LZH	H	A.FASQ
	Desc: V. 1.03 of MultiDialog; Eng		
34042	DF.LZH	H	A.FASQ

Search

Target expression
Desc:

Substitute expression

In M:\ALL02.THT

Mark ☐ First ☒ All ☐ Target ☐ Line

☐ Wildcards ☒ Case sensitive

☐ As word ☐ All expressions

☐ Up

☒

Figure 1B—*Edith Professional* permits multiple selections. Every other line contains the expression "Desc:" The settings made on the menu panel exploit this commonality to select every second line of each record. The inverse video "Line" means that all lines with the target expression are selected in their entirety. Note: clicking on "Home" causes the search to start at the beginning of the document instead of at the position of the cursor.

EDITH File Edit Text Search Options Windows Config 10:36 am

EDITH File Edit Text Search Options Windows Config

Desc: Link for Control Panel							
78	MAKEIMG.TOS	H	BOBR	860608	1260	295	2
Desc: Reconfigures memory for 1 Meg							
51	OLCKEY.TOS	H	VAN	860607	1260	88	2
Desc: Resets ST to Standard Keyboard							
50	DUORAK.TOS	H	VAN	860607	1260	104	2
Desc: Duorak Keyboard for ST							
48	ANALOGCK.ACC	H	SCOTTAG	860607	1260	330	2
Desc: Analog Clock Desk Accessory							
47	DIGICLOCK.ACC	H	VAN	860607	1260	318	2
Desc: Small Digital Clock Accessory							
41	SECTORED.DOC	H	EJSCHICKERT	860607	1260	149	2
Desc: Doc file for 2 drive sector editor							
40	SECTORED.PRG	H	EJSCHICKERT	860607	1260	191	2
Desc: This is a disk sector editor							
39	COPYK2.PRG	H	EJSCHICKERT	860607	1260	1123	2
Desc: This is a 2 drive disk copy program							
6	SNAPSABVE.TOS	H	DARLAH	860604	1260	307	2
Desc: See Stride.doc for further info							
qqq							

Figure 1C—Reverse video identifies selections. One may reduce, if one so wishes, the pointsize of the characters twice and thereby get 53 text lines per window; but that is not shown here. More lines per window does speed up the job of searching for irregularities, such as stray lines, that will interfere with the proper joining of each line that will be cut with the line above it. I added a line after the last selection (qqq) to compensate for a bug in this version of *Edith* used for this review. The problem is attended to.

Figure 1—A proof of the pudding: How one might tackle a fairly complex job with *Edith Professional*. As an exercise, we aim to convert the format of a familiar data base, shown here in Panel A. It is a listing of utilities in GENie's Atari library. End—result is the the format shown in Panel F. Information is deleted, records shaved from two lines to one, and, finally, the chronological order of those records reversed. Although the entire job could have been done with *Edith* alone, it was found in this in-

Figure 1D—After cutting all the second lines of each record in one shot, they are “overlaid” in their new positions. The next step is to remove columns of text, which are first marked using inverse video. Marking with *Edith* requires a scrolling through each column, which in this experiment contains segments of 1892 lines! That is a tediously slow process and, hence, we called on our old friend by the new name *Edit*Plus* for a helping hand. This accessory permits one to quickly mark the start and end positions of a column to be deleted or moved.

EDITH File Edit Text Search Options Windows Config 10:42 am									
Menu ALL02.THT L:00004 C:001									
51	OLDKEY.TOS	860607	1260	88	2	Desc	Resets ST to Stand		
50	DUORAK.TOS	860607	1260	101	2	Desc	Duorak Keyboard fo		
48	ANALOGCK.ACC	860607	1260	338	2	Desc	Analog clock Desk		
47	DIGICLCK.ACC	860607	1260	318	2	Desc	Small Digital Clock		
41	SECTORED.DOC	860607	1260	119	2	Desc	Doc file for 2 dri		
40	SECTORED.PRG	860607	1260	191	2	Desc	This is a disk sec		
39	COPDK2.PRG	860607	1260	123	2	Desc	This is a 2 drive		
6	SNAPSAVE.TOS	860604	1260	307	2	Desc	See slide.doc for		
qqq									
107	RD1041.ACC	H JSDEMAN	860608	1260	50	2			
102	FIHPNL.ACC	H DARLAH	860608	1260	125	2			
78	MAKEIMEG.TOS	H BOBR	860608	1260	295	2			
51	OLDKEY.TOS	H VAN	860607	1260	88	2			
50	DUORAK.TOS	H VAN	860607	1260	104	2			
48	ANALOGCK.ACC	H SCOTTAG	860607	1260	330	2			
47	DIGICLCK.ACC	H VAN	860607	1260	318	2			
41	SECTORED.DOC	H EJSCHICKERT	860607	1260	149	2			
40	SECTORED.PRG	H EJSCHICKERT	860607	1260	191	2			
39	COPDK2.PRG	H EJSCHICKERT	860607	1260	123	2			
6	SNAPSAVE.TOS	H DARLAH	860604	1260	307	2			
qqq									

Figure 1E—Reversing the order of file entries is a snap. We might have used the “Sort” command, but using *Edith Professional's* “Reverse” makes for faster action. Notice the other actions on the menu. Why not obtain a demo copy of *Edith Professional* to experiment with them? You will be impressed with *Edith's* versatility.

EDITH File Edit Text Search Options Windows Config 10:47 am									
A:\ALL02.THT									
EDITH File Edit Text Search Options Windows Config									
No.	File Name						MMDD	Bytes	Access Lib
34074	SUKP0.1.ZIP								
34069	PGP261ST.ZIP								
34059	IQ415107.LZH								
34058	IQ370151.LZH								
34057	IQ380157.LZH								
34056	IQ320112.LZH								
34053	FASTBOOT.LZH								
34047	MDIAL103.LZH								
34042	DF.LZH								
34041	FF32BIN.LZH								
34036	RAMINIT.LZH								
34035	KGBSHELL.LZH								
34027	PHDIAL14.LZH								
34013	NOTEPAD.ZIP								
34012	MOUSE22.ZIP	940924	4400						
34011	LEDPNL27.ZIP	940924	21632						
34006	TOGGLEW.LZH	940924	640						

Figure 1F—Here is the format we were after. Look at the clock on Panels A and F to see how long the whole operation took. The work was done steadily, but without rushing things. And remember: *Edith* can do much more!

EDITH File Edit Text Search Options Windows Config 10:51 am									
H:\UTIL-SAT.THT									
EDITH File Edit Text Search Options Windows Config									
No.	File Name	YYMMDD	Bytes	Description					
6	SNAPSAVE.TOS	860604	1260	See slide.doc for further info					
39	COPDK2.PRG	860607	1260	This is a 2 drive disk copy program					
40	SECTORED.PRG	860607	1260	This is a disk sector editor					
41	SECTORED.DOC	860607	1260	Doc file for 2 drive sector editor					
47	DIGICLCK.ACC	860607	1260	Small Digital Clock Accessory					
48	ANALOGCK.ACC	860607	1260	Analog clock Desk Accessory					
50	DUORAK.TOS	860607	1260	Duorak Keyboard for ST					
51	OLDKEY.TOS	860607	1260	Resets ST to Standard Keyboard					
78	MAKEIMEG.TOS	860608	1260	Reconfigures memory for 1 Meg					
102	FIHPNL.ACC	860608	1260	Fix for Control Panel					
107	RD1041.ACC	860608	1260	360K/60K RamDisk for 1040/520ST					
115	DSPEED.TOS	860608	1260	Check your disk drive's speed					
119	TTOOL.ACC	860608	1260	Tiny Tool disk and memory editor					
120	TTOOL.DOC	860608	1260	Documentation for Tiny Tool					
121	PRINTD.PRG	860608	1260	Print directory program					
122	PRINTD.RSC	860608	1260	Required file for PRINTD.PRG					
124	RAMACC.DOC	860608	1260	Documentation for RAMCHK.ACC files					

stance that efficiency of the step shown in Panel D is greatly improved by a call on *Edit*Plus* (formerly *EdHak*). I imagine that this will not be necessary with future versions of that wonderfully versatile editress whose version 2.20P is reviewed in this article. But making various software tools cooperate with one another is probably a permanent hallmark of personal computing. That sort of thing has been touched upon a number of times in the columns of Atari in the STicks.

Other file security facilities are optional backup copies as well as “carbon copies” saved at timed intervals and stored in an automatically created folder named “CARBON,” “cf” figure 2.

The attention lavished on detail is extraordinary and makes it quite impossible here to describe *Edith*’s many features—so many, in fact, that I expect most non-routine users to not fully exploit all that is offered here. Many key combinations (95!), mostly alternatives to items in the drop-down menus, are available to speed along the work of consistent users of this “editress.” Even the entire numeric keypad may be given over to control of the editing process and thereby put its keys off-limits for typing text. The occasional user of this software may be unaware of this fact and consequentially encounter some unexpected behavior. Pressing the plus-sign will then enlarge characters (up to four times) and the minus key will make them smaller, twice. The digital keys of the numeric keypad may be marshalled for the control of cursor movements; or, instead, one may opt to use those keys for window positioning.

On the topic of window positioning, one may opt to have them positioned “intelligently,” that is where they cover the least of the work being done. Text windows may also be iconified to get them temporarily out of the way.

Special characters, those with ASCII values above 126, may be inserted with less effort than I have experienced with any other software. One might call up a table by pressing [Control]+[Shift]+A and then click on the desired character

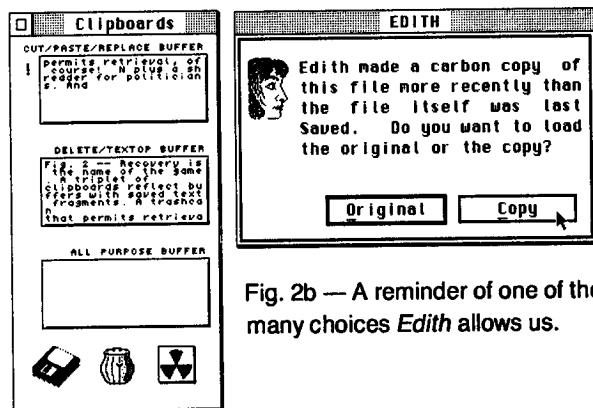


Fig. 2a — Text recovery is a major feature. Here a clipboard panel shows buffers with saved text fragments. The trashcan permits file recovery, of course. And to top it, carbon copies may be automatically saved at preset intervals. But all this notwithstanding, *Edith* comes with a shredder, also, maybe for Atarians aspiring to a political career.

or sequence of characters and the table left on-screen for continued access. But probably more convenient still is the alternative of using the key macro to define key combinations to enter special characters. For example, [Control] preceeding an ‘a’ produces ä; [Control] preceeding an ‘e’ gives us è. As you see, the mnemonics are tops. Printers, however, can

present a problem: not all ASCII 127-plus characters may be available. How nice it would be if we could tell *Edith* to warn us when we put unprintable characters in our text.

‘Watch What I Do’

Edith comes with a number of preset macros, whereas others may be created by invoking the automatic recording of up to ten keystroke sequences. Macros are played back when simultaneously pressing the control key and a function key corresponding to the macro. A cute, little icon showing a cassette of recording tape follows the cursor while a macro plays itself out.

“Kurzels” allow one to type abbreviations that stand in for a body of text. For example, the user might create the kurzels, *cn* to stand in for the body *Current Notes, 122 N. Johnson Road, Sterling, VA 20164, U.S.A.* Typing *cn Esc* will replace this three-keystroke sequence by the entire body. Kurzels should be especially convenient to users of the TeX document formatting language.⁽⁴⁾

An experimental feature of *Edith Professional* is the availability of “filters,” which are here defined as TOS or TTP programs that react to an item of typed text. (I find the word “filter” a bit strange in this context, but that’s the way the cookie crumbles.) A filter is called by pressing the Alternate key and a corresponding function key. One filter, for example, is dedicated to simple arithmetic operations such as 123*2. With the cursor on that line press Alternate-F1 and the answer pops up: 15129. Another handles such a familiar chore as inserting date and time. I hope that imaginative users will design and put in the GENic library all sorts of useful filters.

Editing Binary Files

As said, I take *Edith Professional* to be first and foremost an editor—pardon me, editress—by a skillful programmer for programmers. Mr. Groenink told me that he added features as he experienced their desirability while programming himself. The manual is quite brief on this aspect. The file menu includes an item “Import Binary ...” Figure 3 displays the beginnings of the shareware version EDITH.PRG in hex format. The author states that “new data can be entered either in C format, or by simply entering hexadecimal values.”

Conclusion

“Was sich liebt neckt sich” is an old, familiar Mittel-European saw. Or “You always hurt the one you love,” a popular song used to wail. I began this review in a critical mood brought on by a manual that shows no respect for my time.⁽⁵⁾

⁽⁴⁾ TeX permits one to send high-quality type-setting, including mathematical formulations and tables, in ASCII code. A popular text on TeX: Leslie Lamport, *LaTeX, User’s Guide and Reference Manual*, Addison-Wesley, 1986.

⁽⁵⁾ A copy of this review has been sent to the author a month prior to its publication. Hence, I am confident that some of my negative comments are no longer valid by the time you read this.

Moreover, *Edith* confronted me with a few problems that must also be eliminated. But the upshot of my experience with *Edith* is that I consider this product a "must have." With software such as this, hardware comebacks in the form of European clones, and with sufficient, reciprocated loyalty among Atarians, we just might have seen the bottom of Atari computing.

Edith's author himself is quite candid about possible shortcomings and he invites users' reactions. Do not view this as beta testing a commercial product. The world of Atari has shrunk too much to be viewed as a conventional marketplace. Let's appreciate *Edith* not only for its present usefulness, but also as a meritorious effort that, if nurtured, will deliver more in updates to come. Let's be confident that any remedial software will be made available at minimum cost.

Future refinements are said to include the splitting of text windows into multiple views, text styles such as boldface and italics, a more intuitive binary editing system, and cutting

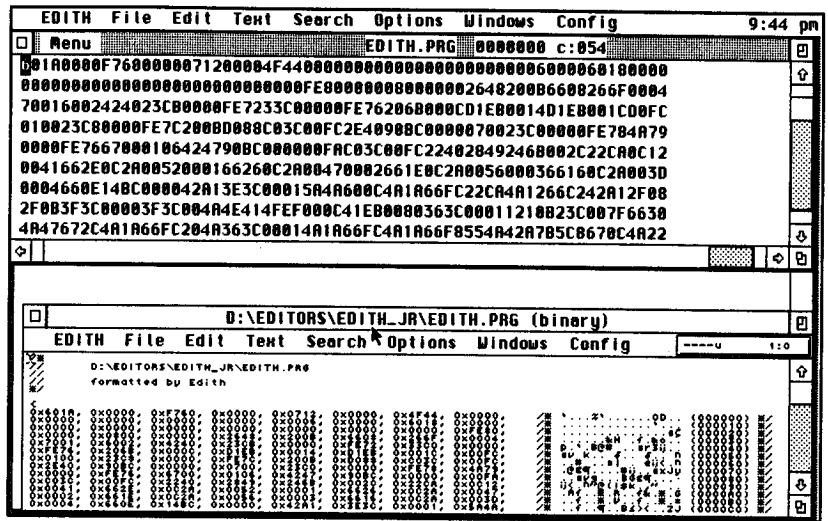
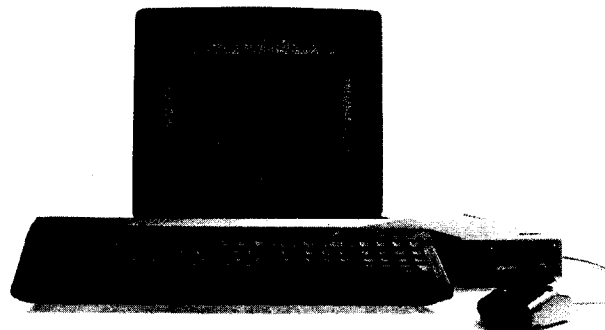


Figure 3 — The beginnings of *Edith* v.1.0 is shown in hexademical format.

down on memory consumption without jeopardizing user-friendliness.

So, be a good Atariian, will you? Favor yourself with a copy.

Pulex vobiscum



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Compaq 386 33MHz	\$239	PC Xtreme	\$59
Compaq Skylake Atari CD	\$34	PC Xtreme 2	\$59
Compaq Skylake Atari CD	\$34	Generator 3.02	\$59
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oshiba 4x External CD	\$399	GE-Soft 64MB TT Ram	\$34
oshiba 3x External CD	\$399	ST Applications Mag!	\$9
oshiba 2x External CD	\$259	Crystal Trackball (ows)	\$49
MEC 1x External CD	\$99		

Supra 144LC (Class 1)	\$149
Supra v.32bis (Class 1/2)	\$199
Supra v.32bis (Class 1/2)	\$249
Supra v.32bis (Class 1/2)	\$149
Zoom v.32bis (Class 1/2)	\$69
Zoom AFX (Class 1)	\$129
Zoom VFDX (Class 1/2)	\$9
ST Modem Cable	\$5
AT Modem Adapter	\$34
Stalker 3 (Exc. Terminal)	\$35
Flash 2 (Terminal)	



by Wally Wilson

Howdy, folks! This time around finds us in the midst of some serious changes for GENIE, and the way you can get to GENIE, or even where you can go from GENIE.

A common scene with online information services is the rush to include Internet access. Well, GENIE is shooting for what they call Level I Internet access by the end of the year.

With Internet access comes all the headaches and wonders of a buzillaion networked storage sites, and just as many people. Problems such as new viruses, Email security, and simply finding what you are looking for amidst this data-torrent can easily become the main focus; distracting you from your original reason for having logged on in the first place.

You'll be happy to know that just about everything you need for your Atari, the Internet, and computing in general is available in the Atari ST RoundTable. From active discussions to file archives of past discussions, from information files, to the actual programs you are looking for ... if it isn't here (which is hard to believe), someone will know where it is, and can point you in the right direction.

I'm getting ahead of myself here. Let's get right into the business of bringing you the latest on what's been happening on GENIE.

Hot Topics by Terry Quinn



The very hottest topic to come along in a very long time is devoted to Atari's hot new game Alien vs Predator in Category 26, Topic 16 of the BBS. For those of you who don't yet have a Jaguar or have not yet obtained your copy of this game, read what some very difficult-to-please people have said about it:

(The following messages are reprinted with permission; GENIE retains compilation copyrights to all bulletin board messages.)

D.ENGEL [Thunderbird]

Hi Guys... *AvP* is the most 64-bitty of the Jaguar games out yet. *AvP* is cool. *AvP* does RULE.

Having played around with versions as recent as June (SCES), I had some concern that *AvP* would be just another

"kill everything that moves" game like *Doom*, only without the puzzles. In other words, no story.

I am pleased to say that the game has a cool story, and interesting gameplay BEYOND simply shooting stuff.

The computer terminals do stuff, and the graphics are excellent. Pixellation is kept to a minimum, and some of the textures are downright GORGEOUS.

It looks like a "not gonna solve this one for a while" type game (for those of you who licked Hitler in three hours), and you STILL have two other characters to play out.

I love most of the sound effects. In-game music would not go with this title. (It wasn't left out as some people suggested because of speed considerations, because they have many, many sound effects playing in place of instruments, which gives a better atmosphere).

The character selector graphics are really cool (stole an idea I had for *StarBattle* or two as well) The 'actors' are all drawn BEAUTIFULLY (or scanned or whatever). They look great. Nicc use of color, too! BTW, the overlays look great, too!

Two criticisms...

1) The decompression scheme is too slow. I know it's gotta be there, but I'd hide it behind an animation or something other than a static screen. (You've got plenty of extra CPU's to animate with). I guess they were too pressed to get it out and didn't have time to make the animations.

2) In the opening scenes that tell the *AvP* "story," they apparently scanned photos of Jupiter's moons and used them for planets (Naughty, naughty). I don't think they even re-touched them to hide their Jupiterness. Also, their renderings of the ships in the opening scenes look too clean; it doesn't match the gritty dirty feeling from the movie (or the rest of the game). The Alien and Predator ships look nice, but the Marine's ship doesn't match the 'style' of human ships from the movies. These are minor ... criticisms, very minor. Probably only bugged me and nobody else. (Mr. perfectionist that I am.) :-)

Other than that, I think the game way cool. Very fun to play.

This game does not compare at all with SNES or Genesis titles. it's WAY beyond those systems. *Dinky Dong Kuntry* is a load of CRAP compared to this one. If EGM really does rave about DDK and gives 'average' reviews to *AvP*, we *know* they are WORTHLESS.

This game IS like an interactive MOVIE. Scores 95% on the Thunderbirdometer (-5 for the Scanned 'planets,' the long decompression times, and the humdrum music).

Total cost was under \$75 (tax included.) Total worth (priceless).

Show THIS one to the Nintendroids!!!!!!

Thunderbird

WETMORE [Tony]

This game is going to make me a nervous wreck, this is certain!! [-;-]

So far I've played all three games, briefly, and can say that I've had the easiest time as the Predator. There's just something about being able to cloak and walk right up behind someone, which really appeals to me. <g>

I've only tried playing as the Alien twice. Once I was nearly wasted by a Predator as soon as the game BEGAN! The game starts with me facing the airlock door (closed) and I hear the "clicking" breathing of a Predator. Looking around (frantically) gains me nothing. I start walking around looking for him and hear something whisper... "Come On."

I whip around and still see nothing, so I keep walking. (Yes, I'm in something of a "cold sweat" by now.)

I turn around periodically to look around and then, WHAM, right in front of me the Predator de-cloaks. Aaaaaa-ieeeeee! Tail, Tail, Tail! I did manage to kill him and decided I had enough of my own ship, so I went through the airlock into the Predator's ship. God Save the Queen, and all that rot. [;-)

In the Predator ship, I killed a couple marines, then walked into something of an ambush (or so it seemed, anyway!). I walked into a room with about eight marines, who, as is a nasty habit of theirs, started shooting first, presumably to ask questions later.

I was killed almost instantly.

Playing as the marine is where things REALLY get hairy, though. I did manage to find a Pulse Rifle, however! I picked it up off a dead guy in the Training Maze on sub level 4.

(Ooh, was that a "spoiler" ... sorry!) I found a terminal in the Maze (well, I think it was - I went into an airduct, and came out to find it) and the "General Log" was from the CO who told me to drop and give him 20 for using a terminal. So, naturally, I ignored the order, thumbed my nose at the terminal, and switched it off. A short while later, I was walking around and heard more whispers. "Anytime."

Beek! Enter

jump-out-of-skin-and-whip-around-with-pulse-rifle-blasting mode! Of course, there was nothing to be seen. I hate this game, I hate this game! (You DO understand that I'm kidding, don't you?)

Oh yeah, for the obligatory *DOOM* comparison... This game frightens me in a way that only *DOOM* ever has, but perhaps is even MORE stressful than *DOOM*. But this, I suppose, could be seen as a Good Thing... <g>

This game is purely awesome, IMHO, so far. Sure, some things could be done better, and some things added, but hopefully there'll be a sequel (on CD!), which would add all sorts of cool new things.

On the 10-scale, I'd rate this one a VERY SOLID 9.9, give or take a tenth of a point. [:-) And I'm not just saying that because I am a Jaguar fan. I do hope that another Jaguar game comes out soon to distract me from *AvP*, or else the White Coated Gentleman from upstate may just come to visit me. A hearty CONGRATULATIONS to Atari and Rebellion for making this game a reality on the Jaguar!! \$69.99+tax WELL SPENT, IM (not so - it IS =my= money after all) HO.

-Tony

For those of you who don't yet know, Tony Wetmore has written a LOT of popular games over the years beginning in the old Atari 8-bit days. His praise is high praise, indeed, from a longtime professional in the field.

*What really "grabs" people about this game is that it is one of the very few games to create the same (or better) exciting experience that you can get from a well-made movie. With *Alien vs. Predator*, this experience is so vivid that even non-gamers are drawn into the story.*

K.DRAKE (Sir Fransys)

DE-LURK---

Herh, Herh, Herh, ... sssssssssss

I could play this game "Anytime."

I'm as impressed as everyone.

I showed it to a non-gameplaying friend of mine and she was jumping and screaming every few minutes! :) Then she'd hug my arm, just like in the movies ... a few more games like this please, thank you.

**Still Sailing,
Sir Fransys**

LURK---

Are you still not yet convinced you should get this game? Well, if the preceding article has been too complicated to follow, the following post says it all in just a few short words.

AEO.MAG [] Go FSU! []

Tried cocooning Predator. Try, try, try.

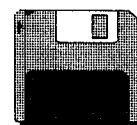
Him stand there and slash me. Slash, slash, slash.

Me die after screaming a lot. Scream, scream, scream.

Me no happy. But me have new body now. Heh, heh, heh.

--Travis @ Alien Explorer Online

**Genie ST Library
by Gordon Meyer**



Internet, Information Highway, Infobahn, blah, blah, blah. Everyone has suddenly discovered the online world. But, while every Sam, Jack, and Garry rushes to get online, hardly anyone stops to think about the societal and privacy implications of ubiquitous electronic communications. Hardly anyone, that is, except the Government and some forward-thinking civil libertarians.

The former group is moving ahead with plans to allow monitoring of net traffic, while the latter is trying to ensure that privacy and confidentiality are not trampled in the electronic land rush. One tool the civil libertarians have embraced is *PGP* (Pretty Good Privacy).

PGP, first programmed by Phil Zimmerman, is the defacto data encryption program used by people around the world. It allows you to attach a digital signature to your email before you send it off across the network. This prevents others from reading it enroute (because it's encrypted) and allows the re-

recipient to verify that not only did you send it, but that it hasn't been modified by someone along the way.

I won't attempt to explain all the details, but the process is basically this: Decide on a password and use *PGP* to create two "keys" for yourself. The "keys" are small ASCII files that you can keep in the same folder as *PGP* itself. One is a *public key* (that you can give to anyone) and the other is a *private key* (that you must keep secret). You give your public key to anyone who wants it, but especially to anyone that you're going to send email to.

They, in turn, use *PGP* and give you their public key. Use your private key and password to encrypt (or "sign") a message before you send it, and the recipient uses your public key (that you gave them, remember?) to decrypt (or "authenticate") the message when they receive it.

A public key can be used to verify that the corresponding private key was used to encrypt a message, but it can't be used to re-create the private key. Therefore, as long as you keep your password and private key secret, people can verify that you encrypted (or "signed") a file but they won't be able to sign a file and make it look like it came from you. Altering just a *single* byte of an encrypted message will cause *PGP* to recognize that the message has been changed after it was signed, and that the contents can no longer be authenticated.

PGP uses some of the most advanced cryptography techniques available, and the documentation provides most of the details. But the upshot is that once you've created and distributed your key, and you have the keys of your friends, you're ready to send secure, private email to each other. It's all rather straightforward once you are set-up.

PGP has several other functions, as well, including built-in compression (to make your message smaller), and a secure method of deleting files from your disks to ensure that they can't be recovered by someone using a sector editor. And it will handle programs, pictures, or any other file as well as email messages. Anything you can create on your computer can be digitally signed for authentication using your *PGP* public key.

PGP is available for almost any computer and, as such, it isn't a GEM program. There are a zillion command line options for *PGP*, but don't get discouraged. **P6PSHL09.LZH** (file #33210) is a shareware shell that puts a friendly face on *PGP.TTP*.

PGP itself is file #34069 (**P6P261ST.ZIP**) but you might want to search for "**P6P**" before downloading because new versions of both *PGP* and *PGPSHELL* are uploaded regularly. You'll also find some additional documentation and commentary about the controversy that surrounds this important program.

RTC Highlights by Wally Wilson



On the 29th of October, I had the pleasure of hosting a formal *Gaming Real Time Conference* with Bill Rehbock, Vice President of Software Business Development at Atari. Many topics were touched on regarding the *Atari Jaguar*, and Bill proved to be a generous guest-speaker.

We hold our Real Time Conferences in the Atari ST Roundtable, page 475, menu selection 2 (**M475;2**), and have many regularly scheduled RTC's during the course of even a week's time.

Sundays at 9:00 pm EST is the *Atari HelpDesk*, where any and all questions are always welcome concerning Atari computing and productivity.

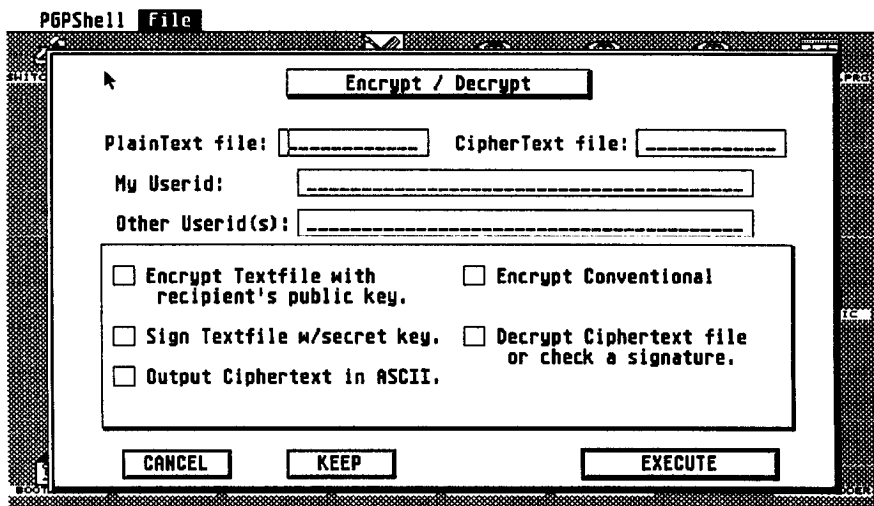
Mondays at 10:00 pm EST is the *Desktop Publishing RTC*, where all the graphical layout and desktop publishing folks get together. Discussions are aimed at improving skill and productivity, hardware and software solutions to real-world desktop publishing problems, and general knowledge-sharing for all attendees.

Wednesdays at 10:00 pm EST is our *General Open Conference*, where just about anything goes. Stop on by and chat for a while!

Saturdays at 9:00 pm EST is the *Atari Gaming RTC*, where Atari gamers, and game enthusiasts of all flavors get together to discuss their favorite games, and favorite game machines. From older Atari game systems, to the new 64-bit Jaguar, this is the place!

Let me share with you some of the highlights from our most recent formal *Gaming Real Time Conference*...

<[Bill@atari] B.REHBOCK> We're just in the process of releasing the last batch of Atari-published Christmas titles for the year. We still are targeting 30 titles by the end of the year. My wife is in the other room playing *Theme Park* from Ocean on our Jaguar right now; our 4-month-old son is fascinated by it. (Although he prefers playing *DOOM* :—)



A brief introduction ... I take care of the Jaguar Third-Party Licensing Program here at Atari; I am also Executive Producer for a few of the Jaguar's games such as *Wolfenstein*, *DOOM*, *Fight For Life*, *Dragon: The Bruce Lee Story* and *Val d'Isere Skiing and Snowboarding*.

<[Clint /APE] C.SMITH89> Bill, when is the Jag CD due and has a decision been made as to if there will be a pack-in?

<[Bill@atari] B.RENBOCK> Clint, the Jaguar CD unit is in pilot production right now. Initial units will be available this year in limited quantity. The main hold-up has been feature-creep on the software, but I think we'll see about six titles for the CD before the end of January. We will most likely have a pack-in game, but the title hasn't been decided yet.

<[Charlie] ARCHIVIST> Bill, it seems Atari has turned to a rather 'closed mouth' attitude in the past few months, for example *Fight for Life* and *Val d'Isere* were unknown until recently. Is this deliberate on Atari's part? Is it a reaction to feedback on the nets about the somewhat 'over optimistic' release dates for some of the early titles?

<[Bill@atari] B.RENBOCK> The release date thing is definitely an issue, and *Fight For Life* is a big project that will blow away the games of the same genre on other platforms, so we didn't want to have any details going out too soon. It is a ruthless industry, you know :-)

With the titles that are in production, and those that are shipping, it is less of an issue to keep talking about "titles to be" when really fantastic stuff is here now.

<[J.KANTARJIAN]> Once the CD unit comes out, will there be any more cart games?

<[Bill@atari] B.RENBOCK> Absolutely! One of the best things about Jaguar over 6DO, PSX, and Saturn is the low entry point. There is still a place for carts. Third parties will still be compelled to do carts because the user base will always be larger than CD units.

<[Dimitri L.] AE0.6> Bill, though we have quite a lot of info on imminent cart games, we don't know much about what's going on in the CD realm. Can you tell us what's coming up in regard to titles, and maybe describe some, like *Battle morph*?

<[Bill@atari] B.RENBOCK> *Battlemorph* is the sequel to *Cybermorph*, with textures, plus very cool cinematics where we get to see just where the heck that little ball goes to when it leaves the planet.

Blue Lightning is based on the Lynx original, 100% texture-mapped and loads and loads of scenery and missions. It also has a way cool soundtrack. Readysoft are doing *Dragon's Lair* and *Space Ace*, faithful to the original arcade versions. We are also working on *Chaos Agenda*, the game where you play a government operative who must walk the fine line between loyalty and doing the right thing.

We also will release *Highlander*, based on the animated television series. There are others, but I think time prohibits going into detail :-)

<[Nathan] POTECHIN> Glad you could make it this evening, Bill, and I'm really glad to see the success of the JAGUAR! I'd

love to hear about some of the games with which you are personally involved?

<[Bill@atari] B.RENBOCK> *DOOM-Jag*, well kicks Sega's 32-X a---. The 16-bit color makes the shading look spectacular. The Jaguar has 23 levels plus a secret level, whereas the 32-x version has less than 15. The *DOOM-II* textures look great in the upper levels of the game. *Jag-DOOM* has all of the original character animations, whereas in the 32-x version, most had to be pulled out because of limitations.

Fight For Life is a 3D one or two player tournament fighting game with full character texture mapping, morphing, amazingly fast camera tracking and more flexibility than *Virtual Fighter* could ever hope to have. The title-track for the sound track is "Fight For Life" by Joe Vitale (he has worked with many bands including The Eagles and has a few albums of his own out) and Joe will be including the song on his upcoming album. It has been written specifically for *Fight For Life* on Jaguar.

Val d'Isere Skiing and Snowboarding will be out before Christmas and is a 60-frame-per-second Skiing/Snowboarding simulation that allows you to compete or play Freeride, where you work your way through Val d'Isere mountain's ski runs in France. Watch out for snowcats and snowmobiles, though :-)

<[Doug] D.ASHTON1> Can you tell us the games that are in production, in the order they are planned for release? Any word on the Tempest soundtrack CD? Also, *AvP* is AWE-SOME!

<[Bill@atari] B.RENBOCK> *DOOM*, *Club Drive*, *Dragon*, *Checkered Flag* have all been released. There is another pile that is getting released this weekend, but I don't have word on them. The packaging for the T2K soundtrack is in its final stages and I would guess that the soundtrack should be around in early December.

<[Tony] WETHORE> Hiya Bill ... My question is about retail outlets (not yet) carrying the Jaguar. For example, recently (yesterday) a Best Buy store opened in my area, so I decided to go check it out tonight. What do I see but a kiosk for every friggin' console in existence, except for the Jaguar and Lynx. They even had an X'Eye (what IS this thing?) console kiosk up and running! <sniff>

<[Bill@atari] B.RENBOCK> We currently have over 3,000 outlets in the US carrying Jaguar and others are coming on board on a weekly basis. We are actively working with Best Buy as well as others and do intend to keep the penetration increasing....

<[Dimitri L.] AE0.6> Bill, we've all heard about the Sega agreement and are thrilled by it. From what we know, the agreement allows Atari to port five Sega games a year over to the Jag. Sam Tramiel said that work on these had already begun. Can you fill us in on what games are being chosen to port?

<[Bill@atari] B.RENBOCK> The details on the titles aren't for public consumption yet, unfortunately. I think announcements will be made just before or after Thanksgiving.



On 13 October 1994 GENie announced its plan to commence *Phase I Internet Access*, thus including GENie in the bigger scheme of things by the end of 1994. You heard correctly, Internet services available on GENie by the end of this year!

Here's a quote from the official news-release covering what will be available with these new services:

"Services will include E-MAIL, FTP, USENET, Outbound Telnet, Gopher, and WAIS. GENie will also establish a GENie Information Server, accessible to Internet users interested in learning more about GENie Services. Pricing information, access numbers, a list of services, and details of special offers will be available, as well as a signup module."

In a recent Real Time Conference in the GENIEus RoundTable, Mark Walsh, *GENie's newly-appointed first president*, fielded questions concerning the new GENie. This new position represents a radical shift in the way GENie has been managed by GEIS (General Electric Information Services). Mr. Walsh reports *directly* to the President of GE Information Services.

Covered during the Real Time Conference was the equipment upgrade GENie will be getting in the future, as well as the proposed Internet access, and related issues. GENie will eventually be switching from the Honeywell mainframes owned by GEIS to its own HP mainframes. As soon as the move is complete, we can expect to see some very cutting-edge advancements on our very own GENie.

Part of the problem with trying to merge with the media-billed *Information Superhighway* is trying to find a suitable on-ramp. To compound this problem is the reality that once you're *on*, where do you *go* from there?

The Internet was originally established to meet the needs of researchers in the United States Defense industry some 25 years ago. To this day it remains a premium research tool for the academic community worldwide. In reality, the Internet isn't really so much a superhighway as it is a very large network of computers and hard drives, all connected with industrial-strength plumbing. It is a network of networks.

As with anything in the computer world, knowing *what* you want to do *before* you start out on the journey is just a little over half the battle; this holds especially true for the Internet. There is so much information moving so many different places that a mere *stroll* down the road can leave you dizzy and without the results you'd expected.

Currently, the finest place on GENie to begin your Internet experience is the *Internet RoundTable*. Current services on the Internet RT include *file requests*, *file searches*, and *directory listings* from Internet archive sites. I recently re-

quested a directory listing from the *Atari Archive* at the University of Michigan, and was a little disappointed at the 110k filesize until I un-ZIPPed it and found a 9,400-line file over 500k in size! This in itself is a nice start, and allows you to get used to reading directory lists from the UNIX-based Internet environment.

An *Internet HelpDesk* is now open daily in the Internet RoundTable Real Time Conference area from 8:00pm to 1:00 am EST to assist you with your Internet endeavors (M1485;2). The Internet RT also has a very well organized bulletin board for ongoing help and discussions (M1485;1).

It's a big computer world out there. Every basic service you could hope for is available now, on GENie...

- » Questions to be asked, answers to be found,
- » Games to be played online or downloaded,
- » Business services,
- » Support for people with special needs,
- » Workshops on writing, computing, home-business, and real-estate (and more!),
- » Software and hardware support from online Atari merchants and developers,
- » and in 1995, the Internet.

It's all there for the picking—on GENie. Join us online, and we'll make it even better!

GENie Signup!

To sign up for your very own GENie account, follow these simple steps:

1. Set your communications software for half duplex (local echo), at 300, 1200, or 2400 baud.
2. Dial toll free: 1-800-638-8369 (in Canada call 1-800-387-8330). Upon connection, enter HHH.
3. At the U#= prompt, enter **XTX99437,GENIE** and then press [Return]
4. Have a major credit card ready. In the U.S. you may also use your checking account number.

Jan/Feb 1995 ? Where's December 1994 ???

Astute readers may have noticed that this issue is marked Jan/Feb 1995 rather than Dec/Jan 1995 as we have done in the past with the winter double—month issue. Now that *CN* has switched to a bimonthly publication, I wanted to put us on an even year boundary so that the issues would be Jan/Feb, Mar/Apr, May/Jun, Jul/Aug, Sep/Oct, and Nov/Dec. By skipping December 1994 we move to this new schedule. A side benefit is that the issue actually arrives before the month on the cover. All end dates will be adjusted accordingly, so no one will miss any issues because we skipped December. —JW

RAM Gizmotm

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INCLUDES IDE
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The ONLY ram expansion board for the Falcon030 that works with ALL standard 80ns (or faster) 8 or 9 bit SIMMs.

Are you tired of having only 1 or 4 megabytes of RAM in your Falcon030? Do you wish it were possible to use industry standard 8 or 9 bit SIMM memory modules in the Falcon030? If your answer to the above questions is YES then you need the RAM Gizmo!

chro.MAGIC is proud to offer the answer to all your ram expansion needs: the giz.WORKS RAM Gizmo. It fits neatly inside the Falcon030 - no cutting or hacking required and no ugly case bulges to worry about. It is a completely SOLDERLESS upgrade board that plugs into the Falcon030's ram expansion socket.

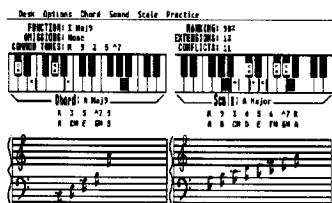
The RAM Gizmo can use either 8 or 9 bit SIMMs that are 256K, 1 Meg, or 4 Meg in size to achieve 1, 4, or 14 megabyte memory configurations. SIMM modules, besides being readily

available in most areas, are very easy to install - just snap them in and you are ready to go! And, unlike other cheaper boards, the RAM Gizmo works flawlessly with ALL 8 bit or 9 bit SIMMs that are at least 80 ns or faster. You won't have any memory glitches or "screen garbage" when you use the RAM Gizmo!

The single most exciting feature of the RAM Gizmo is it's low price of only \$99 (US) suggested retail. This price includes the unpopulated RAM Gizmo board and a complete internal IDE hard drive mounting kit consisting of bracket, screws, and a drive cable. The RAM Gizmo is available now from your dealer or direct from chro-MAGIC Software Innovations.

**Don't settle for a poor IMITATION - insist on the ORIGINAL
RAM Gizmo!**

PIANISTICS 1.20



Pianistics 1.20 is an innovative piano instruction program for all levels of students, as well as for seasoned professionals. It was designed as a tool to help keyboardists learn chords and

scales in all keys and to give insight into the concepts of scale improvisation and chord substitution. Pianistics is an easy to use GEM application for the Atari ST that takes advantage of the many features of the computer. Practice scales and arpeggios are output through MIDI as well as the internal sound chip thus assisting the player in developing a technical mastery of scales and arpeggios.

MULTISYNC GIZMO

chro_MAGIC Software Innovations is proud to offer the MultiSync Gizmo for the Falcon030. The MultiSync Gizmo is a monitor adapter that has a switch to toggle between VGA and RGB modes. Just plug in your multisync monitor and set the switch - that's all there is to it. You can even switch between VGA and RGB "on the fly" without having to reboot the computer.

The MultiSync Gizmo is backed by a full 1 year warranty & is available NOW. Suggested retail price is only \$24.99 (US).

Note: Requires an Atari Falcon030 and a multisync monitor with a 15 pin connector. May also be used as a VGA adapter when the switch is set to VGA mode.

PRODUCT PRICING

Suggested Retail (in U.S. dollars):

Guitaristics \$79.00 RAM Gizmo \$99.00

Pianistics \$79.00 MultiSync Gizmo \$24.99

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Music and Technology

An Interview with Jim Williams

of Audio Upgrades

As you're no doubt aware, manufacturers make many compromises in the construction of audio equipment to meet certain price points. To maximize the potential of your present gear there is an alternative, however. Jim Williams of Audio Upgrades can take just about everything in your studio and modify it to enhance its audio capabilities.

Gary: *What is the primary focus of your modifications?*

Jim: The real problem with equipment these days is fidelity; the band spectrum is too small, so a lot of dynamic detail is getting sucked out of the music. The idea is to cut your losses to the equipment so that you don't have to rely on makeup devices like Exciters, BBEs and high frequency boost EQ. Most people use those things, not to enhance the music, but to correct for losses.

Gary: *It seems that producers are not really after reproducing the exact sonic characteristics of an instrument anymore, but something else.*

Jim: It used to be that the focus of an engineer was to capture the performance accurately. Now, however, the engineer's role seems to be not to capture, but to create, the sound. The basic idea around here is we like to put things on tape as cleanly and accurately as possible.

Gary: *What are some of the components on which manufacturers compromise?*

Jim: Most of the time they use the cheapest stuff they can get away with. The passive parts, like capacitors, were never any good anyway, because they couldn't make good capacitors 15 or 20 years ago. Now they can make very good capacitors, but they're expensive and people don't want to pay for them. Also, the transistors that most companies use for the front end of Mic Pres were designed in the late 60's and early 70's. America basically stopped designing transistors at that time, whereas the Japanese did not, and neither did Aerospace nor the Military. These newer parts are very nice, but not generally used for audio.

Gary: *The component parts of most equipment rely on old technology?*

Jim: Virtually every piece of equipment you buy now has either the original chips or a knockoff of the same design that was created back in the early to mid 70's. The reason they don't use better stuff is twofold, first it's expensive, and second it's not easy to use. Most audio designers don't have the necessary background to deal with a 50 or 100 megahertz bandwidth capability. Designwise, the interesting thing is, no matter how much money you spend, you're still getting the same stuff under the hood. Let's say you go out and spend \$500 on a little Soundcraft Spirit. The same chips are in there as you'll find in a \$500,000 Focusrite. What's the difference between the Spirit and the Focusrite? Well, there's a lot more knobs on the Focusrite, and they use no F.E.T. switches. Also, they use gas filled relays to switch things. Other than that, the circuit components are identical. That's why they end up sounding pretty much the same. One reason people like the old vintage English boards is that they don't use these strident trashy Integrated Circuited Operational Amplifiers.

Gary: *The difference between Pro and Semi-Pro gear seems to be blurring these days.*

Jim: Yeah, it's almost disappeared. You can buy a better digital tape machine from Alesis now than you can from Sony in a 48 track DASH format. You have better technology in the converters, and you have a better, shorter audio path.

Gary: *What about the transport on the new machines?*

Jim: With a fixed head like the Sony DASH machines, the data rates are pretty slow, so you have much less tape going by the head. A Rotary head format like the ADAT gives you the equivalent of 2000 inches per second. The DASH machines are basically designed so the average person who is used to working with analogue tape won't be frightened by the machine. He can take the same kind of tape, put it on the machine in the same way, watch it spin, and say, "Yes, this is a familiar thing; I am happy." In reality, there are a lot of compromises in dealing with a design like that. They say you can cut the tape with a razor blade; well, I wouldn't recommend it.

Gary: *The electronic components in the ADAT are relatively new?*

Jim: New converter technology, it's all oversampled, and the A to D converters are Sigma Delta One Bit Design, which is all the current stuff.

Gary: *Do you have any opinion about ADAT versus DA-88?*

Jim: We checked them both out pretty closely before we made a purchase of the ADAT. The reason we went with the ADAT was twofold. First, the Tascam uses only 4 data tracks on an 8mm tape. With 4 tracks you are companding or multiplexing 2 channels of data on 1 track of recorded tape. That's not a problem if you only do it once, but in a situation in which you make multiple passes, it starts to become problematic.

What happens with the DA-88, is if you're recording on track 1 and you have something down on track 2 you're lifting the data up off track 2, placing it in memory and rerecording it every time you make a pass. It's like taking a DAT machine and making a clone of a clone of a clone of a clone. You do that 10 times and it gets pretty contaminated; you do it 100 times and I don't know what's going to be left.

The other problem with the DA-88, is we couldn't do anything in the analogue circuitry because, although designwise it's virtually identical to the ADAT, the packaging of the ICs are not the same. They use SIP (Single Inline Packaging) chips, cheesey Japanese Op Amps, and there's no physical substitution for them. The ADAT uses a 14 pin Quad Op Amp package in a standard pin out configuration and we were able to substitute very fast videoamps.

Gary: *What are the different kinds of equipment you upgrade?*

Jim: We virtually do everything, starting with microphones at the beginning of the chain, down to speakers at the end. For instance, we do a lot of work on the circuitry in condenser mikes like AKG and Neumann.

Gary: *Do you have a favorite mike?*

Jim: I'd say that the best microphone for any situation if you had to pick one, would probably be a modified AKG 414.

Gary: *After microphones what do you do?*

Jim: We build our own microphone preamps, and we stress the importance of having a very high quality mic pre. If they don't use ours, they should use something really good. We also make a small Mic Pre, which can be placed inside of a console as a modification.

Gary: *What would a mod like that run on something like a Spirit Console?*

Jim: I guess they're somewhere around \$90-\$100 per channel. On a modification you're basically going through the mic pres, fixing the EQ slopes and the band width, and changing the EQ capacitors and operational amplifiers. Usually, once you get rid of the losses to the console, you don't need EQ. People want to add high end because the equipment is soaking it up. If you don't soak it up, you don't have to make it up, and you can leave everything flat.

Gary: *You do a lot of mods on the Lexicon LXP-1s?*

Jim: We do two mods on them. First, we swap out the timing circuits, timing capacitors, reset the gain level and put in some faster switches. This takes the noise and distortion down about 15dB. Recently, we added another mod that replaces the converters with the low noise, low distortion type, and then we put in a F.E.T. comparitor, which eliminates a switching glitch. When they're done, they sound very expensive.

Gary: *Is the software much different between the LXPs and the 480s?*

Jim: Not really. If you take your average plate algorithm, it's pretty much the same. The difference is, of course, how good are the converters and the other circuitry. We've found that the hotrodded LXP plate settings hold up against the top of the line ones.

Gary: *So what are you getting for the more money you pay for the bigger units?*

Jim: Well, you're getting a bigger box, you're getting more controls, and with the 224, 300, and 480, you're getting two units instead of one. Costwise, the difference between a 480 and two LXP-1s with an MRC is about \$9,500.

Gary: *Do you modify many synths?*

Jim: We do a few. Most of them are the classical digital synths because our experience in reworking the digital reverbs showed that most of these digital synths use the same converters. I found that the synths that weren't sample based tended to have better wave forms and clearer sounds. The sample based keyboards tend to be real grungy sounding.

Gary: *For someone getting ready to set up a project studio, what kind of console would you recommend?*

Jim: It depends on the kind of money they want to spend. Right now, in the LA area, it's a buyers market. I've seen \$80,000-\$100,000 consoles going for \$10,000-\$15,000.

Gary: *You think it might make sense to go out and buy like a used Neve, for example?*

Jim: The advantage in having that kind of a board is the name recognition if you're opening up to the public. If you're doing your own private little thing, you buy what works for you, and what you can afford. You can buy these high-end boards cheaply, but you have to keep in mind that there's a bit of maintenance involved.

Gary: *What about parts availability?*

Jim: The English stuff is more problematic because some of the old stuff isn't available or they have to ship it, taking 8-10 weeks. The newer stuff is usually carried in stock, but not always. It depends on the company you deal with as to their product support. Trident is not very well established here, but Neve is. Neve, however, usually doesn't keep the stuff in stock. Soundcraft, however, is good because they have a big part stock over at Harmon/JBL.

Gary: *What about getting one of the Soundcraft low end boards and modifying it?*

Jim: Spirits are pretty nice for the money, but one thing I don't like about them is that they're completely nonmodular. To do any modification you have to entirely disassemble the console. The other thing I hate is that there are no EQ bypass switches.

Gary: *What about the Alesis?*

Jim: I have not used an X2, but I saw one at the trade show. It looked well designed, a good value, fully modular, easy to service and work on. The Alesis people said it uses standard audio parts, which is what I want to hear. Even though I hate those parts, I've got three or four substitutes I can use. What you want to stay away from is surface mount stuff, because to repair it is virtually impossible.

Gary: *What about Mackie?*

Jim: The Mackie is one of those boards we usually tell people not to buy. From the audio upgrade standpoint, there's nothing we can do. It has the same problem as the DA-88, in that it uses the SIP Op Amps from Japan. If you put gain on it, the high end gets very spitty. Its only redeeming quality is that it's relatively quiet. Unfortunately, a board that's built like that has a lot of surface mount and a lot of monolithic boards all stuck together, which makes service a nightmare. If it breaks, I don't know how you're going to get the thing fixed. Also, don't expect to run anything high fidelity acoustic through it. It is a good board for drum machines and synthesizers, however.

Gary: *What about tape recorders?*

Jim: That's real hard these days because there's the big analog, digital war going on. There's good low end analog machines from Tascam and the like, and they

come out pretty darn good for analog. But this new digital 8 track stuff is pretty tough to beat. What people don't like about digital is not the digital converter noise; it's all the analog slop they're hearing. Companies tend to use bad analog parts in these machines, and you're basically creating distortion before you even get to tape.

Gary: *What are the elements someone should look for before buying a piece of equipment?*

Jim: Without being technically knowledgeable, you really don't know what you're getting. You're buying this stuff on basically a leap of faith, a recommendation or a reputation. The best thing you can probably do is use headphones, and bring something you know very well as source material. You can't even believe the specs they give you because their standards are all shifting up and down. I can give a spec on something four or five different ways just by how I reference it. You've got dBUs, dB Volts, dB this, dB that. The problem with spec sheets is normally they don't tell you how they tested it and what they tested it on.

Gary: *When you look at a piece of equipment you've never dealt with before, how do you ascertain what you can do to improve it?*

Jim: Usually in five minutes I can tell what I can do to it on paper. In reality, however, I have to do the mod, test it, confirm everything is working, and then I know. That's why I don't tell people what it's going to cost on a modification I haven't done before because I really don't know.

Gary: *What's that thing people call the English sound?*

Jim: You know I never figured that one out. To me the English sound is those old Beatle records, recorded on old tube Telefunken gear. Other people seem to think it's the discreet Neve consoles of the 70's or something. I don't know, I think it's more of an attitude. (Uproarious Laughter) Basically, I think what they're trying to describe is a wide band width, big flat slope bell EQ.

Gary: *For a studio that's already in operation, are there any general modifications of equipment you would recommend?*

Jim: Mostly, what we tell them to do is get that monitor strip on the console fixed. In a studio, your monitoring path, 2-track returns, and control room speaker feeds are the core of the studio. Everything has to be listened to, and evaluated through that section. So, if you like the murky sound of a Neve board, at least fix the Monitoring Section so there's no more ghosts, no more fooled images, no more false sonics coming out. You want to be able to take a high-end CD player, and a very good CD, and pump it through

the 2-track returns, and listen to what your console really sounds like.

The next element is the monitor speakers. Although some of the drivers are quite good, they sound a little splatty and edgy. This is particularly noticeable on a lot of the JBL monitors. That spitty quality will go away if you clean up the crossover networks and get rid of those cheap capacitors. They get very smooth and pretty sounding when modified, which will allow you to listen all day long without getting burned out. Normally, on JBL monitors you can't do that. We do the same thing on Tannoys, which tend to be more color speakers. The Tannoys have a very narrow aperture width, however. You move off axis about 30 degrees or so and the highs really fall off. You have to basically sit yourself in the sweet spot, whereas the JBLs are much wider, about 90 to 100 degrees.

Then there's always the wire thing. People ask me, "should I use Godzilla wire on my speakers?" I go, "it ain't gonna hurt, but don't go spending \$3,000 on speaker wire, buy a better amplifier first."

Gary: What about power?

Jim: If they're setting up a real pro situation, we like them to invest in an isolation transformer. They're not

all that expensive, maybe \$400-\$500. What that does is basically float you from the world. It does so much more than any power conditioner can do because you have galvanic isolation from the rest of the planet. The refrigerator, the air conditioning, the lights, the guy with the electric shaver or drill. All that stuff won't pass through the transformer. If you use a combination of a filter with an isolation transformer, you will have full grounding, which will make all kinds of buzzes, noises and RF tend to go away. Keep in mind isolation transformers are large, heavy, and should be properly encased and kept away from moisture. Most importantly, *Don't put 'em anywhere near the control room.*

To contact Jim Williams you can call (818) 780-1222 or write:

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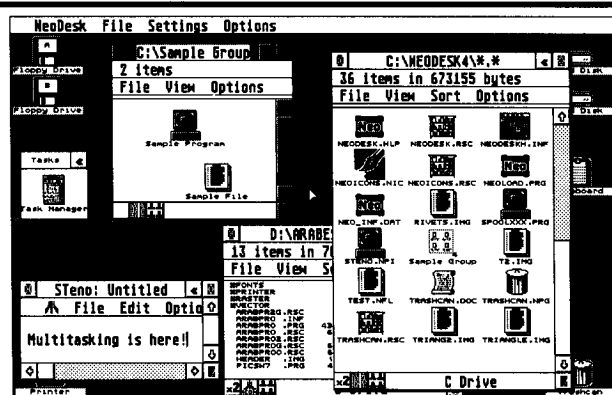
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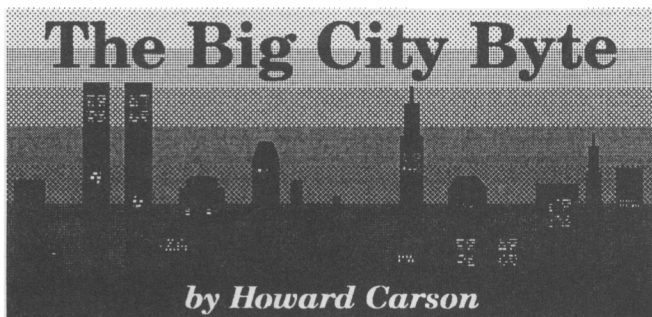
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Saturday, 9:00 a.m.

"Eeeeeeeeyo! Howard! Heeeeeeey, buddy boy! How 'ya doin' there, Big Guy? Ooh, Ooh, Ooh, Ooh! Hey, hey, hey, buddy guy! Hey, ho, hey, HowMeister! What say, duuuuuuude?" The voice came from at least one hundred yards away, but was still loud enough to wake the dead.

I cringed. 'Melvin (not his real name) the Pest' had tracked me down. This morning, if not the entire day, was ruined. Melvin was about to barge through my relatively peaceful existence, and destroy the cool pleasure of an early winter morning. It was a truly fabulous day, too. The sun peeked out from behind billowed clouds, which floated overhead at an incredible altitude. The gentle breeze that rolled down from the north was crisp, cold and carried a scent that reminded me of rocks and trees; a startling delight amidst the traffic and hustle of the city. Those few people whom I had encountered thus far, seemed to have moved past me somewhat unseeing, their faces lifted towards the gorgeous sky, inhaling the clean, luscious air, as the sun warmed them. I had been able to feel a slight mist of perspiration on my forehead, caused by the exertion of my regular, brisk, Saturday morning walk. I had been able to feel the warmth caused by my steady exercise abetted by the sun beating down upon my dark clothing. The breeze was like some musical harmony that provided a delicious counterpoint to my movements and thoughts. My mind had been filled with pleasing notions, and my senses redolent with the scents and sounds in which I was immersed.

Until Melvin showed up, that is, lying in wait for me.

Melvin is bad. He is a penurious louse who always wants to borrow money. Melvin even borrows money when he is flush. Of course, he never pays it back. That makes him a thief, too. Melvin never helps anybody else either; he always has some excuse when someone asks for his assistance. Apparently, Melvin has a bad back.

Poor Melvin.

Remarkably, however, Melvin seems to have no trouble carrying several cases of beer out of the Liquor Store. Melvin drinks an awful lot of beer. Melvin likes to eat, too; at least, as long as someone else is picking up the tab. He often harasses people into inviting him to lunch or dinner. If anyone suggests he kick in a few dollars towards the bill, Melvin has been known to raise his voice to a penetrating, strident grind, and point out to the offending party that it was *he* who invited *him* out to eat. I hate Melvin and I am sure that when he dies, no one will come to his funeral.

Melvin was here now, though, walking up and slapping me on the back, chortling away in an insincere, condescending laugh.

"Heeeey, Howie bay-baaaaaaaay," Melvin smarmed, "how's the boy?"

"Great, Mel," I replied, sounding like nothing so much as a man about to face a firing squad.

"What can I do for you? I never realized you got up this early on Saturday."

"Well buddy," he replied somewhat earnestly, "it seems I'm a little backed up this week, heh, heh, and I could sure use some help with a bunch of file copying. I was hoping you'd come over to my place and give me a hand, you know, and maybe bring over some munchies, coffee and maybe a loaf of bread and some butter, you know like, for afterwards. Oh, and I need you to bring over *FastCopy Pro* or *Kobold*, too! We can put 'em on my hard drive; that will really speed things up!"

"Sure, it would speed things up Mel," I said sarcastically, "and I'll bet when we're done, you'll delete *FCopy Pro* and *Kobold* 'just as soon as you get a chance,' right?"

"Hey, Howie-man," Mel said with a deeply serious look on his face, "absolutely! I wouldn't have it any other way. I mean, I know how you feel about that stuff!"

Uh-huh. To be fair though, I'm sure Mel really would eventually delete the programs from his hard drive.

Sometime in late 1998.

"MELVIN," I rasped in a loud, sharp voice.

"YES, SIR," Mel answered jokingly, with a mock salute.

"&*%\$#@!)*&," I yelled in his face. "And DO NOT ever bother me again!"

"HEY MAN," Mel hollered back with a tone of rage and hurt, "I THOUGHT TORONTO ATARI FEDERATION EXECUTIVES WERE SUPPOSED TO SUPPORT THE MEMBERSHIP?"

"MEL!" I yelled back.

"WHAT?" he replied loudly.

"YOU'RE NOT A TAF MEMBER!"

"So what!" he said, quieting down. Melvin talks like this all time.

"I'm not going to help you steal, Mel!"

"Are you calling me a thief?" Mel said, feigning utter disbelief.

"You're darn straight!" I replied tersely.

The direct accusation shut him up, momentarily. I wasn't finished with him, of course, so I seized the moment to explain the details of my work to him (for the 50th time), describing essentially how I earn my keep. I was hard pressed to make Melvin understand that I worked primarily for my family and myself; not for the unalloyed pleasure of giving away my hard won purchases to lazy, cheap, venal insects like him. To Melvin, 'sharing' software is a very one-sided affair: you buy it, and he gets a copy for free. Think about it.

If you consider the illogic of such a one-sided proposition, it is unlikely you will ever 'donate' software to anyone, ever again.

There are other problems, however, related to 'sharing' and 'borrowing' and 'evaluation copies.' One problem is amply demonstrated by the manner in which Shareware is sometimes distributed. Registered versions are regularly 'hacked' with such programs as Disk Doctor: other people's names are inserted, and registered versions (sic) are then handed to friends. Several pieces of high profile Shareware (*FastPath*, *PAD*, *STorm*, *Selectric!* and *Everest*, to name only a few) have accumulated an absurdly low number of registrations, juxtaposed against the estimated total of computer owners observably making regular use of the programs. Another Atari user handed me a list several weeks ago. He compiled the list by simply observing the number of people whom he 'knew,' who posted BBS messages regarding their use of different pieces of the aforementioned shareware. There are 32 names on the list, representing people who make regular use of this shareware, but who have not registered and don't care enough to hide the fact. According to the authors of these excellent shareware items, the total of North American registrations for ALL the programs mentioned, number in the dozens.

The dozens? No more than that?

I sincerely doubt that such a pathetic response will inspire any shareware authors to write anything more substantial, or support anything major (or minor) they've already written; especially in considera-

tion of the fact that the aforementioned programs are all excellent examples of what to do *right* with Shareware. There are many more examples of superb shareware and commercialware that are in extremely wide use, but unregistered. And all along we thought that in America, there's no such thing as a free lunch. For a bunch of hard-nosed Capitalists, we sure do take certain unwarranted liberties.

You can hardly blame the authors for expressing bitterness and disappointment.

Melvin the Pest exacerbates a situation that is sorely in need of amelioration. So, it is no surprise that the halcyon pleas of Shareware and Commercial software authors are growing ever more thoroughly into a unified, strident bel canto that sounds like nothing so much as: "If you can't afford it, don't steal it. If you steal it, we will not support it. If it is not supported, it will disappear and you will have no one but yourself to blame. We won't stand for any more howls about recessions, poor employment and lack of money, because we authors don't have any more money to live on either! Our incomes

have been shattered by a market reality that has grown so completely out of control, it is debatable whether even the insane among us will be willing to spend so much as another minute programming. We have borne your thievery and dishonesty long enough. How much more do we have to give, before you pay what you owe?"

How much does Melvin think these guys can take? The shocking answer is that Melvin (and all of his kind) do not care.

There are some gabon and fascine that authors, merchants and consumers can erect, to defend against this kind of depradation, however. The defense is simple and affordable, though it tends to isolate us for a short time from the mainstream of whatever computer group we associated with (if that group or the odd member has dabbled in 'pirated, copied, borrowed, loaned, test or evaluation copies' of software).

First, beyond anything else, some of us must admit to some degree of greed toward certain types of software. The degree and the target software varies from person to person. The quality of our legitimate interests must also be ascertained and juxtaposed against the foregoing egocentricities. Plainly put, we will all be better served by making only two or three legal purchases per year. If, by influencing our associates to make only a few legitimate purchases each



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year as well (where mainly illegal acquisitions were the standard before!) and by refusing to copy or loan our purchases or borrow others, we may create an environment that is not rife with bootleg copies of commercial software and registered shareware; a situation that will tend to support the software authors who have provided the means by which we use our computers in the first place.

Second, and no less important, we must begin to take some pride in our ability to ascertain and obey certain ethical (and legal) guidelines. In other words, we may be certain that our refusal to supply 'friends' and 'associates' with free software will likely force those individuals into the stores; there, to purchase that which they so dearly crave. In such a situation, the merchants win, you win and the 'friend' wins. Certainly, that 'friend' isn't going to be bugging you for advice on a program's use; he'll have his own manual!

Third, and perhaps reasonably debatable, a merchant who has a profitable (and expanding) user base, is likely to provide much broader support. That almost inevitably includes the availability of much of the latest software, as it enters the distribution chain. No software author in his right mind will complain.

Fourth, and most instructive of all, is the notion that a legitimate consumer base provides for a more stable, reliable and predictable marketplace. A dealer who can rely on some predictable sales volume in a stable, slowly expanding market, invariably restricts retail price increases. If volume decreases, however, the profit margin must rise to cover the costs naturally incurred, simply by keeping the shop doors open and the shelves stocked. Niche market recession is terrifying for dealers. Their cure is simply to abandon support.

Fifth, and perhaps somewhat less important, a merchant who is earning profit from a particular genre of products because he is not dealing incessantly with outrageous competition from pirates, is generally someone who is easier to know. He'll be more willing to talk to new customers in a way that is less suspicious and more inherently helpful. Many dealers (past and present) in large urban areas have had to contend with several Atari customers who walk in to a store, purchase a piece of software, and then 'share' it with four or five or six associates, often on so-called pirate BBS's. No sane merchant will support the Atari market while such activity continues unabated.

Sixth, authors of shareware and commercial programs *must* toughen their copy and piracy protection schemes. All shareware must be completely save-disa-

bled. All commercial demos must be completely save-disabled. It must be so; apparently, the Honor System doesn't work. While there have been a couple of notable support fiascos (*Freeze Dried Terminal* and complaints about Lexicor come to mind), commercial and shareware authors almost invariably do a great job of supporting their products, providing good value for your money. European shareware authors have the disconcerting habit of replying within only days of receiving registrations (sometimes only hours via E-Mail)! Excellent service, indeed, which bespeaks an attitude that is oriented toward user support, program support and decent quality standards. There are also many examples of highly regarded American and Canadian shareware and commercial authors (Keith Gerdes, Gordon Moore, Michel Forget, Bob Engbersen, Craig Harvey, Dan Wilga, Bob Luneski, Roger Burrows and Anthony Watson to name only a few), who provide superb support and quick service, rivaled only by massive corporations with mind-bending service budgets.

By the way, I did actually go over to Melvin's house later that day. I wanted to see (finally), how much illegal software he owned. I never got the chance though. Only a few minutes after I arrived, Melvin asked me to shove a particular floppy disk into drive 'a'. The disk contained something that Melvin had downloaded only the night before: a commercial game he'd placed on a floppy (to copy with software he tried to borrow from me). Unfortunately, it also contained a major league virus. He'd downloaded the software from a pirate BBS. Melvin told me to reboot and check out the game. So I did.

Whatever had been written to the boot sector of that floppy blew the FAT's and Partition Tables all over his rather large hard drive. Naturally, I laughed. Although Melvin had pirated copies of *Diamond Edge* and *Diamond Back 2* and *Data Rescue*, he'd never bothered using any of them and, therefore, couldn't recover anything, restore anything or rebuild his FAT's. I laughed again. Melvin had to reformat and repartition his entire drive. I laughed again.

I haven't heard from Melvin since that fateful day. I am glad, because I think he is a pest. I also think he is not so enamored of pirating as he once was.

Caveat Emptor, Melvin. Have a nice day.

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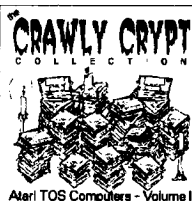
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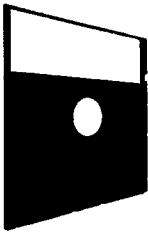
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Atari Boolean Operations To AND OR EOR, That is the Question

By Frank Walters

Atari BASIC AND and OR

Atari BASIC supports "AND" and "OR" statements but they are only 1-bit comparisons. BASIC "AND" compares two statements which are assigned a value of 1, if true, or 0 (zero) if false. The comparison of one bit with the other assigns a 1-bit value to the result.

X=(A<B) AND (C=0)

Each statement is enclosed in parentheses for emphasis. If (A<B) is true, it is assigned a value of 1. If C is equal to 0, then it is true and assigned a value of 1. If C is not equal to 0 then the statement is false and assigned as 0 (zero). AND compares the bits for each statement and the result is X=1, only if both statements are true (1). Otherwise, the above "AND" equation results in X=0.

1 AND 1 = 1
1 AND 0 = 0
0 AND 1 = 0
0 AND 0 = 0

The BASIC "OR" expression is similar except that both statements must be false (0) for the result to be false.

1 OR 1 = 1
1 OR 0 = 1
0 OR 1 = 1
0 OR 0 = 0

Atari BASIC "AND" "OR" expressions are most frequently used in IF/THEN statements, between the "IF" and the "THEN." The entire comparison is evaluated and the "THEN" statement is only executed if the comparison is true, but the program skips to the next line if it is false.

Shortcomings

Sometimes it is necessary to perform boolean operations on individual bits within a byte. When you are constrained to the simple functions in Atari BASIC, this can become quite a programming feat. The rest of this article will show you how to accomplish this with a short machine language routine and gives some practical uses.

Program Listings

Listing 1 is an Atari BASIC program to demonstrate the use of the boolean byte-comparison expressions AND, OR and EOR. The listing contains checksum letters in front of

each line number that are compatible with either Antic Magazine's TYPO II or Analog Magazine's BASEDIT type-in utilities. Two blank REM lines, 75 and 125, are reproduced from Listing 2 and must be merged with Listing 1, see below. After typing the listing and checking for valid checksums (if using TYPO II or BASEDIT), I suggest you list lines 135,145 and change the "AND," "OR" and "EOR" to inverse. List 170 and change "RETURN" and "ESC" to inverse. These are just cosmetic changes.

Listing 1

```
RR 0 REM *** BOOLEAN AND/OR/EOR ***
AE 1 REM ** Atari BASIC Routines **
UU 2 REM ** By Frank Walters **
LC 3 REM ** TACO Bell BBS **
TH 4 REM ***** 09/22/94 *****
YA 5 GOTO 90
PC 9 REM **INPUT 0-255 SUBROUTINE**
TI 10 TRAP 10:?
CHR$(28);CHR$(156);CHR$(127);"(0-255) ";
II 15 INPUT IP$:X=INT(VAL(IP$)):IF X>255 OR X<0
THEN 10
UU 20 X$=" ":X$(4-LEN(STR$(X)))=STR$(X):RETURN
SJ 24 REM **DECIMAL TO BINARY SUBROUTINE**
CJ 25 BIN$="0 0 0 0 0 0 0 0"
JA 30 IF X>=128 THEN BIN$(1,1)="1":X=X-128
PJ 35 IF X>=64 THEN BIN$(3,3)="1":X=X-64
JZ 40 IF X>=32 THEN BIN$(5,5)="1":X=X-32
RX 45 IF X>=16 THEN BIN$(7,7)="1":X=X-16
IV 50 IF X>=8 THEN BIN$(9,9)="1":X=X-8
BB 55 IF X>=4 THEN BIN$(11,11)="1":X=X-4
AW 60 IF X>=2 THEN BIN$(13,13)="1":X=X-2
VF 65 IF X=1 THEN BIN$(15,15)="1"
ZX 70 RETURN
YJ 74 REM **AND, OR, EOR, ML SUBROUTINE**
** FUNC = 1-AND, 2-OR, 3-EOR **
**MASK & BASE 1-BYTE (0-255) **
BO 75 REM
JO 79 REM **DECIMAL TO HEX SUBROUTINE**
LP 80 HI=INT(N/16):H=HI*16:L0=N-H:XHEX$(2)
=H$(1+HI,1+HI):XHEX$(3)=H$(1+L0,1+L0):
RETURN
FA 89 REM **INITIALIZE**
WV 90 DIM BASE$(3),MASK$(3),FUNC$(6),BASE
BIN$(15),MASKBIN$(15),BIN$(15),X$(3),
XHEX$(3),IP$(3),BHEX$(3),MHEX$(3),H$(10)
VL 95 H$="0123456789ABCDEF":XHEX$="$00"
```

```

OL 100 POKE 82,2:GRAPHICS 0
LC 104 REM **BEGIN PROGRAM INPUTS**
BO 105 POSITION 2,2:? "Enter BASE number":
? :GOSUB 10:BASE=X:BASE$=X$:N=X:GOSUB 80:
BHEX$=XHEX$
UA 110 GOSUB 25:BASEBIN$=BIN$
AT 115 POSITION 2,6:? "Enter MASK number":
? :GOSUB 10:MASK=X:MASK$=X$:N=X:GOSUB 80:
MHEX$=XHEX$
DY 120 GOSUB 25:MASKBIN$=BIN$
VA 124 REM **DISPLAY RESULTS**
RF 125 REM
JH 130 FOR FUNC=1 TO 3:GOSUB 75:N=X:GOSUB 20:
X=N:GOSUB 25:X=N:GOSUB 80
RE 135 IF FUNC=1 THEN FUNC$=" AND "
YX 140 IF FUNC=2 THEN FUNC$=" OR "
NV 145 IF FUNC=3 THEN FUNC$=" EOR "
OY 150 POSITION 2,(FUNC*5):? " ";BASE$;
" ";BASEBIN$;" ";BHEX$:? FUNC$;MASK$;" ";
MASKBIN$;" ";MHEX$
TJ 155 ? " "; "-----"
[Insert Listing 1]
TA 160 ? " ";X$;" ";BIN$;" ";XHEX$
HA 165 NEXT FUNC
AV 169 REM **RUN AGAIN OR QUIT**
GF 170 ? :? " RETURN-Again ESC-Quit";
:POKE 764,255
RB 175 IF PEEK(764)=12 THEN POKE 764,255:
POKE 752,0:RUN
AG 180 IF PEEK(764)=28 THEN POKE 764,255:
POKE 752,0:TRAP 40000:END
RS 185 GOTO 175

```

Listing 2 contains DATA lines and checksums which may be converted to the two BASIC lines to merge with Listing 1 to complete the ANDOREOR.BAS program. You can type the data using Analog's MLEDIT machine language type-in utility or use my DATA2OBJ.LST program from *Current Notes* September 1993 issue, page 53, and follow instructions in the article. This listing contains the ML subroutine to access AND, OR and EOR from BASIC. Save this listing as ANDOR2.LST

Listing 2

```

1000 DATA 55,53,32,88,61,85,83,82,40,65,
68,82,40,34,104,104,623
1010 DATA 104,170,104,104,133,215,104,
133,213,104,133,212,224,1,208,5,9019
1020 DATA 37,215,133,212,96,224,2,208,5,5,
215,133,212,96,224,3,7800
1030 DATA 208,4,69,215,133,212,96,34,41,
44,70,85,78,67,44,77,1637
1040 DATA 65,83,75,44,66,65,83,69,41,58,
82,69,84,85,82,78,964
1050 DATA 32,155,49,50,53,32,88,79,75,69,

```

```

32,55,53,50,44,49,8598
1060 DATA 58,63,32,67,72,82,36,40,49,50,
53,41,58,80,79,83,9435
1070 DATA 73,84,73,79,78,32,50,44,52,58,
63,32,34,198,245,238,5952
1080 DATA 227,32,32,196,229,227,32,32,
183,160,182,160,181,160,194,233,3638
1090 DATA 238,160,178,160,177,160,176,32,
32,200,229,248,34,155,0,0,6550

```

Listing 3 is the Mac/65 source code for the USR used in line 75 of the BASIC program. Note in lines 270,300 that the HI and LO bytes of BASE are pulled from the stack (PLA) and stored in USRHI,USRLO (address 213,212). If, by mistake, FUNC is assigned any value other than 1,2 or 3, the USR will branch (BNE) over the AND, OR and EOR comparisons and return to BASIC (RTS) in line 530. BASIC assigns the variable that called the USR (X) whatever value is in the 2-byte address 212,213 when it returns from the USR, which is the original value of BASE, unchanged.

Listing 3

```

10 ; BOOLEAN AND/OR/EOR USR 09/23/94
20 ; by Frank Walters
30 ; T.A.C.O. Bell BBS
40 ;
50 ; X=USR(ADR("code string"),FUNC,MASK,BASE)
60 ;
70 ; FUNC = 1 (AND), 2 (OR), 3 (EOR)
80 ; MASK = Mask number (0-255)
90 ; BASE = Base Number (0-255)
0100 ;
0110 ;
0120 *= $3000 ;ASM addr (temp)
0130 ;
0140 USRLO = $04 ;212
0150 USRHI = $05
0160 XMASK = $07
0170 ;
0180 ; **PULL VARIABLES FROM STACK**
0190 ;
0200 PLA
0210 PLA ;0 (FUNC HI)
0220 PLA ;FUNC LO
0230 TAX
0240 PLA ;0 (MASK HI)
0250 PLA ;MASK LO
0260 STA XMASK
0270 PLA ;0 (BASE HI)
0280 STA USRHI
0290 PLA ;BASE LO
0300 STA USRLO
0310 ;
0320 ; COMPARE FUNC (X REG) TO 1,2,3
0330 ;

```

```

0340      CPX #1      ;IS IT "AND"?
0350      BNE XOR     ;NO, TEST "OR"
0360      AND XMASK   ;YES, "AND" IT
0370      STA USRLO   ;STORE RESULT
0380      RTS
0390 ;
0400 XOR
0410      CPX #2      ;IS IT "OR"?
0420      BNE XEOR    ;NO, TEST "EOR"
0430      ORA XMASK   ;YES, "ORA" IT
0440      STA USRLO   ;STORE RESULT
0450      RTS
0460 ;
0470 XEOR
0480      CPX #3      ;IS IT "EOR"?
0490      BNE RETURN  ;NO, EXIT TO BAS
0500      EOR XMASK   ;YES, "EOR" IT
0510      STA USRLO   ;STORE RESULT
0520 RETURN
0530      RTS

```

When you have typed and LISTed Listing 1 to disk and created the two lines from Listing 2 on disk, go to BASIC and ENTER Listing 1 and Listing 2 into the BASIC editor to merge them. SAVE the program as ANDOREOR.BAS.

Program Description

ANDOREOR.BAS asks the user to enter one byte (0-255) BASE and MASK numbers. The program then performs the indicated boolean operation BASE and MASK then displays the results on the screen in decimal, binary, and hexadecimal numbers. The binary numbers are the key to understanding how these expressions work. All three expressions compare each bit individually between the BASE and MASK bytes.

Variables

X is used to call the USR and contains the results of the operation upon RETURN to BASIC.

The USR statement passes three variables to the ML subroutine.

FUNC tells the O/S which expression to use when comparing the other two variables: FUNC=1 means AND; FUNC=2 means OR; FUNC=3 means EOR.

BASE is the first byte you are comparing, the one you are testing or changing.

MASK is the second byte which the user sets to test or change certain bits in the BASE number.

The above three variables must be set by the user before GOSUB to the ML subroutine. Upon return from subroutine, the variable X will contain the result of the boolean comparison of BASE and MASK. In the program, a FOR/NEXT loop sets FUNC to 1,2 and 3 sequentially to get results from all three types of comparisons.

```

FUNC=1: X=BASE AND MASK
FUNC=2: X=BASE OR MASK
FUNC=3: X=BASE EOR MASK

```

The program prints the results on the screen following each of the three operations, displaying them one below the other. These boolean expressions are a method of testing or changing particular bits in a variable number, without changing other bits in that number.

Binary Bits

Remember that the binary bits are numbered from 7 (hi) to 0 (lo), not from 8 to 1. Each binary bit has a decimal value, depending on its position:

Bit:	7	6	5	4	3	2	1	0
Dec:	128	64	32	16	8	4	2	1

AND

The key to using AND is to set the MASK number based on which bits are NOT SET (the zero bits). The 0 bits in the MASK will force 0 bits in the result after you AND the MASK with the BASE. All the 1 bits in the MASK will permit the BASE to determine the bit in the result.

Suppose you want to insure a byte is not inverse (128 decimal or above). You can use AND to mask out the high bit with 0, allowing the seven low bits to pass into the result. In other words, the result will always have a 0 (zero) in the high bit, regardless of whether the BASE number had a 1 or 0 in the high bit.

	Dec	Binary
	198	1 1 0 0 0 1 1 0
AND	127	0 1 1 1 1 1 1 1
	---	-----
X =	70	0 1 0 0 0 1 1 0

Thus, an inverse "F" [Chr\$(198)] from the keyboard GET routine can be changed to normal "F" by using the Boolean "AND 127" expression. The same thing can be done by subtracting 128 from 198. However, in the latter case, what if the key had been a normal "F" (70)? Subtracting 128 would not result in the desired number, while 70 AND 127 equals 70, just as 198 AND 127 equals 70. Test this with the BASIC program, entering 198 for the BASE and 127 as the MASK.

Suppose you need to test a particular address in memory for the status of one bit (on or off). You PEEK that address into a variable (BASE) and then make MASK equal to the value of the bit you are testing.

Bit 5 equals 32. Let MASK=32. When you AND the BASE value with 32, the result will be 32 if bit 5 of BASE is 1, because all other bits of the mask are zero, so they will be zero in the result. If bit 5 in the BASE is zero, then the result will contain all zero bits, and a value of 0. Thus, BASE AND MASK = 32 or 0; never any other value.

Suppose you want to GET an upper case key from the keyboard in your program. Your program does not want inverse or lower case letters so you need to change them to the equivalent upper case letters, perhaps for a filename entry, etc. Looking at the ASCII table for letters, the difference between upper case and lower case is 32. i.e. Set bit 5 (32) ON with any upper case letter will result in the lower case equivalent of it. "A" becomes "a" when bit 5 is set to 1. Either "A" or "a" becomes inverse if bit 7 (128) is set to 1. Therefore, to convert any letter key to upper case, you can set bits 7 and 5 to zero in the mask, insuring they will be zero in the result, and set all other bits in the mask to 1. $64+16+8+4+2+1=95$. Set MASK=95:BASE=ANYKEY:FUNC=1 (AND). The result is shown below for inverse, lower case "y" (ASCII 249):

```

      249  1 1 1 1 1 0 0 1  Inverse y
AND   95  0 1 0 1 1 1 1 1
---
X =  89  0 1 0 1 1 0 0 1  normal Y

```

CHR\$(89) is upper case "Y." Try this with several inverse and/or lower case letter values, using the demo program.

OR

OR forces all bits set at 1 in the MASK into the result as 1. All the zero (0) bits in the MASK permit the BASE to determine the result bit, either 1 or 0. The 1 bits in the OR mask are dominant, while the zero (0) bits in the AND mask are dominant. OR is used to force selected bits to 1, while AND is used to force selected bits to 0.

Suppose a certain address requires bit 4 to be on for a desired result in your program. Bit 4 is the 16 value. Set MASK=16 and FUNC=2 (the OR expression in the USR). Let BASE=PEEK(ADDRESS). GOSUB to the USR and when you return, X will contain the same bits set as BASE, except if bit 4 had been zero it will be 1 in X. Then POKE ADDRESS,X to insert the result into the address you peeked. i.e. BASE=PEEK(ADDRESS):MASK=16:FUNC=2. Assume the value of the PEEK is 106. Here is the result:

```

      Bit:  7 6 5 4 3 2 1 0
            -----
      106  0 1 1 0 1 0 1 0
OR   16  0 0 0 1 0 0 0 0
---
X = 122  0 1 1 1 1 0 1 0

```

Simply adding 16 to the peeked number will not insure that bit 4 is set to 1. If bit 4 is already 1, adding 16 will set bit 4 to 0. $90+16=106$ (see bit 4 is 0 in 106 above). See bit 4 is still 1 after the expression (90 AND 16) below:

```

      Bit:  7 6 5 4 3 2 1 0
            -----
      90  0 1 0 1 1 0 1 0
OR   16  0 0 0 1 0 0 0 0
---
X =  90  0 1 0 1 1 0 1 0

```

Try setting several bits in random BASE numbers by adding the desired bits in the MASK and testing it with the OR function and entering them in the demo program. You can set MASK=128 to force any number in the BASE to result in an inverse value.

EOR

Exclusive OR, known as EOR is almost a mirror of the OR expression. The 1 bits in the MASK are dominant. Like OR, the 0 bits in the MASK allow the BASE bits to pass through to the result. However, if the MASK bit is set to 1, the same bit in the BASE is toggled to the opposite value in the result. For example, a 1 in the MASK causes a 0 in the BASE to change to 1 in the result. Or a 1 in the BASE changes to 0 in the result.

Let MASK=255 (all bits set to 1). Every bit in the BASE will have the opposite bit set in the result. This is what is known as the "ones compliment." Try it with a few different BASE numbers and see what I mean.

Let MASK=128 and any "inverse" becomes "normal" and vice-versa in the result. You could toggle upper and lower case letters by setting MASK=32, etc.

Conclusion

You can see that the ML subroutine AND/OR/EOR comparisons are much more powerful as they compare all 8-bits of each byte and return an 8-bit result. But each type is useful in its own way.

The demo program contains a couple other subroutines in BASIC to convert decimal bytes into binary and hexadecimal strings. They are my own sloppy methods but they do the job, rather slowly, in the process. You can observe the slight delay between segments during screen display. The delay is caused by the BASIC conversion routines rather than the USR computation. See lines 25-70 for the decimal to binary subroutine and line 80 for the decimal to hexadecimal one.

I hope this little discourse is useful in explaining the function of Boolean AND, OR and EOR. Atari BASIC does not support these expressions on a "bit by bit" basis. The USR included in line 75 of my program enables any BASIC program to do this. Bit mapping in BASIC is quite slow and complicated by a series of IF/THEN statements when these Boolean expressions are not available. They become simple and fast when you have AND, OR and EOR in your inventory of tools. While they are available in other Basic languages such as Basic XL/XE, those languages are not as universally available as normal Atari BASIC.

M.A.G.E.

Majic Arcade Graphics Engine – Part 2

Review by Larry Lefebvre

In Last Issue...

To recap, last issue we learned about *M.A.G.E.*'s strict license agreement, the Pro's and Con's of *M.A.G.E.*'s three editors (Character, Animation, and Map), and some of the manual's shortfalls with regard to these editors. This issue, we'll talk about the Inline Maker editor, various parts of the source code, and other parts of the manual.

To Inline or NOT to Inline

M.A.G.E. comes with one more editor, called the Inline Maker. The Inline Maker embeds your data files, created by the three editors mentioned earlier, into your GFA program. This eliminates carrying around files that are external to the program.

It is not necessary to Inline any external data files, in order to complete a fully functional game using the *M.A.G.E.* system. The *M.A.G.E.* GFA source file provides you with areas of code specifically set up and neatly organized, allowing you to choose if you want your data files Inlined or not.

If you do intend to Inline your data files, you will have to compress them using *Jam-pack*. This program is shareware and should be registered if you use it. *Jam-pack* will compress any data file that you want Inlined into your program. This not only includes the Character, Sprite, Animator, and Map data files from the previous editors, but other data files, as well (ie. Pictures, Graphics, Sounds, etc). Inlining your data files may seem like a lot of work, but having only one .PRG file will make your game look that much more professional.

Making Inlines

The Inline Maker sets up the data files (.CP1, .SP1, GPA, and .MAP) for insertion into your program as an Inline statement. This is a three step process. First, the data in these files are stripped of their headers and you are left with the raw data file. Second, the raw data file is compressed using *Jam-pack*, which you must exit the Inline Maker to do. Third, re-activate the Inline Maker is re-activated and the header file is combined with the compressed raw data file into a final Inline form. Let's take a closer look at what is actually happening.

First, you choose the "MAKE ?NL and/or ?CE" selections from the menu pertaining to the type data file you want to Inline. The SP1/CP1 menu is for the

Sprite and Character data files, the MAP menu is for the Map data file, and the GPA menu is for the Animation data file. The first two menu's split the data files into two new files; a ?NL (SNL, CNL, MNL) header file and a ?CE (SCE, CCE, MCE) raw data file. The third menu creates only the ?CE (GCE) raw data file. (See figure 1.)

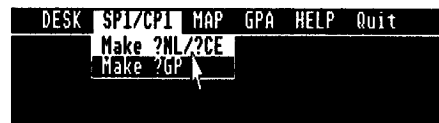


Figure 1

Second, you must exit the Inline Maker and compress the ?CE raw data file using *Jam-pack*. Make sure you set the ICE compression at 1024 ratio with Data selected, and Flash and Heading deactivated. The Help menu of the Inline Maker states that this ratio must be set at 5504, but the manual consistently states that it must be 1024. After checking with MajicSoft, I was assured that the manual compression ratio of 1024 was correct and the Help Menu was not. When you have set everything correctly, choose the ?CE raw data file to compress and overwrite the original ?CE file. (See figure 2.)

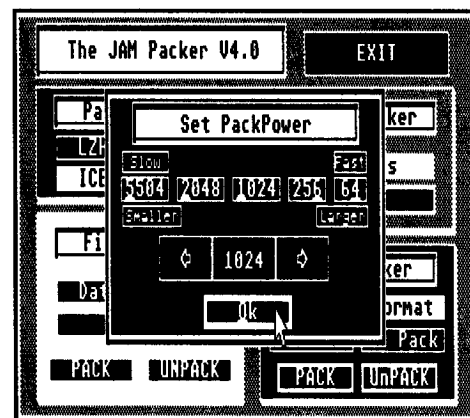


Figure 2

Third, reactivate the Inline Maker. Select "MAKE ?GP" from the menu pertaining to the type of data file you want to inline. This will combine the ?NL header file (for SNL, CNL, and MNL only) with the ?CE raw data compressed file. The resulting ?GP (SGE, CGE, MGE, GGE) file created is the file that

you want to inline into your program. These extenders may sound confusing at first, but after a while, you will have no trouble getting the hang of them.

Last issue, I pointed out that the Character and Map editors only allow you to save a picture in PI1 format. If you want to inline pictures to create introductions, intermissions, etc., you will only be able to do so if the pictures have been saved in PC1 format (before they are compressed using *Jampack*). This means that once you have saved your picture in PI1 format, you have the added task of converting it to PC1 format using *Degas Elite* or a conversion utility. Barring any copyright infringements concerning the PC1 format types, it should have been relatively simple and advantageous to have added the PC1 format as an added save feature, in these editors.

Imbed Those Inlines

The file sizes for each ?GP file created with the Inline Maker must be written down before inserting them in the source code of any game. Execute the *GFA 3.5* program and load in your game (at this time, use the *M.A.G.E.* design shell source code-make sure that you are using a copy). After the shell has been loaded, locate "step 3" in the comments of the source code and place the cursor on the first "INLINE" commented statement. Remove the comment from the line and modify the zero(s) at the right, to the corresponding file sizes of the variable filenames shown. Press the **RETURN** key when done. You will be presented with a dialog box asking you to clear the Inline. Press **RETURN** again to clear the inline. Next, place the cursor back on the line to be Inlined, and press **CTRL-HELP**. A smaller menu will appear above the GFA menu; choose load from this menu to load in the appropriate file to inline. Repeat this process for any other files that are ready to be Inlined. (See figure 3.)

After you have finished, go back up to "step 2" and uncomment the Inline's for "ms_deice%" and "ms_engine16%" Inline variables, if you are using 16 pixel wide sprites or less (see the *M.A.G.E.* review -Part 1). Otherwise, you will have to remove the comment from the "ms-engine32%" Inline variable. Now, you no longer need to use any of those data files that you have Inlined, for your game. (See Figure #4)

```

Save Save,A Quit New BlkSta Replac Pg 0 Direct Run 11:23:47
Load Merge Llist Block BlkEnd Find Pg 0 Insert Flip Test 24

-----
Step 3: Any other INLINE data should be inserted here.
-----
INLINE splx,0
INLINE cplx,0000
INLINE mapx,0000
INLINE gpax,0000
INLINE pc1x,0000
INLINE pc2x,0000
-----
Step 4: System inits. If your program uses any GEM commands.
ms_programinit(FALSE)      ! TRUE = Uses GEM / FALSE = No GEM
ms_spritedump&=TRUE       ! Activate F8 sprite dump? (TRUE/FALSE)
-----
Step 5: M.A.G.E. INIT command.
Pass: Number of sprites to set up. 0=1
mage_init(0)

```

Figure 3

A word of caution is recommended at this time. Due to the tedious process of creating Inlines, you would be well advised to make sure that the Character, Sprite, Animation, and Map Data being inlined, are exactly the way you want them to be, before you start the inline process. Failure to adhere to this, will result in many extra hours of lost time.

May the Source Be with You

The *M.A.G.E.* source code, which is heavily documented, is divided up into seven steps. Each step is comprised of one or more subroutines. The manual does a good job of discussing each step and some of the routines called. Let's take a look at each one of these steps.

Step 1: A routine is called to ensure that you are in low resolution.

Step 2: This is where you inline the main engine of *M.A.G.E.* according to the sprite sizes you have selected, as we discussed above.

```

Save Save,A Quit New BlkSta Replac Pg 0 Direct 12:14:42 a
Load Merge Llist Block BlkEnd Find Pg 0 Insert Flip Test 0

M.A.G.E - DESIGN SHELL
Game design engine for use with GFA BASIC 3.5e or greater.
V1.0 - 010/93 - (Last revision on GFA DESIGN SHELL)

-----
Step 1: Are we running from a monochrome monitor? Color required.
ms_check_rez
-----
Step 2: Press control/help to install M.A.G.E. .INL's as needed.
INLINE ms_deice%,320
INLINE ms_engine16%,32000 !using sprites 16 wide or less
INLINE ms_engine32%,32000 !using sprites 32 wide
INLINE ms_blits%,30000
mage%=ms_engine16% ! or ms_engine32%

```

Figure 4

Step 3: This is where you inline those data files, as we discussed above.

Step 4: A routine is called with one parameter (true or false) for initializing the program. If your program uses GEM, pass TRUE as the argument. Otherwise, pass FALSE.

Step 5: A routine is called which sets up the code for the *M.A.G.E.* core used for processing your data.

Step 6: Routine is called for the play game portion of your game. This is where you will do most of your coding for your program. In the next section, I'll discuss this routine in more detail.

Step 7: Routine is called for ending the game play, and restoring original screen position, colors, and resolution. It also re-activates the mouse, and frees any excess memory area's that your program may have been using.

It's Playtime

The Play Game routine of the *M.A.G.E.* source code includes other routines and parts of code that are organized in a specific order. These routines accomplish a variety of setup tasks prior to the start of a game.

First, the Play Game routine calls a routine that is passed an argument (number) that indicates the total number of 32,032 byte screen buffers being reserved in memory, minus one.

Second, we load in the data (SP1, CP1, GPA, and MAP), using one of two methods. We can either load the data from disk or we can use inlines by using the inline maker address (this is the variable name of the inline data at the beginning of the source code).

Third, data pointers to any game data statements, are restored. This data must have previously been stored in another routine by the programmer.

Fourth, we would declare any arrays and global variables. Essentially, any variable that is set up once per program execution, will be placed here (ie: screen boundaries, internal pointers, etc). This includes any disk data that must be loaded at this time. All that's left is to clear the screen and move the color pallet to bank #1 using the routine given.

Fifth, the VSYNC routine is called. This tells the program to prepare for page flipping. This routine is absolutely necessary if we want to write a game using page flipping (which, in effect, is ALL games).

Sixth, you enter the Main Program loop. This loop will keep on cycling through a number of sequences until the user exits the program.

Play It Again, Sam

The Main Program loop sequences include the title screen routine, game initialization, and storing the color pallet for a quick restore. Next, we encounter another loop for the actual game execution. According to

the manual, this loop is the "Master Brain" behind the smooth execution of a program. This loop continues until the player is either out of lives or an exit is requested through the "ESC" key. This loop performs the following steps:

1. Resets the Vertical Blanks counter to allow a frames per second reading. This step is optional.
2. Updates all player objects (Sprites, Character graphics, etc).
3. Page flips and redraws the background.
4. Handles any sprite collisions and background updates.
5. Plots all sprites, stars, and accomplishes color cycling and flash effects.
6. Calls the keyboard input handler if we want the user to be able to also use key commands. This routine must be completely coded by the user, if needed.
7. Forces the program to run at a certain "Frames per Second." This step is also optional.
8. Displays the "Frames per Second" that the game is currently running at. Also optional.
9. Enters a single step mode for debugging purposes only.

NOTE: In order to use steps #7 and/or #8 above, it also becomes necessary to activate step #1, too.

If the Main Loop is still alive when the user finishes playing the game, the routine for the game reset is activated and the loop is repeated.

Let's Get Physical, Among Other Things

The manual does a very good job of explaining the major terms and variables that are necessary to create a game. These include VSYNCS (Vee-Sinks), FPS (Frames per Second), and Logical and Physical screen addresses. Knowing these terms will enable you to have flicker free graphics images. I will not attempt to explain these terms in full, but I do want to give you an idea of why they are necessary when creating a game.

VSYNC is a signal that is generated by the computer whenever the raster pen is at the bottom right hand of the screen (which is in effect, the last pixel of the screen being drawn) and is now moving up to redraw the screen again. Once this signal is picked up by the VSYNC routine, it quickly flips the Logical and Physical screen addresses (these are variables in the *M.A.G.E.* source code). This happens extremely fast, resulting in the flicker free images mentioned above.

FPS is the number of Frames per Second necessary to accomplish one screen redraw. A typical *M.A.G.E.* game runs at three VSYNCS. This tells the monitor to draw three screens before it does a page flip. This equates to 20 FPS and is very fast (60 VSYNCS divided by 3 screen redraws per page flip).

Physical screens are sections of memory arranged so that they can be recognized as a full bit-map graphic screen by the Atari hardware. *M.A.G.E.* keeps three copies of the screen in memory on top of what you already have) for page flipping. The Physical screen address is the start of the screen that you can actually see. The Logical screen address is the screen that gets drawn on (the physical screen never gets drawn on). The Background address keeps a copy of the fixed background that is copied into the Logical screen for each pageflip. The background screen allows a large number of sprites to be drawn very quickly.

The Rest of the Manual

The manual goes into much more detail than I could give in the space allowed and discusses other important items, such as, Composition of Physical Screen Memory, Partial Screen Copies, Screen Masking, Screen Scrolling, Character Banks and Screens, Sprite Banks, Information and Tips on Animating the Sprites, Collision Checking, Sound Effects using the Mod player (another shareware program that comes with *M.A.G.E.*), Special Effects, etc.

There is also a chapter devoted completely to variables that are important to know how to use in your program. Last, but not least, there is the chapter that lists all of the *M.A.G.E.* commands, their arguments, and an explanation of each one. This is a huge chapter covering 44 pages of commands. Learning these commands and understanding how to use them in the source code (as well as the variables and the various terms), can be an essential key to creating a successful game.

The last three chapters go into the making of the 20-minute game, *Thurge N Murge*, and *Sleuth*. All three of these games (and their source code) are part of the *M.A.G.E.* package. If you read these chapters, you will find many tips and clues on how to go about starting and creating your game. However, I can't help but feel that these last three chapters might have been more useful as one chapter explaining in detail a short simple game (NOT a 20-minute game) from its creation in the editors, to its implementation in the *M.A.G.E.* source code, step by step.

M.A.G.E. in a Nutshell

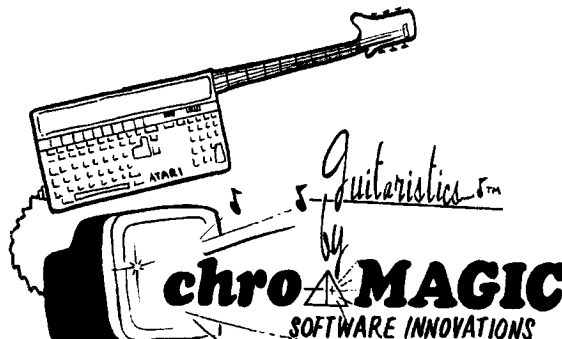
In short, on the minus side, we have a manual that could use a lot of improvements on both errors and content, and editors whose interfaces are inconsistent with each other. On the plus side, we have a manual that does explain game terms (VSYNC, Physical Screen, etc) very well, editors that perform flawlessly to what they were created for, and a source code that is extremely well documented and organized.

At a price tag of \$99.00 from MajicSoft, you

should make sure that you are willing to put in the time and effort necessary to use this package. Besides that, you have to be willing to agree to terms and conditions of the *M.A.G.E.* license agreement, which is strict at best. Of course, if you're a programmer who has already created at least one game and knows GFA Basic well, then the time and effort that you spend creating a game will be greatly reduced.

Well, there you have it! This should be enough for you to decide on whether or not *M.A.G.E.* is for you. Enjoy and good luck with your game creations.

Majic Arcade Graphics Engine (M.A.G.E.)
348 Meridith Square
Columbia, SC 29223
Tech Support: (818) 701-1473
Price: \$99.00



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THE International ST/TT Expert Programming Competition

by Dave Small

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NOTE: This is different than most articles in *CN* in that this may be copied, provided (please!) you copy it *intact*. I would appreciate translation to other languages very much, especially if you re-post the translated version to a BBS or network, so that others can enter this competition.

Caution: This is for experts. Unlike many columns I write, this one is Not For Beginners.

Introduction: The Expert's Competitions

Over the nearly 10 years I've programmed the ST, I've met a lot of *really* good programmers from all over the world. Briefly, from Charles Johnson to Jeremy (Jez) San, from "AutoSwitch Overscan" to "Spectrum 512," there has been *astounding* wizardry and talent turned loose on the ST and TT.

(I'll start using the word "ST" to cover the full product line from 260-520ST to TT to Falcon now, ok?, to save room. The Jaguar is not included, as most people can't write code for it; it requires special, expensive tools).

So, for your *enjoyment*, I would like to present a top-level, "warp drive," *absolutely the most difficult programming contest* I can do that should stretch the talents of the best, to find *who is the very best* out there.

Now I *know* not all of us have time right now to put together a demonstration program, even though, say, we've been programming on the ST since '85; some of us are busy doing other things [like, say, writing *Current Notes* articles, :-)].

So, to "balance" this competition more fairly between people who have time to make a great demo of their talent, and people who don't have time, but work (or have worked) on the ST, there are two contests:

- 1) A Demonstration Program: Show Us Your Best!
- 2) An Expert-Level Quiz On The Atari
(coming right up; see below)

Remember, there are two *separate* contests here.
(Although, you are *welcome* to enter both!)

The Prizes

The most important Prize is to be known and acknowledged as the best there is, here in *Current Notes* and on the worldwide InterNet, specifically in "comp.sys.atari.st," and elsewhere.

As a token of *our* esteem, two Spectre GCR's are reserved, the first, for the *most* impressive Demonstration of Programming, the second for the person who gets the *most* questions *right* in the following Programmer's Questions (they're after the Demonstration section.)

Finally, a Certificate from Sandy and me attesting to the outstanding programming skills of the winners.

Contest One: Show Us Your Best!

The FIRST is a straightforward contest to, frankly, "impress us"—to do your *very best* wizardry, a "demo" or other type program (or, to just send in one you've already done.) Believe me, I have seen some really awesome "demos" done for the sake of a demo—but I have definitely NOT seen them all, just a few that came over from Europe. About 10 disks max. I know there are FAR more.

The Demonstration Contest is a "*what can you DO?*" when you *really* roll up your shirt sleeves and *go for it 100%*. We're talking staying up all night (I've done it, too!), "pulling out all the stops," drinking coffee or anything with caffeine, and "throwing in the kitchen sink" here.

(I understand those phrases may not translate properly from English; if you're translating this from English, *please feel free* to change them into something appropriate meaning, "doing your very best." Or, just explain, "they don't translate directly," but tell them, "here's the essence of it.")

For those of you here who don't know, making up a "demo disk" and spreading it around to show you're Top Gun in programming is an art form in Europe.

For example, I am particularly amazed at whoever figured out how to put text in the HBLANK (horizontal blank) and VBLANK (vertical blank) areas! (See, the ST is setup in hardware to "blank" those areas out, to make a border—but someone figured out a way around it!) The point isn't that lots of people know to flip Display Enable at the right microsecond; the POINT is the first person to figure it out and go, Wow!

Now I realize this is not a new trick in 1994; this is an *example*. It took a lot of work to count cycles and "walk in" the timing. This would be a high-point thing if this contest were held in 1989.

Note: You should know that we over here "in the 'states'" (U.S.) often don't get to *see most* neat demos. (And we get confused a bit by the messages in them, saying, "*this* demo is to show those programmers at xxxx that We Are Better, so there!," and such. Because *we* don't know *who* xxxx is, it's all mystery to us! (If your demo has this, that's okay, but would you mind telling us What's Going On?!?))

For instance, there was a demo of digitized pictures, if I recall correctly, of an ocean cruise to meet with other ST programmers and put out a demo ...

Now, in this competition, I don't as much mean commercial ST products, because not everyone can get something *just amazing* into retail channels to sell, and "straight demos" done for demo's sakes aren't that salable. Remember the spirit of this; we're looking for the *very best*. Now, if it so happens *your* very best is commercially sold, we have no problem with you entering it in the contest; there is no reason to exclude people who "program for a living" from this!

I would recommend sending only disks and a README file on what is great in what you're sending. (Of course, *no disks will not be copied whatsoever*). See the section on mailing entries in for some good advice about disk returns, though; it is unlikely your disk will survive two trips. If you want us to reformat the disk when done, just say so; disks are so cheap these days it's more practical to do that than try to return it.

Criteria for Judging

Sandy and I will be judging demo entries based off, to be utterly honest, a mix of factors listed below, but summarized as:

The most important thing is us feeling your love for the machine and your talent put together into something great.

► **First:** the "Just How Far Our Jaws Fall Open Factor"; how *awesome* it is. Does it make us look at each other and say, "Wow!!!" Are we talking "Jurassic Park T-Rex" here?;

(Example: Remember the *first* time you saw a program that really impressed you? "Blew you away," is an English phrase for it. *Dungeon Master?*, say? *CAD-3D?* *StarGlider?* AutoSwitch Overscan's Falcon Demo for the Atari Messe?

Do remember to tell us how to get to your demo... does it autoboot? What keypresses? And so forth.)

► **Second:** on our knowledge of *just how hard* it was to get this effect, *to do what you did*;

(Note: you can *help us here* with a README file, or a letter, explaining what *precisely* is so unique and difficult in your demo; see the questions below to get an idea of the sort of difficulties *we* have been through; look, if you've fought through a tangle of obstacles, *tell us!*)

► **Third:** "Rock and Roll, Doing Something Impossible" Factor.

(Remember, you're dealing with a person who put a digitized sound file 125,000 bytes long on the Spectre 1.51 disk, *just* to show you how it sounded in my heart to "break through the impossible" barrier! Example: the wild *but perfect* PostScriptish effect but *incredibly fast*, on an 8 MHz ST that is already being cycle-clocked for horizontal and vertical blank additions; that is very, very impressive!)

► **Fourth:** Music is usually part of any "demo disk," but there are demos and applications it just doesn't belong in. You won't have points subtracted for not having sound (for example) in a word processor. If *you* feel music belongs, and you do something nice, points will definitely be added! Please: we're not asking you to be an Academy Awards musi-

cian (as one ST programmer is!), just to have music that has your *heart* in it.

► **Fifth:** If there is a special artistic or technical merit to what you have done. This is also how generally "neat" and "cool" (I hope the word "cool" translates okay; it means "very highly impressive" in this context) what you've done is.

(Example: Just about anything that is different and special. Spectrum-512 showed 512 colors. Tempus scrolls at frightening speed. See what I mean?)

Judging in General

Please realize that, of course, all such judgments are relative; I expect we'll have a few choice arguments here on which is the honor BOTH.) We will also likely honor "Honorable Mentions" that are extraordinary in some way.

In some cases, we'll call in the experts: our kids (now ages 12, 11, and 6, for those of you who remember me changing Jamie's diaper at the Glendale show when we released Spectre 128) will be asked which demo is more *awesome*; they *commonly* start-to-finish a Sega game in *one day*, and have a good feel for computer generated images. (I think the testing side of Sega would commit hari-kari if I sent them a video tape of my kids ripping up a program that took a year to write and test in one day).

Bear in mind I've seen many seriously awesome programs, both commercial applications and demos-as-demos, for instance, *MIDI-Maze*, Jez San's disk that boots on both the Amiga and ST (A-MAZing!), the *Union Demo*, the "infinite number of desk accessory" programs, even new desktops. Yet this does not mean you haven't got something so special, so unique, it won't win! We won't bias our judgement towards manuals or packaging, or commercial, "team" programs; we're looking for something you've done specifically to show you're *good*, and the kind of dedication it takes to get it on-screen on the ST.

Okay, that's the spirit; let's go over the usual entry requirements.

Equipment Needed to Run

Assume an 8 Mhz, 4 Megabyte Atari 520-ST, your choice of color or mono monitors (let me know!). I can crank down the memory if necessary, but, uh, would prefer not to, really! (I don't like putting static electricity into my machines any more than you do.) But look, if you need more CPU to pull off "your vision," we have Mega-STe (16 Mhz cache), TT-32 Mhz, and Falcon-030 machines here, with *all types* of monitors, from SC1224 standard color (320 x 200, 640 x 200, SMI24 Mono (640 x 400), toVGA (640 x 400), and TTM-194 Double-Page High-Rez (1024 x 768, if I recall correctly), plus the other TT rez modes, as well as Moniterm monitors that run on the Mega-ST, and "Crazy Dots" boards running the Tseng video chip. I don't have any other specialty boards (although I do have an AutoSwitch Overscan that I still need to re-install; the machine it was in died of age).

However: Remember: While higher horsepower is nice (by definition, it lets you do more per second), that isn't what

we're after necessarily. *The most important thing is us feeling your love for the machine and your talent put together into something great.*

Entering Is Simple!

So, if you'd like to enter your favorite work, all you have to do is *send it*. (*Please*, please, send it in a "disk mailer," or *at least* between two *big* pieces of cardboard, lest the post office "festflatten" it! We get too many bent diskettes we can't read otherwise; one-half of the Spectre disks we get returned for upgrade are destroyed, literally bent, some bent *in half* (especially on the way from Europe).

On returning disks, let me tell you, it isn't worth it to you or me. Disks are so inexpensive now that it is not worth the postage rates. The other problem is you will probably get back a disk that does not work, or worse, *is not reliable*, a capital crime for a disk. Don't think I'm trying to increase my disk collection; remember, some of the disks will arrive here bent, and, I already have, what, about a thousand disks with various stuff lying around.

I do need to keep them for the length of the contest, so I can compare early entries to later entries.

Or, Electronic Mail

If you wish to upload it, (Good Idea!) which I could well understand given my experiences with various Postal Services, here are some routes.

My account on GENIE is DAVESMALL (no quotes); CompuServe, 76606,666 (no kidding!), and on InterNet is dsmall@well.sf.ca.us. *Note*: Uploads are *generally free*—you are not charged connect time. The Gadgets by Small RT on GENie will be happy to accept your upload; if that doesn't work out, I can try and make a deal with the main Atari ST RT people.

Also, both GENie and Compuserve can now be reached via Internet; *however*, I don't know where file transfer is on these systems yet. Oh, *please*, don't send me an 800K high-bit-stripped Unix "shar" file to decompress, then "compile with Beirut 'C', ok, Dave?" Please send executables and enough documentation to fire them up and make them work.

It is *possible* we could set up an anonymous login FTP site "for uploads," but I can not guarantee this; the local NET situation is, uhhhhh, "interesting." (Which is why I keep using a San Francisco system, The Well, instead of the local Net.)

If you send to me electronically, *particularly via Internet*, *please* tell me exactly *what to do* to get your demo to the ST properly and run it. *We do want to see it!*

Please include either a README file (on disk is fine, or letter) *telling me how to get it into the ST and run it.*

About Other Ways to Send It (disk/e-mail)

A plain ol' .TOS, .PRG, .ACC, or .APP is fine; however, for your sakes, bear in mind the compressors have CRC checking and thus will tell me if your disk went bad on the way ... sometimes I think they ship my disks next to a big

magnet load. Personally, I'd send one compressed and one not-compressed; the cost of 2 disks is very low.

So, an .LZH, .ZIP, .ARC is fine, but *please* send me the de-compressor, too; there are getting to be too many incompatibilities in the various formats (e.g., .ZIPver1 won't work with .ZIPver2 files, etc.) In other words, if you send me DEMO.ARC and want me to de-ARC it, *please* send ARC.TTP (or whatever) to un-ARC the file! I may not have an ARC that is compatible with yours; there are several different ones.

A disk-image program that makes an entire disk into a file is acceptable if you need the space or the demo was written that way originally (for electronic mail).

I will try to return disks that fail or got smashed by the mails, or let you know it happened; same goes for entries via electronic mail. If you have a Net address of some sort, please send it along; I will be *trying* to send acknowledgements that I got your entry, but may get drowned in them.

In your README file / letter let me know, please, how much RAM it should have (or I'll assume a color, 4-meg ST) and whether or not there are any things I need to do, like disconnect the hard disk, use 10-sector floppies, or *whatever*. If needed, *PLEASE* send instructions if I have to do something special (e.g., use a keypress or joystick to open various "doors" to various demos). My kids seem to have genetically gotten all my skill at finding "hidden doors," along with most of my hair ... *sigh*, so don't hide your work from me!

If you want published credit, *PLEASE* send me your names or pseudonyms. *Group efforts count just as much as single efforts* and I will list the names on group efforts; if you want to tell me who did sound, scrolling, etc, please do. Please type or print your signature along with signing your work, so I don't foul up giving you credit. (Please double-check your name's spelling; you'd be surprised how many people miss this.)

Please indicate with your entry, provided it is somehow uploadable/downloadable, or could be put on a Syquest (e.g., doesn't munch out the hard disk drivers, or can be "disk imaged" into a file):

- a) if I can put a picture of the screen in the magazine; (this includes possibly the cover, in color)
- b) if you *want* your entry uploaded and generally sent around, in the USA; (if not, it will not be sent anywhere);
- c) If you want your name listed, or a pseudonym, for privacy;
- d) if it is okay for *Current Notes* to include it in a collection for ST users in the USA, probably on SyQuest disk.

The reason for this is *Current Notes* makes a great deal of PD/Shareware software available at a really reasonable price via 44-meg Syquest removable disks, which is very useful for people without a local user group (of which there are lots!). We really have not seen *MANY* of the really good demos here in the 'States and many people would like to.

(I do understand that some demos make it a point to be hard to copy. I would appreciate you disabling this IF you want the disk sent out into the world.)

Now, if you *don't* want this, your disk and work won't leave my office, and if you want privacy, okay. I will still mail you a prize and scroll.

There is, of course, something else in this for you ...

While it isn't *everything*, being mentioned as "one of the very best programmers" is something worth having, and *if you want*, I will be *happy* to list your name for an employer's consideration. (Or, just photocopy the article). Believe me, anything a little different, a little "better," about your resume, makes it stand out in a pile of other resumes. It says a lot about you that you self-started, tried, and won a competition - believe me. The quality of entries is going to be very high here.

Again, when listing winners, I'll list your name if you want; let me know if you'd like your entry to be anonymous, or under a pseudonym, let's say, if you work somewhere where having your name on a "demo" would be bad news. (I have had to do that in my past; I understand!)

Contest Two: Show Us Your Working Knowledge

The Other Contest is a set of questions immediately following, which cover some *working knowledge* of the ST which can, in my opinion, *ONLY* be acquired through long, hard experience and work and really "hanging in there" (look, *where do you think I got these questions?* I found them *out the hard way*, on the ST since 1985, folks.)

If you haven't programmed the ST, you may find them entertaining, in an odd sort of way...

So here's some questions about the ST. They are generally "been there, done that" sorts of questions that really good programmers have had to solve; and because of what I've been doing (Mac emulation), there's a few related to that as well.

The rules are simple. The *FIRST* entry (as judged by postmark, so everyone starts at the same place) with the maximum number of right answers wins. In case of a tie, I'll think of something.

You can email me the answers at the addresses above; they will count as being "postmarked" *when you mailed them*. Look, there's no way I can be responsible if a machine on the Net sits on your mail for a few hours, any more than if a letter sits in some post office en route for a few hours; fair is fair.

I honestly don't expect anyone to complete all of these questions correctly. I will be very pleased if someone does! (Actually, some time in front of a keyboard will answer a number of them; getting to the point where *I understood the problem*, and can so quickly state it here, is what took so long over the years, so maybe I'm overstating the difficulty level.)

I also spent some time looking through listings, looking for comments saying:

*

* -----

* This one was **HARD!** It didn't work like it said...

* Even though it should work, **DON'T DO THIS!**

* -----

*blah: blah

*and so forth.

Caution: The answers to a few of these are of the type of "Who is buried in Grant's Tomb?" answer. It wouldn't be fun without a few really easy ones.

As you will see, a few of these are going to require you to get out an assembler ... I'm not yet enough of a "C" wizard to pose assembly questions in "C."

All numbers in here are in Hex (base 16) and none of them are trick questions. I've marked some questions "Old-timers" that apply to early ST developers (and, actually, a little before); if you're newer than 1985 / 1986, you probably won't know these. The people who have seen them won't forget them soon, "I betcha." I've also tried to label the questions as to difficulty, sort of like skiing runs are rated for difficulty. However, "OldTimers" I'm going to assume hacked though the same stuff I did, so no ratings there.

If you find out and answer these (I'll run answers in a later column, Explaining All, once the Competition is over), you will have learned some **REALLY** cool stuff, some of which is extremely useful.

The International ST/TT Expert Programming Competition Programming & Related Questions Copyright 1994, David M. Small

1. [OldTimers]:

Why is it a poor idea to use conditional assembly with AS68?

(AS68 is an Atari development tool superceded by another assembler). What *exactly* goes wrong? Why is this gruesome?

2. [OldTimers]:

Why is it a bad idea to do this in AS68:

```
; -----  
; (previous code - whatever, long as it's legal)  
;  
; RTS  
; -----  
; Next routine has 2 entry points, with no opcodes on them.  
VIDEOROUTINE  
RELOOP  
  (routine code)  
  BRA RELOOP  
; end of routine  
; -----
```

What exactly goes wrong? Why is this grim?

3. [OldTimers]:

What *ghastly* thing will happen if you assemble an assembly language file named, oh, "DSMALL.S" (just some random name I picked out of nowhere), using AS68, like this:
AS68 -i DSMALL

4. [OldTimers]:

What happens if you try to LO68/RELMOD a file that doesn't exist? For instance, as part of a batch file to assemble, link, and RELMOD (change from CP/M-68K to TOS format) a file.

5. [Points for witty, original replies]

Why do I not use AS68 nor LO68/RELMOD any more? (Hint: See 1-4)

6. [Hard assembly question]

Assume these registers (data registers all equal corresponding address registers):

D0 = A0 = 12345678 A1 = 23456789 A2 = 34567890 A4 = 45678901
D5 = A5 = 56789012 A6 = 67890123
D7 = userA7 = 00001234 supervisorA7 = 1235 Status Reg. = 2307
PC = \$5000 (and is in a legal program, etc.)

You are in supervisor mode (e.g., SSP & current A7 = 1235).

You perform a multiply instruction using D0 and D1. (Any multiply, I don't care!)

Why, exactly, do you get 3 instant bombs (yes, 3)? (Remember, we're at IPL 7, so interrupts are not distracting us.)

7. [Hard assembly question]

Assume you *must* shut down RAM for a time (probably by writing some value into the Atari Memory Controller, the MCU). (Say, you're working on the 3 MB of RAM upgrade developed in Germany we had to tweak Spectre for—those folks *had* to tweak the MCU.) Of course, interrupts are off. Now, do a division. Will it work? Why?

Once you figure out 6 & 7, "you're welcome." Believe me, I wish I had known it, too!

8. [Hard assembly question]

How, exactly, can you "legally" (e.g., not by directly jumping to the exception vector!) generate a "spurious interrupt" on the ST-series hardware? NOTE: Atari assures me it is "impossible."

9. [Hard floppy disk controller/disk drive question]

Many people are aware you can step the disk head past the 80th track; some programs even use this to store data (shriek!). [Not all drives will step past track 80]. However, what is NOT generally known is that there ARE accessible tracks -1, -2, and -3 OUTSIDE of TRACK 00. (I have just told you a secret that will have copy protection makers/breakers

turning pale). How can you consistently access tracks -1, -2, and -3, to either implement copy protection or just store data?

[Note: This question does not apply to disk drive mechanisms which really have a "Track 00 Stop" where the head is forced to stop at 00; however, there are a bunch of drives out there that go to -1, -2, and -3. In fact, I don't think I've seen a Track 00 mechanical "stop" on a 3.5" disk; they're common on 5 1/4" disks.]

10. [Heavy floppy disk controller/disk question]

Why is it a good idea to *always* step outwards 5 times before doing a RESTORE (seek to TRACK 0)? Note this is done on the ATR-8000.

11. [Heavy assembly/C question]

Assume you are trying to write a Mac emulator (just to pick something incredibly masochistic to do). Assume the Mac uses memory from \$100-\$13f, and on up to \$B00, for that matter) for "Global Variables," which are often directly accessed by programs (for instance, ol' "MemTop," the top of RAM, at \$108).

Why does this spell *absolute disaster* for a Mac Emulator on the ST hardware?

(Hint: It stopped me for a month! and almost, almost for good).

12. When I solved it, it was the last "big" problem in implementing a Mac emulator. I literally woke up with the solution at 3 AM. Two months later Mac mode ran. So: How'd I solve this problem?

13. [Light assembly question]

What does Test and Set (TAS opcode) do on an Atari ST? Why? Should it? (TAS is traditionally used to implement kernel operations on multi-tasking, multi-CPU machines).

14. [Extremely heavy assembly question]

Assume you are working with a program that generates Nil pointers (in other words, address registers that equal zero, 0.) The programs write to this address. On the ST, that's writing to ROM, and you bus-error. Assume the registers are all in valid RAM (except, probably, the one that's pointing to 0.)

How can you then RECOVER from the bus error, given that Motorola's 68000 books say you can't, and keep going? (Motorola says you need a 68010 to recover, and to implement Virtual Memory, as the 68000 buserr stack frame doesn't have enough data.)

Assume that data written to a Nil pointer is unimportant, because the program should not be doing that anyway! —the data is unrecoverable.

Hint: Look at a bus error stack frame.

Note: About 1/3 of Mac programs do this; we help Mac Developers Beta-Test just by seeing if they "Nil-Pointer" and try to crash the Spectre by writing to 0. Frankly, until I solved this problem, they would crash the Mac emulator; when it

was solved was the beginnings of major success for Mac Emulation. That's when the "biggie" programs went stable.

15. [Funny assembly question]

Does Atari's TOS ever access location 0 because of a Nil Pointer? Pick any version of TOS. Show the statement & address. Please, no printouts over 10 pages long.

16. [TT user question; assembly/C answer]

Why does having TT RAM (or equivalent) in the TT (or equivalent 68030 accelerated) machine end up usually accelerating the TT about 11% (depends a little on what you're doing),

17. [Extremely heavy hardware/software question]

You need to startup a 68030 with the first 68030 compatible TOS, TOS 1.62, to begin to debug a 68030 board. The TOS chips are plugged in through the Mega ST bus connector and a PAL address decoder (thus allowing all 256K of ROM to be accessed) and are properly mapped at \$00E00000 (by the way, the 24-bit address has nothing to do with this question!) The old TOS 1.4 chips are removed.

Trouble is, you're doing this on a *Mega-ST*, and TOS 1.62 is for *STE* machines, with their added video/sound registers. When you try to startup, you crash, as TOS initializes video/sound registers that *don't exist on a Mega-ST* and bus-errors out (no DTACK/DSACK generated since "that location doesn't exist" to the GLUE/Shifter chips).

Without modifying those TOS ROMS, (like, NOP'ing out the inconvenient MOVE's) and without some big fancy PAL disabling certain ROM addresses, how can you get around this stuff in startup and in the VBLANK (vertical blank) code (where, of course, the low byte of the video address is updated if you changed the register for it).

In other words, I'm asking you how to run ROM code and change the path of execution in "firm" ware.

Answer not allowed: "This is impossible. That's why it's ROM."

Answer not allowed: No, you can't use the 68030 MMU to copy the ROMs and move RAM under it; this technique doesn't require anything so sneaky. It requires sneakier.

Note: This is an *extremely* valuable technique to know.

18. [Medium hardware question]

What *usually* happens if you directly switch on video? In other words, do a MOVE right into the hardware location that has the display mode (low, medium, high rez) to turn the screen on. (Something like, MOVE.B, #2, hwdisp__mode ; kick on mono)

HINT: "Two men looked out _____"
"One saw the mud, one saw the stars."

19. [Medium hardware question]

What's probably going wrong in what happens in question 18?

20. [Medium hardware question]

What does "ST" stand for officially, and what does it have to do with question 18?

21. [Medium software question]

What's the solution to 18? How can you kick video on yourself?

22. [Light hardware question]

Assume you are running on a TT. The cartridge you have in there (let's stay away from Spectre so you don't think it's related ... say, some video digitizer cartridge, .. well, the cartridge suddenly fails with a gruesome direct short circuit. You sensibly turn the TT off and remove the cartridge. You replace it with a new cartridge. The TT has (at best) difficulty using the new cartridge, to say the least! (It probably won't work at all.)

Assume that the ROM-decode, read, PAL logic, and all that stuff, was not damaged. What's wrong? And why is this something *every* TT owner should know? (I believe it applies to Mega-STE's as well).

23. [Heavy hardware question]

What did Atari NOT keep constant between the ST and TT cartridge timing? Why does this foul up cartridges?

24. [Heavy software/hardware question]

Certain Atari chips *must not* be accessed too quickly. For example, the Zilog 8530 serial chip (runs 2 9-pin ports on the TT and the LocalTalk-size-compatible connector) cannot be written to faster than 2.2 microseconds per write. Since the TT is smoking... errr, zooming along at 33 Mhz (33 cycles/microsec), it would be easy to write again too quickly, overrun and zonk out the SCC. (The same thing applies to writing to the ACSI "disk chips.")

What's the documented, sorta "official" way of assuring a "slow," 125 nanosecond or "8 Mhz" cycle to provide an *enforced slowdown* for the SCC and disk chips on a faster machine, like an accelerator or TT?

25. [Heavy hardware question]

What happens when you try that assured, guaranteed 8 Mhz cycle technique on a TT machine?

26. [Heavy software/hardware question]

Assume you're using the ST Atari's mouse with your own driver for it (like, say, some emulator might .. grin). The mouse moves. Assume a byte comes in from the mouse. Assume the processor is busy doing an IPL=7 task (that means, all interrupts are disabled, like when reading a Mac disk with Spectre GCR). Assume this continues long enough for the next byte to come in (after all, mouse movements are transmitted in 3 byte packets, containing button, change X, change Y information). Then the IPL=7 task is done and the normal ST Interrupt Priority Level, 3 is set. (The mouse has IPL 6 via the MFP chip, as the manuals say).

Why have your keyboard and mouse just locked up?
What is the ESSENTIAL thing wrong?

What's a fairly good way of fixing this in your mouse handler? (I call mine "QuickMouse," by the way.)

27. [Hard software/hardware question]

What is a *working* method of shutting down the keyboard and mouse, then waking them back up, so that the keyboard buffer and mouse don't overrun? As you can see from #26, this could be necessary for extended work at IPL=7 (no interrupts whatsoever). NOTE: By *working*, I mean it really works, not what some manual says.

28. [Really heavy hardware/software question]

Well, if you're smart enough to get 27, how do you do it so it works on BOTH the ST and the TT?

29. [OldTimer] [Really easy software question ... if you know]

What did the "bombs" of the crash mechanism look like in the pre-TOS-ROMs version of TOS (that booted up off disk)? (HINT: I want to give you an easy question!)

30. [Hard floppy disk hardware/software question]

What precisely is the bug that cuts the floppy disk drive data rate capability to drop by half in most ST's (Atari corrected this after TOS 1.4, I believe ... might have been TOS 3. Yet another reason to get a 2.06 card; your floppies will work faster!)

31. [Hard floppy disk hardware/software question]

How precisely does Twister (published in the USA in START magazine, has since become at least an option on most "disk format" programs) work to max-out the data rate to/from Floppy? HINT: It fixes problem 25 by changing the disk layout. (This isn't so hard - when it was published, we gave out the SOURCE CODE; Twister is the basis for the Meg-a-Minute backup to floppy program. The best you can get from floppies is about 1 meg per minute.

32. [Hard floppy disk hardware question]

Why should you definitely wait 30 milliseconds after a step before beginning to write to disk? What are the consequences if you don't?

33. [OldTimers]:

CP/M-68K had a debugger. It could not disassemble one very popular opcode (especially in interrupt code!!). I saw this on a machine called Dimension 68000, which ran CP/M-68K. It was passed on to AtariFolk as a debugger, and still had the bug. It was finally fixed. What was the opcode?

34. [Humans / Electrical Engineering-Hobbyists]:

What is the A.C. voltage on the heat-sink of the power supply found inside the Mega ST's? Measure against, say,

board Ground. Be sure meter scale is on multiple hundreds of volts!

(Caution while measuring!!!, Really!!!)

35. [Humans/Don't Try This!]:

How far will you be thrown if you brush your hand against that heat sink? (Please convert kilometers to miles.)

[Points for original, funny replies]

36. [Humans/Don't Try This!]:

How many days will your arm and chest muscles ache after brushing your hand against this heat sink? (Please convert months to days).

[Points for original, funny replies]

37. [Humans/Don't Try This!]:

How many days will it take before your hair stops looking like "Young Einstein's" hair?

[Points for original, funny replies]

38. [Overseas Travellers, easy]

Summarize quickly the major difference between US and UK, French, German, and Swedish keyboards.

39. [Hard hardware/software question]

What is the exact bug, and when was it fixed, in serial (modem) handshaking?

40. [Historical: Easy software question]

Which TOS fixed the interminable delay on saving a file if your disk was getting full?

41. [Historical: Easy software question]

Who rewrote the Disk Operating System section of TOS to do this?

42. [Historical: Easy software question]

Okay, who wrote it in the slow way to begin with?
Hint: Usenet users have an advantage on these questions as The History of TOS was given out there.

43. [Very, very, hard software question]

How many birthdays are celebrated in Spectre GCR 3.0 upon startup?

44. [Very, very, hard software question]

How many different quotes are randomly selected from in Spectre GCR 3.0 (if it's not a birthday) upon startup?

45. [Medium software question]

What was one major anti-piracy protection placed on the Spectre 1.51 release disk?

46. [Medium software question]

Why was this protection so hilarious?

47. [Trivia question]

Why didn't the "Alarm Clock" work for SO LONG in Spectre?

48. [Trivia question]

Name all the releases of Spectre. How many are there that made it out into the world? Include Spectre 128 and Spectre GCR.

49. [Trivia question]

What was the sound in the hidden dedication page of Spectre 1.51?

50. [Harder trivia question]

What was the updated sound made available to Spectre users, with the advice it was wind-chimes and hard to hear, so they'd better turn it up?

51. [Awww, Heck, Give 'em a point]

Who's buried in Grant's Tomb?

There you are, an expert-level quiz on the Atari. Given time, I could think of some really obscure questions (why doesn't a 5 1/4" drive always work when you plug it in, or, what is the termination situation on the floppy bus?), but I think 51 questions are enough to separate the Hackers from ... the general populace.

Best of luck, I promise there ARE answers, and I hope this brings back a few memories, too!

See you next time, and I hope you had some fun!

Dave Small / VP (Gadgets by Small)

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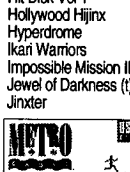
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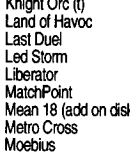
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Walz and Mason

*Create Your Own Games with this
Breakout Clone and Level Editor*

by Scott Tirrell

System used for review: Falcon030, SuperVGA monitor, 4MB RAM, Hard Drive

Don't Judge a Book by Its Cover

When our fearless ST editor, Paul, recently handed me copies of *Walz and Mason* from CWest Software, I must admit that I was a bit skeptical. From my first impressions, *Walz* seemed like just another *Breakout* clone. Since my Falcon came equipped with Atari's own version of *Breakout*, I figured that *Walz* was not going to offer much to my computing life. Well, I am known to be wrong and, in this case, I was way off the mark.

The Contents May Surprise You

Once I started playing *Walz*, I was at first struck by the graphics. In 640 x 480 x 256, *Walz* looks wonderful, if a bit small (in other words, consult your optometrist before playing!). In truth, a quick perusal of the manual (so that's what I forgot to do!) will tell the user that *Walz*, indeed, is intended to be run in 320 x 200. However, 640 x 480 is very nice, as *Walz* is placed into a nice, small window, perfect for use with MultiTOS. The graphics in *Walz* are very colorful with nine different colored bricks as well as nice background clutter such as metallic-like signs. The border itself is made to look like a machine of some type. This image is supported by a cute little sequence in which the player's ball is placed on a platform, pushed across with a plunger into a cannon, which shoots it down towards the player's paddle! This is much more interesting than watching a ball fall down from "Breakout Heaven" as it does in the original *Breakout*.

The Plot Thickens

Although *Walz* initially looks just like *Breakout*, as I mentioned earlier, there are many twists in the game that set it apart. For example, the colorful blocks are not just thrown in to add spice. The different colors denote different characteristics of the blocks. Some take one hit to destroy, some take more than one hit to destroy and some cannot be destroyed. Another major difference from the original game of *Breakout* are power-ups and what I'd call "power-

downs" that are released once certain blocks are hit by the ball. These power-ups and power-downs are: Free Ball, Split Ball, Super Ball, Slow Ball, Attract ++, Paddle Increase, Kill Screen, Unlock Paddle, Kill Ball, Fast Ball, Repel --, Paddle Decrease, and Lock Paddle.

Some of these items are self-explanatory, such as "Free Ball," while others are little more vague. For example, "Attract ++" will make the ball move towards the paddle and "Unlock Paddle" allows the user to move the paddle a certain distance vertically. The "Super Ball" is perhaps the best power of all. When Super Ball is enabled the ball no longer merely bounces off of the bricks back towards the paddle but instead cleaves a clear path right through the bricks. Because of these special features, *Walz* may be considered more of an *Arkanoid* clone than a *Breakout* clone.

The sounds in *Walz* compliment the gameplay nicely, from an awakening alert siren at the beginning of the game to the solid thuds of the ball running into objects. Control is accomplished via the mouse and is well implemented. However, a paddle option would have been very nice.

Choose Your Own Adventure

A companion to *Walz* is the level editor, *Mason*. One thing readily apparent to the player of *Walz* is that the levels are all different. Some have well-placed blocks, which cannot be destroyed; some have the aforementioned signs; and all of them have something distinguishing them from the others! So, of course, the user is prone to think to himself, "Gosh, I have a great idea for a level." Viola, *Mason* comes to the rescue.

Before I get started, I would like to point out that I have had little luck with level editors in the past. It all started with *Lode Runner* for my 8-bit Atari. *Lode Runner* was one of my favorite games for the old 8-bit and I thought that it would be simply wonderful to be able to design my own levels. Let's just say that I learned to greatly respect the level designers of *Lode Runner*. On nearly all of my levels, I had something go awry, usually making the level unbeatable. I, the creator of the playfield, was hopelessly stuck!

The beauty of having a level editor for *Walz* is that it is simple for anyone to make his own levels, even children. It is satisfying being able to quickly make a level and play it. *Mason* is incredibly simple to use. The user starts with a blank canvas on which to paint his *Walz* screen. The user can choose between two different types of objects: background objects and foreground objects. Background objects are the scenery, such as signs and other ambience. For example, I put the sign, "Scott is Omnipotent," in all of my *Walz* screens. Foreground objects are those that the player interacts with, such as, what else, the blocks! Once

foreground or background objects are selected, a tool bar appears to the right of the canvas with all of the available objects. Simply click on the object, place the mouse pointer where you want to place it on the canvas and click. It cannot get much easier than this! *Mason* even allows the user to lasso an area of the canvas to fill it in with the selected object.

After a screen, or series of screens, has been created, the user can then load the new creation via the Load Game option in *Walz*. Or, preview the new level while remaining in *Walz* to test it. No more situations with getting stuck on a newly created level.

The End

If you're looking for a good *Breakout* clone for your Atari computer, *Walz* is it. It is hard drive installable, has great graphics, sound, and a very easy-to-use level editor. *Walz* is a good enough *Breakout* game, but being able to play one's own levels gives us non-programmer types some game creating satisfaction. Both packages are well done.

[*Walz*, \$29.95. CWest, PO Box 12345, San Luis Obispo, CA 93406. (803) 546-9036; FAX (803) 541-1623.]

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Current Notes 1994 Index

Vol. 14, No. 1 – No. 7 (February – Oct/Nov)

Note in this volume, CN transitioned from a periodicity of 10 issues a year to 6 issues per year. The actual monthly issues were Feb, Mar, Apr, May, Jun/Jul, Aug/Sep, and Oct/Nov. The December issue was replaced with the 1995 Jan/Feb issue, which was released in December to provide a new-stand copy that was available before the cover date on the issue and to include all of the Vol. 15 issues within the 1995 calendar year, i.e. Jan/Feb, Mar/Apr, May/Jun, Jul/Aug, Sep/Oct, and Nov/Dec.

The listing below is organized by type of article with entries listed alphabetically by title. We list the article title, author, month, and page. Although they are often relatively small, we have included all the Press Releases and Letters to the Editor to provide a more thorough reference resource to the contents of *Current Notes* in 1994.

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- #775: Oxyd
- #812: Agitation w/Puzzles
- #848: Arka, Sound Search
- #849: Break It! Gothor 2, Mathematics w/Sasha
- #850: Ancient Art of ASCII, Coyote Dave's Poker, Shift II
- #862: Bounce, Search Me v2, ST Doodle
- #882: Shocker 2

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- #261: Startrek: The Next Generation
- #297: Amazing Construction Set; Shanghai*; Hero
- #313: Azarian; Breakanoid; Das Grosse Deutsche Ballerspiel; Ship Combat; Sorry; Zoltar
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- #356: Cadenza Bog V1.2; Bolo; Extensor
- #373: Strip Breakout (R)
- #428: Eco; Orbit; Rocket Patrol; Trifide
- #463: Bloodwych*; Blood Money; WipeOut; Phone Voice
- #478: The Stellar Starfighter; Flight Levels; Jumpster; Lunacy! V1.1; SpaceWars V1.0
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- #575: Valgus2 V3; Mah—Jong*; Pipemana*; Word Bid*; Black Jack V3*
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- #621: Offender*
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- #624: Boston Bomb Club*; Eliemouse CC Book; Desktop Repeat
- #628: Omega 075!
- #646: Noids V1; Demolition Man V2; 3__Shoots (Galactic, River, Hunting); Sorry
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- #656: Triples; Robot Repairs*
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- #691: Flipped; Poker Dice; Roulette V1.7; Computer Yhtzee
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- #703: Eliemouse CC Bk V6; Eliemouse Paper, Rock, Scissors; Play Spell
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- #711: Hurry! V1; Marbleous, V1; Cops and Robbers; Sno—File
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- #737: Arena Earth
- #750: Ozone; Tuzzle V1.2; Tanx; TV Adv; Spider v2.0
- #762: Chateau Santa; Spirits; Beepin' Concentration
- #768: Light Cycles
- #774: Oxyd
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- #781: Rayoid; Blox 2.0
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- #784: Nethack V3.1
- #785: Tuzzle V2.1; Space War; Centipede; Punk Man
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- #796: Naarjek III; Club Dominoes*; Insecta; Galaxians
- #806: Barryard; Dark Pearl; Invaders!; Lucky Guess V1; SoS Hangman 2.01
- #816: Legends of Valour*; Cudlee's Quest
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- #853: Fly Ex, Grav, Ms Pac, Plax, Teserae, Hot Wheels
- #854: Jurassic, Lunacy 3.1, Reaction II, Space!, Thingy, Life Bugs
- #855: Droid, Triad, Warship
- #856: Bat Invaders, Bat Risk, Bat Solitaire, Bat Sub, Dungeon Lord, Maze
- #857: Cold Revenge, Desktop Ent. Pack, GNU Chess
- #858: Grandad and the Quest for the Holy Vest
- #859: MIDI Battle
- #860/61: Pegasus (2—disk set)
- #874/75: Towers (2—disk set)
- #876: Land Mine, Match Up, Super Dark Pearl, High Score Term Util
- #897: Medieval Chess
- #919: Star Ball, Orion's Run

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- #153: Hack; Eamon Adventures: Eamon Beginner's Cave, The Devil's Tomb, Eamon Death Star, Holy Grail, First Eamon game, and V2.0 of the Eamon Main Hall
- #360: Bermuda Race II; Hero! V1; Battle of Midway Simulation
- #363: A Dudley Dilemma; Tark
- #364: Love's Fiery Rapture; Susan, A Lustful Game; Des Ring Des Nibelungen; Pork (R)
- #366: The Adventure Game Toolkit; Colossal Cave Adventure, Crusade, Elf's Adventure, A Fable, Ghost Town, Paranoia, Odieu's Quest, The Squynchia Adventure, An Underground Adventure.
- #383: The American PaSTime Baseball Simulator V2.0D; Baseball
- #387: Taipan II V1.1; Empire and Dungeon Master maps
- #505: Kid Adventures: SDI; Mansion; Mountain
- #507: The Text Adventure Development System; Ditch Day Drifter; Deep Space Drifter
- #513: Disenchanted; El Bozo's City Out Of Bounds; Once a King; System 5
- #761: Adventure Game Toolkit v1.3
- #832: Angband
- #844: Nethack 3.13
- #895: Escape

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- #431: Kidshapes; Kidshapes Plus; Kid Publish; Kidpublisher Prof*
- #535: Kid Video (Add Up, Fonix, Geography V1, Me First V2, Me Second, Matcu)
- #536: Burger; Circus; Robin; Rabbit; Santas Workshop; Col or Quilt
- #537: Makin' Aiken; Kidmixup Plus; Perfect Match; Letter Hunt; Enchanted Forest
- #542: Rebus Writer; Wuzzlers; Kid Story
- #547: Electronic Jigsaw Puzzle; The Wolf and the Seven Kids; Barnimals
- #560: Wuzzlers II
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- #855: Droid, Triad, Warship
- #856: Bat Invaders, Bat Risk, Bat Solitaire, Bat Sub, DungeonLord, Maze
- #857: Cold Revenge, GNU Chess, Acc games (Puzzle Slide, Tic Tac Toe, Flip-Flop)
- #858: GRANDAD and the Quest for the Holy Vest
- #859: MIDI BATTLE - (STe)
- #860: Pegasus (Disk 1)
- #861: Pegasus (Disk 2)
- #862: Bounce, ST Doodle, Search Me V2 (M)
- #863: Word Quest - V3.1, word search puzzle maker w/puzzles.
- #874: Towers (Disk 1)
- #875: Towers (Disk 2)
- #876: Land Mine, Match Up, Super Dark Pearl, Highscore terminal utility
- #882: Shocker V2 (M)
- #895: ESCAPE graphic adventure
- #897: Medieval Chess
- #919: Star Ball, Orion's Run

Utilities

- #864: Uncle Carl Utilities - Belef v2.02b, HeidiSeek v2.07a ProFile v1.01c, ProLock! v1.05.
- #872: ARC/LZH Archiver
- #879: 33 small utilities consisting primarily of formatting and copy programs
- #880: 28 small utilities covering bootup, files, folders, floppy, and desktop.
- #881: 15 More utilities (cli, file manipulation, unix utilities, etc)
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- #894: Esscode v5.06, Led Panel, LHarc v3.01, Splitter v2.0
- #918: ST Zip v2.6, ST Tools v1.93

Text/AtariWorks

- #865: AtariWorks #2
- #866: AtariWorks #3
- #873: A Tribute to Frank
- #883: AtariWorks #4

Telecom

- #867: TripLink BBS V7.2
- #868: Teddy-Term2, MaxiMiser
- #869: Storm v1.0, Mountain QWK V1.18
- #878: BinkleyTerm
- #885: Turbo Board ST v1.0, HS Modem
- #890: Connect V2.46E
- #892: BAT100, Teddy Term v2.12, BBS Express BBS list

Applications

- #870: Grammarian V1.1.0, MyDraw 1.1, No Frills Labels 1.05, TeraDesk 1.36
- #871: German -> English V3.0
- #884: Marcel V2.2
- #887: Euler - Mathematica clone
- #888: The Printing Press V3.03
- #896: AIM (Atari Image Manager) V3.1
- #898: PAD V2.4 (M) drawing program
- #911: Marcel v2.3 w/spell-check dictionary
- #912: GEM View v3.05
- #914: Sheet V2.3
- #915: Ref Base v1.4 (m)
- #917: Master Browse 4.4, ColorBurst IV, Alarm Clock
- #920: Speed of Light v3.1

Languages/OS

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- #886: ZX81 Emulator
- #891: MAGE Demo
- #899: NeoDesk Icons No.1
- #900: NeoDesk Icons No.2 (+ Secrets of NeoDesk)
- #916: OMEN v2.5

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- #902: Mother's & Father's Day
- #903: Halloween
- #904: Octoberfest
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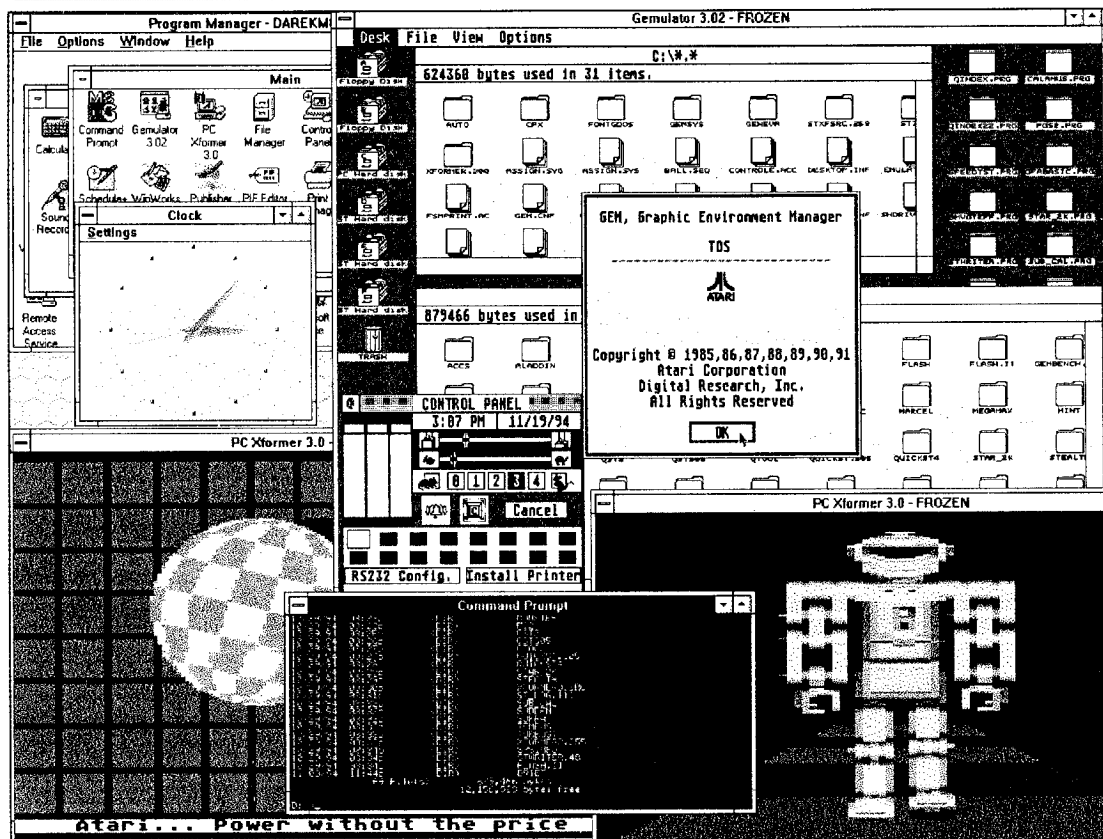
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