

ANIMATION
Special—pp. 22-41

AMIGA

W O R L D

October 1991
U.S.A. \$3.95
Canada \$4.95
UK £2.80
An IDG
Communications
Publication

*Yes! The Mouse IS
Mightier Than The Pen...*

ANIMATION

Amiga Style!

- ▶ Pro Tips & Tricks
- ▶ How-To Projects
 - DPaint III • Imagine
- ▶ “Morphing” Magic

Plus!

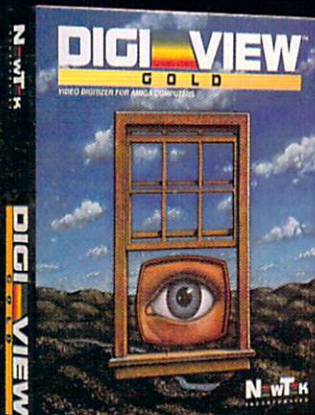
- Multimedia Tips:
Accent Your Audio!
- 24-Bit Painting
- Single-Frame
Recording—For Less!
- Reviews, Games, More!



“Mighty Mouse” goes Amiga—p. 115

THE AMIGA MULTI-MEDIA TASK FORCE

DIGI-VIEW GOLD



NOW WORKS WITH
THE AMIGA 3000

The Best Digitizer Keeps Getting Better

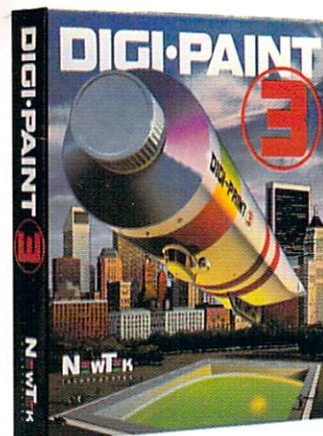
Digi-View Gold is the most award winning, best selling, most used Amiga hardware product of all time. Simply focus your camera on any object or picture and in seconds Digi-View Gold turns it into Amiga graphics that glow with vibrant colors and stunning clarity. Only the new Digi-View 4.0 offers Dynamic HiRes (4096 colors in high resolution), advanced image processing, and powerful graphics tools never before available. Images can be modified and enhanced with Digi-Paint 3 and easily displayed with Elan Performer. AmigaWorld Magazine says, "Digi-View is the best value in Amiga digitizers and delivers the best images."

\$199.95

The Most Successful HAM Paint Program Of All Time

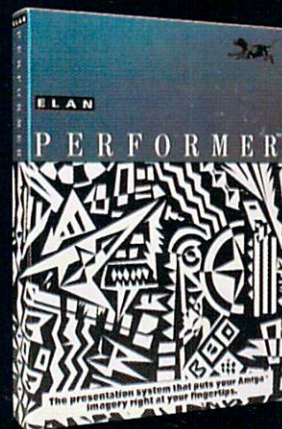
NewTek pioneered 4096 color painting on the Amiga. With Digi-Paint 3 we enter the next generation of advanced HAM painting. Powerful features such as Rub-Thru, Colorize, Variable Transparency, and Warping put Digi-Paint 3 in a class by itself. Don't be fooled by HAM newcomers, only Digi-Paint 3 has the speed, ease-of-use, high-quality HAM display, and direct Digi-View interface that make it the best paint program for your Amiga. In a head-to-head paint showdown AmigaWorld found a clear winner: "If you are really serious about owning only one paint program, we would have to recommend Digi-Paint 3."

DIGI-PAINT 3



\$99.95

ELAN PERFORMER 2.0



NOW AVAILABLE
EXCLUSIVELY FROM
NEWTEK.

The Hottest Presentation Graphics Tool Ever For The Amiga

Before Elan Design joined the NewTek Video Toaster design team they created Elan Performer 2.0. Now available exclusively from NewTek, Performer brings high-end presentation power to the Amiga. Performer is the power tool Digi-View and Digi-Paint users have been waiting for. Now you can easily combine your images in presentations that spring to life with animation and excitement. Whether you're doing presentations, video, multi-media or animation, Performer will make your graphics the star of the show. AmigaWorld says, "Elan Performer is a flawless performer."

\$99.95

Digi-View Gold, Digi-Paint 3, and Elan Performer are available now at your local Amiga dealer or call 1-800-843-8934 or 913-354-1146.

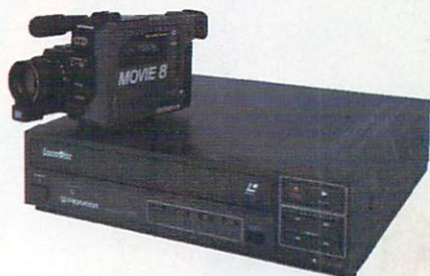
Digi-View Gold, Digi-Paint 3, Dynamic HiRes and Video Toaster are trademarks of NewTek Inc. Dynamic HiRes requires 2 megs of RAM. Amiga is a trademark of Commodore-Amiga, Inc. Elan Performer is a trademark of Elan Design.

Circle 38 on Reader Service card.

NewTek
INCORPORATED

TURN YOUR AMIGA INTO A VIDEO PRODUCTION SYSTEM!

ShowMaker™ is the first package that turns your Amiga into a complete desktop video solution, providing sequencing of video, animation, and Toaster effects together with mattes*, wipes, titling, and multi-channel soundtracks. In short, ShowMaker lets you quickly and easily assemble full video productions on your Amiga.



VIDEO PRODUCTION MADE EASY

Integrate video, animations, music, effects, and more with the ease of the mouse. ShowMaker's unique Time-Line Production Interface gives you simple graphic controls to "layout" the order and duration of your elements. ShowMaker lets you assemble your whole production, from animations and video to Toaster effects and sound effects.

VIDEO CONTROL

ShowMaker gives you control over genlocks, videodisc players, and VCRs. Just tell ShowMaker when to cut in your video, and it will automatically search to the correct position and cut or fade in the genlocked signal at exactly the right time.* Video sequencing has never been this easy!

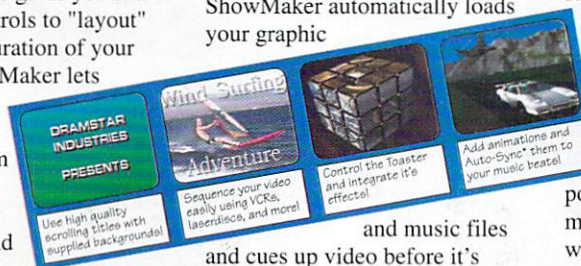
TOASTER POWER

If you have a Video Toaster, you need ShowMaker. Only with ShowMaker can you sequence a series of Toaster

effects directly into your production, making for spectacular video. And ShowMaker makes it easy!

AUTOMATIC PRE-LOADING

ShowMaker automatically loads your graphic



and music files and cues up video before it's needed, without interrupting the playback. This means you can create long running productions, limited by disk space, not RAM.

BUILT-IN TITLING

ShowMaker's built-in video titler gives you dynamic scrolling titles. And with ShowMaker you can run titles over video and animation, even adding special effects like drop shadow and outline! ShowMaker also includes a collection of high quality video fonts and exciting backgrounds.



EXCITING TRANSITIONS

ShowMaker features dozens of built-in transitions, including wipes, fades, and dissolves. You can create exciting professional-style transitions with just a click of the mouse.

DYNAMIC SOUNDTRACKS

Add dynamic stereo soundtracks just as easily. Simply position segments on any of the music or sound effects tracks with the mouse. ShowMaker supports MIDI output, MIDI files, SMUS files, and IFF samples. And ShowMaker's unique auto-sync feature** ensures that your production always remains synchronized to the music!

EDITING POWER

With ShowMaker you can preview and refine your production at any time during its development. Then quickly and easily adjust, cut, copy, and paste tracks until your show is perfect. ShowMaker will even generate storyboards and cue sheets to help you visualize and fine tune your production.

IT'S A WRAP!

Hit the play button and ShowMaker plays back your production in real time, automatically synchronizing the video, animation, soundtrack, and titling. A true multimedia presentation. Then record your production to videotape for a first generation Master Tape!



REACH YOUR AUDIENCE

Business, education, presentation or entertainment. Whatever your message, video brings it to life. There is no easier way to combine graphics, animation, video, sound, and titling into exciting and effective productions. ShowMaker turns your Amiga into a video production system. Join the video revolution by seeing your dealer or calling us at 1-416-602-4000.

By the way, this entire ad was created with Professional Page 2.0 desktop publishing software, another high quality Gold Disk product.



GOLD DISK

P.O. Box 789, Streetsville
Mississauga, Ontario, Canada
L5M 2C2 (416) 602-4000

*Additional hardware required

**Patent pending. ShowMaker and Professional Page are trademarks of Gold Disk Inc. All other products mentioned are trademarks of their respective owners.

SEE THE POWER!

Drop by your local dealer and ask to see our new ShowMaker demonstration tape "Multimedia Muscle", produced entirely with ShowMaker!

Circle 19 on Reader Service Card

SHOWMAKER

*The Complete
Desktop Video Solution*



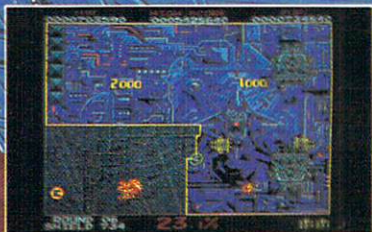
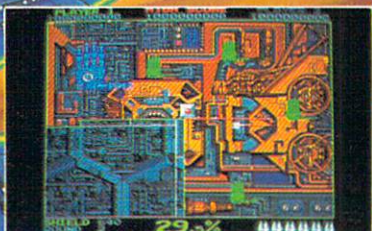
WHAT THE CRITICS SAY — "A FIRST CLASS CONVERSION"

V O L F I E D

VOLFIEV

THE ULTIMATE TAITO COIN-OP CONVERSION

VERY SLICKLY CODED WITH TERRIFIC ATTENTION TO DETAIL -
A BRILLIANT CONVERSION



Use your planning skills and put them into quick action, as you fight through 16 levels of challenging gameplay crammed with masses of enemies, special and hidden bonuses.

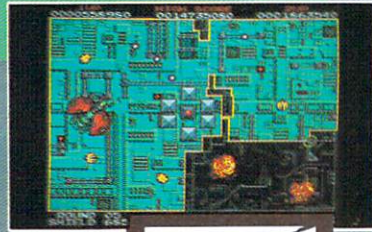
Pick up extra powers like lasers, power-ups and time stops and face the ever changing massive "Boss Alien".

VOLFIED: READY TO ATTACK YOUR NERVOUS SYSTEM!

VOLFIED: SKILL, STRATEGY AND EXTREMELY QUICK REFLEXES

VOLFIED: AMAZINGLY SIMPLE IN CONCEPT, INCREDIBLY ADDICTIVE TO PLAY

VOLFIED: YOU HAVE TO SEE IT TO BELIEVE IT



LICENSED FROM TAITO/TAMCO PROMGRAMMED FOR THE COMMODORE AMIGA, C64, ATARI ST AND
IBM PC & COMPATIBLES BY OXFORD DIGITAL ENTERPRISES

TAITO

AVAILABLE ON IBM PC, AMIGA, ATARI ST, COMMODORE 64

ReadySoft, Inc. • 30 Wertheim Ct. #2 • Richmond Hill, Ontario Canada L4B 1B9
(416) 731-4175 • FAX (416) 764-8867

**ARCADE
Masters**

• C • O • N • T • E • N • T • S •

FEATURES

GOOD VIBRATIONS *By Eric Daniels, Kelly Day, Steve Segal, and Mark Swain...* 22

Here are some concise pointers and sage advice from four leading Amiga animators to help make your creations sparkle.

VISUAL ALCHEMY *By Tracy Sabin...* 29

Learn the secrets of 2-D "morphing," which is as close to magic as you can get in the animation game.

IMAGINE ANIMATION

By Steven Blaize 33

Here's a step-by-step guide to mastering Imagine, Impulse's powerful new program that's capable of producing amazing 3-D animations on the Amiga.

AROUND THE WORLD IN

80 FRAMES *By Joel Hagen* 39

Create an entire world of your own and set it spinning gloriously in space with this planet-building animation tutorial.

ARTICLES

ACCENT ON AUDIO

By Geoffrey Williams 42

Music and sound are key ingredients for spicing up your multimedia presentations. Try this mix of useful tools and tips.

CREATION BY EVOLUTION

By Gene Brawn 49

If you haven't yet made the leap from 2-D to 3-D graphics, here's a good introduction to help you do so.

COLUMNS

CHIEF CONCERNS *By Doug Barney* ... 6

Users' groups and their newsletter columns are on Barney's front burner this month.

ACCENT ON GRAPHICS

By Joel Hagen 56

This month Joel joins the impressionist school, using DCTV for some incredible painterly effects.

VIDEO SUITE *By Louis R. Wallace* ... 58

Recording full-screen 24-bit sequences to tape requires single-frame control. We look at a low-cost option: Panasonic's AG 7750 SVHS VTR with its time-code card plus Nucleus Electronics' Personal SFC.



Like our cover (inset above) suggests, the Amiga is a "mighty" fine machine for doing animation. This month's features focus on a wide variety of animation tips and techniques—both 2-D and 3-D—culled from some of the best Amiga animators in the business. Whether you're an old hand or just starting out, whether you use animation for video/multimedia presentations or just do it for fun, we think you'll find something here to "animate" your imagination. And, by the way, the creator of "Mighty Mouse" (who also did the illustration for the cover) has been using an Amiga to create some of the recent comic-book adventures of MM. For a profile of Ernie Colón, see page 115.

DEPARTMENTS

OVERSCAN 8

This month *AmigaWorld* expands its recently added column to bring you even more news, new products, and on-line developments.

HELP KEY 86

Lou's all over this month, fielding the usual barrage of technical teasers.

AW PRODUCT INFORMATION ... 118

For contacting the developers of products mentioned in this issue of *AmigaWorld*.

AW PROFILE 115

Meet Ernie Colón, the creator of "Mighty Mouse" and this issue's front cover illustration.

THE LAST WORD 128

The last page is always yours to shoot from the hip on any topic that happens to strike your fancy.

REVIEWS

SUPERBASE PROFESSIONAL 4

(Precision) 16

The best of the database bunch updated.

REAL 3D PROFESSIONAL

(Activa International) 17

3-D object modeling made easy.

PELICAN PRESS *(Pelican)* 90

Making posters and banners isn't just kid's stuff.

NORGEN *(Norris)* AND YOUR

FAMILY TREE *(MicroMaster)* 92

Two programs to trace your genealogy.

RXTOOLS *(TTR)* 102

An elegant interface solution for ARexx script writing.

PROTEXT *(Arnor / Michtron)* 106

Full-featured word processing—but without the Amiga look and feel.

INFOFILE *(The Disc Company)* 107

Competent file manager at a low price.

SOUNDMASTER *(Oxxi/Aegis)* AND

AUDIO ENGINEER PLUS

(RamScan/MicroPace) 109

Tune in on the eight-bit market for some slick sounds.

BACKTALK 113

Spirited views on *AW* reviews.

GAMES

CRIB NOTES *By Peter Olafson* 74

Masterful tips on top Amiga games such as *Beast II*, *Elvira*, *Indiana Jones*, *The Immortal*, and more.

CENTURION: DEFENDER OF

ROME *(Electronic Arts)* 74

Ancient world to reconquer in this new strategy offering.

WONDERLAND *(Virgin Mastertronic)* . 76

"Alice" revisited in a graphics adventure.

THE SECRET OF MONKEY

ISLAND *(Lucasfilm)* 80

Swashbuckling adventure, with plenty of humor thrown in.

BATTLE COMMAND *(Ocean/*

Electronic Arts) 80

The long-awaited follow-up to *Carrier Command*.

New! Redesigned and FAAAASTER

50MHZ 68030 POWER

Now Expandable to 32MB of 32-bit RAM!



1 Optional 3.5" IDE/AT hard disk up to 340MB capacity (13ms).

2 Built-in Autobooting IDE/AT hard disk controller.

3 4MB to 32MB of 32-bit wide High Performance memory.

4 50Mhz 68030 CPU and 50Mhz 68882 Floating Point Unit.

Our new faster and more expandable A3050 50Mhz accelerator kit will turbo-charge your Amiga 2000® beyond your wildest dreams.

Check out these features:

- ✓ Uses GVP's new custom designed 4MB, 32-bit wide, SIMM32™ memory modules with state-of-the-art 4MB, 60ns, DRAMs.
- ✓ ZERO SLOT SOLUTION! Even with a full-blown 32MB, 50Mhz, A3050 kit installed in the A2000's "CPU" slot, ALL ZORRO II expansion slots are left free for unlimited future expansion!
- ✓ Exciting new 3.5" hard disk "bundles". Choose between the 1" high, 120MB (15ms) model or the incredible half-height 340MB (13ms) model.
- ✓ Converts an A2000 into the fastest Amiga in the world. There is truly NO competitive product.
- ✓ 68000 fall-back mode for timing sensitive applications (e.g. some games).
- ✓ GVP is the world's leading manufacturer of accelerator products for the Amiga.



GVP is a trademark of Great Valley Products, Inc. Amiga and A2000 are registered trademarks of Commodore-Amiga, Inc.

GREAT VALLEY PRODUCTS INC.

600 Clark Avenue, King of Prussia, PA 19406

For more information, or for nearest dealer, call today. Dealer inquiries welcome.

Tel. (215) 337-8770 • FAX (215) 337-9922

Dealers Circle 21 on Reader Service card.

Consumers Circle 22 on Reader Service card.

STEPHEN C. ROBBINS, *Publisher*

DOUGLAS BARNEY, *Editor-in-Chief*

DANIEL SULLIVAN, *Executive Editor*

SWAIN PRATT, *Managing Editor*

BARBARA GEVERT, *Senior Editor*

JANINE L. JACKSON, *Review Editor*

LOUIS R. WALLACE, *Senior Editor, Technology; Special Products Manager*

LINDA BARRETT LAFLAMME, *Editor, The AmigaWorld Tech Journal*

TIM WALSH, *Technical Editor*

MARE-ANNE JARVELA, *Special Products Coordinator*

GENE BROWN, JOEL HAGEN, DAVID T. MCCLELLAN,

PETER OLAFSON, *Contributing Editors*

HOWARD G. HAPP, *Art Director*

LAURA JOHNSON, *Assistant Art Director*

ANN DILLON, *Designer*

ALANA KORDA, *Production Supervisor*

DEBRA A. DAVIES, *Typographer*

DANIEL HUSTON, *Editorial Intern*

KENNETH BLAKEMAN, *National Advertising Sales Manager*

MICHAEL MCGOLDRICK, *Sales Representative*

BARBARA HOY, *Sales Representative*

HEATHER GUINARD, *Advertising Sales Representative,*

Partial pages & InfoMarket, 1-800-441-4403, 1-603-924-0100

MEREDITH BICKFORD, *Advertising Coordinator*

GIORGIO SALUTI, *Associate Publisher, West Coast Sales, 1-415-363-5230*

2421 Broadway, Suite 200, Redwood City, CA 94063

WENDIE HAINES MARRO, *Marketing Director*

LAURA LIVINGSTON, *Marketing Coordinator*

MARGOT L. SWANSON, *Customer Service Representative;*
Advertising Assistant

LISA LAFLEUR, *Business & Operations Manager*

MARY MCCOLE, *Video Sales Representative*

SUSAN M. HANSHAW, *Circulation Director, 1-800-365-1364*

PAM WILDER, *Circulation Manager*

LYNN LAGASSE, *Manufacturing Manager*



ROGER J. MURPHY, *President*

NANCY GENDRON, *Assistant to the President*

PAUL BOULE, *Vice President/Group Publisher*

JIM MCBRIAN, *Vice President/Group Publisher*

STEPHEN C. ROBBINS, *Vice President/Group Publisher*

DENNIS S. CHRISTENSEN, *Vice President of Manufacturing/Operations*

BONNIE WELSH CARROLL, *Vice President, Circulation & Planning*

JEFFREY D. DETRAY, *Director of Technology Research*

LINDA RUTH, *Single Copy Sales Director*

DEBBIE WALSH, *Newsstand Promotion Manager*

WILLIAM M. BOYER, *Director of Credit Sales & Collections*

DOREEN MEANS, *Systems Coordinator*

AmigaWorld (ISSN 0883-2390) is an independent journal not connected with Commodore Business Machines, Inc. *AmigaWorld* is published monthly by TechMedia Publishing, Inc., an IDG Company, 80 Elm St., Peterborough, NH 03458. U.S. subscription rate is \$29.97, one year; \$46.00, two years; \$64.00, three years. Canada \$38.97 (U.S. funds), one year only. Mexico \$38.97, Foreign Surface \$49.97, Foreign Airmail \$84.97 (prepayment is required on Foreign Surface and Airmail subscriptions in U.S. funds drawn on U.S. bank). All foreign rates are one-year only. Second-class postage paid at Peterborough, NH, and at additional mailing offices. Phone: 603-924-0100. Entire contents copyright 1991 by TechMedia Publishing, Inc. No part of this publication may be printed or otherwise reproduced without written permission from the publisher. **Postmaster:** Send address changes to *AmigaWorld*, Subscription Services, PO Box 58804, Boulder, CO 80322-8804. Nationally distributed by Kable News Co., *AmigaWorld* makes every effort to assure the accuracy of articles, listings and circuits published in the magazine. *AmigaWorld* assumes no responsibility for damages due to errors or omissions.

Introducing the **AMIGA® 500 FITNESS PLAN**

GVP's New Series II™ A500HD8+ Puts A2000® Computing Power and Punch into Your Amiga 500

IMPACT
Series II

By now you know that every Amiga 500 comes with that special built-in program called "Wait". Wait while your A500® loads software. Wait while you save files. Wait while you change disks. *It doesn't have to be that way!*

GVP's Series II A500HD8+ Takes Off the "WAIT"

GVP's Series II A500HD8+ 40-105MB Hard Drives work like the world's fastest runners to take the "Wait" off and to get your Amiga 500 racing along at data transfer speeds of up to 52 times faster than floppy disk drives. But getting rid of the "Wait" is just the beginning...

GVP's Series II A500HD8+ Turns Floppy Fat into HARD DRIVIN' Muscle

Because the Series II A500HD8+ uses the same custom VLSI and **FAASTROM™** technologies of its powerful cousins — Series II A2000 SCSI+ RAM — you get more than an amazingly fast hard drive. You get the storage space of 45 to 136 floppy disks, depending upon the model you choose.

You also get Series II's:

- ✓ Exclusive Game (Hard Disk disable) Switch for Full Games Compatibility
- ✓ A2000 DMA Data Transfer Speeds.
- ✓ FAST RAM expansion with up to 8MB of SIMM-Based Internal RAM Expansion
- ✓ "Mini-Slot" Access to All A500 Expansion Bus Signals for future expansion.
- ✓ External SCSI Port for adding up to 7 SCSI Devices
- ✓ Internal Fan for Cool, Reliable Operation
- ✓ External Mounting to Maintain Your Original Commodore Factory Warranty
- ✓ **FREE** Dedicated Universal Input Power Supply. Insures full compliance with Commodore's A500 power limitation.
- ✓ One-Year GVP Factory Warranty.

GVP's Series II A500HD8+ Keeps Your Amiga 500's Sleek Good Looks

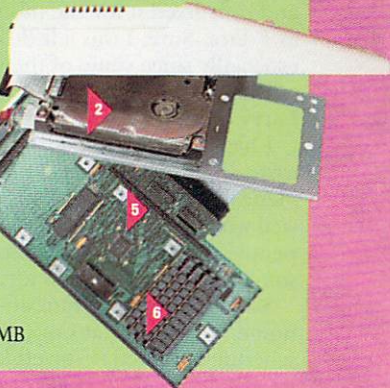
GVP knows that no fitness plan is complete unless it keeps your system looking great. That's why your Series II A500HD8+ matches your Amiga 500's good looks line-for-line, curve-for-curve.

So get a GVP Series II A500HD8+ hard drive for your Amiga 500. Lose the "Wait" and Gain the Muscle.



Important A500HD8+ Body-Builders

- 1 Game Switch
- 2 Hard Disk Drive
- 3 External SCSI Port
- 4 Free Power Supply
- 5 "Mini-Slot": for future expansion
- 6 Internal RAM Expansion: up to 8MB



GVP

Series II, FAASTROM and GVP are trademarks of Great Valley Products Inc. Amiga, A500 and A2000 are registered trademarks of Commodore-Amiga, Inc.

GREAT VALLEY PRODUCTS INC.
600 Clark Avenue, King of Prussia, PA 19406

For more information, or for nearest dealer, call today. Dealer inquiries welcome.

Dealers Circle 23 on Reader Service card.

Tel. (215) 337-8770 • FAX (215) 337-9922

Consumers Circle 24 on Reader Service card.



CHIEF CONCERNS

Behind the users' group scene.

I'VE GOT A BOX under the table in my office that overflows with newsletters from users' groups around the country, and I've read every one. Some are pretty sparse, focusing on minutes and dues and such. Others, though, have an editorial bite that would make Pat Buchanan and Ed Anger look like angels.

This level of literacy is one of the things that is different about the Amiga market. Many of you combine great creative skills with emotion, and the result is plenty powerful. It's not just in the newsletters, but also in the letters we receive from individuals. Just read *The Last Word* each month and see for yourself.

Take Larry Lack, for instance. This Jerry Pournelle/John Dvorak (two famous computer columnists who don't write for *AmigaWorld*) quasi-clone writes a great column called *Digital Dungeon* for *The Amiga Users of the Heartland*, in Omaha, Nebraska. Now Larry never knew I read his newsletters—until, that is, he gave *AmigaWorld*, and me in particular, both barrels.

Larry blasted us about an article that had an error—which was the vendor's fault—and levelled a scurrilous attack on me for my sudden discovery of the Amiga, saying I knew nothing about it and only liked it for the money I made as Editor. Sure, I was a little offended, especially since some of the points were off target. But I have to admit that Larry did it with style and humor.

I had to call. Heck, any guy who can write about "Personal Computer Hygiene" and the "I-Vana Trump Card" is well worth talking to. Besides, the people who are the harshest critics sometimes have the best ideas.

So I tried to track him down at home. I tried him at work. Since our schedules clashed, I stayed late one

night and nailed him as he walked in the door.

"Hey. What's all this rotten stuff you're writing about us, Larry?" I asked. "You mean you read our newsletter!" "I read 'em all, Larry." "Oh."

For the next ten minutes, I laid out my side of the story, with Larry taking copious notes. For the next twenty minutes, we talked about everything else, Commodore, the machine, the magazine, his column.

Minds met. Friendship began. And now the first thing I do when I get the *Heartland* newsletter is turn to *Digital Dungeon*.

People like Larry Lack are the soul of the Amiga. They take the time to help organize a group, keep a newsletter going, and give a hand to their fellow users.

These groups get involved in the market by voicing concerns to Commodore, keeping mainstream computer publications aware of the Amiga's existence, and keeping us Amiga magazines on our toes.

DING DONG, YOU'RE WRONG

There are also guys like Paul Metheney, former editor of *The Miami Amigos* newsletter. I got a note from Paul after another publication launched a vicious (we don't mind that) and inaccurate (now that really bugs us!) attack on *AmigaWorld* because of our aggressive coverage of new products.

To his tremendous credit, Metheney churned out a very reasonable defense of *AmigaWorld*'s attempts to cover the big products first. And it was really well written. So I called him, too.

Unfortunately, the publishing crew in question hasn't so far had spine enough to publish a correction, let alone any of the many letters from users complaining about the attack. As a result, Paul's letter may never get published.

Anyhow, I happened to pick up Metheney's latest newsletter, and there

was a quite articulate, funny, and honest description of our conversation. I'd better be careful with guys like Lack and Metheney around. Sooner or later, they'll come after my job.

After I had written the first few paragraphs of this column, I got a call from US Army Sergeant Marney, who is stationed in Garlstadt, Germany. We talked about a lot of things, such as how he used his Amiga to create presentations about the Gulf War for the 5000 or so concerned relatives of those serving, and how he uses Russian fonts from *Classic Concepts* in his work as a Russian linguist.

But mostly we talked about his users' group, which was kinda torn apart when so many soldiers were moved to Saudi Arabia. Marney is now trying to get the group back together, so if you're near Garlstadt, call him up.

Users' groups, if properly managed and motivated, can do members a world of good. They provide access to good, cheap public-domain software. They can wangle deals out of a local dealer, or even out of Commodore. They attract good speakers and give great demos. They act as an informal flea market. They solve problems. They keep users abreast of the latest news and gossip. They provide a social bond between users. And they help keep Amiga users off the street.

Maybe that's why some 30% of *AmigaWorld* readers belong to users' groups. If you have ideas about how such groups can be improved, send 'em our way, and we'll do our best to pass them along to that active, committed 30%. ■

Doug Barry

WHAT HAS 16M COLORS, 24-BIT FRAME BUFFER + GENLOCK + FRAMEGRABBER + FLICKER-ELIMINATOR + PIP + VIDEO TITLER + 3D MODELLING SYSTEM?



If you're into video, IMPACT VISION-24 is truly a dream come true for your A3000 or A2000. It is the first multi-function peripheral specifically designed for the A3000's video expansion slot.

With the optional A2000 genlock slot adaptor kit, it also perfectly complements and enhances the A2000.

Check out these features, all packed on a single Amiga® expansion board!



► **Separate Composite and Component Video (RGB + Sync) Genlocks.** RGB genlock operates in the digital domain, for digitally perfect

production studio quality mixing: no color bleeding, no ghosting, no artifacts...!

► **1.5MB Frame Buffer.** Display 24-bit, 16 million color images on your Amiga monitor. On a multi-sync monitor, you can even display 16 million color images in non-interlaced mode!

► **Realtime Framegrabber/Digitizer.** Freeze, grab and store (in standard 4096 or 16 million color IFF format) any frame from a "live" incoming RGB video source. Optional "RGB splitter" required to grab incoming composite or S-VHS video.

► **Flicker-Eliminator.** Duplicates and enhances the A3000's display enhancer circuitry. It even de-interlaces live external video! A must for any A2000 owner. Ask about our A2000 "genlock slot trade-up" program (in case your genlock slot is already used by something less exciting!)



► **Simultaneous Component Video (RGB) Out, Composite Video Out and S-VHS Video Out.** Now, anything you can see on your Amiga monitor can be recorded on video tape,

Introducing the IMPACT VISION 24™ from GVP The All-In-One Video Peripheral for the A3000 and A2000

including animations, ray-traced 24-bit images and more!

► **Picture-In-Picture (PIP) Display.** Freeze, resize, rescale and/or reposition live incoming RGB video just like any workbench window at the double click of a mouse or the pressing of a "hot key". With a multi-sync all this can even be in rock steady de-interlaced mode. Unique "reverse-PIP" feature, even allows you to place a fully functional Amiga workbench (or other application) screen as a SCALE-ABLE (shrunk down!) and re-positionable window over full-screen live video.

► To make sure you can take full and immediate advantage of every feature of your new Impact Vision 24 video-station, we even include the following software with every unit:

● **Caligari-IV24.** An exclusive version of the leading broadcast quality, 3-D modelling and rendering program. Use your imagination to model 3D, 16 million color, scenes. Use your digitized video images as textures to wrap around any object! The mind is the limit!

● **SCALA-Titling.** Easy-to-learn, video titling package complete with lots of special fonts and exciting special transition effects. Turn your Amiga into a character generator.

● **MACROPAINT-IV24.** A 2D, 16 million color paint program that lets you have fun



creating or manipulating any 16 million color, 24-bit image.

● **Control Panel.** Provides full software control over all Impact Vision-24's numerous features. Use your mouse or simply



press a (configurable) "hot key" to activate any feature.

At GVP, we wanted to make a major impact on the use of the A3000/2000 by professional video enthusiasts. With the Impact Vision-24 we have!

For more information on how the Impact Vision 24 can have a major impact on your video productions, call us at 215-337-8770.

IMPACT VISION 24



GVP

GREAT VALLEY PRODUCTS, INC.
600 Clark Ave., King of Prussia, PA 19406
For more information or your nearest GVP dealer, call today. Dealer inquiries welcome.
Tel. (215) 337-8770 • FAX (215) 337-9922

OVERS CAN

News, New Products and Networks

AT CAL ARTS, COMPUTER MEANS AMIGA

Where do you go to learn Disney-style character animation? To the school founded by the Disney family, of course: the California Institute of the Arts. Located just outside of Los Angeles, Cal Arts' Character Animation Department uses only Amigas to teach animation. Several successful animators have put their careers on hold to brush up at Cal Arts. It is generally considered the finest school in the world to learn character animation, and the Amiga has become a pivotal part of the curriculum there.

While the 165 students in the program also learn traditional animation techniques, they are required to take a computer class in which they use DeluxePaint III (Electronic Arts) and Disney Anima-



Student Director Sean Schur (left) oversees Cal Arts' animation lab from the back of the room.

tion Studio (Walt Disney Computer Software). From there they can move on to
Continued on p. 14.



OVERHEARD

WordPerfect Corporation is now doing feasibility studies to determine whether enough people are clamoring for WordPerfect Amiga version 5 to warrant its release. According to *AmigaWorld* reader Diane Carter, the company encourages interested folks to call or write with requests for the multiplatform word processor (1555 N. Technology Way, Orem, UT 84057 801/225-5000). If WordPerfect gets enough response, you will see the update.

LITTLE BIG SHOW

ORLANDO—"It's not fair to compare a market like Orlando to that of New York or LA," said one exhibitor. And she was right. Summer AmiEXPO in Orlando was about half the size of the spring show in New York City. But given the location, the state of the economy, and the increasing number of shows Amiga developers must consider (Siggraph began just days later), it was not bad. Many of those who doubted that good things come in small packages were pleasantly surprised. Exhibitors treated the enthusiastic attendees to some interesting displays and announcements.

As with the last EXPO, this show offered no games, but instead a good amount of video gear and software. **JVC** (RS# 120) showed off a range of cameras and equipment, and **IDEN** (RS# 121) demonstrated its line of TBCs. The biggest news of the show was the 24-bit graphic board from **GVP** (RS# 122). The A3000/A2000 **Impact Vision 24** board (\$2199), which occupies both a Zorro II slot and the video slot, offers PIP (Picture-in-Picture) capabilities. This lets you display

video in a resizable, movable window on the Workbench. The hardware will be bundled with a version of **Octree's** (RS# 123) 3D modeler/renderer **Caligari** and **GVP's** **MacroPaint** and **Scala** programs. Another couple of surprises from GVP came in the form of music products. Representatives demonstrated a new 8-bit sound sampler (Digital Sound Studio, \$125) and spoke of a 12-bit sound board that's slated to sell for \$399.

Drawing a crowd disproportionate to its booth size was **Blue Ribbon SoundWorks** (RS# 124). Professional guitarist Mike Torres provided both entertainment and a demonstration of **Bars&Pipes Professional**. Blue Ribbon worked with a prototype of **SunRize's** (RS# 125) 12-bit sound sampler (which promises direct-to-disk recording) and Blue Ribbon's own **SunSet** supporting software. The company also announced **Jam** (\$99). Due out before the holidays, this composition software is for people who "know nothing about music and can't carry a tune in a bucket." It is designed to easily integrate music into multimedia productions.

Next door in the **Axiom** (RS# 126) booth was **Pixel 3D 2.0**, an upgrade to the popular 2-D bitmap to 3-D object converter. This new version supports more 3-D formats and has a wealth of new features. Programmers were also there demonstrating the 2.0 version of **3D Professional** (from **Progressive Peripherals & Software** (RS# 127) that's scheduled for fall release (\$399, or \$100 for registered owners of the earlier version). Interestingly, it was running on an A3000 with Progressive Peripherals' **68040 card** and the **Rembrandt** high-resolution 24-bit card. 3D Pro now provides new animation features, full-point vertex editing, extensive texture mapping, and Boolean object functions. 3D Professional retains support for X-Specs 3D, the liquid-crystal stereoscopic glasses released three years ago by Haitex.

In case you ever wondered what happened to **Haitex** (RS# 128), it is back with **X-Specs TV**, which allows you to view 3-D images from videotape (using X-Specs, of course).

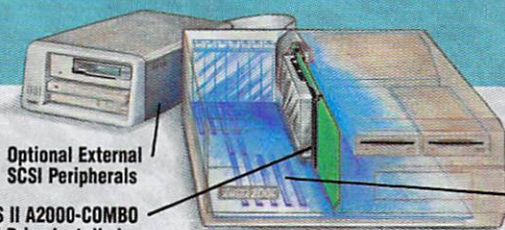
Continued on p. 14.

For information about the vendors of products, see "Manufacturers'/Distributors Addresses" list on p. 118.

MEET THE CHAIRMAN OF THE BOARDS

68030 Power, Up to 16MB RAM and SCSI Controller All in One

IMPACT
Series II



Optional External SCSI Peripherals
SERIES II A2000-COMBO + SCSI Drive Installed

All A2000 Expansion Slots Free

This single GVP SERIES II A2000-COMBO board gives you more power, performance and control over your Amiga® system than any 4 other boards out there.

You want to expand your Amiga's memory?...the SERIES II A2000-COMBO does it and does it big.

You want to make your Amiga faster than a speeding bullet?...the SERIES II A2000-COMBO does that too.

You want to use your Amiga with virtually every and any SCSI device on the market—from CD-ROM drives, to Magneto-Optical and tape-based storage devices?...the SERIES II A2000-COMBO does it all.

You want all the storage capacity of a 3.5", 500MB hard drive on a single card?...Yep—it's an option.

You want to save lots of time with your desktop publishing, ray-tracing, rendering and animation programs?...Nothing's faster than the SERIES II A2000-COMBO.

You want to use your Amiga as a special effects generator for broadcast

quality videos?...the SERIES II A2000-COMBO perfectly complements New Tek's Video Toaster™ special effects system.

Plus, when you install the SERIES II A2000-COMBO board directly into your Amiga's CPU accelerator slot, you still have all 5 of your original expansion slots open and free for other uses.

If that doesn't make the SERIES II A2000-COMBO the *Chairman of the Boards*, we don't know what does.

For more information on how you can put the Chairman of the Boards—SERIES II A2000 COMBO—to work for you, call 215-337-8770.

IT'S LIKE AN ENTIRE FACTORY ON ONE BOARD

Just look what you get from this workhorse, powerhouse:

- ✓ 33 or 22Mhz 68030 Accelerator
- ✓ Up to 16MB of fully DMA-able 32-bit wide memory expansion (13MB on 22Mhz model)
- ✓ High Performance, Auto-Booting, DMA SCSI Hard Drive Controller able to DMA directly into ALL memory
- ✓ SCSI Connector for External SCSI Peripherals
- ✓ Screen Icon-Based 68000 Mode Switch

Optional "Hard-Disk-Card" Conversion Kit

Converts the SERIES II A2000-COMBO board into a "Hard-Disk-Card" as well! Drive mounts on the back of the board, saving even more space!



Built-in GVP Series II DMA SCSI Controller

SCSI Connector for external SCSI peripherals

Internal SCSI Hard Drive (3.5" available up to 500MB!)

1MB (22Mhz) or 4MB (33Mhz) Surface-mounted 32-bit wide Memory

Up to 12MB of 32-bit wide, User-installable SIMM32 Memory Expansion

Surface-mounted 68030 CPU and 68882 FPU (22 or 33Mhz)

★ Ask your dealer for the
GVP A2000-COMBO 22 OR 33
bundled with a Hard Drive Kit

SIMM32 and GVP are trademarks of Great Valley Products, Inc.
Amiga, A2000 and A3000 are registered trademarks of Commodore-Amiga, Inc.
Video Toaster is a trademark of NewTek Inc.

GREAT VALLEY PRODUCTS INC.

600 Clark Avenue, King of Prussia, PA 19406

For more information, or for nearest dealer, call today. Dealer inquiries welcome.

Tel. (215) 337-8770 • FAX (215) 337-9922

CIS—France
Europarc 14, Avenue Gustave Hertz • 33600 Pessac
T. (33) 56-363-441 • F. (33) 56-362-846

SDL—United Kingdom
Unit 10, Ruxley Corner Ind Est.
Edgington Way, Sidcup • Kent DA 14555
T. (44) 81-300-3399 • F. (44) 81-300-6765

Power Peripherals—Australia
1st Floor, 257 Hawthorne Rd.
Caulfield North 3161 • Victoria
T. (61) 3-532-8553 • F. (61) 3-532-8556
Dealers Circle 27 on Reader Service card.

DTM—West Germany
Dreiherrnstein 6A • 6200 Wiesbaden-Auringen
T. (49) 6127-4065 • F. (49) 6127-66276

Datacom APS—Denmark
Kirkerfjæget 23 • Hattling • 8900 Horsens
T. (45) 75-65-37-88 • F. (45) 65-37-16

Merlin—Austria
Dorfstrasse 5 • A-6074 Rinn • Innsbruck
T. (43) 522-388-96 • F. (43) 522-388-97

Pixel Soft—Spain
C/ Gral. Franco • 7 Entlo F-G • 3400 Palencia
T. (34) 88-751180 • F. (34) 88-751191

Broadline OY—Finland
Vanha Porvoontie 295 • 01260 Vantaa
T. (358) 087-479-00 • F. (358) 087-449-44

Non-Stop SPA—Italy
Filiale di Vendita Admin.
40057 Cadriano di Granarolo • Via B. Buozzi, 11 Bologna
T. (39) 51-765299 • F. (39) 51-765252

Datacom—Canada
431 Hampton Court Rd.
Dollard des Ormeaux • Quebec H9G 1L1
T. (41) 32-87-2429 • F. (41) 32-87-24-82

Microtron Computerprodukte—Switzerland
Bahnhofstrasse 2, Postfach 69 • CH-2542 Pieterlen
T. (41) 32-87-2429 • F. (41) 32-87-24-82

Consumers Circle 28 on Reader Service card.

MORE POWER!

Continuing with its popular Power Up program, Commodore is offering cost savings on Amiga 500 bundles. Until October 31, owners of Commodore 16, 64, 64SX, 128, Plus/4, PET and VIC computers—as well as students and educators—can upgrade to the one-megabyte A500P computer/software bundle for up to \$300 off the usual price of \$799, or choose an A500S assemblage for \$200 off the \$599 suggested retail.

Several documents can serve as “coupons” at Amiga dealerships. For Commodore owners, the CPU serial number of your qualifying computer written onto its original manual cover is your ticket to savings. Students need to present either a high-school diploma, a college ID card, or college acceptance letter. Educators must show a school ID or a business card to receive the discount. For more information on the program, call 800/66-AMIGA or contact an authorized dealer.

—BG

MUSICAL SCORES

Jagged, bitmapped printouts are what you get from Electronic Arts' Deluxe Music Construction Set (DMCS). Unless you have **Copyist Companion** (\$30, *NerveWare*), that is. Copyist Companion converts DMCS files into a format compatible with Dr. T's musical-notation program The Copyist, which delivers high-resolution, professional-quality output. (RS# 105.)

In case that won't help and you are just not happy with any of your music soft-

ware, consider Blue Ribbon Sound-Works' upgrade offer. Until December 15, you can trade in any Amiga music program for Bars&Pipes or Bars&Pipes Professional—for just \$99 or \$199, respectively. Send in your payment plus the manual cover of the program you would like to trade, or contact Blue Ribbon customer service for more information. (RS# 106.)

—BG

THE MEDIATOR

Will a PC/AT keyboard work with your Amiga? Now it will, with The **=KB- TALKER=** (\$69.95) by **Co-Tronics Engineering**. This device promises to work with all IBM PC/AT-compatible keyboards (not XT-types), and all Amigas—although the A500 requires a special adapter cable and a modification of the case. The **=KB- TALKER=** is compat-

ible with bar-code/UPC-reading keyboards, such as the Cherry G80-1600 keyboard and bar-code reader. It provides full “Num Lock” support, requires no changes or additions to software and no additional power. Purchasers are entitled to free upgrades for the first year. (RS# 102.)

—DH ▶



ON-LINE SCAN

By Tim Walsh

Sometime in late June, American PeopleLink, the network that knowledgeable Amiga enthusiasts had come to revere for both its files and helpful social atmosphere, quietly succumbed to mysterious woes. Unfortunately, one of the problems with the demise of PLink was that there was little warning. Despite having logged on daily, I wouldn't have guessed that anything was amiss had I not received the inside word in advance from the sysops. After the shutdown occurred, a call to the local Tymnet number for PLink would produce a forlorn screen message that read “PCI -call cleared (c 19,d 81): local procedure error.”

Without missing a beat, many of the frequent attendees, sysops, and personalities of PLink's AmigaZone swiftly moved to the network system called Portal, headquartered in Cupertino, California. Lead by PLink's former AmigaZone Chairman Harv Laser, these

PLinkers went to work like crazed roustabouts and in a remarkably short time, installed a multitude of Amiga files, arranged conferences, scheduled events, and generally made the Portal environment a new home for displaced PLinkers.

Signing on to Portal has been made easy, too. If you're a former PLinker interested in checking out Portal, you can sign up on-line. Just use your modem-equipped Amiga to call your local Telenet or Sprintnet number and instead of entering “C PLINK” at the final connect prompt, enter “C PORTAL.”

Once you've logged on as a new member, enter “GO REFUGEE” to join the other displaced PLinkers. Be forewarned, though, that Portal differs in appearance from most other national networks. Some long-time PLink Amiga users are not nearly as nice in their descriptions of Portal, either. Coddled by PLink's forgiving and relatively effortless user interface, com-

plaints are commonplace within Portal's Amiga message boards. Personally, I disagree with the faultfinders, including those of stature and expertise in the Amiga community, who have found Portal cumbersome to navigate. Sure, a few more keystrokes are needed to maneuver about the system, but after a dozen or so sessions, I have committed most instructions to memory. Looking at Portal more as a BBS and less as a network, experienced telecommunication users will know it's a matter of programming some function keys, setting up some macros, and changing settings on Portal to a shortened command line. Admittedly, it takes time to become accustomed to unusual screen prompts containing such terms as edit, logout, add_article, and unsubscribe, but you can get explanations for these and other mystifying commands simply by typing “HELP BEGINNER” or “HELP” followed by the command name in question. Also, all

inductees receive a New User's Guide from Portal, which goes a long way in helping beginners to comprehend the system.

One of the first Amiga files I encourage everyone to retrieve from the Amiga file area is called HOWTOPORTAL.LZH, written by Rick Plavnick. Although he is not a Portal employee, Plavnick has taken the time to write an 11-page reference document designed to help former PLinkers through the transition period. Be certain to check out the other Amiga files on Portal. It's the only national network that stocks the entire Fred Fish Disk collection of freely-distributable Amiga software.

If you're interested in a Portal account, here is the necessary information:

Portal Communications Co.
10385 Cherry Tree Lane
Cupertino, CA 95014
Voice: 408/973-9111
Data: 408/725-0561

On an aside, a Federal Communications Commission form letter I recently received sets to rest the question of a modem-tax proposal that was posted on GENIE and mentioned in the July issue (p. 10). According to the letter, no such proposal exists.

YOUR WISH IS OUR COMMAND!...

If you wish to enhance your Amiga 2000® with
MORE MEMORY, a HARD DRIVE, or BOTH
wish no more—GVP has the solution for you.

IMPACT
Series II

Choose GVP's Series II RAM Expansion Board, SCSI Hard Drive Controller or SCSI+RAM Hard Disk Card. Realize the potential of configuring your perfect solution without any need for compromise!

RAM Expansion

SII A2000-RAM8/2: The smallest and most compact 8MB RAM expansion board for the A2000!

Features:

- ✓ 2MB of factory-installed RAM, expandable to 8MB.
- ✓ All memory fully Auto-Configured.
- ✓ Also supports 6MB configuration for maximum memory utilization for Commodore's A2088/2286 "bridgeboard" users.
- ✓ Uses easy-to-install, industry standard, SIMM memory modules. No more bent pins or incorrectly inserted DRAM chips!
- ✓ GVP's state-of-the-art VLSI technology has reduced an 8MB RAM expansion board to a "half-card"! This translates into a lower parts count and also means the highest possible reliability and life expectancy.

2MB Factory-Installed Memory

GVP Custom VLSI Chip

Up to 6MB User-Installed Memory

SCSI Hard Disk Controller

SII A2000 SCSI "Hard-Disk-Card":

Specifically designed for those users who don't need memory expansion but still need maximum hard disk performance at a budget price.

Features:

- ✓ Incredible SCSI hard disk performance achieved through GVP's innovative new custom chip design.
- ✓ Supports virtually any SCSI device including: CD ROMs, tape drives, Bernoulli drives, removable hard drives...
- ✓ Fully implements Commodore's Rigid Disk Block (RDB) standard as well as the new DIRECT SCSI interface standard.
- ✓ Allows direct AUTOBOOT from Fast File System Partition.
- ✓ Simplest and easiest SCSI installation in the industry.

SCSI Hard Disk+RAM Expansion

SII A2000-SCSI Hard Disk+RAM-Card:

State-of-the-Art integration packs GVP's high performance SCSI controller, 8MB FAST RAM expansion and a 3.5" hard drive drive INTO A SINGLE A2000 EXPANSION SLOT!

Features:

- ✓ GVP's new custom chip design provides DMA performance and unique direct dual port memory access to FAST RAM, eliminating typical DMA side effects under heavy graphics load.
- ✓ Easy-to-install SIMM memory modules allow flexible memory configurations for Zero through 8MB. Supports 6MB FAST RAM configuration for BridgeBoard users.
- ✓ Supports virtually any SCSI device.
- ✓ Allows direct AUTOBOOT from Fast File System Partition.
- ✓ Simplest and easiest SCSI installation in the industry.

Factory-Installed 3.5" Hard Disk Drive

GVP Custom VLSI Chip

Up to 8MB FAST RAM Expansion

Ask for GVP factory-installed drives.
NEW LOW PRICING!

GVP

GREAT VALLEY PRODUCTS INC.
600 Clark Avenue, King of Prussia, PA 19406

For more information, or for nearest dealer, call today. Dealer inquiries welcome.
Tel. (215) 337-8770 • FAX (215) 337-9922

Series II, and GVP are trademarks of Great Valley Products Inc.
Amiga and Amiga 2000 are registered trademarks of Commodore-Amiga, Inc.

Dealers Circle 29 on Reader Service card.

Consumers Circle 30 on Reader Service card.

ANIMATION 101

For those interested in taking a course in real-time Amiga animation for video, *Myriad Visual Adventures* offers **Animation 101** (\$35). The one-hour VHS tape is a two-part course for beginners. It covers animation and motion study, and has a brief section that aims to clear up some of the confusion about video editing. (Part 1 won second place the Industrial Video category at the '91 New York Ami-EXPO). The animated sequences on the tape were recorded in real time using basic software and hardware. (RS# 101.)

—DH



Put one foot in front of the other—with some help from Animation 101.

COMMODORE GOES TO WASHINGTON

WASHINGTON, DC—Imagine how exciting history would be if you could actually witness the events that shaped our world. While technology does not currently support time travel, you can see the next best thing to being there—at DC's Smithsonian Institute.

Commodore teamed up with Pioneer Electronics and Scholastic Books to donate three systems for presenting "Visions of American History: Struggles for Justice Volume 1: African American, Native American, Latino," an interactive exhibit. Scholastic designed the courseware for this educational extravaganza to run on an AmigaVision-

equipped A2500/30 connected to a Pioneer laser-disc player.

The exhibit draws you into the material with historical footage, simulations, maps, charts, biographies, and time lines in an attempt to make history lessons as close to personal experience as possible. According to Commodore's Director of Educational Marketing Paul Calkin, Scholastic hopes that the course will give students not only a more accurate account of history, but also a feel for the sacrifices made by the ground-breakers in our past.

—JJ

MOUSE ALTERNATIVES

Perhaps you use your mouse hour after hour, day after day. Perhaps you're tired of moving your arm and wrist into precarious positions, and are suffering from finger cramps trying to get the precision you need. Perhaps you haven't heard of **Mouse-trak**. Mouse-trak, by **ITAC Systems**, is what you get when you place a two-inch phenolic ball on hardened stainless steel shafts and bearings for precision, and add a wrist pad for cushioning the hand. It comes in two models, the MQ2 (\$159) and the MQ3 (\$169). This stationary device, designed for precision and comfort, offers a toggle mode (press to start, move the cursor, and press again to release) to reduce hold-and-drag finger cramps. It also offers user-definable-keys, and cursor-speed control. (RS# 103.)

Another option for mouse opponents is **TriMedia's Amiga Wiz** digitizing tablet (\$249). The Wiz hardware, manufactured by Calcomp, offers a 7.5x7.5-inch active area and 1000 lines-per-inch resolution. A two-button pen comes with the package, but if you need a more precise method of tracing, you



OVERHEARD

"The change is in name only," said a spokesperson for Stylus Inc., formerly entitled Taliesin. The firm, known for its structured-drawing program ProVector, also noted that it is sending free 2.0 upgrades to registered owners, so if you have not yet mailed your registration card, do so now! The company retains its address and phone number: PO Box 1671, Ft. Collins, CO 80522, 303/484-7321.

can opt for Calcomp's six-button mouse-style cursor with cross-hairs (\$75). TriMedia provides a five-year warranty and control software for all Wiz options. The Amiga Wiz attaches via the serial port (the A1000 requires a gender changer). (RS# 104.)

—DH

ALL BUSINESS

LabelDex! (\$74.95, *EasyScript!*) promises to solve the problems of organizing and managing the name/address/phone lists, floppy disk libraries, and electronic mail addresses that you are now accumulating in disarray. LabelDex! is compatible with dBASE, the popular MS-DOS database manager, and supports ARexx. Not only can it search, sort, and dial the phone, it can also log floppy-disk information straight from the disk, and automatically format and print professional-looking disk labels. (RS# 113.)

Small, fast, and memory-resident, **Contact 1.2** (\$59, *Desktop Utilities*) is a personal-contacts manager and database that you can summon with a hot key. Like LabelDex!, it can search, sort, and dial the phone. It can also send entries directly to your current document or to a printer (PostScript included). The program is compatible with Workbench 2.0 and customisable through ARexx. To prevent accidental losses, Contact automatically saves new entries whenever you press the Return key. Registered users are encouraged to send their ARexx scripts to the developer—any script that is included in the next release of Contact will win its author a free upgrade. (RS# 114.)

Designed specifically for special-events videographers, the **Video Escort (Mr. Hardware)** management system provides eight computerized forms to cover all aspects of the business. The program works with Precision's Superbase Professional 3.02; you can purchase both packages for \$399.95 or, if you already own Superbase, you can buy Video Escort alone for \$299.95. Video Escort's efficient data-entry system reuses previously entered data whenever possible. Not only can the software help you track client needs, special requests, phone calls, deposits and payments made, and balances due, but you can also print job contracts, receipts, crew schedules, editor's sheets, and over 20 other reports, including a sales-tax report. Video Escort can also keep track of crew and event scheduling, and you can modify all variable information. For security, Video Escort is password-protected. (RS# 115.)

For file security in networked computer systems, **Intercore Development** has released **InterLock** (\$59.95), a programming utility. InterLock promises to give AmigaDOS an advanced set of file-locking routines that are flexible, fast, and efficient. The utility is implemented as an Exec-style resident library. You can call it from any language; the program supports both the Manx and SAS C compilers, along with various 68000 assemblers. With InterLock, programmers can create multiuser applications that allow simultaneous access to a single file. (RS# 116.)

—BG ▶

Unleash The Artist Within No Natural Talent Required

Put DesignWorks To Work For You

If you've been looking for a fast, easy-to-use, high quality structured drawing program, look no further. Now you can unleash the artist within with DesignWorks, the structured drawing program designed for the Amiga mind.

Creativity In The Fast Lane

DesignWorks is built for speed. No longer are slow and cumbersome programs needed to achieve professional results. DesignWorks is the ultimate in simplicity, with a responsive interface and design set.

The Highest Form Of Self-Expression Is Now The Least Expensive

DesignWorks costs far less than you would expect from a structured drawing program with this much speed and flexibility. With a Bezier smoothing algorithm, unlimited numbers of drawing layers, flexible text handling system and user-definable multi-color patterns, you don't need to be a professional engineer or CAD programmer to achieve quality results. And high resolution printing means you get near-PostScript quality output from your dot matrix printer.

Stop by your local Amiga dealer to see DesignWorks in action.

DRAW YOUR OWN CONCLUSIONS

Fast and intuitive structured drawing
Create lines, rectangles, ovals, polygons, and freehand objects
Smoothed (Bezier) curves
Optional arrows on lines
Duplicate, rotate, flip, and scale objects
Text with multiple fonts, sizes, styles, and colors
Import/export IFF pictures
Automatically align objects relative to each other
Automatic grid snap
Group objects together
Variable line thickness
Customizable multi-color fill patterns
Multiple drawing layers
AREXX port
Macros, when used with AREXX
Magnified and reduced views
Drawing up to 100 inches by 100 inches in size
Up to 10 drawings open at the same time
Inch or centimeter rulers
Near-PostScript quality printing on dot-matrix printers, full 4096 color printing
Complete printer control, including sideways printing
Fully customizable
Full support for Kickstart 2.0
Requires Kickstart 1.2 or later and 512K of memory
Suggested retail price: \$125.00



NEW HORIZONS

206 Wild Basin Road, Suite 109
Austin, Texas 78746 (512) 328-6650

Amiga® is a registered trademark of Commodore Business Machines, Inc.
DesignWorks™ is a trademark of New Horizons Software, Inc.
Circle 64 on Reader Service card.

INTERFACE LIFT

Having trouble creating software with the "look and feel" of the Amiga? Your friends at *Commodore-Amiga* have written a book that can help, **Amiga User Interface Style Guide** (\$21.95, 224 pages). This addition to the Amiga Technical Reference Series details all the standard elements of the Amiga user interface, and documents the conventions that you should follow when writing applications. It provides definitions, descriptions, and illustrations of the Amiga's three built-in interfaces—the graphic user interface,

the Shell, and ARExx—and depicts such graphics as gadgets and windows. The Amiga User Interface Style Guide is designed for all interface designers, from novice to expert. (RS# 107.)

If the software you generated with an authoring system needs a better look, you may be interested in **INOVAtronic's Interface Design Kit** (\$54.95), a four-disk collection of button and icon clip art. The kit is for use with such authoring systems as Commodore's AmigaVision and INOVAtronic's own CanDo. It

contains over 500 ready-to-use images (in hi- and medium-res brushes) that represent functions frequently used in multimedia applications: videodisc, music, sounds, trashcan, mouse, printer, animation, pic, clock, document, floppy disk, and more. It also provides mathematical symbols, many styles of arrow buttons, and generic round, square, and rectangular button images. A 30-page manual directs you to each brush's location on the disks. (RS# 108.)

—DH

Cal Arts, from p. 8.
advanced techniques with such 3-D programs as *Imagine* (Impulse).

The 2000-square foot computer lab, open 24 hours a day, the lab was funded primarily from a grant from Disney. It holds nine A3000s, three 2500s, and an assortment of A500s and A1000s, all of which are cabled to AProDraw (R&DL) drawing tablets. The computers are linked via Ethernet to a Sun workstation that contains all of the lab's software, freeing up the hard drives and disks for the students' work. Two Video Toasters (NewTek) and an assortment of frame grabbers, slow-scan digitizers, and other peripherals are also available. One area is devoted to single-frame animation and video transfer.

TEACHING TALENT

An important part of what makes the lab work is the knowledge and enthusiasm of Amiga experts Dale McBeath, Assistant Department Director, and Sean Schur, who is not only an instructor, but a student as well. Both are artists and programmers; they have written custom software for the lab and even modified such programs as *Animation:Journeyman* (Hash). Dale is also a hardware guru, having built and designed an Amiga-based switching system. Sean's background is in film directing. He has extensive knowledge of computers, being involved with the Computer Research Institute. He is also an experienced teacher of advanced 3-D courses, wherein he pushes the state of the art in Amiga animation.

Besides its regular Amiga animation courses, Cal Arts has a Visiting Artists Program that has tapped the talents of such well-known Amiga animators as Gene Brawn, Joel Hagen, Jody Gillerman, and Brad Schenck. This program provides a two-week focus on each artist's area of expertise.

At the end of each year, the Cal Arts

students present their work to producers, some who come from as far away as Japan and Germany. At least a third of the students are hired on the spot, even before they graduate. The Simpsons television show, for instance, employs Cal Arts graduates almost exclusively, and you'll find large numbers of alumni working for all the major animation production facilities.

A new room is now being added to the lab, and pending additional grant

money, Cal Arts hopes to expand its capabilities dramatically. Staffers are also doing experimental work with virtual reality. Dale has written custom software for the project, and with Sean has designed and built a helmet and glove. The two hope to soon do more with 3-D—interactive sculpting, finger painting, and character design—and to allow viewers to interact with a three-dimensional environment.

—Goeffrey Williams

Little Big Show, from p. 8.

Down the way, **Centaur** (RS# 129) demonstrated the **Colorburst** 24-bit graphics board. Jaded by previous demonstrations of it, I was not excited until I saw the box—the board is finally shipping!

Programs Plus & Video (RS# 130) showed an upgraded version of **Real 3D** (1.4), now designed to take advantage of an '040 accelerator.

ICD (RS# 131) showcased **Prima**, its new internal A500 hard drive, available in sizes of up to 105 megabytes. Because **Prima** needs the space occupied by the A500's internal floppy, ICD also now offers the **Shuffleboard** (\$25), which allows you to make any external drive DF0:. The company's **Novia** internal A500 hard drives now come in 30- and 60-megabyte capacities and do not require removal of the internal floppy.

New hardware under development by **INOVAtronic** (RS# 132) will give A500 owners a video slot and lots of room for expansion in the form of a "tower." The unit will be available first as a kit. The company also showed a slick, easy-to-use directory utility called **Directory OPUS** (\$59), which has scores of configurable features.

Those wanting to further configure their system speed have just one equation to solve: $2.0 + x = 68040$. (Hint: x is the time Commodore needs to release AmigaDOS 2.0.) Among exhibitors holding 68040 boards until the 2.0 release were **RCS** (RS# 133), **Progressive Peripherals & Soft-**

ware, **GVP** (which now promises a clock rate beyond 25 MHz), and **CSA** (RS# 134, with its **40/4 Magnum** hardcard, which also provides serial, parallel and RS 422 ports and accepts 64 megs of RAM).

Picking up the slack for NewTek, which was not in attendance with its usual larger-than-life display, was **BreadBox** (RS# 135), the Video Toaster users' group. BreadBox displayed some of the latest Toaster tapes and demos.

In addition to its usual schedule of keynote addresses, seminars and master classes, AmiEXPO offered a series of novice classes. Show representatives also announced AmiEXPO's Fourth Annual Art and Video Contest. Submissions will be accepted for seven categories, and winners will be announced at the spring 1992 show. For details, entry forms, or more show information, contact AmiEXPO, 465 Columbus Ave., Suite 285, Valhalla, NY 10565, 914/741-6500.

The next AmiEXPO is scheduled for October 4-6 in Oakland, California. Following that will be Amiga '91 in Cologne, Germany, which runs October 31-November 3.

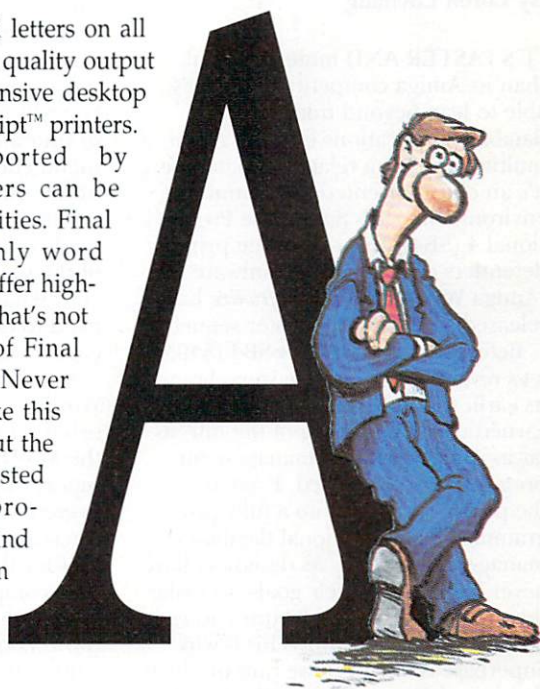
—BG

Overscan is compiled by Barbara Gefvert, Janine Jackson, and Tim Walsh. Send your news, new products, and network information to *Overscan*, *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458. ■

Before you purchase a new word processing program ask for character references (and then ask the price!)



Say goodbye to rough, jagged letters on all of your printouts. Until now, quality output was only possible from expensive desktop publishing programs or PostScript™ printers. Now any printer supported by Workbench™ printer drivers can be utilized to its fullest capabilities. Final Copy™ is the first and only word processor on the Amiga to offer high-quality outline fonts. And that's not all...Check out the rest of Final Copy's™ great features. Never before has a program like this been available. Check out the price. If you are interested in a quality word processor, you will not find a better value than Final Copy.™



Outline Fonts:

- Size fonts from 4 to 200 points
- Leading (line spacing) from 4 to 200 points
- Compress/Expand character widths
- Underline, Double Underline, Strike-Thru
- Small Caps/All Caps
- Superscript/Subscript

Word Processing Features:

- 116,000 word Spelling Detector and Corrector
- 470,000 synonym Thesaurus with definitions
- Automatic hyphenation
- Multiple columns (1-6)
- Search and Replace
- Title page option
- Header/Footer option
- Left, right, center, and decimal tab stops
- Left, right, center, and full paragraph justification
- Document statistics
- Copy/Paste ruler
- Insert date, time, and page numbers
- Custom page sizes

User Interface Highlights:

- Ruler displayed in inches, picas, or metric

System Requirements: Amiga™ with 1 megabyte RAM, and either a hard drive or 2 floppy drives.

Final Copy™
from
SoftWood

© SoftWood, Inc. P.O. Box 50178, Phoenix, AZ 85076

1(800)247-8314

Visa/Mastercard Accepted

ONLY \$99⁹⁵

- Magnified and reduced page views
- User-defined preferences
- ARexx port

IFF Graphic Support:

- Real-time text flow
- Scale to any size
- Cropping
- Place anywhere on page
- Depth arrange
- Also supports HAM and Extra Halbrite

Final Printing:

- Print at full resolution of printer
- 12 Bit-plane printing
- No jagged edges
- Pictures print in their original colors

Draft Printing:

- Print at maximum speed of printer
- Left, top, right, bottom, and first margins
- Use printer's built-in fonts

Printing General:

- Use standard Amiga printer drivers
- Print and edit documents simultaneously

Workbench 1.3 and 2.0 compatible.

REVIEWS

SUPERBASE PROFESSIONAL 4

Look! Up in the sky!

By Loren Lovhaug

IT'S FASTER AND more powerful than its Amiga competition, and it's able to leap beyond traditional database applications into the realm of multimedia. It's a relational database... it's an object-oriented programming environment... it's Superbase Professional 4 (SB4)! Yes, one of the prime defenders of productivity software the "Amiga Way," *Precision Software* has released another blockbuster sequel.

Before we take a look at SB4 (\$495), let's review the Superbase story. From its earliest Amiga release, Superbase earned the title of "king of the hill" as far as Amiga database-management programs are concerned. Even as the product evolved into a fully programmable and relational database-management system, its designers have never lost sight of their goal—to make the product's powerful features accessible and straightforward. This is why Superbase is one of those rare products that is equally attractive to the novice with minimal needs as well as to the experienced user who demands power and performance.

Sensitive to the diversity of its clientele, Precision split the evolution of Superbase into separate tracks. Superbase Personal offers an inexpensive, nonprogrammable version of the product, while Superbase Professional affords a full-blown implementation that stands up to database-management systems available on any platform.

UP, UP, UPGRADE

SB4 for the Amiga addresses several of the minor deficiencies of Superbase

Professional 3 (see July '89, p.14) while adding legions of new features—so many, in fact, that editorial space and postal weight regulations prevent me from covering them in detail. To give you an idea of this upgrade's scope, consider that the program's documentation grew from around 550 pages to more than 900 pages. Within you will find over 250 new DML programming constructs, several new menu choices, and a multitude of other enhancements.

Thankfully, the new version is fully read-compatible with previous versions of the program, but if you reorganize your database under SB4, you will need to export the data for use with earlier versions.

Since the introduction of SB4 for Windows, many of us have been clamoring for the enhancements found in the MS-DOS version. I am happy to report that our calls have been answered. In fact, other than the areas where the platforms involved diverge, SB4 for the Amiga and Windows are data-compatible and operate alike. The operational similarities between these two versions of SB4 mean applications written in DML (the Superbase programming language) require only minor or, in many cases, no modification to run under either version of Superbase. This gives Amiga Superbase owners the ability to tap into the wealth of applications created for use on MS-DOS machines.

Perhaps even more exciting than the compatibility with the MS-DOS version of SB4 is the enhanced Forms Designer. Previous versions of the program allowed you to create custom data-entry screens and define relationships for multifile applications. SB4's Forms Designer, however, now includes a more efficient design and a number of new features.

Of the Forms Designer's new fea-

tures, I was most impressed with its three new object types. These add a higher degree of automated and interactive control to on-screen forms and DML applications. The CMD object makes it easier to add embedded automatic commands as well as to create on-screen push buttons that execute DML commands. Your push buttons can be either solid or transparent rectangles with titles in the colors of your choice. The program gives you the option of defining hot spots over IFF backgrounds or other Forms-Designer objects.

Two more objects allow you to define graphics-based data-entry constructs. You can create a set of specific responses for a field with radio buttons that a user can select via the mouse or by pressing the Tab or Spacebar keys. Likewise, using check boxes, you can create a graphical means for selecting binary choices such as yes/no or true/false.

Another benefit of SB4's new Forms Designer is that now it is much easier to define relationships among multiple files. This was once a confusing and tedious chore, but now you can define these relationships simply by choosing a primary and secondary file and drawing a line on screen linking the fields in question. The same holds true when linking and replicating fields to define one-to-many relationships (transactional processing).

One problem that plagued pre-SB4 versions of the Forms Designer involved fonts. Although previous versions allowed you to display informational text and field names using any screen font you wished, you could not display your field data itself in any font other than the system font. This stumbling block has been removed, so that when you use the desktop-publishing-like tools provided, it is very easy to construct attractive data-entry and

For information about the vendors of products reviewed, see "Manufacturers'/Distributors' Addresses" list on p. 118.

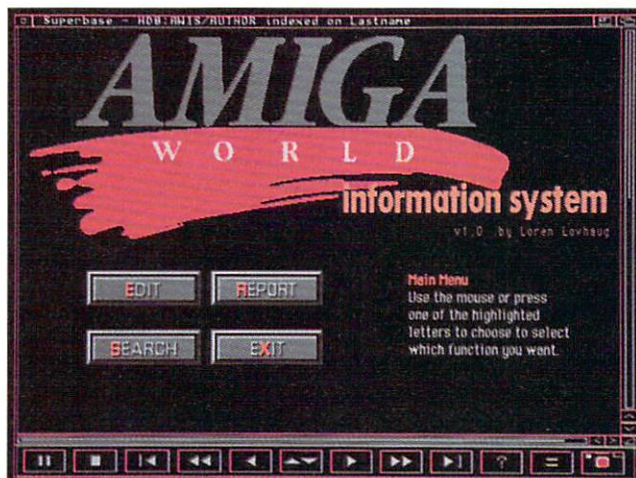
processing screens. In addition to these facilities are a number of new options for importing non-IFF graphics, scaling images, and working with image palettes.

DML control is another benefit of the new Forms Designer. DML now provides a complete complement of high-level commands for dealing with every sort of mouse, pull-down menu, control panel, and key-press event occurring in conjunction with screen forms and their new object types. Further enhancing DML's form-control facilities is a new set of commands for actually defining a new form and adding form objects completely under DML, thereby allowing you to bypass the form designer itself for applications where it might be desirable to do so.

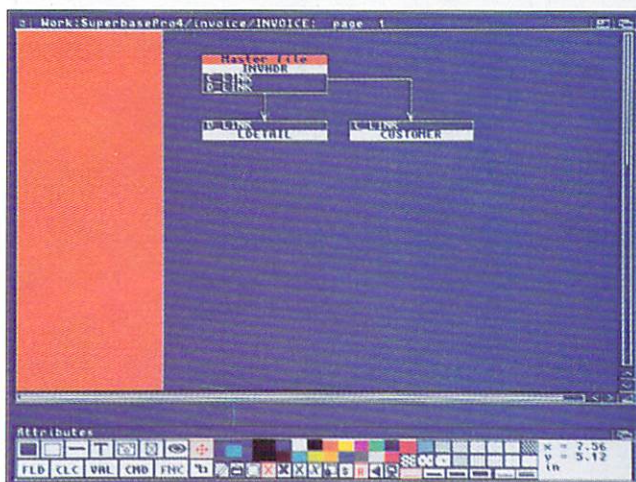
WHAT'S IN STORE?

Although you may care little about MS-DOS compatibility or the Forms Designer, there are still plenty of reasons why you may want SB4. To begin with, Precision optimized Superbase's internal storage format in order to provide better performance and increased storage capacity. Precision asserts that Superbase can now store, index, and retrieve information from a one-billion-record database. In addition, SB4 now includes a single-character logical field type as well as virtual fields.

Precision extended Superbase's ARexx support and provides adequate documentation. Overall, the manuals are greatly improved. We no longer have to live with the fascinating trivia on installing the Atari ST version of Superbase, the easy-to-lose stapled addendum booklet, and the 27K read-me file. Replacing these rough edges are two well-written, beautifully illustrated, tab-divided manuals in D-Ring binders.



With Superbase Professional 4, boring database screens are a thing of the past.



Linking your data base files is as simple as drawing lines on screen from one file to another.

Precision improved both the Superbase label-dialog and report-generation facilities which now incorporates many new options and is substantially easier to use. And finally, Precision opted to make SB4 noncopy-protected right out of the box.

So do I have any gripes about SB4? Just two. First, SB4 comes with only slightly better than Preferences-based printer support. While I realize this meager support reflects mostly on Commodore, given a package of this price and stature, I would like to see better support for resident and soft printer fonts. Lastly, I think that the indexes of the new manuals are a bit skimpy for 900 pages of text.

Overall, however, SB4 carries on the Superbase tradition of excellence. The enhancements, particularly those made to the Forms Designer, expand Superbase's potential considerably. SB4's interactive on-screen-button support and programmable nature make the program ideal for multimedia applications, especially when you need database accessibility on a grand scale. These new-found talents combined with the product's success as a tradi-

tional relational database manager, truly make it super.

REAL3D PROFESSIONAL

Closing the gap between reality and imagination.

By Kelly Day

IF NOT A SCULPTOR, an artist requires the imagination to translate 3-D reality into what is essentially a 2-D medium. Photography gave us a relatively simple means to convert a 3-D world into 2-D form, but in many ways it left out the imagination or inner vision so close to an artist's heart. The advent of computers, coupled with 3-D modeling programs, gave us the opportunity to get back some of that, however, by providing us with a kind of camera of the imagination.

The trouble is that this new medium has been too complex and 3-D software has required too much tedious calcu- ▶

lation an tinkering. That's where programs like *Activa International's* Real3D Professional (\$499) are ready to make a difference. The idea behind Real3D is to minimize the model-building process that more often than not hinders a designer's progress rather than helping it. Real3D accomplishes this by eliminating the process of working directly with points or vertices.

To create designs in Real3D, you combine wireframe representations of simple primitive objects (cones, cubes,

spheres, etc.). Initially, I balked at this approach, because I always liked the detail that direct control over vertices gives me, but some of Real3D's built-in features present a very convincing counter argument.

AT THE COUNT OF THREE

Real3D is divided into three basic sections. First, you create and edit your scenes and objects. In the second, you rotate these objects and make adjustments to their positions so that when

you put the third section—the rendering mode—to use, the observer's point-of-view is precisely the way you want it.

Real3D's tri-view is similar in some respects to Byte-by-Byte's Sculpt 4D environment. Not only does it provide three views of your scene, but it also provides markers for your observer position (camera), aim point or target, secondary pointer, and lamps.

As mentioned previously, you build your models by continuously adding primitive objects to a hierarchical structure. There are three reasons why this process is more accessible than any 3-D program I've previously used. First, because what you see is a simplified wireframe of each primitive and not all of its constituent surfaces, the tri-view is kept very clean and clear of extraneous lines.

In addition, the color that you select for each primitive object is reflected in



We're making waves

Real3D is a revolutionary 3D modelling, ray-tracing and animation package. Version 1.4 is now available.

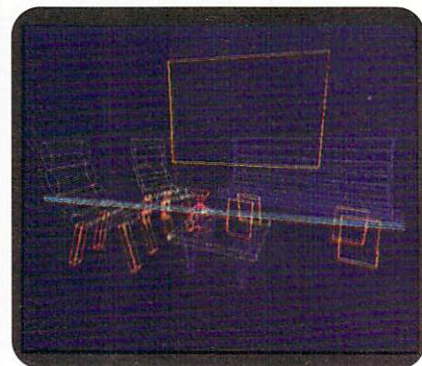
Includes sophisticated solid modelling, 24 bit rendering, superior material handling, fog effects, and several mapping methods.

REAL3D™

Real3D is marketed internationally by
Activa International B.V.
P.O. Box 23260, 1100 DT Amsterdam
The Netherlands

Real3D's support for North America by
Programs Plus & Video
544 Queen Street, Chatham,
Ontario N7M 2J6, Canada
(519) 436-0988 BBS(519) 436-0140

Real3D™ is a product of realsoft ky, Finland



Real3D Pro lets you model with lines first, before you commit to rendering.

its wireframe color, which also helps to keep individual primitives quite distinguishable from one another. Typically, hierarchical systems prove cumbersome when you are designing in a 3-D environment, because they require that you stop designing and name each little part as you go along.

Real3D eliminates this stop-and-go process by automatically naming each object for you as you create it. It gives each object a temporary name, such as "Cube1" or "Sphere5," for example. You can either pay attention to the naming and hierarchical placement of each object as you go along, or you can completely forget about it and rename them later. Real3D lets you rename each object and then copy, cut, and paste individual pieces into the roots of the hierarchical tree.

Working with outlines of objects makes designing simple. There is no need to put a boundary box around a set of points in order to quickly move ▶



SupraDrive™ 500XP

for the Amiga® 500

52MB Quantum® drive with

1/2MB RAM \$599

PLUS when you buy this combination,
you'll get **an extra 1/2MB**

of RAM FREE!

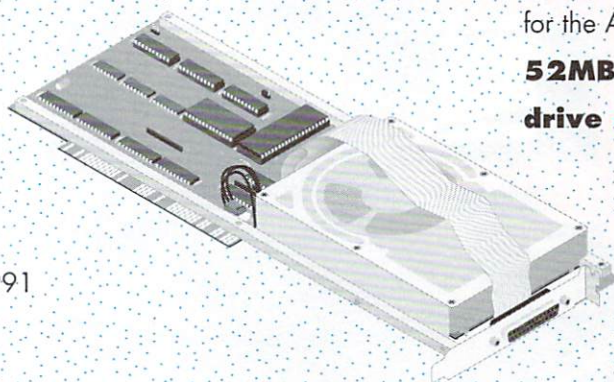
OUTSTANDING

SupraDrive™ with Wordsync

for the Amiga 2000

52MB Quantum

drive \$379



Offers expire October 31, 1991

Available directly from Supra
and from most Amiga dealers.



ORDERS: 1-800-727-8772

503-967-9075 • 7101 Supra Drive S.W., Albany, OR 97321 USA • All trademarks belong to their respective owners.

them. Each primitive object is born with its own simplified boundary box. Such movements as rotate, relocate, stretch, and scale occur as quickly as you can move the mouse.

Real3D offers a veritable host of special built-in tools, such as Lathe, Fence, and Tube, that all work to create extruded or molded objects in 3-D as fast as you can draw them in 2-D. If the tri-view refresh rate starts to bog down as your model becomes more complicated, there are controls that allow you

to choose whether you want all of the windows to auto-refresh after each movement or just the one in which you are currently working.

The same goes for the objects within the windows. You can select auto-refresh for just the object currently under scrutiny—from its immediate parent onward. You can even set it up so that only the component you are currently moving will be constantly redrawn. If all this still is not enough to speed things up or clarify the scene for you,

then you can also hide objects by name from the hierarchy.

GLASS WATERMELONS

Through a variety of controls, you can whip up just about any material or texture that you can imagine. With the material creation requester's sliders, you can control various aspects of the physical properties of light on the surface of an object. The program also lets you map pictures and textures—including a rippling-water effect called bump mapping—onto surfaces.

Using a set of "Boolean logical operations" (a complicated term for a cookie cutter), you can quickly and easily create intricate objects. It's like having a tool set made out of thin air: If you need a drill or a scoop or a saw, you just make one, use it, and then toss it out. You can overlap any two objects in space and then combine them in one of six ways to produce a new object.

If you link objects with the AND function, only the parts of the original two objects that were overlapping will remain after the operation is complete. If you use the AND NOT function, the tool or object will leave a hole of its own shape in the object it intersects—similar to the way a cookie cutter works. EOR, the opposite of AND, leaves only the parts that did not overlap in space. DIVIDE behaves the same way as AND NOT, except that you get to keep the cookie, too.

The remaining two functions (called AND WITH PAINT and AND NOT WITH PAINT) behave the same way as AND and AND NOT, with the slight difference that the attributes of the tool that you used to cut are left on the surface of the resulting object. This feature intrigues me because it is one of those things from the realm of imagination that you cannot create in reality. What this means is that, for example, you can cut tiger-stripe holes in a watermelon or glass-lined scoops out of a piece of wood or carpet.

The light sources in Real3D are superb. By placing a lamp in a tube and then aiming the tube at my model, I created a spotlight. I agree with the philosophy in use here; this light source is like a filament around which you place some sort of opaque object to make lamps.

Real3D's Wireframe mode provides a perspective through-the-camera point of view of a model or scene. With it, you can manipulate a series of controls to move your point of view around—almost in real time—for proper framing

Continued on p. 90.

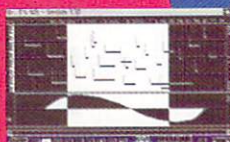
SYSTEM Control

No other software gives you the power and control over your creativity the way that KCS 3.5 with MPE does. This is the system you've been waiting for with 48-track sequencing, realtime graphic editing, scoring, and MIDI mixing. And if that's not enough, we have a complete line of products including Copyist, X-oR, M, TIGER Cub, Phantom, and Music Mouse. From beginner to serious professional, we have musical products to fit your need.

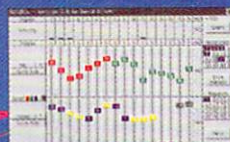
Once you try it, you'll be convinced.



KCS Track Play



KCS Graphic Editing



KCS AutoMix



X-oR



"M"



Phantom

Dr.T's MUSIC SOFTWARE
100 Crescent Rd.
Needham, MA 02194

For more information
and a complete catalog
call 617-455-1454.

SUPRAMODEM

P L U
MNP 5 & V.42bis



Also Available: SupraModem 2400i Plus IBM®
internal \$179.95, SupraModem 2400zi Plus
Amiga® internal \$229.95, SupraModem 2400
MNP external \$179.95.

Fast, error-free communication has never been so affordable! The SupraModem 2400 Plus adds MNP classes 2-5 and CCITT V.42bis to the popular SupraModem 2400, providing high-speed, error-free communications at a very low price. MNP 5 gives you up to 4800 bps, error-free throughput with another MNP 5 modem. And CCITT V.42bis (the international standard for error correction and data compression) gives up to 9600 bps error-free throughput — a 4 times speed improvement over regular 2400 bps modems! All this means you can get more done with less time spent on line, so all your costs are less!



free throughput with another MNP 5 modem. And CCITT V.42bis (the international standard for error correction and data compression) gives up to 9600 bps

error-free throughput — a 4 times speed improvement over regular 2400 bps

modems! All this means you can get more done with less time spent on line,

so all your costs are less!

SupraModem® 2400^{plus}

- Up to 9600 bps, error-free throughput when communicating with another V.42bis modem
- Up to 4800 bps throughput with MNP 5
- Compatible with MNP classes 2-5
- Supports Bell 103/212A & CCITT V.21/V.22/V.22bis/V.42bis
- Asynchronous operation at 300, 1200, and 2400 bps
- Automatic adjustment to optimal protocol & rate
- 100% "AT" command compatible
- Works with virtually any computer
- Compatible with all popular telecommunications software
- Autoanswer/Autodial (tone or pulse)
- Two modular phone jacks
- Adjustable-volume speaker
- Made in the U.S.A.



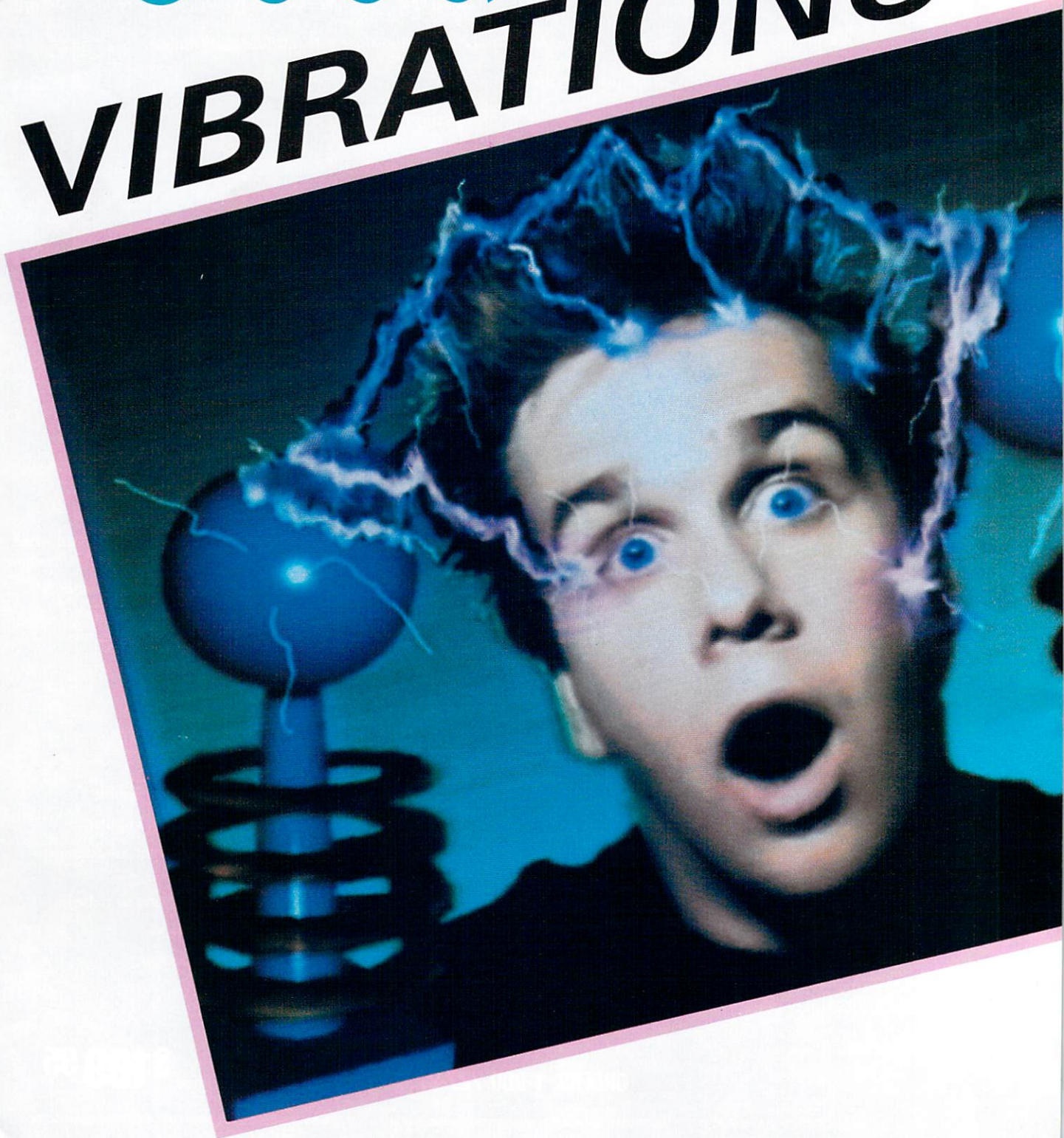
Supra Corporation

ORDERS: 1-800-727-8772

Suggested Retail Price

\$199⁹⁵

Good **VIBRATIONS**



How to give your animation ex-ci-ta-tion?

Here's some

advice from the experts.



What makes an animation successful? What is it that makes you sit up and take notice when one cartoon starts to roll but sends you drifting off to dreamland when the sequel comes around?

To be successful, your animation must be clear—in both purpose and execution. It's also got to be believable. Exaggeration aside, you must take into account the rules of physics when producing an animation. Further, your animation should have personality; tiny characteristics are key. But th-th-th-that's not all, folks! Sometimes, a touch of razle-dazzle is in order (see opposite page).

We asked a group of professional animators to share some of the techniques they use in their work. While these techniques are basic, they are not necessarily obvious. They can, however, make a tremendous difference in the impact of your animation. Although the tips these experts provide may be exemplified in terms of a particular program, these pointers can apply to 2-D and 3-D animation alike, so everyone can benefit.

So now, without further ado...let's get on with the show!

CLARITY IS KEY

BY ERIC DANIELS

As an animator, the most heinous crime you can commit is to bore your audience. You've got to grab them by the eyeballs and make them want to watch your animation! The best way to get and hold people's attention is to clearly communicate an entertaining idea. Here is a four-point plan for doing just that:

Create definite characters: Know who your characters are and make them known early to your audience. Stereotypes can help communicate personality quickly. Your audience must have a set of expectations built up about the character, which you can then follow or break depending on your mood. This goes for inanimate objects as well as characters. If you are animating a spaceship or a car, let the audience see it and become familiar with its shape before doing anything fancy with it.

Keep your story simple: Don't try to animate a Dostoevsky novel; simple ideas make the best animations. One of my favorite short animated films, called *Sisyphus*, depicted nothing more than a man pushing a rock up a hill. What made the film ►



special was the beautiful simplicity of the idea and the skill with which the animator portrayed it. The more complicated the idea, the more the audience will want to wander away.

Stage clearly: This is where your story-telling abilities get tested. You have to break the action down into poses, all of which advance the action. Strong posing is a mysterious art, but there are a few rules: Try to create strong silhouettes, with important objects or gestures held away from the body, surrounded by "clear air." Don't clutter your story with too many poses; use just enough to convey the idea clearly.

Use the character's whole body with every motion, and try to caricature attitudes that the audience is familiar with. For sadness, throw the head forward into the hands and slump the shoulders forward. For pride, arch the back until the chest swells out like a sail. Isolate

the important motions and objects, and make them fill the screen if possible.

Keep the tempo interesting: If you introduced new poses at exactly one-second intervals, it would not matter how interesting they were; the animation would be lifeless. You must break up the timing into fast-slow-fast sections, with an eye toward what the character is thinking.

If you want a mischievous character to have a brainstorm, you might show him rubbing his chin slowly while looking skyward. Then, you might slow his hand to a complete stop for a second, and make his eyes widen as the idea formulates. Then, he might have a sudden look of anticipation and switch to a delighted expression with his finger raised. With him looking into the camera, his "Eureka" expression might slowly change to a devilish one, after which he might zip

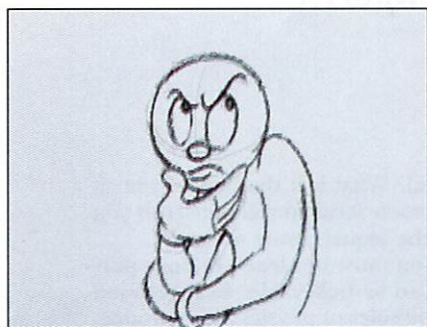


Figure 1. A brainstorm brews



Figure 2. Hey...

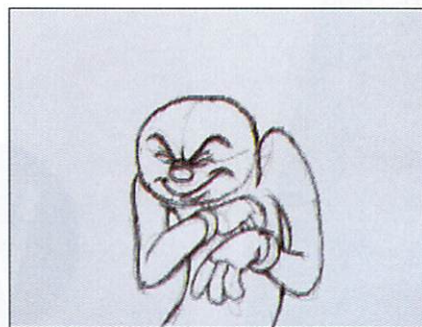


Figure 3. Uh-oh

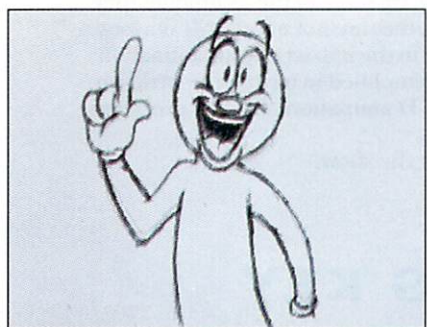


Figure 4. Eureka!

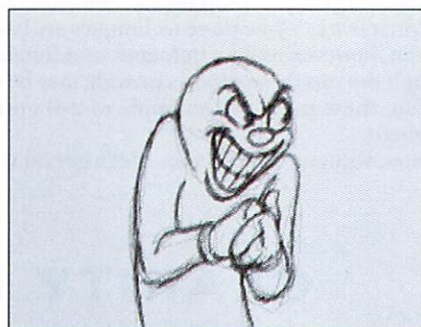


Figure 5. A devilish look



Figure 6. Ready, set...

Figures 1-7 show the key frames of this sequence. Figure 8 shows you various options for laying out the animation while keeping the pace varied.

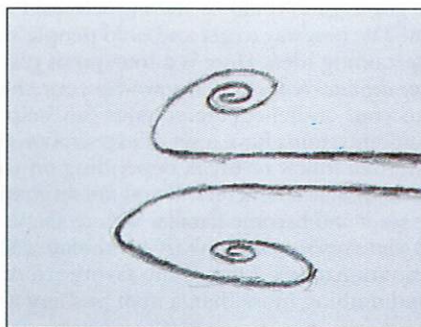


Figure 7. ...whoosh!

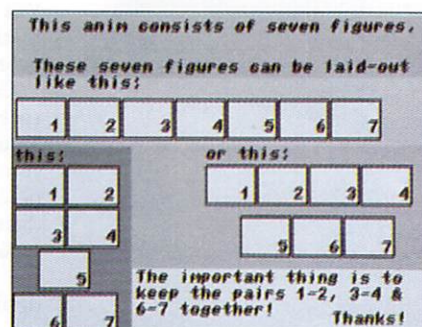


Figure 8. Layout options

quickly off screen. In every case, the speed of the motion helps to communicate what the character is thinking.

So remember, clarity is essential in communicating your ideas and in making your animation succeed.

Eric Daniels, a traditional animator for 13 years, has worked on such feature films as "An American Tail" and "The Rescuers Down Under," and he did all the animation on Disney's Roger Rabbit game for the Amiga. He currently works for Baer Animation in Hollywood.

EASY EASES

BY KELLY DAY

Aside from good story-telling and image composition, I think one of the most important aspects of good animation is accurate easing in and easing out. Unfortunately, most computer animation to date has overlooked this phenomenon. I think this is largely due to the analytical "one-thing-at-a-time" nature of most computers. But we smart people who own Amigas already know the value of doing more than one thing at a time (multitasking), so here is a tip for how to get good "eases" in computer animation.

Several 3-D and 2-D animation packages for the Amiga are able to perform in-betweening—that is, taking two keyframes that you provide and drawing transition frames between them. Rarely, however, do such programs provide a good method for accurately accelerating between key poses. It's as though things in the computer world had only two states of being—stopped and full-speed movement—with no smooth transitions between the two.

In the real world, that is not the case. Except for clocks, not many things move at a constant rate of speed. When you lift your arm from your side, for instance, it starts out slowly, gains speed, and then rapidly slows down before stopping or changing direction.

Here is a technique that I use to adjust tweens and make the motion look more natural. While I do this mostly with Sculpt-Animate 4D (Byte by Byte), you should be able to apply it to any program that generates only precise, even in-betweens for key-frame-type animation.

What I do is save off two key frames that I want to 'tween (see Figure 9), and then load them into a sec-

ond, multitasked Sculpt environment. There, I set up more in-between frames than I will actually need. Then I generate only some of the new key frames between them—not at regular intervals. I skip a few frames progressively. For instance, if I wanted to have a car accelerate forward and then stop, all in ten frames, I might actually design the sequence in the second program to generate 20 frames between my starting and ending points, for a total of 22. Then I'd have the program generate new key frames for frames 2, 4, 7, 11, 15, 18, 20, and 21.

It helps if you can visualize the frames getting further apart and then closer together, so sometimes I actually draw little hash marks on my monitor with a fine-point Dry-Erase (erasable) marker. The marks look something like this:

||| | | | | | | | |

This helps me get a feel for how an object is going to move. In Sculpt 4D's Keyframe Take mode, I draw these lines on the glass right over the key frames so that I can look below and see exactly which frames I need to generate (see Figure 10).

Once I have the ten new key scenes I need, I go back to my original animation and insert them all in succession between the original two by renaming them (see Figure 11). Now what I have is a key-frame animation where all ten in-between frames are key frames. The result is that instead of an even stop-go-stop animation, the car accelerates and decelerates—just like real life!

Kelly Day is Computer Animation Director for Walt Disney Television. He was the leader of the crusade to introduce Amiga to the company. ►

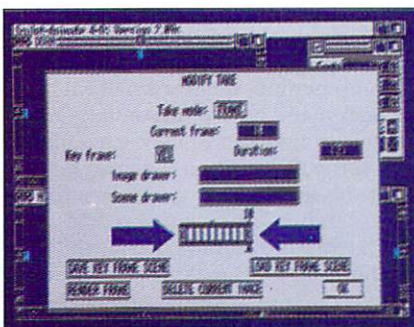


Figure 9. In the first Sculpt environment, choose two key frames to save.

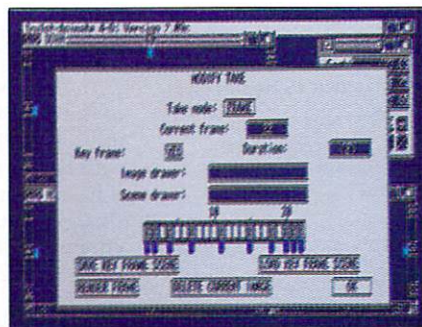


Figure 10. Generate your in-betweens in the second Sculpt program. Drawing hash marks (here in blue) on the monitor can help with timing.

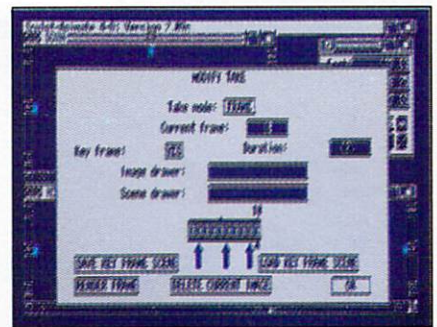


Figure 11. Back in the first Sculpt environment, insert the new frames.

GIVE IT PERSONALITY

BY STEVE SEGAL

It's easy to create an animation on the Amiga. If you use DeluxePaint III (Electronic Arts), you can just move the mouse around and voilà—instant animation! But to connect with an audience, you must give your animation personality. That does not mean your character must be a person or an animal; anything can move with personality—even typography.

There are lots of ways you can give an animation personality. Here are a few things to consider:

Speed: How fast an object enters a scene affects how we react to it. Fast-moving objects denote youth, energy, excitement. Slow motion, on the other hand, implies old age, stateliness, or heaviness.

Squash and stretch: An age-old animation convention, the squash-and-stretch principle says that when a moving object makes contact with a surface that stops it short, the object shrinks in the direction it was moving and expands in the other directions. As an example, a bouncing ball gets shorter and fatter when it hits the floor. Keep in mind, though, that the volume of the object should stay constant at all times.

Anticipation: When you throw a punch, you draw your arm back so you can pack more power. This is anticipation in action. In animation, you can use this principle to direct your audience and make the action

clearer. When a character prepares to run to the left, he should first rear to the right. This makes it easier to realize what is happening, especially when he runs off quickly.

Follow-through: Just as follow-through helps your tennis swing, it can benefit your animations. The idea is to go past your destination point and then pull back. For example, if a car screeches on its brakes in an attempt to stop, the top of the car will keep going forward a little bit and then move back. The faster the action is, the more pronounced the follow-through should be.

Anthropomorphism: Animation can and often does bring inanimate objects to life. You can add life to a car, for instance, with something as simple as a funny sound—or by turning its headlights into eyes and the grillwork into a mouth. Don't go overboard with this technique, however; there should be some reason why an object comes to life—even if only for gag purposes.

Exaggeration: If Popeye flexed his arm and a muscle of ordinary size popped up, boy would we be disappointed. Why do you think Arnold Schwarzenegger is so popular? He's bigger than life! Don't stick to exaggerating just characters, though—exaggerate their actions, too. A running character should take bigger steps and jump higher than humanly possible.

Overlapping action: When a character moves or comes to rest, not all parts of him move at the same time. For example if a rabbit turns his head, the tips of his ears should start moving after his head starts, and stop after his head stops.

Ignore all rules: As long as you consider the possibilities inherent in these techniques, feel free not to use them if the animation works better without them. Animation is, after all, a medium of creativity.

THE APPLICATION

To demonstrate some of these principles, let's consider a before-and-after example. In the first instance, we'll have all the letters in the word BEFORE move onto the screen at a constant speed and then stop in the center. Now this is about the most boring presentation imaginable. Although you could make it more impressive by adding some flips, spins, and highlights, it still would not have personality. Sometimes dazzle is what the client wants and expects from computers, and I'm a sucker for it myself. But it can get tiring after a while, and it's not likely to carry an animation by itself.

In the revised presentation, the word AFTER starts at the left of the screen and zips to the center. On the approach, the letters are skewed to look streamlined, with the top bent to the right. When the word jerks to a halt, the tops of the letters keep going as a follow-through, but then bounce back. You can add some choreography by having the letters enter at different times, and even some humor by making one letter late and having it run to catch up with the others. This is one example of anthropomorphism. Another is my de-

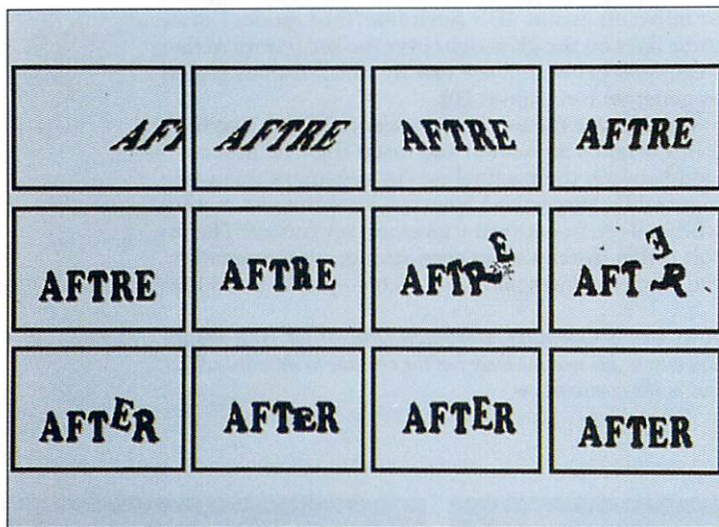


Figure 12. Personality helps AFTRE to become AFTER.



cision to transpose the last two letters (this gives the spelling AFTRE), so that the R can use its legs to kick the E. While the E is flipping overhead, the R runs to take its place. When the E lands, it squashes and then settles back to its original shape.

The accompanying storyboard (Figure 12) shows the key elements of the AFTER sequence. This example is just a simple introduction of letters, but by adding some humor and taking advantage of some of the possibilities of animation, the action is more memorable.

STARTING TIPS

Once you have created a character or object that you want to animate, try to determine its weight and mass and imagine how these factors will affect its movement. A rubber ball and a bowling ball react completely differently, so you must decide what kind of material the object is made of before you move it. Also, timing is critical, but very difficult to perfect. I often use a stopwatch to try to create the action in my mind. While you are working, don't be afraid to act out the motion of

your characters—and don't be embarrassed to make sound effects with your mouth.

It is a good idea to work as roughly as possible at first, so you can keep the motion in your mind and not worry about details. I draw very quickly in DeluxePaint III to get the rough shape of the character; then I draw over my roughs in another color. In that way, I can use the Stencil option to lock the new color in and then clear all the frames to get rid of the rough drawings. With Disney Animation Studio, I insert a blank frame after the rough one, draw the cleaned-up version, and then delete the rough frame.

Finally, studying tapes of animation will help you appreciate the imagination and expertise that has gone into those wonderful works of art. Once you pick up on some ideas, you will be able to apply them to your own epics.

Steve Segal originally became famous in the Amiga community for his "Dance of the Stumblers" animation. He has also done animation for ABC's "Into the Night with Rick Dees."

SHOCK THERAPY

BY MARK SWAIN

You've seen them on television: animated electric bolts that blast onto the screen, etching and singeing—sparking life into still graphics and titles. These effects are not difficult to produce on your Amiga. All you need are a paint-and-animation program and some imagination.

To set up for these effects, start your software in any resolution—I tend to use lo-res interlace. (For the purposes of illustration, I will reference DeluxePaint III.) Create a palette containing a dark base color, a lighter version of the base color, and white. For electric effects, use dark blue for the base, light blue for the highlight, and white for the hot electric flashes. Other color combinations produce different effects: using shades of orange, for instance, creates fiery sparks. For a plasma or ray-gun blast, try a combination of purple and green, with white for the tips.

To create an electrified title sequence, begin by choosing a large font with which to make a template for your effects. Using a color that is not in your effects palette, type in your title (if the text is not large enough, grab it as a brush and resize it), and place it where you want it on the screen. Then create ten frames.

Now that your template is in place, click on the base color you defined for your effects. Then select the smallest (single-pixel) brush and the continuous free-hand-drawing tool. (You can also use the smallest square brush for the base color and the single-pixel brush for the highlight colors.) Jiggling the mouse slightly, trace through the letters with a continuous stroke, giving the appearance of random electricity (see Figure 13).

When you finish with frame 1, advance to each of the following frames and repeat the process. Make ►



Figure 13. Trace through the template with the base color (top). Then remove the template and add the highlight color. Finally, use white either to trace the whole title or to create power surges.

your bolts random, but try not to make drastic changes from frame to frame. In other words, if you have a large flare or electric branch in one frame, it should not suddenly vanish in the next, but move or change slowly throughout the following frames.

With all ten frames traced using the base color, create a stencil that locks all of the colors but that of the text template. With the stencil on, clear the frames to remove the template.

Now, using the base color as a guide instead of the template, select the highlight color and trace over the top, leaving some of the base color visible. While you are drawing, just wiggle the mouse as before.

The final step is to add the white heat. You can do this in one of two ways. The first is simply to trace the letters as before, this time using white. The result of this option is that all three colors are interwoven together. The second method gives the effect of electrical surges streak-

ing through the text. To get that result, first determine a path that the surge will follow. For example, in the word "Therapy," the surge would crawl down the T, over to and through the center of the H, and

then through the other letters. Find your starting location and begin to draw the white surge as you did with the other colors. Once you've created a short surge, simply advance to the next frame (by pressing the 2 key) while you are drawing. In the following frames, continue the surge on its path by drawing and advancing to the next frame. It is best to keep the surge lengths approximately the same. Once the surge reaches the end of a word or title, you can repeat the process to add two or

*It may sound
too simple to work, but
you will catch yourself
listening for
the thunder when you
run the sequence!*

three more surges to the animation.

If you want to add electric effects to an existing title or graphic, you can use a similar approach. To finish a title with crawling electric shocks, clone the original screen as before to produce 10 frames. With the word Shock in Figure 14 as an example, use dark blue to draw the short electric shocks on the left sides of the S in the first frame. Then advance to the next frame while continuing to draw. It is best to keep the path short, limiting the shock's movement to one curve or surface. Make the shock grow larger as it travels around the graphic, and then have it shrivel back when it reaches the end.

With the base color completed, add the highlight color to each frame. The final step is to add a white tip to the front of the shock. If you want, you can add surges, but beware of cluttering the graphic. The final animation should have several shocks spaced evenly throughout the graphic.

What's an electric effect without a few lightning flashes? You can add lightning to any of the above examples, or to other animations where they would fit in. Simply find the spot where you would like the flash to occur, and select the Add Frame command from DPaint's Animation menu. Next, select the Filled Box tool and the color white, and fill the entire screen with a white box. Then skip two frames ahead in the animation, and do the same thing. It may sound too simple to work, but you will catch yourself listening for the thunder when you run the sequence! ■

Mark Swain is a California-based freelance writer who does video post production and computer animation. He has shown work in the Siggraph Electronic Theater '90 and the 3rd Animation Celebration.

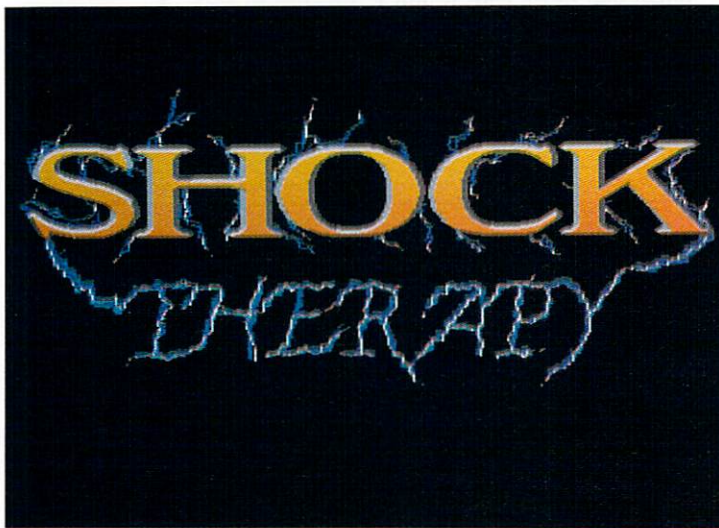


Figure 14. Adding effects to an existing graphic.

Visual Alchemy

*These tips on 2-D morphing techniques may not make you rich,
but they will certainly add a lot more pleasure
to your animation efforts.*

By Tracy Sabin

Like the dream of medieval alchemists, the whole idea of metamorphosis is intriguing. While some of those old-timers were in it just for the dough—a “get-rich-quick” scheme to walk away with the gold when the experiments were over—others had more lofty intentions. They were fascinated by the very idea that all matter might essentially be composed of one substance that appears in different forms, and that it should be possible by physical treatment to cause one form to change into another. They weren’t talking about DNA molecules, either; no, they were dealing with some pretty heavy-duty natural magic.

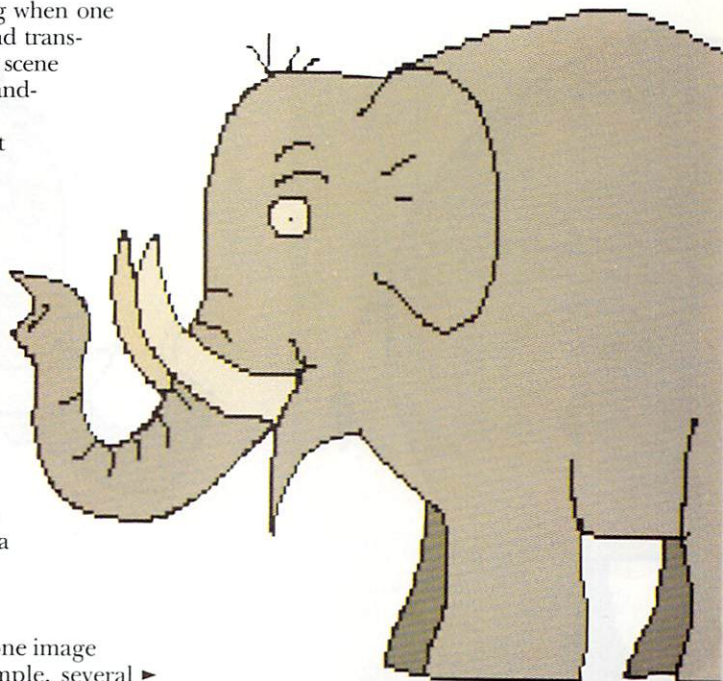
We animators can also feel our imaginations stirring when one considers the possibilities attached to taking images and transforming them into something entirely different from one scene to another. That’s what “morphing”—specifically 2-D hand-drawn (mouse-drawn, really) morphing—is all about.

Now, there are more and more Amiga programs that perform morphing automatically, so why would anyone want to draw a morph by hand? But that’s like saying the goal of alchemy was *only* to turn base metals into gold, period. Those medieval wizards and magicians were up to a lot more than just that.

Besides, most of the programs that morph automatically are 3-D programs. If you are interested in 2-D morphing, a 3-D program is not the optimal tool. Further, most 2-D programs that have a morph function can deal only with simple shapes. Even if a practical program did exist that could automatically morph between two complex, unrelated IFF images, there are compelling aesthetic reasons why you might want to draw the morph frame by frame. It’s simply not true that “a morph is just a morph is just a morph...”

A MORPH BY ANY OTHER NAME...

The fact is that there are myriad ways to morph from one image to another. Consider my elephant-into-a-horse example, several ►



frames of which run along the bottom of the pages of this article. Instead of the rougher, but more creative (and fun) transitional frames that I morphed by hand, a program that morphs automatically would deal with these images as lines or shapes, and it would create a nice, smooth, but quite mechanical metamorphosis.

There's more than one way to turn an elephant into a horse, however. For instance, you could consider the fact that the two animals share common characteristics and morph individual body parts from one animal to the other. The eye could remain intact and travel to its new resting place, the legs of the elephant could elongate and narrow, and so on. Or, perhaps you would like to play with shapes, instead. You could transform the body parts into balloons. The head, each leg, the tail, and the body could all become balloons. The balloons then might float around and transform back into body parts. Maybe you would like to add more animation to the morph: Instead of balloons, you could have butterflies that fly around before they transform into the new image.

You could even combine a morph into the action of a scene. The elephant starts walking, runs into a wall but continues walking, while at the same time slowly squashing into a big lumpy wad. When the wad is finally a big amorphous mess, it could start walking back away from the wall, becoming the horse in the process. The point is not simply that the possibilities are endless, but that a morph can have some meaning. You can use a morph not only for its visual appeal, but also to help tell your story. An elephant that morphs in a mechanical way into a horse has a different meaning than an elephant that turns into butterflies that fly off and transform into a horse.

MORPHING: MEANS AND METHODS

Well, if our "elephorse" example got you interested in trying 2-D morphing, what kind of animation program should you look for? There are two basic requirements. First, the program must let you move from frame to

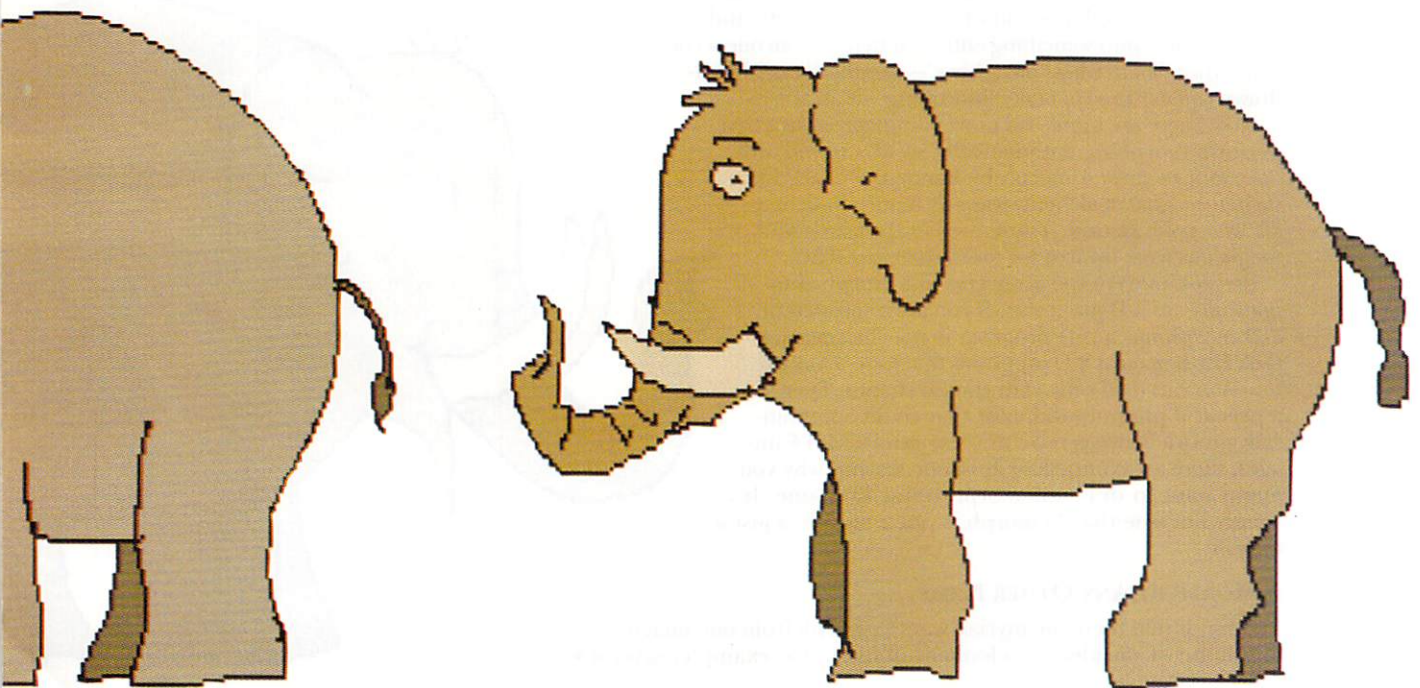
frame, backward and forward, with ease. Second, it would be helpful if it allowed you to see previous and subsequent frames as you draw—the so-called "onion-skin" effect. **The Disney Animation Studio** (\$179, *Walt Disney Computer Software*) is a good choice because it fulfills both requirements. You can also work with **DeluxePaint III** (\$149.95, *Electronic Arts*), although the program does not allow you to see previous and subsequent frames. (The soon-to-be released **DeluxePaint IV** supposedly will include an onion-skin effect.)

With ideas in mind, and software in hand, just how does one go about morphing? The three approaches described below should put you on the right track.

Standard Key-Frame Morphing

Key-frame morphing begins with the creation of such key frames as the elephant and horse discussed above. For the purposes of illustration, let's use simpler key frames. The left half of Figure 1 shows two key frames, a circle and a square, both visible on the same screen. In the Disney Animation Studio, the frames appear in different shades of gray, becoming more faint the further they are from the current frame. If you have several key frames loaded, you may want to use the bracket key ([) to eliminate from view all but the two key frames you are currently working on. If you are using a program such as DeluxePaint III that does not provide an onion-skin effect, you will need to insert a blank frame between your key frames and then skip back and forth between the two key frames to determine how to draw your morph.

Using your key frames as a guide, draw a morph frame that strikes a middle ground between the two key-frame shapes. It might look like a square with rounded corners (the right half of Figure 1). If you are using the Disney Animation Studio, you need to place your morph drawing in its proper position between the two key frames. Because the onion-skin images are the frames immediately preceding the current frame, your



Imagine ANIMATION

Imagine animation. It's easy if you try

(and if you have a little help from your friends!)

animation is not what John Lennon had in mind when he sang his ballad "Imagine." It is, however, what Amiga users have in mind when they enter the Stage Editor in Impulse's powerful 3-D program of the same name. Too often, though, the objectives of would-be animators appear as elusive as Lennon's vision. That's because Imagine's animation module can be difficult to grasp, and the program's documentation is of little help.

To help you harness Imagine's elusive animation power, I've worked up an exercise that demonstrates how to use some of its features. The project employs techniques for rotating objects, moving objects on paths, creating spotlights, following objects with both lights and camera, and even changing (morphing) one object into another.

The finished animation contains a revolving pyramid that changes colors (from red to blue, green, yellow, and then back to red). The focus is on a gold rotating object illuminated by a spotlight as it circles the pyramid.

The project takes about an hour to create, but rendering time varies according to the speed of your computer. To hasten the production, I have indicated with square brackets where you can use default function keys and hot-key combinations. For example, [F1] is the F1 key and [A-4] is the Right Amiga key plus the 4 key (press both together). Keep in mind that numbers or

names entered into a field must be followed by the Enter key, or the data will not be retained. ►



By Steven Blaize

This tutorial is designed to run on a 1MB machine with one floppy disk. If you plan to work further with 3-D animation, however, I recommend you add a hard disk to your system.

DON'T FORGET THE PLANS

Before you start the program, you should have a good idea of what you would like to do with your animation. This planning step cannot be overemphasized. Even

a storyboard representing key frames with stick figures can point up potential problems. Because I outlined above the concept for this project, you can proceed to load Imagine (all of the references in this article are to version 1.1).

Select Project-New [A-N] from the menu; then indicate which disk drive you want to work from and enter MY3D for the name of the project. Imagine will automatically create drawers for storing pictures, objects, and animations. In

Imagine, renderings are controlled with subprojects, which let you render an animation at one resolution for testing, and at another for production.

Create a subproject by clicking on New (your project's disk and drawer should be indicated). Then type First requester into the file box and press Enter; the parameters for the Rendering Subproject screen will appear (Figure 1). Click on Presets, and then choose Laced HAM Quarterscreen for this project; the rest of

the defaults are fine. This selection is based on time and space requirements. Click OK.

THE CAST OF CHARACTERS

The Detail Editor, one of three editors in Imagine used to create objects for animation, lets you set the specific surface characteristics (attributes) of each object. If you are unfamiliar with object creation, read each step carefully and examine other references (see sidebar).

Use the menu's Editor-Detail [A-2] to enter the editor. The first object will be the gold orbiter. Select Functions-Add-Primitive from the menu, and click on Sphere. Change Radius to 30, Circle sections to 5, and Vertical sections to 2; then click OK. You should notice that this ten-sided object looks nothing like a sphere. Don't be afraid to change the numbers in these requesters to obtain unusual shapes.

The menu's Pick/Select-Pick Select [F1] will pick the object so you can change the color of the surface. Then select Object-Attributes [F7], which brings up the Attributes requester. This provides the controls to set a multitude of combinations for your objects. These attributes interact with each other to provide infinite control and you may need to experiment to gain a complete understanding. For now, just enter the values indicated for the specific attributes.

You set a value by first clicking on a specific box; then either enter numbers or move the sliders. Values on the top left can be from 0 to 255 for each of Red, Green, and Blue, providing a selection of 16.7 million colors. The approximate color is indicated in the box on the top right.

To enter the attributes for gold, click on the following boxes one at a time and enter the indicated values. Color: Red 255, Green 180, and Blue 75 sets the surface color to a gold tone. Specular: Red 255, Green 250, and Blue 220 produces a natural gold tone highlight. Dithering: use Value 50 to help blend the colors. Hardness: Value 190 gives a medium-size highlight spot. Shininess: Value 255 makes the surface very slick. The Index of Refraction at 1.75 enhances the metallic look when ray-traced. Phong should not be checked. When you finish, click OK.

Save your object to the disk with Object-Save [A-S] from the menu. Click on Disks, select your disk, the drawer named MY3D.IMP, and the objects drawer. Enter Sphere in the filename requester and click OK. Using the menu's Objects-Cut [A-K] will clear the work space.

The objects saved to disk are not specific to this project. As you create objects, save them into a library, which you can then use for other animations.

Now for the next actor, the first pyramid. Again, use Functions-Add-Primitive, click on Cone, change Circle Sections to 4, and click on OK. Now choose Pick/Select-Pick Select [F1] and then Object-Attributes [F7]. This time you will not need to change as many items. Change Color to Red 255, Green 0, Blue 0; the Specular to Red 255, Green 255, Blue 255; Hardness to Value 255; and Shininess to Value 255. Remove the check from Phong and click OK. Again, save the object with Object-Save [A-S], call it Red and click OK.

With the object still picked, select Object-Attributes [F7], click on Color and change Red to 0, Green to 255, and Blue to 0. Also click on each box in the first two columns and click OK. This will keep everything the

Planning

cannot be

overemphasized.

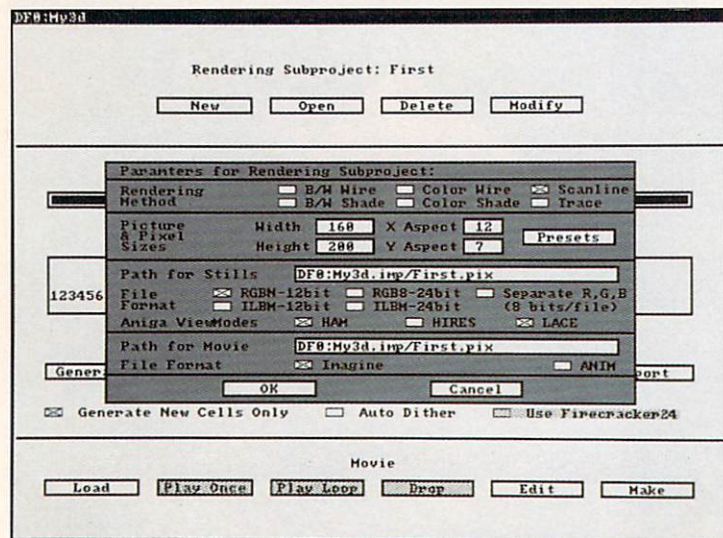


Figure 1. Return to Render: The Subproject screen.

same except that you just changed the surface color from red to green. Select Object-Save [A-S], enter Green and click OK. Repeat this procedure, but change Color to Red 0, Green 0, Blue 255, and save as Blue for the blue pyramid. You make the yellow pyramid by changing the Color to Red 255, Green 255, and Blue 0. Save this object as Yellow. These four objects will be used to morph the pyramid from one color to the next. Select Object-Cut [A-K] to clear your work area.

The last object is the floor, which is essential because we want to see the spotlight as it follows the gold object. If the floor is not in the scene, the light continues into an empty space. Select Function-Add-Ground, Pick/Select-Pick Select [F1], and then Object-Attributes [F7]. Set the floor to a medium blue finish by clicking on Color and entering Red 0, Green 0, Blue 150; set Specular at Red 0, Green 0, Blue 255, and Hardness at Value 255. Remember to click on the specific box before entering the values. Save the object with Object-Save [A-S] and call it Ground. Use the menu to select Project-Stage, and click Yes to quit the Detail Editor.

Now for the Action

The Stage Editor is for creating animation movement and viewing perspective. It has the same types of orthogonal views: Top, Front, Right, and Perspective. Select Display-Camera View and Display-Coordinates. The Perspective window now shows the viewer's perspective and cursor positions in the top right-hand corner. Briefly, positions in this 3-D space are defined by coordinates on the x, y and z axes. The x axis runs side to side when viewed from the front. The y axis extends

front to back when seen from the top, while the z axis is vertical when viewed from the front or right.

The center of this space is point 0, 0, 0. Negative values are to the left (x axis), the front (y axis), or below (z axis) the center point. The coordinates displayed at the upper right indicate your pointer position on the x, y, and z axes. Zoom in or out with Display-Zoom Out [A-O] and Display-Zoom In [A-I] at any time.

Clicking on a title bar (TOP, FRONT, RIGHT, or PERSP) will provide a full-screen view. Click on the bar again to return to the quad view mode.

First, you will create the number of animation frames. You can change this number at any time, but you will need to make fewer adjustments if you set this number first. This is where planning helps. Mine determined that 28 frames would fit on the disk and provide sufficiently smooth motion. Select Object-Action [A-A], the Action Screen, and enter 29 in the Highest Frame # requester. One extra frame will be used by some of the Imagine controls. Click on Done, and you will be back to the Stage views. Load the first object into the Stage by selecting Object-Load [A-L]. Now select Red and then click OK.

Next, create the path for the gold object to orbit the pyramid with Object-Add-Closed Path from the menu and click OK. Enter Path for a filename in the File requester. This object is used only to create movement and is not visible. A few changes are needed, so use Pick/Select-Pick Select [F1] to pick the path for modification. If you clicked anywhere before picking the path, use Pick/Select-Find [A-F], click on Path, and then press F1. ►

Help!

Impulse has an outstanding reputation for quality products such as Turbo Silver, Imagine, and Firecracker. To date, however, documentation and support have been questionable. Fortunately, Imagine has a good deal of after-market support. Below you will find some products and groups that can help.

Support Group

Turbo-Sig (international support group for 3-D graphics and animation; membership includes monthly newsletter)
1341 Ocean Ave., Suite 349
Santa Monica, CA 90401
213/398-7649

Books

The Imagine Companion
by David Duberman, author of the original Turbo Silver documentation
Motion Blur Publishing
915A Stambaugh St.
Redwood City, CA 94063

Software

Hot Key Authority (configuration files and utilities)
by Victor Osaka and Tim Donley
3-D Specialty Catalog
1341 Ocean Ave., Suite 349
Santa Monica, CA 90401
213/398-7649

The Buddy System (on-line help system)
Help Disk
6671 W. Indiantown Rd., Suite 56360
Jupiter, FL 33458
407/694-1756

Instructional Videotapes

Imagine the Possibilities
by Rick Rodriguez, author of the Imagine manuals
Impulse
6870 Shingle Creek Pkwy., Suite 112
Minneapolis, MN 55430
612/566-0221

Imagine - A Guided Tour
by RGB Images
Centaur Software
PO Box 4400
Redondo Beach, CA 90260
213/542-2226

Scale the path larger by first pressing S and dragging the mouse slowly up to the right until the box is slightly larger than the pyramid when viewed from the top. The bounding box approximates the size of an object. Any object can be scaled [S], moved [M] or rotated [R] interactively in this editor. Press the space bar when satisfied. Press M to move the axis of the path to the center of the pyramid in either front or right views. Press the space bar to retain the new position.

Do not be concerned about exact placement, for you can scale or move this path at any time you wish. While you still have the Path picked, choose Mode-Edit Path [A-2]. The path now has three axes, the two on the path being control axes. Click on the axis to the far right of your screen in the right view, press M to move, and drag it down so that it is just above the bottom of the pyramid. Press the space bar to keep the position.

Now click on the left axis, press M, move it up slightly, and press the space bar. Use Mode-Pick Groups [A-1] after you are satisfied with your path. Click Yes to save the path and then OK. The difference between the two modes is that in Pick Group you are scaling, moving or rotating the entire object, while in Edit Path you are modifying the axes that control the path's slope, angle and pitch.

Use Object-Load [A-L] to add the Ground. Then choose Pick/Select-Pick Select [F1], press M, and move

the ground down slightly in the front or right views so that it is below the base of the pyramid.

Now add your lighting, first a fill light. Use Object-Add-Light Source, then press F1 to pick it. This time you can move the object to a specific location with Object-Transformation [A-T]. The Transformation Requester allows you to enter specific values for rotations, sizes, and positions. Click on Position and enter -100, -300, and 250 in the respective x, y, and z boxes. This places it in the left (negative x) foreground (negative y) and slightly above the pyramid (positive z). Click on Perform.

Now add another light—the follow spotlight. Using the same procedure, enter Position 50, 0, 250, click Size and change x to 20 and y to 80, click OK. The x value sets the radius and the y sets the focal length of your spotlight. Spotlights begin at the point set by Position, and will illuminate only objects that fall within the diameter size of the light.

You can now add the last actor. Once again, use Object-Load [A-L] and select Sphere. Don't worry at this point that the objects do not seem to be in position. You will set this up in the Action Screen.

When you select Object-Action [A-A] to enter the Action Screen, you'll see your list of objects on the left side of the screen. The first two, Camera and Globals, are always in the list and will exist in every frame of the animation. Each object has six channels listed on the right side of the screen. The color bars indicate timelines (frame counts) of the specific channel. The frame numbers are along the top edge of the list of objects. Click under the frame numbers. Your position is the cross section of the red indicator on the frame numbers and the one on the channel names. Use these to select the proper frame and channel you wish to modify. The scroll bar to the far right scrolls through to the other objects. The buttons on the top permit you to select the type of modification you will make to a particular channel.

First, make the camera automatically point to the gold object by clicking Delete and moving the pointer to the Camera with the red indicators on Frame 1 and the Align channel. Click once. If you delete the wrong channel, click the Undo button. Now click on Add, move back to the Camera Align channel, click once on Frame 1, move to Frame 29 and click again. You should get a Specify Type requester. Select Track to Object, enter Sphere in the Object Name box, press enter, and click OK. You should now have a long timeline on the Camera's align channel. You can also adjust the focal length of the camera lens. Click on Info and then on the Camera Size channel at Frame 1, change X to 600, press Enter and OK. You now have a wider viewing angle.

The Global actor sets general (ambient) light, the horizon, and colors above and below the horizon, as well as adding star fields or an IFF for global reflectance. Click on the Global Actor channel, Frame 1, enter 40 in each of the Ambient color boxes, and click OK. This helps to add general lighting.

When you enter different objects on the same channel, they will change from the first into the next and take the transition frame count to make the change. This is how you will change the colors of the pyramid. So click on the Cone Actor channel, change End Frame to 1, press Enter and OK. Click Add, click once ▶

*You can scale
or move a
path at
any time.*

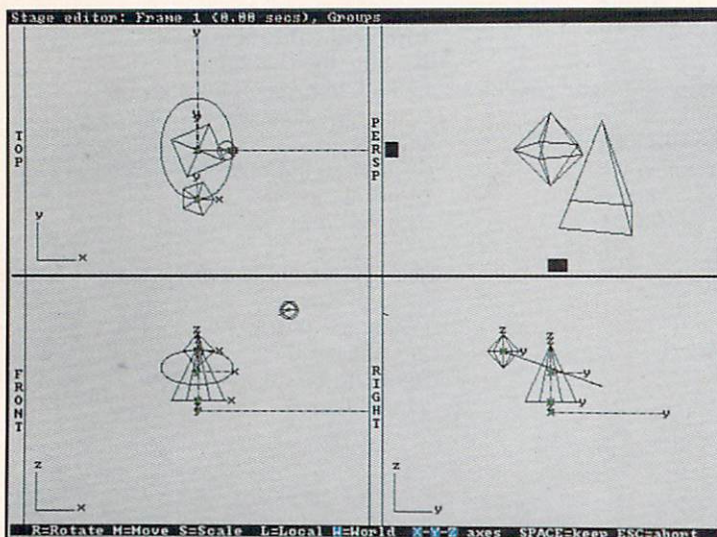
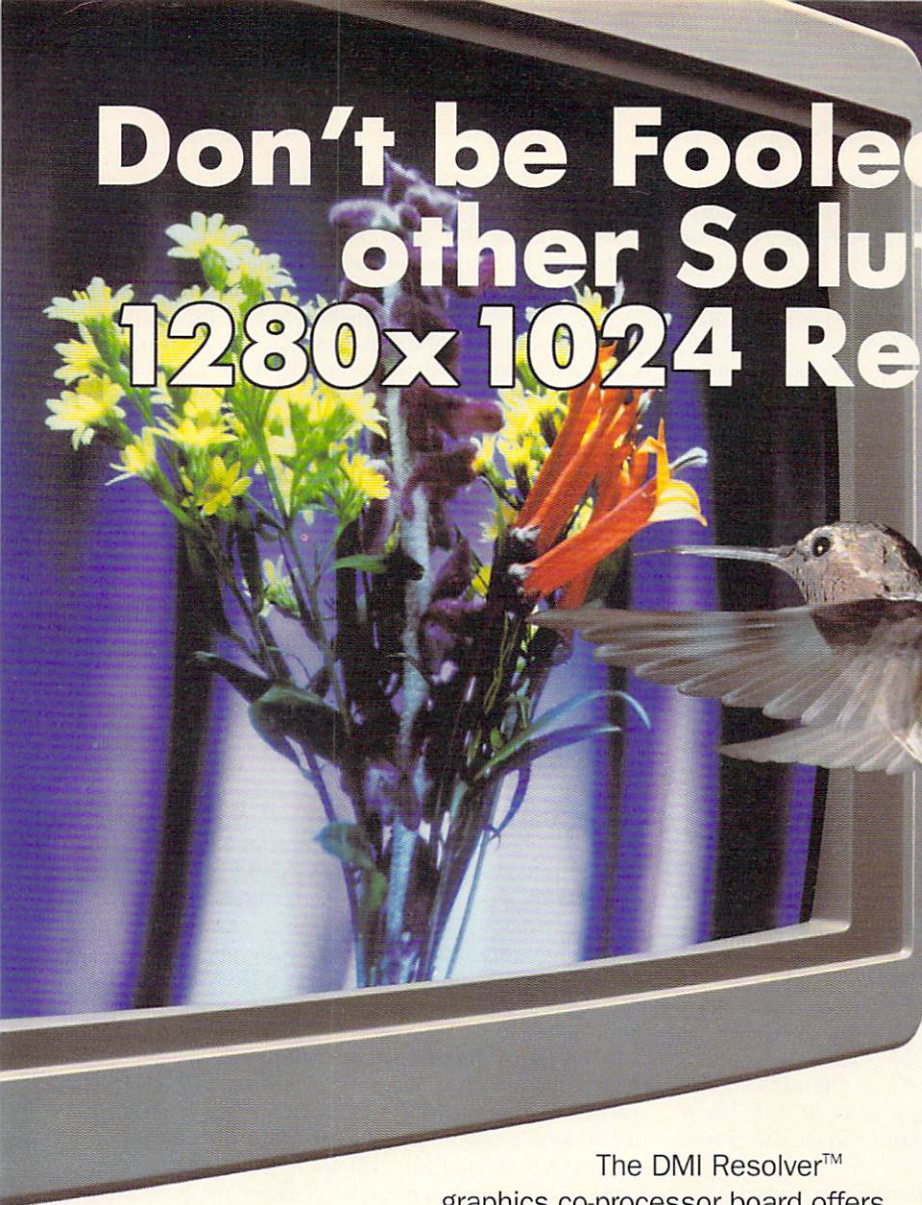


Figure 2. The quad-view Stage Editor.

Don't be Fooled by any other Solution. 1280x1024 Resolution.



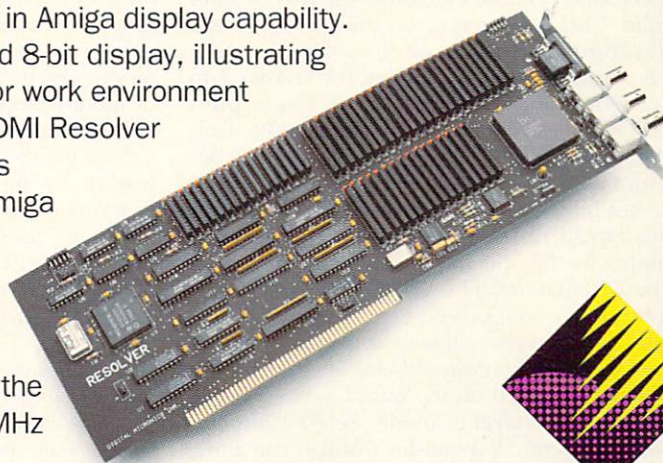
DMI Resolver™

- 1280x1024 Resolution
- 8-bit Color Graphics
- 16-million Color Palette
- 60MHz Processor
- Programmable Resolution

The DMI Resolver™
graphics co-processor board offers
a new dimension in Amiga display capability.

Shown above is an unretouched 8-bit display, illustrating the 1280x1024 resolution color work environment provided by the Resolver. The DMI Resolver boosts the display and graphics processing capabilities of all Amiga A2000 and A3000 series computers, under both AmigaDOS and UNIX operating systems. Not to be confused with a frame buffer or grabber, the Resolver is a lightning fast 60MHz graphics co-processor.

Whatever your application – desktop publishing, presentation graphics, animation, 3D modeling, ray tracing, rendering, CAD – let the Resolver move you into a new realm of resolution and workstation quality display.



Digital Micronics, Inc.

5674 El Camino Real, Suite P
Carlsbad, CA 92008

Tel: (619) 431-8301 • FAX: (619) 931-8516

Call for more information and the dealer nearest you.

Resolver is a trademark of Digital Micronics, Inc.
Amiga, A2000, and A3000 are registered trademarks of Commodore-Amiga, Inc.
UNIX is a registered trademark of AT&T

Circle 64 on Reader Service card.

on Cone Actor channel Frame 2, and then on Frame 8. Select Green from the objects, and change Transition frame count to 6. Repeat this for Frames 9 to 15 using Blue, 16 to 22 for Yellow, and 23 to 29 for Red. The one limitation is that you can do this morph only if the objects have exactly the same number of points and faces.

While you still have the Add button selected, add a timeline on the Cone's F/X channel on Frames 2 to 29. You will use the Rotate F/X, but other F/Xs provided with Imagine produce even more stunning animations. A file requester will default to your Imagine drawer. Enter `Im_Effects` in the Drawer box, press Enter, click on Rotate and OK. To create one full rotation about the vertical (Z) axis over 28 frames, set the Start Frame to 2, the End Frame to 29, an x next to the z axis, and Degrees to 360.0000. Click on OK.

Use the scroll bar on the far right to move down your list of Objects until you see Lightsource and Lightsource.1. The first light you added is called Lightsource, and each subsequent one is numbered in order. The first light is the fill light and the default values will work for this animation. Lightsource.1 will be the follow spotlight. Click the Info button, click the Actor channel of Lightsource.1, select Conical and Cast Shadows, and change each Intensity value to 700. Click OK.

A conical light begins at a single point and reaches the radius (X size) at the focal length (Y size). Using the same method as for the Camera, you can make the spotlight follow the gold object. Click Delete, select Lightsource.1, Frame 1, and the Align channel. Click Add and add a timeline in this same channel for Frames 1 to 29. Click Track to Object and enter Sphere in the Object Name box. Press Enter, then OK. If any timeline is not the correct length, click on Info, then click on the specific timeline and adjust the frame numbers within the requesters.

You make the last movement changes to make the gold object (Sphere) rotate and follow the path around the pyramid. Click Delete, move to the Sphere, Frame 1, and the Position channel and click. Click on Add, and on the same channel add a line for Frames 1 to 29, select Follow Path, enter Path for Path Name, press Enter and OK. (Please note that Imagine has controls for acceleration and deceleration along a path, but these are not covered here.)

For the last bit of variety, add another F/X timeline for Frames 2 to 29, using the Rotate effect with default values. Refer to the specific instructions above for adding the F/X channel. This will make the object rotate about its x axis as it orbits.

Click on Done and you will be returned to the Stage Editor screen. The sphere should now be on the path, with the camera focused on its central axis. Now test the animation in wireframe mode. Select Animate-Make from the menu. A requester displays the Start, Stop, and Step frame numbers. Change 29 to 28, and

then press Enter. The reason you use Frames 1 to 28 is to work around an Imagine quirk. Closed Paths begin and end at the same point. If you render every frame, the animation will have the object on the path in the same spot for both the first frame and the last. A similar thing is done for the Rotate F/X. Imagine begins the rotation in the very first cell and ends in the original position. The effect starts in the second frame and ends with one extra. This gives you the original position in the first frame and the correct ending position in the next-to-last frame.

Use the Animate-Play Loop to view the test. The Animation Control requester allows you to slow the animation down or even to step through it frame by frame. If the animation does not look like the design concept, make notes of errors, go back to the Action screen and review the settings for each of the objects with the above instructions in mind. When the wireframe animation looks correct, use Project-Save Changes [A-S], then Project-Project Editor to exit the Stage Editor.

LET'S SEE IT

It is now time for the computer to work instead of you. While in the Project Editor, click on Range in the middle of the screen, change the End number to 28 and press Enter. The frame numbers should be highlighted. Click on Make near the bottom of the screen. Select Yes to let Imagine create a temporary Movie file, Yes for a looping movie, and Yes to Delete picture files.

The status of the render process is displayed at the top of your screen. It is complete when the Cancel requester disappears. Now there is time for a break.

When the Amiga finishes cranking out its calculations, click on Load. When the cursor returns, you are ready for viewing. Click on Play Loop and use the F1 to F10 keys to speed up or slow down the animation as it plays. Your spotlight will not have the shadow you see in the illustration because shadows are generated only when rendering in full ray-trace, which takes longer to render. To get these shadows, render your animation again, but change the subproject parameters to Trace. You can either create a new subproject or modify the parameters of the current one with the Modify button.

Now go ahead and modify other things in the animation, saving new versions and rerendering to your heart's content. As you experiment, you will learn more about the program and the types of things you like best. Imagine offers infinitely more than we can cover in one article, but there are many other resources you can turn to. Your imagination is the only limit! ■

Steven Blaize is owner of Creative Fire, a multimedia presentations company. He is an author, lecturer, and consultant on Amiga and PC-DOS platforms, as well as the Assistant Director of the Amiga Video-Graphics Guild. Write to him c/o AmigaWorld, 80 Elm St., Peterborough, NH 03458.

AROUND THE WORLD IN 80 FRAMES-OR LESS!

*It took eons for our earth to evolve,
but with DeluxePaint III and a little imagination,
you can create your own world in considerably less time.*

On the theoretical level, "world building" is a fascinating thought experiment. Building your own planet using an Amiga, however, can be an exciting *practical* endeavor. While this article shows you how to do it with Electronic Arts' DeluxePaint III, I will also give you some ideas that go beyond mere technique to make it more rewarding.

At the annual CONTACT conferences—which bring together prominent scientists, artists, and science-fiction writers—participants create a set of interesting cosmological parameters. Using scientific principles, they then evolve a planet and biosphere within those constraints. Disciplined world building is hard play, and I find the Amiga an ideal visual tool to aid in such projects. For our experiment here, I will show you how to use DPaint's animation and painting features to create a planet and set it spinning in space. (CONTACT's address is 1412



Potomac Ave. SE, Washington, DC 20003.)

IN THE BEGINNING...

The first stage in constructing your planet is to paint its surface features on a map representing both hemispheres—as though a globe were unwrapped onto a rectangle. The result is much like a Mercator projection (named for the 16th-century Flemish cartographer who revolutionized early navigation methods), which renders the planet on a rectangular latitude-and-longitude grid, with the navigational advantage that any straight line represents a constant compass course. The problem with this type of map is that it radically distorts land masses near the poles. (As countless school children might attest, the ubiquitous classroom Mercator projection of the world gives one the impression that Greenland is larger than Africa and that Antarctica is shaped like a ►

By Joel Hagen

long, wavy stripe.) This distorted map, however, is ideal for our purpose of wrapping a brush to a filled circle.

In the finished animation of your spinning globe, only one hemisphere will be visible at any given moment. To plan for this, make your map a rectangle of two adjacent squares. Set DPaint's Prefs to FastFB and Be Square. Select the Filled Rectangle tool and hold down the Shift key while you drag out the box. This constrains the box to the dimensions of a square. Pick up the square as a brush and press SHIFT-X to double it horizontally. Then stamp it down on a cleared screen and get ready to paint.

You might want to make your first planet similar to Earth, with oceans, continents, and islands. If you need some ideas on the processes in nature that shape such a planet's features, do a little reading on planetary geology and plate tectonics. On an active planet such as our Earth, the same tectonic shifting of plates that produces earthquakes also builds mountains, as one plate separates from or crumples into another over millions of years.

Thus, mountain ranges do not occur as random lumps, but as harmonious lines of relief that clarify the dynamics of the crust. These mountains, in turn, form barriers and channels to meteorological processes that affect the landscape colors you choose. For example, wind-driven clouds pile up on steep slopes (white and brown), unload their rain in that region (green), and may leave land beyond quite arid (tan and ocher).

COLOR YOUR WORLD

There are any number of ways to paint the surface features of the planet. Try this quick technique to give a convincing appearance of contour and elevation with natural transitions of colors. For best results, build a range of 16 to 24 colors in the Palette requester and use the Spread feature to create a smooth sequence of gradation. An easy range to create is very light yellow-brown at one end and dark brownish-green at the other. (See Figure 1.)



Figure 1. The Initial map, showing palette construction.

Fill the map with the darkest color in the range, and, with the left mouse button, choose any other shade within that range as the foreground color. Then, using the right mouse button, choose the surrounding screen

color—a color outside of the range you have made—as a background. Make a half-inch round brush and press F5 for Shade mode.

Painting in Dotted Freehand mode, you can brighten the map with one mouse button and darken it to the base color with the other. If you will think of the lighter colors as representing high elevation and the darkest color as the ocean, you quickly begin to see convincing contours appear. Use a very small brush for such final details as river valleys, fjords, and islands (enlarging and shrinking the brush with the + and - keys).

If you do not want to shade an area all the way to the darkest or lightest color, change the range settings occasionally to control the effect of the Shade operation. Many artists forget that the range settings can be adjusted again and again during a painting session to control the effect of the tools. You can use the Blend tool to refine contours after they are roughed in with Shade, and you can fill the darkest areas with blue to turn them into oceans. In my illustrations, I've used a more complex series of palette spreads to color landscape and give variation to terrain. You can make such changes even after the painting is complete.

MAKE IT GO 'ROUND

The left edge of the map must perfectly match the right if it is to have continuity as a globe. This is easier than it appears. Simply cut a one-inch vertical strip from the right edge of the map with the right mouse button, removing it from the background. Carefully stamp it down at the left side of the map and use Blend to smooth and adjust the resulting seam. Because they are edges of the same cut, the new left and right sides of the map make a perfect match. When you are satisfied with your map, save it to disk.

For the next phase, you need to make a couple of measurements and place some markers. To mark the middle of the map, use the Brush Selector to pick up a full strip of the top edge of the map. Press the h key to halve that brush and carefully stamp it directly above the map, aligned with the left edge. Use the Straight Line tool to make a mark above the middle of the map for future reference. Turn on Coordinates from Prefs and, using the Straight Line tool, stretch a horizontal line precisely from the left edge of the map to the right edge. Now, make a note of the x coordinate at the top of the screen and undo the line. Bring up the Move requester from the Anim menu and enter the map width (262 in my example) in the Distance box under "X." (You must use an even number for the width, or you will see gaps in your animation.)

Exit the Move requester for the moment and pick up the map—including a piece of the line you drew as a halfway mark—as a brush. Clear the screen and go to the Anim menu to set the number of frames. Ten frames will do, but if you have enough RAM, 30 to 60 will make for a smoother animation.

Returning to the main screen, you will be on frame 1 of the animation—a blank screen. Stamp the brush down in the center of the screen to let the Move requester locate it, then select Undo to remove the image. Return to the Move requester, where the horizontal movement of the map is already entered. Make sure that the entry in the Count box equals the number of frames in the ANIM, and click on Preview to verify that all is well. You should see the map, or a box represent-

ing it, move frame by frame off the right side of the screen. Now select Draw, and DPaint will create the ANIM frames.

Play the animation to verify that the map slides smoothly across the screen. Eventually, you will pick up a square ANIMbrush to enclose that portion of the screen occupied by the right half of the map as it appears in frame 1. Envision that brush as a window on a hemisphere of the planet. Run the ANIM a few times and see how the map slides out of the imaginary window, leaving space behind. A second copy must fill this space to provide continuity as the globe rotates. This is why the left and right sides of the map must match.

GLOBE TROTTERING MADE PERFECT

You can use the Move requester to make a second copy of the map follow the first (see Figure 2). Start the second pass on frame 1. You may need to shift the brush handle with ALT-X. Carefully stamp the map brush at the left edge of the map that is showing in the frame, click Undo to remove the image, and return to the Move requester. Using the settings already in place, choose Preview to confirm the motion and path. As shown in Figure 3, the second map will join seamlessly with the first and trail it across the screen. Select Draw to complete this phase.

Return to frame 1 of the ANIM and select Anim Brush Pickup from the Anim menu. The next step has to be precise. You must cut out the right half of the map with no background beyond the edge of the brush. Use the midpoint mark for reference in starting at the upper-left corner of the brush, and drag the box over the right half of the map. The lines of the cutout box must be placed *exactly* on the edge of the map—not even a single pixel beyond. Release the mouse button to pick up the ANIMbrush. You will see the map advance through the window of your ANIMbrush box, and, at just the right moment, the second copy of the map will appear and follow the other along.

Return to Frames in the Anim menu and select Delete All. Clear the screen and select the Filled Circle tool. Make sure you are in Solid mode in the Fill requester and drag out a filled circle the size you want the planet to be—a bit smaller than the height of the map. Go back to the Anim menu, select Frames and reset the number to what you originally had (30 in my example). You now have that number of frames containing the blank circle.

Next, summon the Fill requester by pressing SHIFT-F and then select Wrap. Return to frame 1 of the ANIM, hold down the Left Amiga key, and fill the circle. The ANIMbrush will automatically advance with the ANIM frames. You can take your hands off the mouse and key board while DeluxePaint wraps the map window to each ANIM frame.

Press the 4 key to play the ANIM in a continuous loop and adjust the speed with the Cursor-Up and Cursor-Down keys. At this point, you can pick up the planet as an ANIMbrush and save it to disk. You can put the planet into a "technoframe," as I have done in the illustration on the opening page of this article, or use the Move requester to move it through space or to zoom in and out. You can add the planet to other animations, or bring in 3-D or ray-traced spacecraft. (The same ANIMbrush wrap technique is also useful for rotating text effects, titling, and a host of other applications.)

You might also use the planet animation as part of a larger project, including detail maps, landscapes, dioramas, and paintings of alien life forms. With the help of a sound digitizer, you could add alien animal sounds or speech. Such a project can be as whimsical as you like, or it can be the core of a rigorous exercise in creative interdisciplinary play. A family, class, or scout troop can use a world-building project as a connecting thread to explore astronomy, biology, geology, anthropology, art, and physics. In fact, the Smithsonian Institution recently granted the CONTACT organization funding for just such a special curricular project at the junior-high level.

The arts and the sciences link in powerful ways. World building is fun and provides an example for young students of how everything they learn interrelates. Further, as a world builder, you discover that in order to build a great alien planet, you must first understand your own. ■

Joel Hagen is the author of AmigaWorld's regular column, "Accent on Graphics." Write to him at 10512 Sawyer, Oakdale, CA 95361.

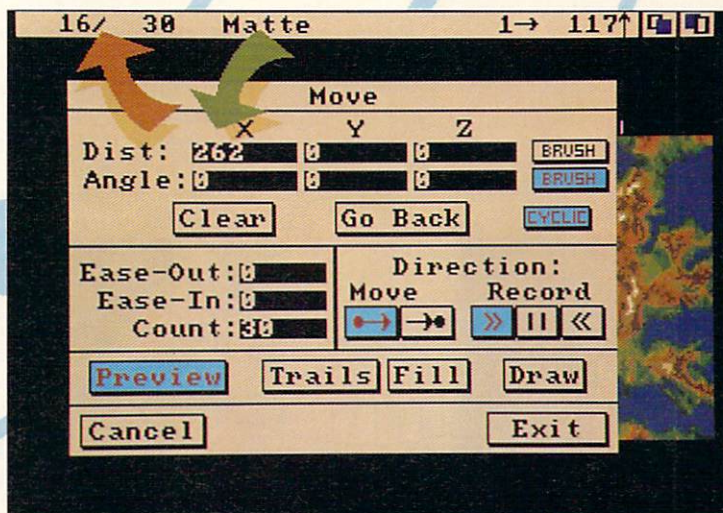


Figure 2. The move requester settings for the second pass.

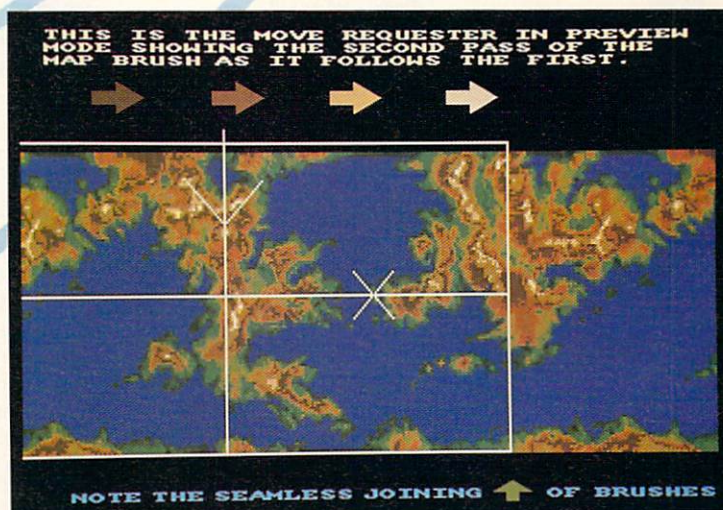


Figure 3. A look at the second pass—from preview mode.

A

ccent on Audio

Music and sound can be just the spice to liven up your multimedia presentation. Here's some good advice about the 'utensils' and 'recipes' you'll need to get the mix right.

By Geoffrey Williams

BRECHT WITHOUT WEIL? Lerner without Lowe? Johnny without Doc Severenson? No way...it just wouldn't "sound" the same!

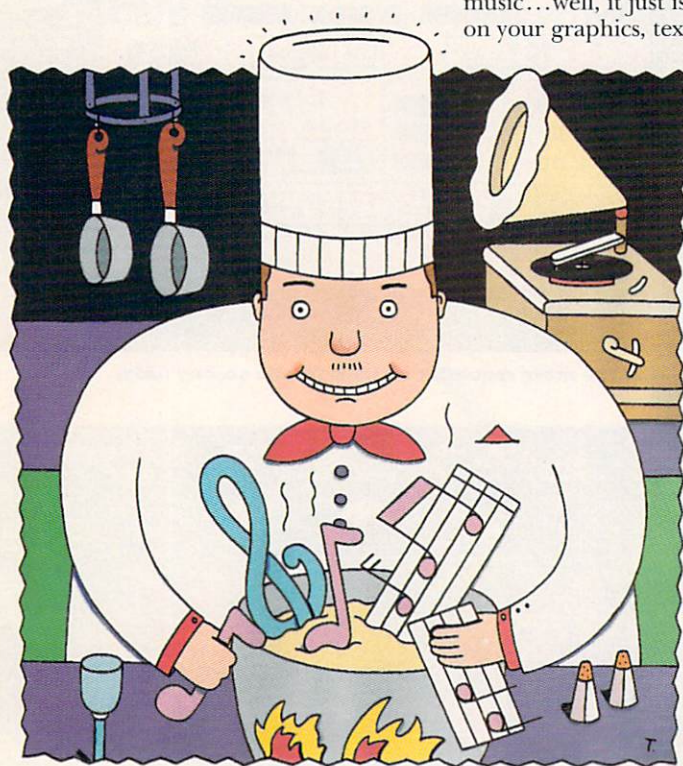
And if you're creating multimedia presentations without using sound or music...well, it just isn't multimedia. While you may have a good handle on your graphics, text, animation, and video, if you neglect the potential that sound and music offer for enhancing your production, your show may turn out pretty flat. Let's examine some tools and tips to help make your multimedia presentations as pleasing to the ear as they are to the eye. (For information about contacting the developers of products mentioned in this article, consult the "Manufacturers'/Distributors' Addresses" list on p. 118.)

DIGITIZE AND SYNCHRONIZE

Your Amiga does an excellent job of manipulating and playing back digitized sounds. It accomplishes this through a process called "sampling." Simply put, the computer can "listen" to any sound and turn it into digital information—a series of bytes it can store. This data is then fed back through a digital-to-analog converter (DAC), an amplifier, and speakers to turn it into sound again.

The first part of the process is performed with the help of a sound sampler—or audio digitizer. Ordinary analog sounds are converted to digital information through the sampling hardware's analog-to-digital converter (ADC). There are several very competent audio digitizers available for under \$100, the most popular of which is probably **SunRize Industries' Perfect Sound 3.0** (\$99.95).

Most audio digitizers come with some type of sample-editing software, but, in my opinion, you are much better off using **Aegis/Oxxi's AudioMaster III** (\$99.95—see Mar. '91, p. 13, for a complete review). It is a full-featured audio editor with a host of capabilities, and it supports a wide variety of other sampling hardware (in addition to Perfect Sound). It allows you to add real-time echo and flanging, and it uses a low-pass filter to remove noise and aliasing distortion automatically. You can also perform all the ►



SAVE IT. MOVE IT. GET IT BACK.

Valuable utility programs can save you time, money and, in the case of catastrophic errors like hard drive failure, possibly months of work.

Quarterback Tools – Recover Lost Files

Fast and easy. Reformats all types of disks – either new or old filing systems – new or old Workbench versions. Also optimizes the speed and reliability of both hard and floppy disks. Eliminates file fragmentation. Consolidates disk space. Finds and fixes corrupted directories.

Quarterback – The Fastest Way To Back-Up

Backing-up has never been easier. Or faster. Back-up to, or restore

**Back-Up...Transfer...Retrieve
Quickly And Easily
With Central Coast's
Software For The Amiga**



from: floppy disks, streaming tape (AmigaDOS-compatible), Inner-Connection's Bernoulli drive, or ANY AmigaDOS-compatible device.

Mac-2-Dos & Dos-2-Dos – A Moving Experience

It's easy. Transfer MS-DOS and ATARI ST text and data files to-and-from AmigaDOS using the Amiga's own disk drive with Dos-2-Dos; and Macintosh files to-and-from your Amiga with Mac-2-Dos. Conversion options for Mac-2-Dos include ACSII, No Conversion, MacBinary, PostScript, and MacPaint to-and-from IFF file format.



Central Coast Software

A Division Of New Horizons Software, Inc.

206 Wild Basin Road, Suite 109, Austin, Texas 78746
(512) 328-6650 * Fax (512) 328-1925

Quarterback Tools, Quarterback, Dos-2-Dos and Mac-2-Dos are all trademarks of New Horizons Software, Inc.

Circle 36 on Reader Service card.

basic editing features: cut and paste, copy, and zoom in for fine editing. It even provides a separate buffer that is much like an audio version of the spare screen in DeluxePaint.

When you are digitizing a sound for use in your presentation, you should capture ("sample") it at the highest resolution your digitizing software can handle. This will give you the best quality when that sound is

If you use
copyrighted music
without licensing it,
you are breaking
the law.

played back. Sampling a sound at a high sampling rate—the number of times per second your computer takes the "picture" of that sound—records it most accurately (hence the higher resolution—and greater fidelity—when that sound is played back). Unfortunately, this also results in a very large sample, which, if you are using several samples in your presentation, may quickly exceed your system's memory capacity.

The best solution to this problem is to use

AudioMaster's "resample" capability. This reduces the sample size without reducing the sound quality (up to a point) by resampling the sound in memory. Many samples recorded at 20,000 samples per second (sps) can be reduced in AudioMaster to 8363 sps—dramatically reducing the sound-file size without appreciable loss in quality. This method provides superior quality to sampling at a lower rate in the first place.

Another memory-saving feature of AudioMaster III is its ability to build sequences from a single sample. Using its Sequence mode, you can set up to 999 loop points for any given sample and have the sequence play the loops in the order you set them. When using long samples, such as continuous music where a great many phrases are usually repeated at various points in the sequence, you can simply loop them at the appropriate points and cut down significantly on the length of the sample.

Unfortunately, this looping capability is not yet a part of the IFF sound standard, but you can still use it with programs such as **Commodore's AmigaVision** (\$149.95 or bundled free with some new Amiga systems) and other multimedia-authoring programs that allow you to run external programs. Because AudioMaster III comes with a player program for playing looped sequences, you can run this player as a background task from within AmigaVision by using the external-program command option.

One potential problem (and another AudioMaster solution) to keep in mind is that if you are playing music and want several sounds to play simultaneously, you may not have enough sound channels (there are only four). It is possible, however, to make a digitized sound track that contains all of the sounds by using only two sound channels (or just one, if you are not using

stereo). This also permits you to synchronize sounds (although not to frame accurately) with animations in programs that let you start a sound and an animation at the same time, but in which you cannot play the sounds on a specific frame.

Here's the trick: Load your animation into your multimedia software and carefully time it from the moment it starts to the points at which you want your sound effects. Load the sound effects into AudioMaster III by appending the sounds together. Add the appropriate amounts of silence from the beginning and between the effects by using the Add Workspace option. Turn on the Time Coordinate display so that you can edit the length of these silences with better than a hundredth-of-a-second accuracy.

You now have a sample that starts playing silently until the time the first sound effect should be heard. More silence ensues until the next effect, and so on for each effect. You can even add additional sounds that can overlap those you have already added. When you are finished, you will have a single sample that uses only two channels but includes all of your audio—in stereo—for an entire sequence. You may have to tweak it a couple of times to get the timing just right, but the method does work.

Another excellent tool for editing sound samples for use with animation sequences is **Hash Enterprise's Animation:Soundtrack** (\$119.95). Combining full-featured sample-editing and synchronization capabilities, it simply can't be beat for synchronizing sound with animations. It lets you edit and synchronize your sound while you play your animation. This not only speeds up the process of audio syncing considerably, but it also makes such complex tasks as lip syncing a snap, because you can both edit and choreograph the sounds from within the same program.

Soundtrack allows you to load your samples into memory, and it then assigns them in whole or in part to be triggered at specific frames. You can play back the resulting sound track and dub it onto video, or you can play it simultaneously using the program's own ST player program. The latter is also fully multitasking, so that you can actually drag and pull down the screen to get to Workbench while the animation is playing. This feature is a favorite of mine for demonstrating the power of the Amiga.

(Editor's Note: Another promising stand-alone sample editor was announced just as this article was going to press. SunRize Industries' Audition 4, \$99.95, is reported to have an impressive list of features, including sequenced loops; such real-time effects as echo, fade, and flange; and such editing functions as cut, copy, paste, filter, smooth, and—notably—resample. Also, Audition 4 supposedly will allow you to record directly to floppy disk.)

BORROWING VS. MAKING YOUR OWN MUSIC

Often in your presentations you need only a short bit of music to act as a bridge between sequences or as a flourish for an animation. In this case, it makes sense to digitize the music and incorporate it as a digitized sample. Keep in mind, however, before you start sampling your favorite records, that if you use copyrighted music without licensing it, you are breaking the law. The American Society of Composers, Authors and Publishers (ASCAP) is cracking down hard on those who abuse these copyrights. I know of one multimedia ▶



AMNIOS

Alive and Killing!

"Put simply, AMNIOS is the best shoot-'em-up that has been released for a long time".

— Amiga Action — 93%

Penetrate the living hell that is **Amnios**. Counter your comparatively diminutive ship against the merciless might of **ten living, breathing planets** in an audacious endeavour to rescue imprisoned members of your own persuasion.

Pick up indigenous DNA and utilise it to fabricate enhanced weaponry to abet your pestilential quest.

Aw, forget the Bull! Just get in there and save the World!

Amiga Screen Shots

PSYGNOSIS, 29 ST. MARY'S CT., BROOKLINE, MA 02146
TEL: (617) 731-3553 FAX: (617) 731-8379

producer who recently was nailed at a conference with a client at a major hotel, and he wound up paying some substantial penalties.

There are many music libraries that you can license on a yearly basis, and there are also buy-out collections where you can buy the music and use it indefinitely for your projects. Look in any video magazine for ads for production-music houses. Remember, too, that buying music at a record store does not give you the right to use that music, even if the production you are doing is being offered for free. If you want to use prerecorded music, you must pay a licensing fee for it.

AW on Audio

FOR MORE INFORMATION on Amiga sound capabilities, audio-digitizing hardware and software, sampling tips, audio-synchronizing techniques, or MIDI, consult the following articles and columns that were published in past issues of *AmigaWorld*.

References to previously published reviews of individual products are contained in the article itself.

"Talkin' Electronic Music Blues," May '91, p. 18.

"Sound Design," Mastering Multimedia, Mar. '91, p. 72.

"MIDI and SMPTE Compatibility" (time codes), Jan. '91, p. 76.

"MIDI Sequencers" (buyer's guide), Dec. '90, p. 43.

"Now Hear This!" (sampling tips), Mar. '90, p. 20.

"Play It Together, Sam" (audio syncing), 1990 Video & Animation Special Issue, p. 68.

"SizzlingSounds" (audiodigitizers/sample-editing software), Oct. '89, p. 48.

"The Sound of Music" (Amiga sound/MIDI music), May '89, p. 16. □

If you can write your own music, or know people who can, you may be better off. If you do not own MIDI-compatible keyboards or other instruments, though, your choices are limited (we will discuss MIDI later on in this article). **Deluxe Music Construction Set** (\$99.95, *Electronic Arts*) and other composition programs that use standard IFF instruments do not provide professional, high-quality sound. But if you want your music to come straight from the Amiga, there is really only one choice: **Sonix** (\$79.95, *Aegis / Oxxi*).

Sonix is a poor composition tool—lacking such important features as the ability to create triplets—but it is capable of creating outstanding sound that is as good as many MIDI instruments. Using its custom-instrument format, you can obtain amazingly good quality that does not sound "computerized." You are limited to the standard four-channel audio, but with the help of AudioMaster, you can create Sonix instruments that are composed of more than one sound so that a single note can be playing two or more different instruments using only one audio channel.

One particularly nice touch about Sonix is that you can tune any sound in AudioMaster to use as an instrument in Sonix. For example, my group turned an explosion into an instrument that was played as a single note within a Sonix sound track. You can also incorporate samples of vocals into your Sonix scores. You can even create very long scores with several instruments and vocals without consuming large amounts of memory. Such a score will sound like one long digitized sample, even though it is made up of digitized bits and

pieces. As awkward as Sonix can be at times, it can create some very impressive music.

AmigaVision and most other multimedia programs, however, do not support the Sonix file format. But, again—as with AudioMaster—you can use AmigaVision's external-program command to run the Sonix player program. This will play the music in the background while the rest of your show continues. I did, however, encounter one problem worthy of note. In some cases, it may take a second for the sound channels to be released before a sound effect can be played. Even though the music had stopped, the sound channels were not released immediately.

MAXIMIZE WITH MIDI

Although programs such as Sonix are very versatile, they are still bound to a large extent by the recording and playback limitations of the Amiga's native sound architecture. This does not mean, though, that the Amiga is not capable of producing high-quality audio. It can...with the help of MIDI.

While there is not enough space here to go into a full-scale discussion of MIDI, we can take a look at how it can contribute to your multimedia sound solutions. (See the "AW on Audio" reference box for *AmigaWorld* articles and columns covering MIDI in more depth.)

MIDI (Musical Instrument Digital Interface) is a serial interface that uses five-pin black-and-silver cables to carry a wide range of MIDI data back and forth between the computer and MIDI-equipped synthesizers or sound modules. It acts as a standard protocol to let your Amiga (or any computer) talk to and control electronic musical instruments. MIDI specifications provide for 16 discrete address channels, each of which can send a separate set of information to its own synthesizers and samplers. This means you can have 16 discrete performances occurring simultaneously—a significant boost over the Amiga's native four-note capability!

Another advantage of the MIDI standard is that there is also a MIDI music file format. You can load music created on an IBM or Macintosh into your Amiga if that program and yours both support the MIDI file standard.

There are many other advantages in having the Amiga play music through MIDI, and most of them are of particular interest to multimedia producers. These involve a variety of ways to accurately synchronize the music to the visuals (or vice versa). A number of MIDI sequencer programs for the Amiga can synchronize music to both MIDI time code (MTC) and SMPTE time code (the Society of Motion Picture and Television Engineers standard).

These include **Blue Ribbon SoundWorks' Bars&Pipes Professional** (\$379—reviewed Jul. '91, p. 66), **Dr. T's KCS 3.5 Level II** (\$400—reviewed Jul. '90, p. 80), **PassPort Design's Master Tracks Pro 3.0** (\$395—reviewed Jan. '90, p. 62), and **MicroIllusions' Music-X** (\$299.95—reviewed Oct. '89, p. 18). (Also consult the "MIDI Sequencers" buyer's guide referred to in the "AW on Audio" box.) ►



The Evolution of Publishing: PageStream 2.2

AmigaWorld called PageStream 2 the "Amiga desktop publishing king of the hill." Amiga User International named it the "heavyweight champion." But we weren't satisfied. We wanted to create the most advanced publishing system for any computer, so we added a new interface, HotLinks, and a host of new features to create PageStream 2.2. HotLinks lets text, graphics and publishing applications talk to each other in real time, on one computer and across networks. So, instead of spending time importing text and graphics, you can spend more time being creative. PageStream 2.2: The evolution of publishing is complete.



Soft-Logik Publishing Corporation

PAGESTREAM 2.2 HOTLINKS BME PAGELINER • WE GIVE YOU THE TOOLS TO DREAM

Coming Soon. 1-800-829-8608.

Circle 46 on Reader Service card.

Because Bars&Pipes Professional (through its \$59.95 add-on **Multi-Media Kit**) also supports ARExx, you can integrate it into a multiprogram environment—which opens even more possibilities for the multimedia producer. You can load, play, start, stop and synchronize music with such ARExx-compatible programs as AmigaVision, **CanDo** (\$149.95, **INOVAtronic**s), and even **Elan Performer 2.0** (now hard to find). Or, you can control such ARExx programs from within Bars&Pipes. Also, because Bars&Pipes will keep track of SMPTE time code if you have a time-code reader, you can have AmigaVision use ARExx to read a time code number from Bars&Pipes and synchronize a sound, graphic, or event to a specific frame of video.

ARExx control is particularly important if you are using the current version of AmigaVision, which supports only four channels of MIDI. This makes MIDI applications useless, because very few compositions use only four voices. The true beauty of multitasking and ARExx is the ability of one program with limitations to be able to control another that will make up for those limitations. Thus, Bars&Pipes does nicely as a companion music player for AmigaVision.

Bars&Pipes is a visually oriented program that uses a pipe metaphor to graphically show the flow of the music. You can drag special effects icons onto certain points along the pipeline. These effects include a keyboard splitter, event and note filters, randomizer, transposer, harmony generator, quantizer, and many more.

You can even create your own effects—each with its own icon—and then drag them into place at the appropriate points.

The program is very flexible, so it is possible to work with music that has nonstandard key signatures. It also has high-resolution timing, with 192 clocks per quarter note, as well as standard MIDI timing. You can even print out a lead sheet and hear notes as you edit them. While there are many excellent sequencers for the Amiga (and I do like Music-X very much), Bars&Pipes' strong visual interface and ARExx capability put it at the top of the list for multimedia producers.

There are a lot of very good sound and music tools available to the multimedia producer. Most multimedia packages do support digitized sound. Many have a problem with music, however, as they cannot load and play standard MIDI files. Software publishers are working to increase the audio sophistication of their multimedia packages, and these programs should soon catch up with the power of the current batch of sound-editing and MIDI composition software. When they do, it will move Amiga multimedia presentations onto a very exciting next level. ■

Geoffrey Williams is Executive Producer for Creative Business Communication and head of the Amiga Video-Graphics Guild. Write to him c/o AmigaWorld Editorial Dept., 80 Elm St., Peterborough, NH 03458.

Vistapro is the graceful flow of color and form at your control... it is landscapes and animations of power, bright impact, and striking realism.

If your Amiga could dream... it would dream in Vistapro

"Vista Pro pulls out all the stops... Its output is pure eye candy — gorgeous stuff... by far my favorite of the programs discussed here."

Review of landscape generators July 1991
AmigaWorld pp 64-65

3 megs NTSC, 3.5 megs PAL

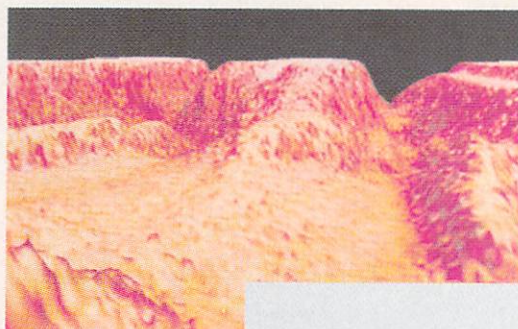
Overscan, interlace, 24 bit color; list \$149.95

1 meg Vista 1.2; \$59.95 list

Makepath and Terraform tools now available



Virtual Reality Laboratories, Inc. (805) 545-8515



Grand Tetons, Earth

Valles Marineris, Mars



Olympus Mons, Mars — Terraform

Creation by Evolution

3-D GRAPHICS FOR 2-D THINKERS

If you've dabbled with straight 2-D paint and drawing programs—but shied away from 3-D modeling and animation software—here's a trail-blazing introduction to help you get in the right mindset to make the evolutionary leap.

By Gene Brawn

FROM THE EARLIEST cave-wall drawings at Lascaux and Altamira 20,000 years ago to abstract impressionism and post-modern pop in the late 20th century, the artist has struggled with the same dilemma: How do you go about the task of representing a three-dimensional world on a two-dimensional surface? Power to sculptors, architects, and junkyard impressarios for answering the question. But how do the rest of us deal with the basic problem—despite whatever advances, or just plain tricks, with trompe l'oeil, the-medium-is-the-message 3-D canvases, or computer-generated 3-D object modeling?

Focusing on the computer side of things, at first the new medium was easy for artists to understand because it mimicked the way they normally worked. Although they were painting with light, not pigment, the tools were familiar and the computer could even automate some of the more tedious tasks. Painting and drawing programs were welcomed as great boons to the artist.

The digital wizards were not finished yet, however, and soon



3-D modeling was unleashed on an unsuspecting art world. This new technique produced amazing, alluring, and compelling images, but the processes and techniques used to create them were so arcane that even programmers had problems understanding the concepts. Eventually, improvements in software design and user interfaces made this powerful new medium a practical tool for the artist...at least we think so.

CONTEMPLATING THE DIGITAL CANVAS

For most traditional artists, it is a rewarding process to see the mind's image pass directly to the canvas. 3-D computer images, on the other hand, while appearing to break a dimensional barrier, are electronic, not tactile; your canvas is inside a glass tube, and worse yet, you need an apprentice—the computer—to guide the mindless electrons painting the image on your screen.

You might call this "art by remote control."

Relinquishing control to a machine is difficult, if not repugnant, for most traditional artists, but no matter how much you ►

wish for it, computers cannot read your mind...yet. You will have to learn to speak the machine's language if you want to create images in this exciting new medium. Far from arcane, in many ways the new medium is easy to understand and use, but first you must step

world of digital art. (Editor's Note: If this article whets your appetite for further, and more specific, 3-D exploration, we heartily recommend that you take a look at two features we've published recently on Amiga 3-D graphics software to get a feel for the individual programs out there on the market: "The AW User's Guide to 3-D Software," Mar. '91, p. 22, and "The State of 3-D Art," May '91, p. 26.)

THE CREATIVE DIRECTOR

Now that you have surrendered yourself to this strange new way of making art, it is time to meet your crew of new assistants and to examine the role each plays in your multidimensional productions. (Although we are not talking multimedia or video here, think of yourself for this section more in terms of film production than traditional painting or drawing—try it!) First off, you are like a producer. Initially, you need some objects, the foundation of 3-D imaging. Think of them as your actors, but—unlike in Hollywood—you cannot just call a casting agent and order them up; instead, you must create them—either from scratch or from primitive shapes from your program's library.

Once your cast is assembled, you assume the role of a scene designer. You define the size of your set and whether it is indoors or outdoors, and then add the props and paint. Next, as the lighting designer, you light the set and determine who gets the spotlight and who stays in the shadows. Then, as director, you place your actors on the set and rehearse their moves. Finally, as the cameraman, you choose the best lenses and shooting angles and prepare for that fateful moment when you shout, "Ready when you are, C.B.!"

ARTIST'S MODELS AND ARCHITECTS

Just as in a paint program, you use points and lines to define the shape of your three-dimensional object, usually in a separate part of the program called a modeler. Unlike its 2-D cousin, however, the 3-D modeler adds a third, z, axis to the standard x and y dimensions. In other words, besides the left-to-right horizontal (x) and top-to-bottom vertical (y) lines, the modeler has a third (z) direction perpendicular to both the x and y axes (see Figure 1). The addition of this third axis is the key to 3-D software. (While some applications orient these three axes differently, the perpendicular arrangement never varies.)

Some 2-D paint programs, such as DeluxePaint, also offer this third dimension, but with limitations. For example, if you create an image of a cube and then rotate it on the y-axis, it is instantly apparent that the cube is an illusion and has no depth. The program is designed to know about 3-D space, but the objects in it are always flat.

Changing metaphors for a moment, think like an architect while creating a 3-D object. Working from your "blueprints," the first thing you must do is to construct a skeleton, or wireframe, for your object. This framework resembles the unfinished steel skeleton of a high-rise building before the walls are hung from it. Many 3-D software packages use polygons to define this structure, and although lacking color or texture, the basic outline is apparent. Polygons can assume any shape as a group, but are always composed of triangular or rectangular facets.

The drawback to this technique becomes apparent when you try to create smooth curves. The polygons al-

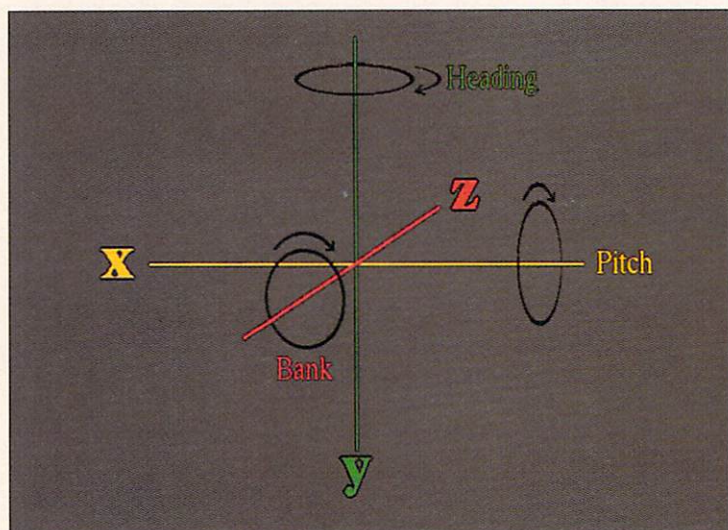


Figure 1. 3-D modeling adds a third—z—axis to the traditional x and y dimensions of 2-D drawing.

out of your 2-D straitjacket and adjust to the new point of view.

To ease your journey, I will provide you with some examples that better illustrate what is going on behind the screen. Because the Amiga boasts so many different 3-D software packages, I cannot possibly cover all the

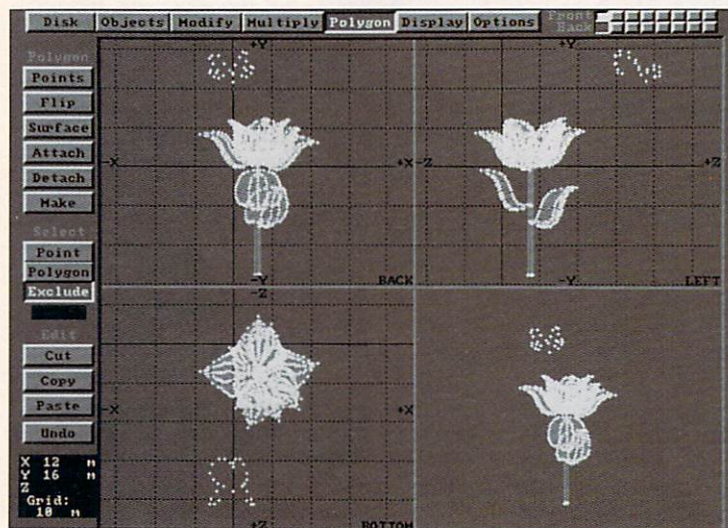


Figure 2. LightWave 3D, like many modeling programs, offers the familiar 2-D tri-view—plus a 3-D representation in the lower-right corner.

different variations on the theme. This article, then, is necessarily an overview of the topic, and while the terminology and methodology of a particular program may vary from my general explanations, the underlying ideas are valid across the range of products available. So take off your beret, put down your brush, and prepare yourself for a wild ride through the brave new

"It is indeed a winner"

"There is simply no other Amiga program that comes close to it in terms of out-of-the-box useability, speed, or level of features."

AMIGA WORLD August 1991

Professional Computer Aided Design and Drafting for the Amiga

DynaCADD is a 2D and 3D general purpose design and drafting software package for electrical, mechanical, architectural and civil applications. Fully interactive 2D and 3D capabilities to both North American and European standards. 16 decimal places precision. Math coprocessor support. Pull down menus, mouse, keyboard, function keys and user definable macro keys. Online context sensitive documentation. On screen command help line. Extremely user friendly icon based interface that sets the program apart from all competitors.

- **Multiple 3D views**
- **Hidden Line Removal**
- **Dimensioning**
- **Line Weights / Styles**
- **Resident View Control**
- **Grid and Axis**
- **Sectioning / Hatching**
- **Entity Types** Base entity types include: POINTS, LINES, CIRCLES, ARCS, FILLETS, ELLIPSES, ELLIPTICAL ARCS, TEXT, SOLID, 3D FACES, B-SPLINES and BEZIER CURVES. Multiple entities in BOXES, POLYGONS, POLYFIGURES, SUBFIGURES, SECTIONING and HATCHING. Entities can be either 2D or 3D. Entities in 3D can be transformed to 2D.
- **Fifteen 2D dynamic Entity Insertions**
- **Location and Entity Snap**
- **Entity Selection and Drawing Information**
- **Entity Transformations**
- **Up to 256 Layers**
- **Background Plotting / Printing**
- **MAKEPLOT Program**
- **Printer Support** Epson and compatible printers, both 9 and 24 pin. Laser printers, HP LaserJet series, PostScript compatible and Encapsulated PostScript.

"Installing DynaCADD onto a hard drive is effortless". "One of the more logically laid-out CAD programs I have seen". "The manual is thorough, well organized, and easy to understand". "DynaCADD's menu system, with its excellent range of commands and modifiers, is unmatched by any program I have used to this point."

AMIGA WORLD August 1991

"The best CAD program for the Amiga currently available"
AMIGA Markt&Technik May 1991

DynaCADD received the highest rating for application software ever awarded, 11.2 out of 12, by the German AMIGA Markt&Technik publication.

- **Plotter Support** Pen plotters, including Houston Instruments, Hewlett-Packard, Ioline, Calcomp, HPGL and DMPL compatible devices. Output to the serial or parallel port or to a disk file.
- **Text/Fonts** AGFA/COMPUGRAPHIC fonts are included. Character kerning, proportional or constant (mono) character spacing. Left, right or center text justification. Character width, height, slant, rotation, pen styles, weights, color and layer can be set.

- **File Transfer** HPGL, DMPL and Calcomp (Out), PostScript®, Encapsulated PostScript® (Out), Xerox Ventura IMG Files (Out) GEM® META Files (Out), IFF ILBM, Sculpt 3D, VideoScape, LightWave and Imagine (Out) and DXF 2D/3D (In/Out).

- **Vector Font Editor** A designer's tool to create and edit high resolution vector fonts. Editing aids include: Bezier curves, B-splines, Unlimited number of vector cut and paste buffers, Rotate, stretch, mirroring horizontally or vertically, move, copy, distort any character or vector. Each font can contain from 1 to 255 characters.
- **100's of additional features**



DynaCADD®
Version 2.0

AMIGA® Systems Requirements:

All Amiga systems with a minimum of 1 MByte RAM, OS 1.3 or later. A 68020/30 with at least 2 MBytes of RAM, a math co-processor and a hard drive is recommended.

DynaCADD® is also available for the MS/DOS 80286,386,486. PS/2 and 100% compatibles and the Atari ST/TT. Features may vary between platforms.

DynaCADD DEMO versions are available.

DynaCADD® is a registered trademark of Ditek International. Other computers or software names are the trademarks or tradenames of their respective holders.

Specifications are subject to change without notice.

©1991 Ditek International

Ditek International

2651 John Street, Unit #3 Markham
Ontario, L3R 2W5 Canada

Tel (416) 479 1990 Fax (416) 479 1882
GEnie: ISD Compuserve: 76004,2246

Germany CRP: (07531) 56265
Sweden Bremberg: 503 40330
Spain MAD: (91) 250 9040

England Expressworks: (0252) 726 255
Finland IDEAL: (9)0-755 5500
Korea Union Systems: (02) 533 6213 / 7

Denmark Nikita: 75 65 37 88
Italy Studio: (02) 26 14 38 33
Singapore 2000+: 65 265 3300

The suggested retail price of DynaCADD, on all platforms, is US \$ 995.00.

ways have straight edges. In order to create a smooth surface, the polygons will have to be very small and numerous. Adding, or subdividing, thousands of polygons can get tedious very quickly. (Very few Amiga



Figure 3. Texture mapping can quickly turn an ordinary object, such as a simple sphere, into a richly detailed globe like this one.

applications based on this approach can offer you any help here.)

As a result, some new 3-D modeling programs using algorithmic splines, not polygons, were developed to alleviate this time-consuming procedure. Instead of building your shape from little triangles, you use splines to draw the shape as if you were drawing it free-hand, and the software does the rest. Not everybody, however, jumped on this bandwagon, perhaps because they felt that they were sacrificing the power and precise control inherent in the earlier method.

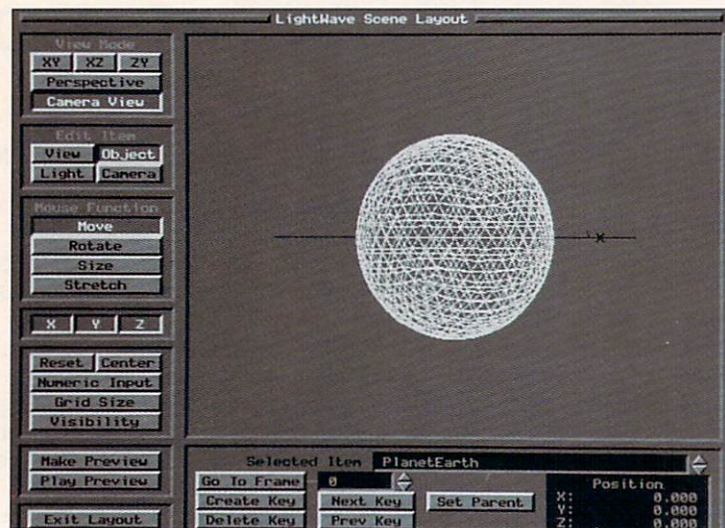


Figure 4. A good scene-layout editor allows you to work in either 2-D or 3-D to place objects, lights, and cameras.

Whatever the program's approach, the typical interface of a 3-D modeling program can take some getting used to if you are not a draftsman. Figure 2 shows a

fairly representative "tri-view" screen from NewTek's LightWave 3D modeler program (bundled with that company's Video Toaster hardware). Although, internally, the computer is manipulating a true three-dimensional object, so to speak, the image is usually represented two-dimensionally on your monitor. The program generally provides three views of the object: a front or back view, a top or bottom view, and a side view. In the lower-right corner of the screen is a true 3-D representation of the current object.

If you modify one of the views in the tri-view, the others are instantly updated to reflect the new configuration. While it may seem more intuitive to manipulate the three-dimensional representation directly, many artists find the 2-D tri-view essential for the exactness it provides in allowing them to observe the precise relationship of planes and points that is so difficult to see in the 3-D version.

ADVENTURES IN THE SKIN TRADE

Now that you have completed your object's skeleton, it is time to flesh it out. In 3-D modeling, this binary skin is called a surface or facet. Depending on the package you are using, this fleshing out is accomplished within the modeler or in a separate module (as in LightWave 3D's Surfaces module). Again, using the skyscraper analogy, this is similar to adding the stone facing, window glass, and decorative trim to the building. Although the concept is simple, the options are so numerous as to be often overwhelming. The simplest technique is to digitize, say, a real marble pattern and then use the software to wrap this texture around your object. Called surface mapping, this is quick and painless; the hardest part is to get the edges of the image to meet without a visible seam.

Potentially more powerful, but more complicated, is the algorithmic texture map. In this variation, the program uses software to generate the pattern (as in Figure 3, where the simple spherical object—whose wireframe representation you can see in Figure 4—has been texture mapped so that it now appears to be a planet or globe). Because the computer generates the texture, the variations are, theoretically, infinite (depending on the software, of course).

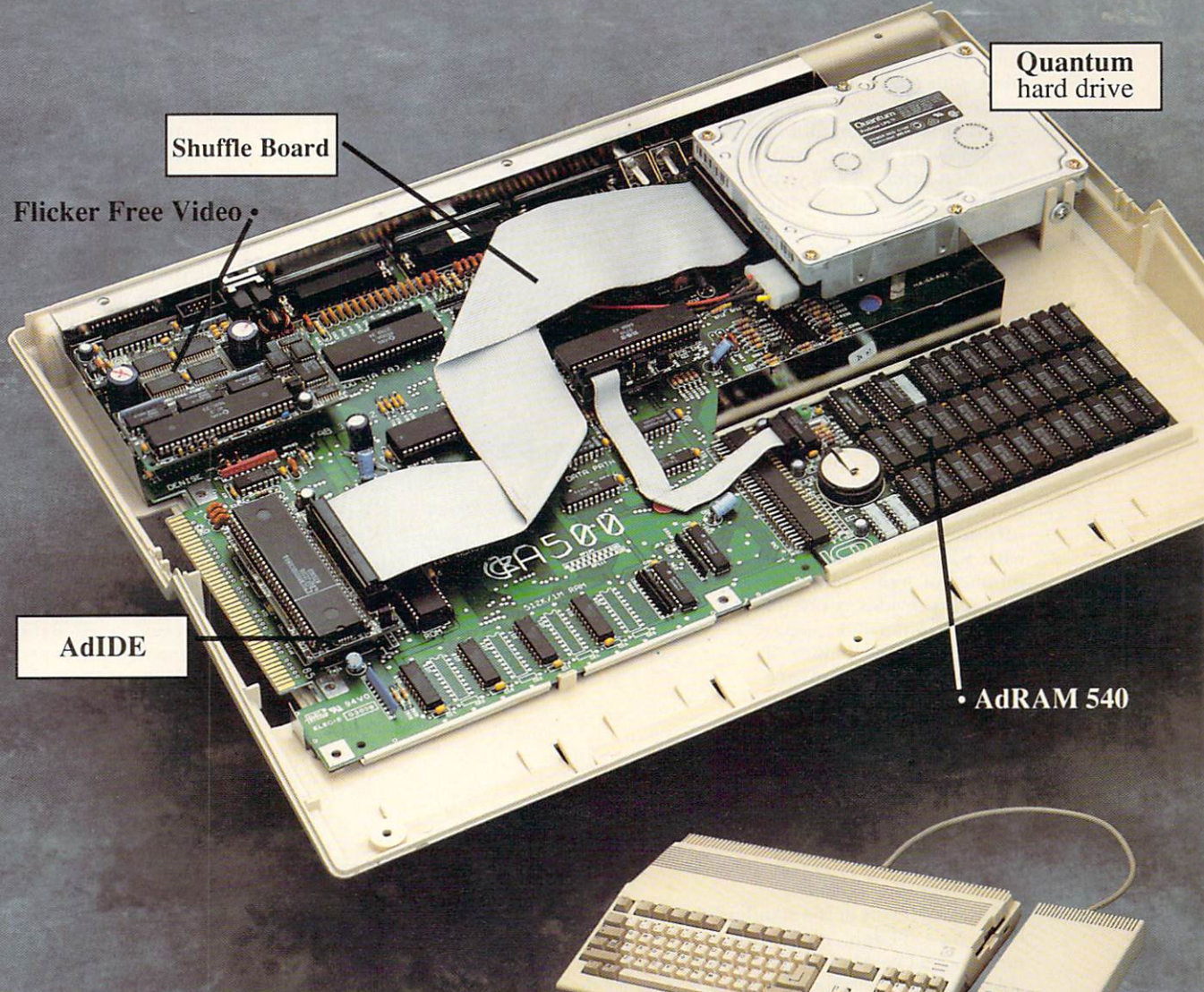
Texture mapping is one of the more exciting areas of 3-D modeling, with new variations appearing almost daily. The beauty of mapping the texture to the object is that you do not have to worry about contouring, shading, or highlighting; the computer handles these automatically. As there are so many possible variations in a texture, you may spend a long time arriving at one that pleases you. Nevertheless, it is much easier to instruct the computer to modify a setting and rerender the object than it is to draw the surface by hand, only to find that you took a wrong turn somewhere and have to start over from scratch.

THE DIGITAL DIRECTOR

The next stop on our journey is the digital studio. This is where you build what is known as a scene, or the artificial universe in which your objects exist. For this phase, put away the drafting table, take out the director's chair, and treat the scene as the stage or movie set we discussed earlier—complete with actors and props (your objects), lights, backdrops, and, of course, a camera for recording your brilliant staging. As with the ▶

Prima!

A Look Inside the Ultimate A500.



ICD proudly presents **Prima™**... the high performance, low cost hard drive for Amiga® 500 computers. Prima blends a large capacity, low power Quantum™ hard drive with the **AdIDE™** host adapter for an unbeatable combination.

Prima replaces the internal floppy drive but includes **Shuffle Board™** to make your external floppy drive DF0:. **Prima** features auto-booting from FastFileSystem partitions, high speed caching, auto-configuring, and A-MaxII™ support. Formatted capacities of 52 and 105 megabytes are currently available.

Prima comes complete with instructions, software, and all the hardware necessary for a simple, clean, no-solder installation. It does require an A500 with switching power supply, 1 megabyte of RAM, and an external floppy drive for setup and installation.

What other products would we include in the "Ultimate A500"? Of course a four megabyte **AdRAM™ 540** and **Flicker Free Video™** with a multi-sync monitor. Why settle for less?



ICD, Incorporated
1220 Rock Street
Rockford, Illinois 61101

USA (815) 968-2228 Phone (800) 373-7700 Orders (815) 968-6888 FAX

Prima, AdIDE, AdRAM, Flicker Free Video, and Shuffle Board are trademarks of ICD, Inc. Other brand and product names are registered trademarks or trademarks of their respective holders.
Circle 31 on Reader Service card.

modeler, the ideal scene module allows you to work in either a 3-D or 2-D environment (see Figure 4). Once again, this may be necessary to ensure the precise placement of your objects in the dimensional space.

First, decide how large your set should be and then place your actors and props within the boundaries of this space. It is often helpful to position your software camera, then orient the objects while viewing the scene through your digital "lens." You may, of course, view the scene from whatever position you wish—from on high or even from below, as if you were looking through a glass floor. You get to define "reality" here; you are the digital deity.

Now you are ready to light the scene. Depending on the software you are using, you will have from one to an infinite number of lights with which to work. The number of lights your 3-D package provides is one of the most important aspects in the success or failure of your images. If you are working with a single light, your images will tend to have a monotonous sameness. As you gain confidence and your scenes become more complex, multiple light sources are mandatory. For best results, put on your photographer's hat while you are lighting a scene.

Think in terms of the standard three-point setup: a key light, a fill light, and a back light. If you are fuzzy on this concept, a basic photography manual is invaluable. Keep in mind that 3-D software mimics the laws of physics. Even though you are manipulating little figures on a monitor, the computer treats the lights and objects as if they were in the real world. For example, if you want a shadow on the left side of the character, you must place a light of sufficient power at the proper angle and distance to the right of the subject. I cannot overemphasize the importance of good lighting technique; it will make or break your final image.

Depending on your needs, you may want to consider 3-D software with "ray-tracing" capabilities. The principles behind this technique are simple in concept, but complex in execution. Ray tracing takes the simulation of the laws of physics to their extreme by applying them to each simulated ray of light in your scene. The software calculates the path of a ray of light from its source to your eye—bouncing off reflective surfaces, passing through water or glass, casting shadows, and defining textures. The drawback is that this process requires literally millions of calculations and a lot of rendering time. But if realism is paramount to you, there is no better way to go.

AND CHOREOGRAPHY, TOO!

3-D software is unquestionably revolutionary, but no aspect of it is as impressive as its power to animate. Although the holy grail of perfectly realistic character animation is not yet a reality, desktop 3-D software puts this marvelous art form nearly within the reach of every artist. Not only that, but you can create striking animations even if you are not a gifted artist. Your skill at drawing, while not unimportant in terms of composition, color, and style, is not so crucial in the creation of individual 3-D objects or characters. In traditional 2-D animations, such skills are essential if you are going to draw the same character hundreds or even thousands of times. With the help of powerful software routines built into 3-D programs, however, once an object exists, you'll never have to draw it again. If you are not satisfied with something, simply tweak a few settings and command the software to do the grunt work.

If your animation is in an Amiga screen format, you can replay the 3-D animation frames in real time, using any number of standard animation packages. On the other hand, if you create the images in one of the new 24-bit, 16-million-color formats, you will need a way to save the individual frames, which usually involves some expensive hardware. If price is a problem for you, low-cost solutions are available via such hardware/software systems as Digital Creations' DCTV or Black Belt System's HAM-E. These "black boxes" use conventional Amiga-formatted files to simulate the 24-bit display, and they allow you to play back your animations in real time.

Computerized 3-D modeling opens up a new world to both the traditional artist and amateur graphics fan. Accomplished artists can use this powerful software to indulge their most outrageous fantasies and to push their talents to the limit. The novice, too, will be able to create beautiful objects in a much shorter time than the traditional period of art apprenticeship usually dictates. Of course, mastering the power at your fingertips does require tackling a steep learning curve. Taken one step at a time, however, it is manageable and, above all, one of the most rewarding things you will ever do with your Amiga. ■

Gene Brawn is a digital animator, graphics designer, and frequent lecturer, as well as a contributing editor to this magazine. Write to him c/o AmigaWorld Editorial Dept., 80 Elm St., Peterborough, NH 03458.



*For best results,
put on your
photographer's hat
while you are
lighting a scene.*

Let those who have understanding reckon the power of the

FUSION-FORTY

MEGA-STEROID ACCELERATION FOR THE AMIGA 2000

Performance :

- Motorola MC68040 microprocessor at 25Mhz.
- 18 - 25 MIPS, 3.5 - 8.0 MFLOPS
- 32-Bit RAM

Quality and reliability :

- 6-layer board with separate ground and power planes for uniform voltage stability.
- extensive use of decoupling devices minimizes electrical noise.
- high-performance clock for the tight electrical specifications of the MC68040.
- heat sink to dissipate heat generated by the MC68040.

Expandability :

- memory available in 4 Mb, 16Mb and 32Mb configurations.

Features :

- hardware select switch to disable accelerator board and run original processor.
- asynchronous design for Genlock compatibility.
- user object code compatibility with all earlier Motorola 68000 series microprocessors.
- compatible with Videotoaster, Imagine and other software.
- one year warranty.

up to 32Mb of RAM

68040 with heat sink

	FUSION-FORTY	Commodore 2630	GVP R3001	IBM i486
Processor	MC68040	MC68030	MC68030	i80486
Clock Speed	25Mhz	25Mhz	25Mhz	25Mhz
Mips	20+	5.8 +	6.4 +	15
MFLOPS	3.5 +	Less than 1	Less than 1	1.
Cache Sizes	4Kbytes x 2	256bytes x 2	256bytes x 2	8kbytes
Burst	Yes	NO	YES	yes
Memory(32bit) on board	4M Standard Max 32 M	2M Standard Max 4 M	(Needs DaughterBoard)	



RCS Management Inc.
120 McGill Street, Montreal, Quebec
Canada, H2Y 2E5

Tel.: (514) 871-4924
Fax: (514) 871-4926



32

A continuing series
of tips, techniques,
and tricks for
creating more
imaginative Amiga
graphics.

By Joel Hagen

Painting with DCTV

AMIGA ARTISTS ENJOY an increasing number of alternatives to 32-color or HAM images. In fact, with a new generation of 24-bit or near 24-bit imaging devices (with their accompanying software) making it possible to create up to 16.7 million colors, even the Amiga's original 4096-color display seems a little passé.

One of the more interesting of these new products is Digital Creations' DCTV (\$495), the Paint module of which allows painting with millions of colors on a TV image. DCTV is a small box that plugs into the RGB video port on the Amiga. I plug the Video Out cable from DCTV into the Video In jack on my monitor and set the Video Mode switch to Composite when I use DCTV. In addition to the Paint program, other software modules—Digitize and Convert—allow you to capture images from a video source and to process and convert them into any standard Amiga format and resolution (as well as saving them in DCTV "raw" or 24-bit IFF file formats).

This month's column details an easy first project with DCTV Paint that yields results I cannot achieve with HAM or 32-color paint programs.

NATASHA'S A HAM, BUT MORE WAS NEEDED

The object of this project is to give a digitized photograph the look of a painting. Even a nonartist can achieve interesting results with this technique. I started with a photo—taken on a trip to the Soviet Union—of a friend, Natasha, in the birch woods near Moscow. I had previously digitized the image in HAM mode, but with poor lighting. I liked the composition, but it was grainy and indistinct and soon relegated to the scrap drawer. Ironically, however, this graininess made it a perfect candidate for my DCTV idea.

Loading the image, I selected Hide Pointer under Paint Options. Doing this makes the crosshairs disappear when a stroke is begun. Using the

Brush icon to put me in Paint mode, I selected the dotted-line drawing tool for a faster response than that obtained with the solid-line tool.

Beneath Palette are the five buttons of the Panel selector. Opening the Brush panel reveals an assortment of modes, controls, and shapes. I selected Solid, then Blend mode, as my primary tools for this project. Blend picks up colors the brush passes over, smearing them along the stroke. You can control the behavior of a Blend brush with the Flow slider. A Flow of 100% lays down heavy, opaque color. Lower Flow rates give a subtler, more gradual effect that fades over the length of a stroke. I used a Flow of 25% for this project. I chose a round brush, changing its size with the + and - keys as needed. More often than not, I used a size 5 brush. This provides good control and responsiveness, even on a stock Amiga 1000.

This basic setup is quite easy: Simply load an image, select Blend, slide Flow down to 25% and start painting. When the Blend brush passes over an area of the loaded HAM image, pixels vanish, to be replaced by a soft brush stroke of smooth colors. The "feel" of painting with DCTV is quite different than with a program that lays down a tile of colored pixels.

I started with Natasha's hair, smearing the colors out in smooth strokes as though I were using oils. The graininess of the original HAM image helped me see which areas I had not yet retouched with the Blend brush. I planned to go over the entire image, making the final picture look as though it had been painted with brush strokes.

I was careful to follow contours and lines in logical ways. As I stroked the brush along the wrinkles in the jacket, pixels blended and became soft shapes. In the hair, I followed lines in the underlying image. The Blend brush pushes color from one area into another. As I painted, I revised the original image—extending the line of the collar, painting out extraneous detail, and refining lines and edges with careful brush strokes. I saved the face for last,

Using the millions of colors available in DCTV's 24-bit paint software can yield some impressive results.

learning the behavior of the tools on less critical areas.

GIVERNEY IN THE MOSCOW WOODS

As the image developed, I wanted more color in the background for an impressionistic mood of sunny woods in the distance. I switched to Tint mode, which colors an area while retaining the detail. Setting Flow to 50%, I selected the Draw Filled icon from the tool bar. From the Fill panel, I then chose the Point highlight. Using a light-blue color, I outlined areas of sky in the background, specifying the area of maximum tinting by clicking the cursor at that highlight point. Because Flow was set at 50%, the tinting effects were subtle and cumulative. The Point highlight kept the edges soft. I added warm color to earth in the middle distance and brightened the greens of the foliage.

Returning to the original Blend mode settings, I worked the colorful background heavily, breaking up the photographic detail, but preserving the feel of organic forms. Moving to the face, I took care to control the brush strokes so that areas of light and dark colors did not intermix to destroy the modeling of the features. At the time of writing this article, DCTV Paint does not have an Undo function (such a feature is promised in the upcoming 1.1 version), so I made frequent use of the Quick Save/Quick Load feature as a safety precaution.

In the original HAM picture, a vertical slice of busy background cluttered the image to the left of the large tree. As my blended image neared completion, I decided to fill the left side with dark color to strengthen the composition. I used the Draw Filled tools again, but this time with Solid color and the Vertical hotspot. With the Shift key, I was able to select a dark color directly from the screen. I then returned to Blend mode, adding brushstrokes to the dark area to finish the image.

While the file size of my original HAM image size was about 95K, the 24-bit IFF version of my blended pic-



In "Natasha" (above), a photograph digitized in HAM has been modified with DCTV's Paint program to look like a painting.

ture was over 500K. The DCTV version, however—containing all the color of the 24 bit version—was only slightly larger (105K) than the original. With this DCTV advantage, the artist can enjoy the benefits of the millions of NTSC colors in addition to the small file size of standard IFF images. No special software is needed to display DCTV images, because they are stored as standard IFF files. Almost any display or presentation software can use them. Remember, however, that you must keep the DCTV box plugged in to see full video color; if you don't, you won't see anything. ■

Joel Hagen's credits include work in art, astronomy, science fiction, and software development. Write to him at 10512 Sawyer, Oakdale, CA 95361. Please include a stamped, self-addressed envelope for a reply.

VIDEO SUITE

Video for Animators

*At last there's a low-cost solution
for single-frame recording.*

By Louis R. Wallace

THE AMIGA HAS been a consistent leader in both animation and video, offering advanced animation software at a fraction of the price of other platforms. While animations could be played in real time, they were, however, limited to the standard Amiga display modes and palettes. Although these screen resolutions have been useful for on-screen demonstrations, educational use, and other such applications, in most cases the resulting animations are not suitable for professional output.

In the past year there has been tremendous progress in the twin areas of Amiga graphics and animation. With the new generation of animation software such as Caligari (Octree), Lightwave (NewTek), and Imagine (Impulse), Amiga animators have tools equal, and in some cases superior, to many of the professional software tools currently used for commercial animation. New graphic hardware gives the Amiga animator access to full 24-bit graphic displays. NewTek's Video Toaster is a composite video-output display card with a video signal perfectly suited to broadcast applications, while Impulse's Firecracker 24 is a powerful, 24-bit RGB device capable of displaying pixel resolutions of 1024x482 on a standard Amiga RGB monitor.

Affordable tools for creating professional animations are only half the equation, however. Obviously, you cannot haul out your Amiga on any and every occasion to display your animations; you must be able to transfer them to videotape. Currently how-



Figure 1. The Personal SFC's main control center.

ever, no personal computer has enough power and memory to animate full-screen 24-bit sequences in real time. You must create and record your animations to videotape one frame at a time, a process called *single frame recording*.

Home VCRs and the bulk of industrial editing VTRs (such as Panasonic's AG 1960, NEC's PC-VCR, and Sony's EVO 9700) are not suited to the task. You need a more sophisticated video deck, with absolute frame accuracy,

that you can control from your computer, and that has the ability to read and write some form of time code, usually one of the SMPTE formats. In addition, you need a transport controller, a computer-controlled device that in turn controls the VTR.

This type of equipment is generally quite expensive. The Sony VO9850 SP VTR with time code (\$8100) and BCD 5000 transport controller (\$3000) that *AmigaWorld* purchased for single-frame recording was an effective solution. ▶

It's Time Our Family Met Yours.



Play games that take full advantage of your Amiga — and your imagination.

MicroProse games are synonymous with innovation, excitement and challenge — from sophisticated simulations to fascinating role-playing adventures. And each one is designed to thrill you not just the day you buy it, but weeks, months and years later.

Create and develop an industrial empire in *Railroad Tycoon*, pilot the world's most versatile jet fighter in *F-15 Strike Eagle II*, or travel back to the glory days of dogfighting and aerial gallantry in *Knights of the Sky*. Sail the Spanish Main in search of treasure and adventure in *Pirates!*, or fly the world's most sophisticated jet deep into enemy territory with *F-19 Stealth Fighter*.

The options are endless. In MicroProse games, the only limit is the power of your imagination.

MICRO PROSE™
ENTERTAINMENT • SOFTWARE

For the latest information on release dates and availabilities, call MicroProse Customer Service at 301-771-1151, 9 am to 5 pm EST, weekdays. © 1991 MicroProse Software, Inc.

Circle 80 on Reader Service card.

Combined, however, with the price of the computer, memory, disk storage, graphic display device, and software, their cost is beyond what many prospective animators can afford.

February's InfoCOMM multimedia show and April's NAB convention brought good news for the price-conscious. At the former, Panasonic showed a new SVHS VTR called the AG 7750, which representatives promised would be "perfect" for Video Toaster users. According to Panasonic, the deck has a built-in TBC, SMPTE time code, an RS-422A interface, and frame accuracy. Just as important is the price—\$6500 for the deck and \$650 for the time-code card option (AG F700). You should be able to find street prices that are considerably lower.

At NAB, Nucleus Electronics took a step towards fulfilling Panasonic's promise, announcing an extremely low-priced transport controller for use with the Toaster's Lightwave animation package and (you guessed it) Panasonic's AG 7750. Instead of costing thousands of dollars, the Personal SFC (Single Frame Controller) lists for only \$425.

THEORY INTO ACTION

While somewhat dubious about the effectiveness of anything so inexpensive, I decided I had to find out if the claims were true. Shortly after the shows, I added the Personal SFC and the AG 7750 to my Video Toaster-equipped Amiga 2500.

Hardware installation was extremely simple: For video, I connected a video cable from the Toaster's Video Out to the AG 7750's Video In connector. The AG F700 time-code card went in equally smoothly. I loosened a couple screws on the top of the deck, lifted the lid, and inserted the card in the easily accessible slot.

The Nucleus controller was also simple to set up, because the hardware component is merely a cable that runs from the Amiga's serial port to the AG 7750's RS-422A port. Unlike other transport controllers, which are usually large boxes that connect to the computer via cable, the Nucleus controller supposedly has circuitry embedded in its connector that, with the accompanying software, replaces a great deal of the traditional unit's "unnecessary" electronics.

When starting the SFC, you are presented with a fairly clear-cut interface (see Figure 1) that is segmented into groups of related controls. The

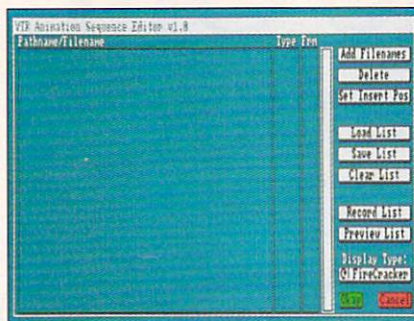


Figure 3. The Animation Sequence Editor lets you specify a list of scenes for display and recording.

upper-left cluster powers standard VCR functions (Play, Pause, Rewind, Fast Forward, Stop and Record); the middle set consists of a time-code readout and a jog-shuttle dial; and the upper-right group sports six special-function command buttons. The bottom of the main screen is a status display, where the software keeps you informed of its actions.

To begin single framing with any system, you must first stripe a tape—that is, write time code and a black

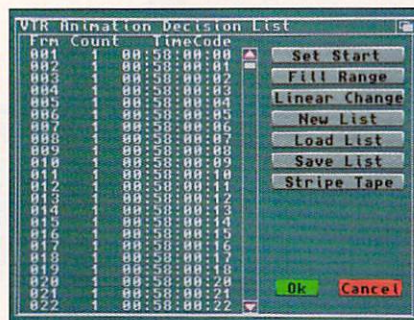


Figure 2. In the VTR Animation Decision List screen, you can specify your recording settings.

video signal to the entire tape. The system subsequently uses this time code to access specific frames on the tape. This is an absolute necessity for single-frame animation work. Striping a tape on some systems is an overly complex chore, but the Personal SFC makes it a breeze. Clicking on the Anim button brings up the VTR Animation Decision List screen (see Figure 2). From here, you set the starting time-code value you want on the tape, and you are prompted to make the proper control settings on the AG-7750 before it begins striping.

Keep in mind that you should supply a good video black signal; there are two easy methods of doing so from the Toaster. The first is to select a black

background from the Toaster switcher and BKG for the Program output. This will work, but you can obtain a better black directly from Lightwave. From the Lightwave Scene menu, clear the scene to remove any objects, images, or backgrounds, and then select Render. This creates a very good black that you can use for striping your tapes. Once the black screen is rendered, you can reenter the switcher, make sure your program output is DV1, and then use the CTRL-CTRL-ALT-ALT key sequence to return to the Amiga display, and the SFC software to start the tape striping.

CUSTOM CONTROL

Once you stripe the tape, you can configure the SFC for use in Lightwave. Return to the Anim menu and indicate by selecting Set Start where on the tape you wish to record your animation. In the resulting requester, enter the position on the striped tape, using the hour, minute, second, and frame number at which you want to begin recording. You can also specify the number of frames of tape you wish to record for each animation frame, although normally you'd want only one frame apiece. By clicking on the number in the Count column, you can change the number of recorded frames for any frame, independent of the others.

Selecting Fill Range lets you set an entire range of frames with the same frame-count number. This is very useful for animations in which you don't need a different scene every frame and are willing to settle for recording two frames of video for each frame of animation. I use this feature to record multiple video frames of the first frame of my animations. I normally write 30 frames (a full second) of video for the first animation frame to use later on when I edit the sequence onto another tape.

The final set-up phase begins by choosing the Auto option from the main menu. In the resulting requester, select the Toaster Render option. A final requester then asks you for the frame at you want to start recording. Normally you indicate the default value of 1, but there will be times when you need to restart an unfinished animation from where you left off. For example, if you have already recorded the first 250 frames of your Lightwave scene on tape, you can tell the SFC software to start at frame 251 (just as ▶

All photographs are of
actual DCTV screens.



The Future Is Here

- ▲ Paint, digitize and display full color NTSC video graphics on any Amiga.*
- ▲ Capture a video frame in 10 seconds from any color video camera. (Also works with still video cameras, video disk and still frame capable VCR's.)
- ▲ Display and capture full color 24 bit high resolution images.
- ▲ Convert DCTV™ images to or from any IFF display format (including HAM and 24 bit).
- ▲ Paint, digitize and conversion software are all included.
- ▲ Works with all popular 3D programs.
- ▲ Animate in full NTSC color.

\$495

* Min. 1 Meg. required

DCTV™ (Digital Composite Television) is a revolutionary new video display and digitizing system for the Amiga. Using the Amiga's chip memory as its frame buffer memory, DCTV™ creates a full color NTSC display with all the color and resolution of television. Sophisticated true color video paint, digitizing and image processing software are all combined into one easy to use package included with DCTV™. DCTV™ also works with all popular 3D programs to create full color animations that can be played back in real time.

DIGITAL

C R E A T I O N S

2865 Sunrise Boulevard Suite 103 Rancho Cordova CA 95742 Telephone 916/344-4825 FAX 916/635-0475

©1990 Digital Creations. Amiga is a registered trademark of Commodore Business Machines. Patents applied for.

Circle 15 on Reader Service card.

you can start Lightwave rendering at the same frame). This can be an invaluable time-saving feature.

At this point, a message appears in the status window indicating you are in Lightwave control mode. Returning to Lightwave, select the Record menu and enter the Record command, T#. Now, when you render your scene (if you have enabled Lightwave's Record mode), each frame will be recorded to the videotape at the position you indicated in the SFC software.

BEYOND TOAST

As you can see, the Personal SFC is a powerful and extremely easy to use addition to the Toaster/Lightwave animation system. Even if it did nothing more than I have described so far, I would heartily recommend it. But it has a number of other features that make it desirable for uses besides Toaster-based projects.

For example, the Animation Sequencing feature (see Figure 3) lets you build a list of filenames of disk-based images. Then it displays and records the images to tape, one frame at a

time. It supports a great number of display output devices, including Firecracker, Framebuffer (Mimetics), DCTV (Digital Creations), HAM-E (Black Belt Systems), Colorburst (M.A.S.T./Centaur), Toaster framestores, and standard IFF images. Once you create a sequence list, the Personal SFC software loads and records the images in the designated sequence. Or, you can create a small black-and-white Amiga animation that the SFC software will play on the normal Amiga display.

For those who would like to experiment with stop-motion animation, the software includes an option to manually record incoming video one frame at a time. So get out your tiny dinosaurs, clay models, and the kids' toys and become the next great stop-motion animator.

For me, an even more fascinating option is time-lapse photography. With this option and a video camera, you can compress a long time sequence into a fraction of real time by recording a single frame from the camera every *n* seconds. As a test, I recorded a flower outside my window for ten hours, at a

rate of one frame every 30 seconds. The result was a 40-second film that clearly showed the plant moving in response to the sun, a phenomenon that impressed me as much as the younger members of my family.

While the Personal SFC was originally designed for use with the Panasonic AG 7750, Nucleus has greatly expanded the number of VTRs the SFC controls. Current support includes such other Panasonic models as the AU 60, AU 65, AU 640, AU 650 and AU 660, as well as Sony's BVU 800, BVU 820, BVU 850 SP, BVU 870 SP, BVU 950 SP, VO 9850 SP, BVH 3000, BVH 3100, BVW 70 Betacam SP, BVW 75 Betacam SP, and the DRV 10 D2. Support for others is under way.

There are a number of animation transport controllers on the market, but none have the price/performance combination or the software features of the Nucleus single-frame controller. Few products come along that offer a real solution to a need, do it far better than the competition, and for a fraction of the cost. The Personal SFC is one of those few. ■

Continue the Winning Tradition With the SAS/C® Development System for AmigaDOS™

Ever since the Amiga® was introduced, the Lattice® C Compiler has been the compiler of choice. Now SAS/C picks up where Lattice C left off. SAS Institute adds the experience and expertise of one of the world's largest independent software companies to the solid foundation built by Lattice, Inc.

Lattice C's proven track record provides the compiler with the following features:

- ▶ SAS/C Compiler
- ▶ Global Optimizer
- ▶ Blink Overlay Linker
- ▶ Extensive Libraries
- ▶ Source Level Debugger
- ▶ Macro Assembler
- ▶ LSE Screen Editor
- ▶ Code Profiler
- ▶ Make Utility
- ▶ Programmer Utilities.

SAS/C surges ahead with a host of new features for the SAS/C Development System for AmigaDOS, Release 5.10:

- ▶ Workbench environment for all users
- ▶ Release 2.0 support for the power programmer
- ▶ Improved code generation
- ▶ Additional library functions
- ▶ Point-and-click program to set default options
- ▶ Automated utility to set up new projects.

Be the leader of the pack! Run with the SAS/C Development System for AmigaDOS. For a free brochure or to order Release 5.10 of the product, call SAS Institute at 919-677-8000, extension 5042.

SAS and SAS/C are registered trademarks of SAS Institute Inc., Cary, NC, USA.

Other brand and product names are trademarks and registered trademarks of their respective holders.

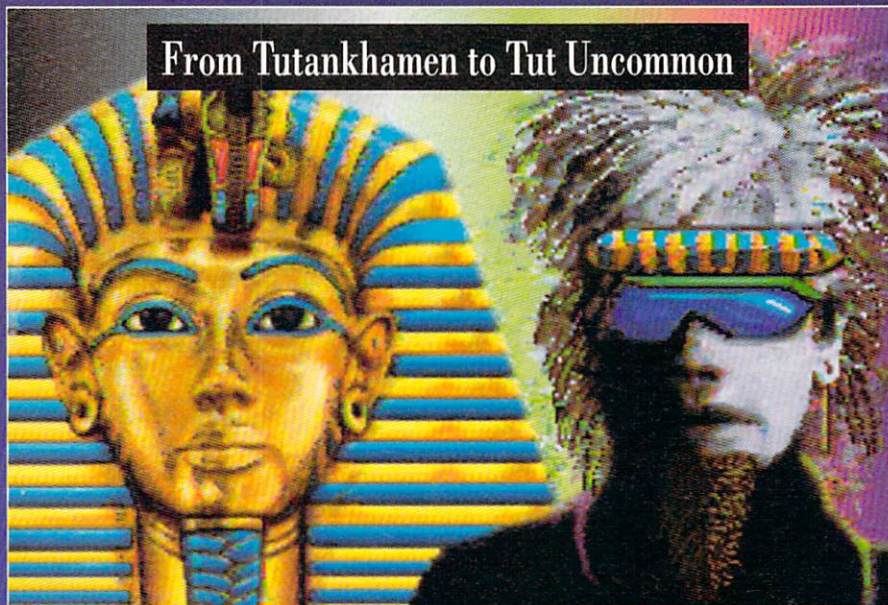


SAS Institute Inc.
SAS Campus Drive
Cary, NC 27513

DELUXE PAINT IV

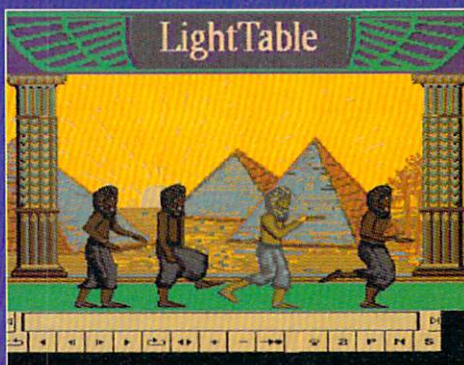
KING OF PAINT AND ANIMATION

There's a reason DeluxePaint® has been the leading Paint and Animation program throughout the evolution of the Amiga®. We've consistently overcome obstacles as large as pyramids to bring you the most intuitive, up-to-date graphics programs available. That's why our list of satisfied customers is as long as the Nile. So, forget about using those other programs with the hieroglyphic interfaces and enter the next era of paint and animation with DeluxePaint IV.

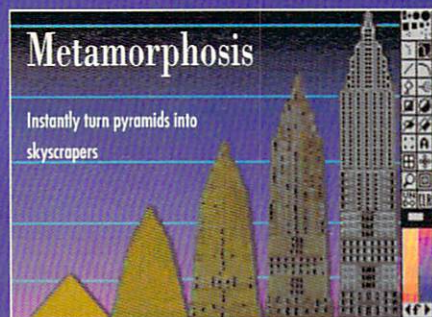


From Tutankhamen to Tut Uncommon

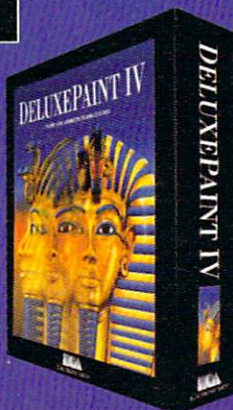
Powerful New Tools
Everything needed to transport you from the Cradle of Civilization into the Modern Age, including Tinting, Translucency and Anti-Aliasing.



Superior LightTable
You'll be doing the "Tut two-step" when you see how easy it is to create animations. Now, see through your current frame to four additional frames — in color!



Easy Metamorphosis
Watch evolution unfold. Instantly animate the shape and image of one brush into any other brush.



DeluxePaint IV features:

- Paint AND Animation in HAM using all 4096 colors
- Improved gradients are now smoother, more versatile and easier to define
- All new Color Mixer makes creating and choosing colors a snap
- New Animation Control Panel with VCR-style interface means no more searching through menus for the animation controls you need. Now, just point and click.
- Enhanced Stencils give you greater control over image processing and image manipulation

Plus all the Award-winning features you've come to expect from DeluxePaint:

- AnimPaint™ — Creating animations is as easy as pressing one key to record your paint strokes and another to play them back
- Instant 3-D perspective
- Direct Overscan support for video applications
- Split screen Magnification with variable Zoom
- Animated brushes to simplify cel animation
- Move Requestor lets you automatically animate brushes in full 3-D
- Extensive keyboard equivalents help advanced users work more efficiently

For more information
about DeluxePaint IV and
our special upgrade offer,
call 800-245-4525
ANYTIME!

And You Thought Tut was Ancient Art



ELECTRONIC ARTS®

Amiga is a registered trademark of Commodore-Amiga, Inc. All other trademarks are trademarks or registered trademarks of Electronic Arts.

Circle 73 on Reader Service card.

SAVE \$5 NOW!

**SUGGESTED
RETAIL:**
~~\$24.95~~
now only
\$19.95
ea.



**FOLLOW-UP TO
OUR
BEST SELLER!**

AMIGA ANIMATION VOLUME TWO!

...Selected from hundreds of incredible works.

In response to the clamor for another videotape featuring Amiga animations, the Editorial Staff of AmigaWorld has created ANIMATION VIDEO, VOLUME TWO. AmigaWorld sponsored another contest soliciting entries from talented Amiga animators. The Editors sifted through hundreds of submissions and countless hours of animation clips to select the very best in animated art. The result is a videotape with scintillating animations, showcasing the efforts and talents of Amiga enthusiasts.

ANIMATION VIDEO, VOLUME ONE was a best-selling video, containing commercially broadcast and award-winning work. The second volume is even more exciting, due to such innovative animation programs as Sculpt-Animate 4D, LightWave 3D, Turbo Silver, Imagine and Deluxe Paint III. The animations on this video will impress you with technical brilliance and delight you with imaginative plots. You'll be thoroughly entertained as you absorb new animation techniques and ideas. Whether you just brought your Amiga home from the store or you have created your own animation art before, you'll want to add ANIMATION VIDEO, VOLUME TWO to your Amiga video collection!

1-800-343-0728

CALL TOLL FREE or mail this coupon.

YES! I am eager to become an expert! Please send me the following videos:

- ☐ Animation Video, Vol. Two... ~~\$24.95~~ **\$19.95**
- ☐ Animation Video, Vol. One... ~~\$19.95~~ **\$14.95**
- ☐ Hot Rod Your Amiga... ~~\$24.95~~ **\$19.95**
- ☐ NewTek's Video Toaster™... ~~\$24.95~~ **\$19.95**
- ☐ Desktop Video, Vol. One... ~~\$29.95~~ **\$24.95**
- ☐ Amiga Graphics, Vol. One... ~~\$29.95~~ **\$24.95**
- ☐ The Musical Amiga... ~~\$29.95~~ **\$24.95**
- ☐ The Amiga Primer... ~~\$29.95~~ **\$24.95**

- ☐ Check/Money Order ☐ MasterCard ☐ VISA ☐ AmEx
☐ Discover

Make checks payable to TechMedia Video.

Please include \$2.95 shipping & handling for one video, \$5.00 for two or more.

Canadian orders add 7% GST (GST reg. #126038405) **Total Amt. \$** _____

Acct. # _____ Exp. Date _____

Signature _____

Name _____

Address _____

City/State/Zip _____

**TECHMEDIA
VIDEO**

AVID1091

PO Box 802, 80 Elm Street, Peterborough, NH 03458 603-924-0100
An IDG Communications Company

Available in VHS only. Please allow 4-6 weeks for delivery. Foreign orders: add \$7.50 for airmail delivery. \$18 for two or more videos. Payment must be made in U.S. funds drawn on U.S. banks. TechMedia Video is the licensed North American distributor of AmigaWorld Videos. © 1989, 1990, 1991 by Razza Video USA. All Rights Reserved. Amiga is a registered trademark of Commodore Business Machines, Inc. All other product names used herein are trademarks of their respective holders.

The Creative Computers Low-Price Guarantee.

Creative Computers is the service and low-price leader and the largest Amiga mail-order company. Check out the prices in this ad, then in the unlikely event that you find a lower price anywhere else in this magazine, we'll beat it!**

Commodore Amiga 500DS

Comes with:
3.5" Floppy Drive, Mouse,
Joystick, bundled with
the following software
packages:



Call for the Lowest Price

Kindwords, FusionPaint, Indiana Jones and the Last
Crusade, F40 Pursuit, and F/A-18 Interceptor.

Commodore
AMIGA

creativeTM
COMPUTERS

The Creative Computers Exclusive Money Back Guarantee Program (CC-MBG)

When you purchase any accelerators, floppy drives, memory expansions, hard drives and hard drive controllers or Newtek's Video Toaster from **Creative Computers**, you are protected by a full 30-day, No-Questions-Asked Money Back Guarantee!

Are you in the market for a Video Toaster but don't know if it will work right with your set-up? Or are you waiting for your Amiga to compute but don't know what an accelerator will mean in practical terms to you? You need not wait any longer. Just buy it from us, and if you don't like it, send it back for a full refund!

CC-MBG rules: Limited-time offer expires 12/31/91 and only applies to the above listed categories only. You must call Customer Service to obtain a Return Authorization number before sending the item(s) back. The item(s) must be in original condition and in original packaging. No damaged items will be accepted. Refunds issued within 14 days of receipt of the returned item(s). Refund is limited to \$3,000 per customer.

ORDER BY PHONE -OR- MAIL IN THIS FORM

1. Call for most current prices and shipping rates.
2. Mail this order form to:
CREATIVE COMPUTERS at: 4453 Redondo Beach Blvd., Lawndale, CA 90260
3. Credit card orders only shipped to billing address.

Name _____
Address _____
City _____ State _____ Zip _____
Country _____
Day Phone# () _____ Night Phone# () _____

QTY.	PRODUCT NAME	UNIT PRICE	TOTAL

8.25% SALES TAX (CA. RES. ONLY)

SHIPPING METHOD: (Call for rates)

- ☐ UPS Ground ☐ Airborne Express
☐ DHL - International orders
☐ Other _____

SHIPPING

TOTAL

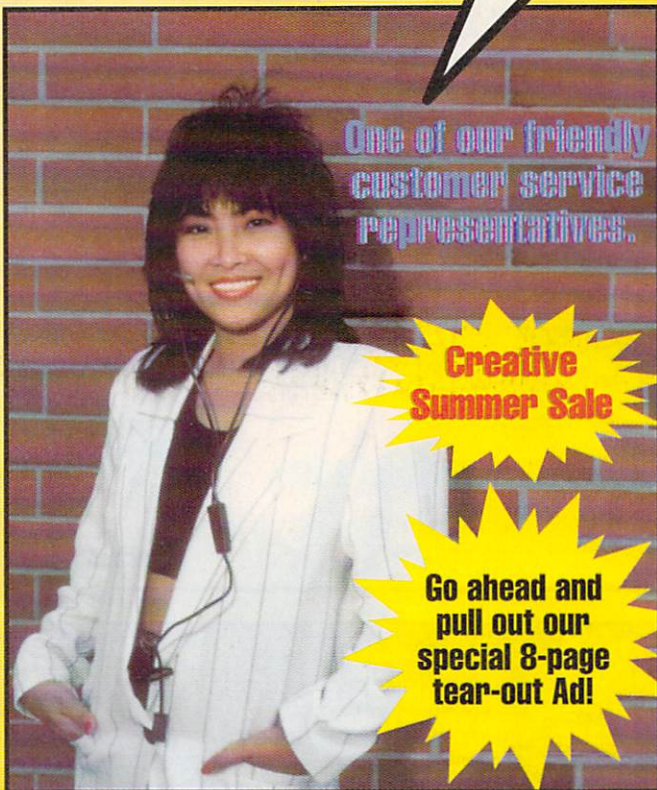
OFFER CODE:
P1A40111

METHOD OF
PAYMENT:

- ☐ Check ☐ Money Order ☐ Visa ☐ MasterCard
☐ American Express ☐ Discover

CREDIT CARD USERS ONLY:

Credit Card # _____ Exp. Date ____/____/____
Signature _____



One of our friendly
customer service
representatives.

**Creative
Summer Sale**

**Go ahead and
pull out our
special 8-page
tear-out Ad!**

OFFER CODE: P1A40111

OFFER VALID September 1, 1991

U.S. ORDERS ONLY:
800-872-8882

CANADA: 1-800-548-2512

CUSTOMER SERVICE OR
213-214-0000

ORDER STATUS

4453 Redondo Beach Blvd., Lawndale, CA 90260 - Mon-Sat 8-6 PST - FAX: 213-214-0932

ACCELERATORS

MEGA MIDGET RACER 25mhz . 639.00
MEGA MIDGET RACER 33mhz . 739.00
PROGRESSIVE
68040 FOR A3000 . 1485.00
PROGRESSIVE
68040 FOR A2000 . 1595.00

AUDIO HARDWARE
AMAS MIDI SAMPLER . 129.00
CM MIDI 1 (EXT) . 56.95
ECE MIDI 1000 . 49.95
ECE MIDI PLUS . 49.95
MIDI GOLD 500 . 59.95
MIDI GOLD INSIDER . 64.95
PERFECT SOUND 500/2000 . 69.95
SOUNDMASTER . 139.00

COMMODORE

A10 STEREO SPEAKERS . 33.95
A2060 ARCNET LAN . 189.00
A2065 ETHERNET LAN . 289.00
A2091 AUTOBOOT CNTRLR . 149.00
A2232 MULTI-SERIAL AD . 289.00
A2300 INT GENLOCK2000 . 239.00
A2320 DISPLAY ENHANCER . 239.00

A520 COMP. ADAPTER . 41.95
A2000 DRIVE REPLACMNT . 89.95

FLOPPY DRIVES

AE HIGH DENSITY DRIVE . 184.00
ROCTEC 5.25" FLOPPY . 159.00
ROCTEC SLIM EXT. 3.5" . 94.95

MEMORY EXPANSION

ADRAM 505 INT 512K . 59.95
ADRAM 540 0/4 MEG INT . 99.00
ADRAM 5600 2 MEG A540 . CALL
BASEBOARD A500 0/4MB . 111.00
MINIMEGS A1000 2MB . 259.00
MINIMEGS A500 2MB . 249.00
SUPRAM 500 1/2 MEG . 47.00
SUPRAM RX 1MB . 125.00
SUPRAM RX 2MB . 189.00
SUPRAM RX 8MB . 449.00

HARD DRIVES

SUPRADRIVE 500XP
20MB W/512K . 329.00
52MB W/512K . 475.00
52MB W/2MB . 499.00
105MB W/512K . 655.00

105MB W/2MB . 715.00

MODEMS

BAUD BANDIT MODEM . 105.00
BAUD BANDIT MODEM L5 . 169.00
GALAXY APOLLO 9600 . 449.00
SUPRA 2400 BAUD MODEM . 89.00
FREE CABLE WITH PURCHASE
SUPRA 2400+ W/MNP . 135.00
SUPRA 2400ZI (INTERNAL) . 114.00
SUPRA 2400ZI+ . 155.00
SUPRA 9600 V.32 . 479.00

MONITORS

NEC MULTISYNC 3D . 699.00
NEC MULTISYNC IIA . 650.00
SEIKO 1440 MULTISYNC . 599.00
SONY 1304 MULTISYNC . 779.00

PRINTERS

CITIZEN GSX140 24 PIN . 329.00
CITIZEN GSX200 9 PIN . 185.00
LASERJET III PRINTER . CALL
QMS PS-410 LASER . 2495.00
STAR NX1000 II PRINTER . 169.00
STAR NX1020 RAINBOW . 219.00

VIDEO HARDWARE

AMIGEN GENLOCK . 97.95
ASDG EPSON DRIVER . 135.00
BCD 5000 . 1995.00
CHROMA KEY . 315.00
COLOR SPLITTER . 109.00
DENISE EXTENDER BUS . 85.00
DIGI VIEW GOLD V4.0 . 119.00
DIGIVIEW GOLD 4.0 PAL . 134.00
EPSON ES-300C SCANNER . 1395.00
FLICK. FIX TO GENLOCK . 37.95
FLICKER FIXER . 249.00
FLICKER FIXER PAL . 300.00
FRAMEGRABBER . 449.00
FRAMEGRAB PAL VERS . 659.00
FRAMEGRAB/256 GRAY . 629.00
FRAMEGRAB/256 PAL . 659.00
HAM-E PLUS . 399.00
LENS 16MM NO IRIS . 18.95
LENS 16MM W/IRIS . 53.95
LIVE! 1000 . 249.00
LIVE! 2000 . 349.00
LIVE! 500 . 309.00
MAGNI 4004 . 1049.00

MAGNI 4004S . 1049.00
MINIGEN GENLOCK . 189.00
MINIGEN PAL GENLOCK . 239.00
NERIKI GENLOCK . 1799.00
NUCLEAS PERSONAL SFC . 399.00
PANASONIC WV1410 . 189.00
PANASONIC WV1500X . 319.00
PERSONAL TBC . CALL
SHARP JX300 SCANNER . 2095.00
SHARP JX450 SCANNER . 5195.00
SUPERGEN 2000S . 1350.00
SUPERGEN GENLOCK . 649.00
TCRG 102 . 649.00
VIDEO MASTER GENLOCK . 995.00
VIDI CHROME COLOR MOD . 29.95
VIDTECH SCANLOCK . 789.00
VIDTECH SCANLOCK PAL . 1149.00
VIDEO BLENDER . 1135.00
VIP VIDEO INTERFACE . 97.95

MISC. HARDWARE

A MAX II MAC EMULATOR . 135.00
AUTOLINK . 44.95
BIGFOOT 150 POWER SUP . 97.95
CMI MULTIPOINT BOARD . 195.00

CMS SYQUEST 45MB HD . 699.00
SYQUEST CARTRIDGE . 80.00
DAKOTA SKETCH MASTER . 419.00
SKETCH MASTER. 12X18 . 619.00
DOUBLE TALK A2000 . 399.00
DUAL SERIAL BOARD . 269.00
FATTER AG SWITCH A500 . 21.95
FATTER AGNUS SWITCH'R . 21.95
GOLDEN IMG. HAND SCAN . 289.00
IC AGNUS: FATTER(1MB) . 89.00
IC AGNUS: SUPER FAT . 89.00
IVS GRAND SLAM 2000 . 249.00
IVS GRAND SLAM 500 . 319.00
KICKSTART 1.3 ROM . 39.00
MEGACHIP 2000 . 259.00
OMNKEY ULTRA . 132.00
PROFESSIONAL SCANLAB . CALL

ACCESSORIES

DISKETTES/DISK ACCESSORIES

BANX DISKETTE BOX . 14.95
DISKETTES, 50 PACK . 44.00
SONY DISK 10 PACK . 12.95

Newtek Video Toaster



\$1399⁰⁰!

DPS Personal TBC
\$779⁰⁰



DCTV



From Digital Creations
Full NTSC Color Display
\$389⁰⁰ and Digitizer.

DCTV: A guided tour

This easy-to-follow, comprehensive VHS tutorial will tell you need to know about DCTV. **\$26⁹⁵**



Dr. T's ...has the
most extensive line of Music
products for the Amiga!



Xor Universal
MIDI system
organizer. Can get, send,
load and save entire
banks from any
instrument in your
system. Call



The Copyist
Score Transcription
and Editing.
Enter scores on
screen or transcribe
from SMUS or MIDI
files. **\$219⁰⁰**



Tiger Cub
Inexpensive, full-
featured tape
recorder-style
sequencer. Perfect for
beginners. **\$58⁹⁵**



The Phantom
SMPTE reader/
writer and MIDI
interface.
Compatible with
KCS and Bars & Pipes
Professional. **\$239⁰⁰**



KCS 3.5
Complete
MIDI
sequencing
system. **\$229⁰⁰**



Music Mouse
Make music
with the
touch of the
mouse. Call

CSA

New, lower
priced Mega-
Midget Racers!

25 Mhz . **\$488⁰⁰**
33 Mhz . **\$558⁰⁰**
Ram Board with 2mb . **\$409⁰⁰**
Ram Board with 4mb . **\$779⁰⁰**
68882 - 25 Mhz . **\$189⁰⁰**

These Economy boards do not have an MMU

KB-Talker & KB Talker 500

Universal PC/AT Keyboard Adapter for all
A1000/A2000's (& A500 w/500 kit)



2 Keymaps
No Software
Cap Labels
\$54⁹⁵

Chroma Key
Video Overlay Device
\$315⁰⁰

Best International
freight service and
low, low rates via:



Overnight International Shipping Including Canada as low as \$15

Most rates cheaper than Express Mail at the Post Office!

Creative
Summer Sale

SONY COLOR DISKS 10 PACK 13.95
SONY DISK 5.25" 10 PK 7.95
SONY DISK DSHD 5 PACK 8.95
SONY DISK DSHD 10 PACK 19.95
WOODEN DISKBOX 2 DRAWER 45.00
WOODEN DISKBOX 3 DRAWER 55.00
WOODEN DISKBOX 4 DRAWER 65.00

DUST COVERS

COVER UPS A1084 MON 6.95
COVER UPS A1950 MON 6.95
COVER UPS A2000 CPU 5.95
COVER UPS A2000 KEYBO 2.99
COVER UPS A2000 SYSTM 10.95
COVER UPS A3000 CPU 5.95
COVER UPS A3000/A1950 10.95
COVER UPS A500 CPU 5.95
DUST COVER DESKJET 28.95
DUST COVER LASERJET III 25.95
DUST COVER LASERJET IIP 18.95
SAFESKIN / A1000 17.95
SAFESKIN / A2000 17.95
SAFESKIN / A3000 17.95
SAFESKIN / A500 17.95

MICE

A1352 MOUSE 89.95
BEETLE MOUSE (VAR. COLORS) 39.95
BOING OPTICAL MOUSE 79.95
GOLDEN IMAGE MOUSE 39.95
MOUSE MATS 6.95

JOYSTICKS

BOSS JOYSTICK 14.95
ERGO STICK 17.95
500XJ SPEEDKING 14.95
FREEDOM CONNECTION 25.95
GRAVIS CLEAR JOYSTICK 35.95
GRAVIS MOUSESTICK 64.95
GRAVIS SWITCH JOYSTCK 32.49
LIGHT GUN, PHASAR 32.49
MAXX YOKE JOYSTICK 79.95
POWERPLAYERS JOYSTICK 14.95
SLIK STIK JOYSTICK 7.95
TAC-2 JOYSTICK 10.95
WICO 3-WAY JOYSTICK 22.95
WICO BAT HANDLE STICK 18.95
WICO RED BALL JOYSTICK 18.95
WINNER JOYSTICK 14.95
ZOOMER JOYSTICK 47.95

PRINTER ACCESSORIES

DATA SWITCH 2-WAY 13.95
DATA SWITCH 4-WAY 22.95
DESKJET BLK CARTRIDGE 18.95
DESKJET FULL COLOR KIT 34.95
DESKJET REFILL BLACK 13.95
DESKJET REFILL BLUE 13.95
DESKJET REFILL BROWN 13.95
DESKJET REFILL GOLD 13.95
DESKJET REFILL RED 13.95
DESKJET REFILL YELLOW 13.95
DESKJET STAND/ORGANIZER 69.00
PAINTJET BLK CARTRIDGE 25.95
PAINTJET COLOR CARTRIDGE 28.95
PAINTJET CUT PAPER 17.95
PAINTJET Z-FOLD PAPER 17.95
STAR NX2410 RIBBON 7.49
STAR RAINBOW RIBBON 8.95

MISC ACCESSORIES

AMITOTE A2000 69.95
AMITOTE A500 69.95
AMITOTE A1084 69.95
AUTO DROID 50.95
CLEANING KIT SMALL 5.95

CLEANING KIT LARGE 12.95
COMPUTER SERVICE KIT 18.95
COPY/CAMERA STAND 59.95
DIGI DROID 67.95
MONITOR STAND A500 27.95
PERFECT SOUND ADAPTOR 10.95
X-SPECS 3D 84.95

HOT GRAPHICS SOFTWARE

3D TEXT ANIMATOR 29.95
ANIMAGIC 87.95
DELUXE PAINT III 99.95
BUDDY SYSTEM 29.95
DELUXE PAINT IV 109.00
DIGI PAINT 3 54.95
DIGIPAIN 3 PAL 59.95
DIGIMATE III 23.95
DISNEY ANIMATION 79.95
DRAW 4D PROFESSIONAL 199.00
MACRO PAINT 81.95
PHOTON PAINT 2.0 99.95
SCULPT ANIMATE 4-D 299.00
SCULPT ANIMATE 4-D JR 89.95
SPECTRACOLOR 84.95

TURBO SILVER 3.0 69.00
VIDEOSCAPE 3D V2.0 119.00

DESKTOP VIDEO

ART DEPARTMENT 52.95
BROADCAST TITLER 84.95
FONT PACK 1 84.95
ENHANCER 84.95
BROADCAST TITLER II 229.00
BROADCAST TITLER II PAL 239.00
CINELINK FOR IMAGLINK 175.00
CREDIT TEXT SCROLLER 23.95
DELUXE VIDEO/PHOTO LAB BUNDLE 89.95
INVISION PLUS 179.00
NERIKI VIDEO TOOLS ON TAP 52.95
PERFORMER (ELAN) 87.95
PHOTON TRANSPORT CONT 195.95
PHOTON VIDEO EDLP 299.00
PIXIMATE 40.95
PRO VIDEO PLUS PAL 199.95
PRO VIDEO POST 199.00
PRO VIDEO POST PAL 199.00
SCALA 249.00
SCREEN MAKER 239.00

ON SYQUEST CARTRIDGE 299.00
SCREEN MAKER STARTER SET 34.95
SHOWMAKER 215.00
TGALINK FOR IMAGLINK 175.00
TV GRAPHICS 29.95
TV GRAPHICS 2 29.95
TVSHOW 58.95
TVTEXT PROFESSIONAL 99.95
VIDEO CLIPS 64.95
VIDEO EFFECTS 3D 119.00
VIDEO EFFECTS 3D PAL 139.95
VIDEO PAGE 93.95
VIDEO TOOLS 179.00
VIDEOTITLER 3D 89.95
VIDGEN 1.0 93.95

3D RENDERING

3D PROFESSIONAL 199.00
3D PROFESSIONAL PAL 199.00
DIGITAL LANDSCAPE 73.95
IMAGINE 199.00
MAP MASTER 45.95
PRO TEXTURES 36.95
SURFACE MASTER 25.95
IMAGINE BUDDY SYSTEM 28.95

The ICD Advantage

AdSpeed™ \$209⁰⁰
Best overall performance of any accelerator in its price range.

Flicker Free Video™ \$295⁰⁰
Eliminates interface flicker for any Amiga computer.

Novia 20i™ \$549⁰⁰
The smallest hard drive and interface in the world for your Amiga 500. Fits internally.

Novia 60i™ Call
Now you can have the Novia with a 60 meg 2.5 inch hard drive.

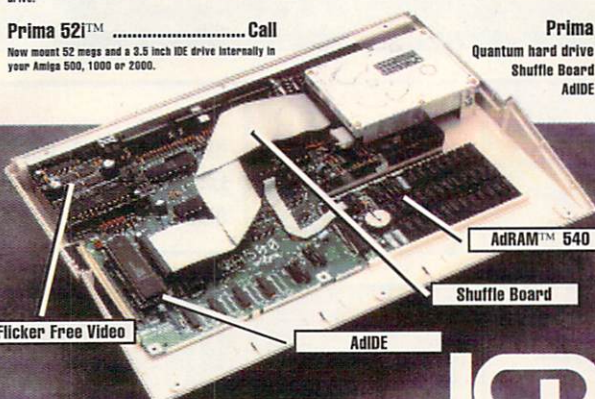
Prima 52i™ Call
Now mount 52 megs and a 3.5 inch IDE drive internally in your Amiga 500, 1000 or 2000.

Prima 105i™ Call
105 megs internally in your 500, 1000 or 2000.

AdIDE™ \$99⁰⁰
Smallest Amiga hard drive interface made. For IDE (AT) drives.
IDE 44 for your 2.5 inch hard drive. \$118⁰⁰

Shuffle Board™ \$29⁹⁵
Reroutes Df0: to the external floppy connector. Boot from an external floppy. For an Amiga 500 or 1000.

Prima
Quantum hard drive
Shuffle Board
AdIDE



Centaur Hardware

Minimegs

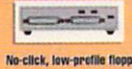
Affordable 2 MB External
RAM for 500 and 1000
Full AUTOCONFIG
A1000 \$259⁹⁵
A500 \$249⁹⁵



Enhanced Unidrive



\$124⁹⁵



No-click, low-profile floppy
with LED track display and
virus protection switch



Boing! Mouse

Best-selling optical mouse
for the Amiga with Free
D.J.D.E. software
(a \$39.95 value).
\$79⁹⁵

Flash SCSI
Supercharger CALL
Fastest 8- or 16-Bit NON-DMA

Hard Drive Specials

Controllers

GVP Series II - Non Ram Cap. \$159⁰⁰
GVP Series II - Up to 8 megs .. \$199⁰⁰
ICD AdSCSI 2000 \$129⁰⁰
ICD AdSCSI 2080 \$199⁰⁰
IVS TrumpCard 2000 Prof. \$199⁰⁰
IVS TrumpCard 500 Prof. \$259⁰⁰
Supra WordSync \$109⁰⁰
Dataflyer 2000 \$89⁰⁰

Dataflyer 500 \$179⁰⁰
Nexus HC 8/0 \$229⁰⁰

Bare Drives

Quantum 52mb LPS \$233⁰⁰
Quantum 105 LPS \$377⁰⁰
Quantum 170 \$618⁰⁰
Quantum 210 \$698⁰⁰
Quantum 425 \$1589⁰⁰

Supra Corporation

SupraRam 2000 4mb RAM 235.00
SupraRam 2000 6mb RAM 299.00
SupraRam 2000 8mb RAM 369.00
SupraRam 500 512k 47.00
Due to industry fluctuation, RAM prices are subject to change without notice



SupraRam 2000
2/8mb Board
\$169⁰⁰



Roctec

New, reliable drive for the Amiga.
Super slim, less than 1-inch high.
Low power consumption.
Drive pass-thru. \$94⁹⁵

OFFER CODE: P1A40111

OFFER VALID September 1, 1991

U.S. ORDERS ONLY:
800-872-8882

CANADA: 1-800-548-2512

4453 Redondo Beach Blvd., Lawndale, CA 90260 - Mon-Sat 8-6 PST - FAX: 213-214-0932

CUSTOMER SERVICE OR
213-214-0000

ORDER STATUS

INTERCHANGE	29.95
INTERCHANGE TSLV MODL	18.95
MAP MASTER	
FOR LIGHTWAVE	64.95
MATHVISION	119.00
MATERIALS TEXTURE LIBRARY	
VOL 2: TILES	26.95
MODELER 3D	64.95
PIXEL 3D AUTOTRACING	52.95
SCAPE MAKER	24.95
SCENE GENERATOR	29.95
SCENERY ANIMATOR	64.95
SCULPT 3DXL	109.00
VISTA 1.2	37.95
VISTA PAL	58.95
VISTA PROFESSIONAL	87.95
GRAND CANYON 1	48.95
GRAND CANYON 2	48.95
JACKSON HOLE 1	48.95
SCAPES CALIFORNIA #1	48.95
SCAPES MARS	48.95
WESTERN U.S.	48.95
WYOMING 1	48.95
WYOMING 2	48.95

DESIGN DISKS

(SPECIFY SCULPT/TSLV/VSCAPE)	
AIRSHIPS OF THE 20TH CENT	23.95
ARCHITECTURE	22.95
DINOSAUR	25.95
FUTURE	22.95
HUMAN	22.95
INTERIORS	22.95
MICROBIOLOGICS	22.95
NY CITY ICONS	25.95
SPACE	25.95
VINTAGE AIRCRAFT	25.95
WOODLAND	25.95

CLIP ART

AIRCRAFT PICS	31.95
COLOR CLIP ART	
VOL #1-3 (EA)	17.95
CLIP ART #1-8 (EACH)	12.95
ECLIPS PROFESSIONAL	60.95
ECLIPS PROFESSIONAL II	64.95
MAP PICS - US	34.95
MAP PICS - WORLD	37.95
PRO FILLS	17.95
PROF. PAGE STRUCTURED	38.95

SOFTCLIPS: 1-4 (EA)	44.95
ANY TWO SOFTCLIPS	85.00
ALL FOUR SOFTCLIPS	160.00
SUPER CLIPS 1-3 (EACH)	18.95

Fonts

1ST PRIZE TOASTED FONTS 1 ...	40.85
IMAGINE BROADCAST 3D	
FONTS VOLUMES 1-3	38.95
INTERFONTS	69.95
GOLD DISK DECORATOR FONT ...	34.95
GOLD DISK DESIGNER FONT	34.95
GOLD DISK PUBLISHER FONT	34.95
GOLD DISK VIDEO FONT	34.95
KARA ANIMFONTS 1	29.95
KARA ANIMFONTS 2	29.95
KARA ANIMFONTS 3	29.95
KARA FONTS HEADLINES	44.95
KARA FONTS HEADLINES 2	39.95
KARA FONTS SUBHEADS	39.95
KARA STARFIELDS	34.95
KARA TOASTER FONTS VOL 1 ...	62.95
KARA TOASTER FONTS VOL 2 ...	62.95
MASTERPIECE FONTS	159.00
MASTERPIECE TOASTER FONTS ..	89.95

PAGESTREAM PLUS PACK	46.95
PAGESTREAM. FONTS	
PACK. (4 SETS)	46.95
PROWRITE PRO FONTS VOL I ...	22.95
PROWRITE PRO FONTS VOL II ...	22.95
PROF. FONT LIBRARY	48.95
PROF. PAGE OUTLINE CG	129.00

MISC. GRAPHICS

ACAD TRANSLATOR	139.95
AUTOSCRIPT	81.95
FRACAL PRO	50.95
FRAMEGRABBER V2 SFTWR	58.95
IMAGE LINK	119.00
PRO/MOTION	58.95
RESEP	51.95

DRAWING/CAD

DECKBUILDERS CAD	69.95
DYNA CAD	729.00
FLO FLOORPLAN CNSTRCT	29.95
HOMEBUILDERS CAD 2.0	124.00
HOMEBUILDERS_SCULPT	69.95
HOMEBUILDERS_CHOICE	50.95
HOMEBUILDERS_LIB_1	26.95
HOMEBUILDERS_PRINT	72.95

INTROCAD	46.95
INTROCAD PLUS	64.95
ULTRA DESIGN	199.00
XCAD DESIGNER	89.95
XCAD DESIGNER PAL	89.95
XCAD PROFESSIONAL	149.00
XCAD PROFESSIONAL PAL	CALL
XSHELL	124.00

DESKTOP PUBLISHING

AWARD MAKER PLUS	32.49
DESIGN WORKS	78.95
DRAW 4D	164.00
PAGESTREAM 2.1	179.00
PAGESTREAM FORMS	26.95
PELICAN PRESS	64.95
PRINTMASTER PLUS	25.95
PROFESSIONAL DRAW	129.00
PROFESSIONAL PAGE 2.0	165.00
PROF. PAGE TEMPLATES	95.95
PROVECTOR	169.00

MUSIC SOFTWARE

BARB AND PIPES	139.00
BARB AND PIPES PROF.	239.00
MULTIMEDIA KIT	34.95

MUSICBOX A	34.95
MUSICBOX B	34.95
INTERNAL SOUNDS KIT	34.95
RULES FOR TOOLS	35.95
C-ZAR	9.95
DR. T'S MUSIC SOFTWARE	
BACH SONGBOOK	17.95
COPYIST APPRENTICE	75.95
COPYIST DTP	180.00
D-50 ED/LIB	80.95
E-MU PROTEUS	90.95
KCS 3.0	159.00
KCS LEVEL II 3.5	229.00
KORG M-1 ED/LIB	87.95
MATRIX-8	87.95
MIDI INTERFACE	79.95
MIDI RECORDING STUDIO	40.95
MT-32 ED/LIBRARY	87.95
M INTELLIGENT MUSIC	124.00
TIGER CUB	58.95
MASTER TRACKS PRO	259.00
MUSIC X	89.95
SONIX	51.95
SOUND QUEST/MIDQUEST	148.00
SOUNDTRAX VOL 1	14.95



HAM-E Plus

- Paint, render, convert and image processing software
- 18/24-Bit "pure" modes
- 256/512 color register modes
- RGB pass through
- Screen overlay/underlay
- Screens pull up/down & go front/back
- View with any IFF Viewer
- Animate via ANIM or Page Flipping

\$379⁰⁰



Seiko CM-1440

- 14" Super fine pitch Trinitron
- Resolution up to 1024 x 768
- Anti-glare silica coating
- Works on all Amigas
- Includes a free cable

\$579⁰⁰



FireCracker 24

- High-resolution
- 16.8 Million Colors
- 24-Bit graphics display card
- Works on the Amiga 2000 and 2500

\$895⁰⁰

2 Meg Version

DKB SecureKey

The SecureKey is a hardware security device that installs in any A2000 or A3000. The SecureKey will not allow access to your Amiga without the right security code. **\$199⁰⁰**



DKB MegAChip 2000

2 Megs of Chip RAM for the A2000 and A500
Doubles your Graphics memory for Desktop Video, 3D Rendering & Animation, Multimedia or Desktop Publishing

\$219⁰⁰

without Agnus

\$309⁰⁰

without Agnus

Printers



HP PaintJet \$699.00

HP DeskJet 500 .. \$469.00

LaserJet IIP \$799.00

QMS-PS 410 \$1989.00

COLORBURST

24/48 Bit
Graphics/
Video Engine

16.8 Million
Colors

Pure RGB
output

WORKS WITH
ALL Amigas
and monitors

\$689⁰⁰

**HOT!
NEW!**



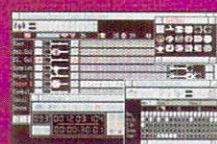
DKB Insider II

1.5 Meg of Internal RAM for the A1000 with clock/calendar

OK	\$189 ⁰⁰
512K	\$219 ⁰⁰
1MB	\$249 ⁰⁰
1.5MB	\$279 ⁰⁰

Audition

Advanced digital sound editing.
More features than AudioMaster 3.
100% Assembly language. **\$64⁹⁵**



Bars & Pipes Professional \$209⁰⁰

MultiMedia Kit \$32⁹⁵

Rules for Tools \$32⁹⁵

Internal Sounds Kit \$32⁹⁵

Music Box A \$32⁹⁵

Music Box B \$32⁹⁵

Educational, Corporate and Aerospace purchase orders accepted. Call (213) 542-2292 for details.

USE OUR TOLL-FREE INTERNATIONAL PHONE LINES

Australia 0014-800-125-712 ; Canada 1-800-548-2512; Denmark 0434-0297; France 19-0590-1099; Italy 1678-74086; Japan 0031-11-1351; Netherlands 06-022-8613; Norway 050-12029; Switzerland 046-05-3420; United Kingdom 0800-89-1178.

**Creative
Summer Sale**

SOUNDTRAX VOL 2 14.95
TRAX MIDI STUDIO 58.95

SAMPLER/EDITOR SOFTWARE

AUDIOMASTER III 64.95
AUDITION 64.95

UTILITY SOFTWARE

MISC. UTILITIES

AMI ALIGNMENT SYSTEM 28.95
B.A.D. DISK OPTIMIZER V4.0 29.95
CROSS DOS 25.95
CYGNUS PROF. REL. 2 58.95
DISK LABELER 22.95
DISK MECHANIC, THE 52.95
DISK TO DISK 28.95
DISKMASTER 28.95
DISKMASTER II 42.95
DOCTOR AMI 29.95
DOS TO DOS 32.49
FACC II 21.95
MAC 2 DOS 80.95
MASTERING CLI 25.95
POWER PACKER PRO 17.95

SCANNERY 195.00
VO REC ONE 117.00
W SHELL 31.95
WORKBENCH 1.3 19.95

BACKUP UTILITIES

AMIBACK 44.95
BYTE 'N' BACK BACKUP 40.95
COPYRIGHT CALL
FLASHBACK 24.95
MR. BACKUP PROFESSIONAL 32.95
PROJECT D 35.95
QUARTERBACK 40.95
QUARTERBACK TOOLS 52.95
RAW COPY 1.3 34.95
X-COPY PROFESSIONAL 45.95

PRINTER UTILITIES

DJ HELPER 29.95
PALETTE PRINTER 19.95
SUPER DJ V2.0 15.95

TELECOMMUNICATIONS

ATALK III 64.95
BAUD BANDIT 29.95
BBS PC 91.95

ONLINE PLATINUM 39.95
MINDLINK TELECOMM 28.95
PARAGON BBS V2.08 99.95
STERLING SERVICE BBS 84.95
SKYLINE BBS V1.2 87.95

PROGRAMMING

AC BASIC 129.95
AC FORTRAN 77 399.00
AC FORTRAN 195.00
ADAPT 680 X 0 69.95
AMIGA LOGO 58.95
AUTOBASIC 59.95
AREXX 28.95
BENCHMARK SOURCE LVL 83.95
CAPE 68K ASSEM 2.5 52.95
INOVATOOLS I 51.95
JFORTH PROFESSIONAL 134.00
LATTICE C SAS/C 189.00
LATTICE C++ 89.00
POWER WINDOWS 2.5 52.95
SOURCE LEVEL DEBUGGER 48.95

PRODUCTIVITY SOFTWARE

AUTHORIZING SOFTWARE

AMIGA VISION 99.00
AMOS THE CREATOR 64.95
AMOS THE COMPILER 45.95
AMOS 3D 42.95
CANDO 88.95
CANDO PAL VERSION 86.95
CANDO INTROPAK 23.95
CANDO PROPAK 1 23.95
DIRECTOR V2.0 74.95
FOUNDATION 149.00
HYPER BOOK 64.95
HYPER HELPERS 35.95

ACCOUNTING

BEST BUSINESS MGMT 192.00
DESKTOP BUDGET 40.95
EASY LEDGERS 192.00
PHASAR 4.0 59.95

DATABASE

DB MAN V 174.00

MICROFICHE FILER PLUS 117.00
SUPERBASE PERSONAL 2 87.95
SUPERBASE PROF 3.0 189.00
SUPERBASE 4 329.00

WORD PROCESSING

ELECTRIC THESAURUS 29.95
EXCELLENCE VERSION 2 109.00
FLOW 57.95
OFFICE GOLD DISK 159.00
SCRIBBLE PLATINUM 87.95
TRANSWRITE 39.95
WORD PERFECT 159.00
WORD PERFECT LIBRARY 76.95
WORKS PLATINUM 89.95

MISC. PRODUCTIVITY

ALL IN ONE 54.95
EZ GRADE 35.95
MICROLAWYER 37.95
TOP FORM 52.95
WHO WHAT WHERE WHEN 51.95

SPREADSHEETS

ADVANTAGE SPREADSHEET 119.00
MAXIPLAN PLUS 69.95

SUPERPLAN 84.95
TEMPICITY ANALYZE 20.95
TEMPICITY MAXIPLAN 20.95
TEMPICITY SUPERPLAN 20.95
TEMPICITY VIP PROF 20.95
VIP PROFESSIONAL 58.95

CIRCUIT DESIGN

PRO BOARD/NET PACKAGE 289.00
PRO BOARD PERSONAL 99.95
PRO NET PERSONAL 99.95

EDUCATIONAL SOFTWARE PRESCHOOL

ADVENTURES IN MATH 24.95
BARNEY BEAR 20.95
BARNEY BEAR GOES FARM 20.95
BARNEY BEAR TO SPACE 20.95
CHICKEN LITTLE 17.95
DISCOVERY (VARIOUS TITLES) 11.49
DISCOVERY W/MATH 23.95
DISCOVERY W/SPELLING 23.95
KATIES FARM 25.95
KINDERAMA 29.95

Centaur Software Inc.

Personal Fonts Maker

Design and modify screen and printer fonts. Loaded with features \$69⁹⁵

Personal Write

Fast, full-featured Word Processor. Lots of Power and a Super value \$38⁹⁵



Pixound

Transforms your Amiga graphics into music. Supports MIDI as well as Amiga sounds \$58⁹⁵



B.A.D. Ver. 4.0

Best-selling disk optimizer for all Amigas. Speeds floppy and hard drives by up to 5 times! \$29⁹⁵



SHOWMAKER

MAKES DESKTOP VIDEO A REALITY!

- Synchronize Video and Sound to the Beat!
- Control External Devices like the Video Toaster, LaserDisc, VCRs, Writable Optical Disks, MIDI!
- Create Productions of Virtually Unlimited Length!
- Edit Productions in Real Time on Your AMIGA!
- Save Finished Productions to Video Tape!

ONLY \$215⁰⁰

CONTROL YOUR VIDEO TOASTER!

NewTek Bundle



Digi View Gold 4.0 124.00
Digi Paint 3 58.00
Panasonic WV1410 189.00
Panasonic WV1500X 319.00
Copy/Camera Stand 59.95
Super Bundle/Digi View 399.00
(Digi View Gold 4.0, WV1410 Camera, Copy Stand, Lens, Cable)

SoftClips



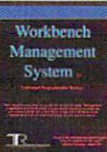
\$44⁹⁵

Proper Grammar



\$57⁹⁵

- Buy any Amiga word processor and Proper Grammar at the same time, and save \$5.00 off the normal price.
- Buy all four volumes of SoftClips clip-art for the special price of \$160.00 — a savings of \$5.00 per volume!



Workbench Management System \$26⁹⁵



Mr. Backup Professional \$32⁹⁵



Brigade Commander \$29⁹⁵

Our Wedding

22 Images
\$55⁹⁵ in 24-bit
\$44⁹⁵ in HAM



OFFER CODE: P1A40111

OFFER VALID September 1, 1991

U.S. ORDERS ONLY:
800-872-8882

CANADA: 1-800-548-2512

4453 Redondo Beach Blvd., Lawndale, CA 90260 - Mon-Sat 8-6 PST - FAX: 213-214-0932

CUSTOMER SERVICE OR
213-214-0000

ORDER STATUS

LETTERS FOR YOU	12.95
MATCH IT	25.95
MATH DOCTOR	29.95
MATH MAGICIAN	29.95
MATH WIZARD	29.95
MCCEE	25.95
MOTHER GOOSE	19.95
MY PAINT 2.0	29.95
MY PAINT DATA DISK #1	19.95
MY PAINT DATA DISK #2	19.95
NUMBERS COUNT	19.95
NURSERY RHYMES STORY	19.95
OPPOSITES ATTRACT	13.95
SPELLAFARI	29.95

**GRAMMAR SCHOOL/
ADULT**

ALGEBRA I	31.95
ALGEBRA PLUS VOLUME I	31.95
ALGEBRA PLUS VOLUME II	29.95
ARITHMETIC	29.95
BIBLEREADER STUDY	31.95
CALCULUS	31.95
DISTANT SUNS V3.0	29.95
DISTANT SUNS V3.0 PAL	31.95

YALE BRIGHT STAR CATLG	12.95
SKYMAP LVL 1 STAR CATLG	15.95
DEEPSKY OBJECTS	18.95
DISTANT SUNS V4.0	57.95
INTELLITYPE	9.95
JAPANESE I	25.95
LINKWORD (VAR LANGUAGES)	19.95
MATH-AMATION	49.95
MAVIS BEACON TYPING	34.95
PRE CALCULUS	31.95
TEACHERS TOOLKIT	34.95
TRIGONOMETRY	31.95
WHERE IN EUROPE CARMEN	29.95
WHERE IN TIME IS CARMEN	29.95
WHERE IN THE U.S.A.	29.95
WHERE IN THE WORLD	29.95
WORLD ATLAS 2.0	32.49

CD TITLES

ADVNCO MILITARY SYSTEMS	29.95
ALL DOGS GO TO HEAVEN	32.95
AMERICAN HERITAGE	
DICTIONARY	49.95
BARNEY BEAR GOES CAMPING	27.95
GOES TO SCHOOL	25.95

CASE OF THE CONDOR	32.95
CLASSIC BOARD GAMES	32.95
DEFENDER OF THE CROWN	39.95
ELECTRONIC COOKBOOK	43.95
FRED FISH COLLECTION 1	48.95
FUN SCHOOL 3	35.95
GARDEN FAX	
TREES, SHRUBS, ROSES, & CONIFERS	39.95
FRUITS, VEGETABLES, HERBS	39.95
GARDEN PLANTS	39.95
ILLUSTRATED HOLY BIBLE	34.95
HOUND OF THE BASKERVILLES	39.95
ILLUSTRATED WORKS OF SHAKESPEARE	34.95
LEMMINGS	39.95
MUSIC MAKER	39.95
MY PAINT	29.95
PSYCHO KILLER	39.95
SIM CITY	39.95
TIMETABLE SCIENCE	44.95
TIMETABLE BUS. & POLITICS	44.95
WORLD VISTA	64.95
WRATH OF THE DEMON	34.95
WOMEN IN MOTION	39.95

GAME SOFTWARE

ARCADE GAMES

AWESOME W/ T-SHIRT	34.95
BATMAN THE MOVIE	29.95
BATTLE STORM	29.95
BATTLE SQUADRON	14.95
DRAGONS LAIR II	
ESCAPE SINGE'S CASTLE	34.95
DRAGONS LAIR II/TIME WARP	34.95
HOVER FORCE	32.95
KILLING GAME SHOW	26.95
LEMMINGS	32.95
MARBLE MADNESS	13.95
NY WARRIORS	32.49
PERSIAN GULF INFERNO	14.95
PIONEER PLAGUE	10.00
POWERDROME	13.95
PRINCE OF PERSIA	25.95
SHADOW OF THE BEAST	25.95
SHADOW OF THE BEAST II	34.95
SHOOT 'EM UP CONSTRUCT	13.95
SPEEDBALL 2	32.95
SPOT - THE ZUP GAME	25.95
SWORD OF SODAN	15.95

TURRICAN II	32.95
-------------	-------

FLIGHT SIMULATION

A-10 TANK KILLER	32.95
BLUE MAX	34.95
CHUCK YEAGER'S ADV FLY	27.95
F-16 COMBAT PILOT	13.95
F-16 STEALTH FIGHTER	34.95
F-18 INTERCEPTOR	13.95
F-29 RETALIATOR	29.95
FALCON	32.95
FALCON MISSION DISK	15.95
FALCON MISSION DISK 2	17.95
FLIGHT SIMULATOR II	32.49
SCENERY DISK #7,9,11(EA)	19.95
SCENERY DISK STARTER	37.95
SCENERY DISK W.EUROPE	19.95
SCENERY DISK, JAPAN	19.95
THEIR FINEST HOUR	24.95

ROLE PLAYING

B.A.T.	34.95
BARD'S TALE	13.95
BARD'S TALE II	13.95
BARD'S TALE III:	
THIEF OF FATE	34.95

CAPTIVE	32.95
CURSE OF THE AZURE BONDS	34.95
DRAKKHEN	36.95
DUNGEON MASTER	23.95
CHAOS STRIKES BACK	23.95
ELVIRA:	
MISTRESS OF THE DARK	38.95
EYE OF THE BEHOLDER	38.95
HERO'S QUEST II:	
TRIAL BY FIRE	38.95
IMMORTAL	30.95
MIGHT & MAGIC II	40.95
NEUROMANCER	29.95
OBITUARY W/T SHIRT	34.95
SEARCH FOR THE KING	38.95
SECRET OF MONKEY ISLAND	38.95
SPIRIT OF EXCALIBUR	32.49
ULTIMA V	35.95
WIZARDRY	
BANE OF THE COSMIC FORGE	38.95
WRATH OF THE DEMON	29.95

SPORTS

GRETZKY HOCKEY	32.49
HARD DRIVIN' 2	32.95



Professional Page 2.0
The Ultimate in Desktop Publishing

Easy to Use.
Works with ALL printers.
Includes word processor and dictionary.
Prints 24-bit images.
1000 color display.
Rotates text and graphics.
Comes with free DTP video.

\$185⁰⁰



DesignWorks

- Fast and intuitive structured drawing.
- Import and export IFF pictures.
- AREXX port.
- Full 4096 color printing.
- Multiple drawing layers.
- Full support for Kickstart 2.0.

\$79⁹⁵

Grand Slam
Expansion Card Milestone!



\$249⁰⁰



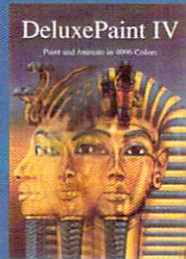
excellence!



\$99⁹⁵

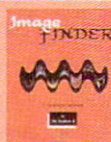
14,000 word dictionary
1.4 Million word Thesaurus
Grammar checker included
Postscript output

DeluxePaint IV



THE HAM
Animation Program for the Amiga!
\$109⁰⁰

Image Finder
\$42⁹⁵



Scenery Animator

Create 3D animations of real world or imaginary fractal scenery in 24-bit color.
Requires accelerator and two megs **\$64⁹⁵**

**Deluxe Video III &
Deluxe Photolab**
Bundle now for only
\$99.95

Visit our Amiga Superstores!

South Bay: 4453 Redondo Beach Blvd. - Lawndale, CA 90260 - Mon-Sat 11-7 PST - Phone: (213) 542-2292
Westside: 318 Wilshire Blvd. - Santa Monica, CA 90401 - Tues-Sat 11-7 Sun 11-5 PST - Phone: (213) 394-7779

**Creative
Summer Sale**

HARDBALL II	32.95
HARDBALL II DATA DISK	12.95
HOCKEY LEAGUE SIMULATOR	22.95
HOLE IN ONE GOLF	28.95
HOLE IN ONE COURSE #3	11.95
INDIANAPOLIS 500	34.95
JACK NICKLAUS UNLIMIT	38.95
JACK NICKLAUS CLSC 1	12.95
COURSES 1,2,3,4,5(EA)	14.95
PRO TENNIS TOUR 2	34.95
PROF. FOOTBALL SIM.	22.95
TESTDRIVE II	32.49
CALIFORNIA CHALLENGE	14.95
EUROPEAN CHALLENGE	14.95
MUSCLE CARS	14.95
SUPER CARS	14.95
WORLD CLASS SOCCER	27.95

ACTION/STRATEGY

ART OF GO	35.95
BATTLE CHESS	31.95
BRIDGE 6.0	25.95
CHECKMATE	35.95
FULL METAL PLANET	32.49
HOYLE BOOK OF GAMES VOL 1	22.95

HOYLE BOOK OF GAMES VOL 2	22.95
ISHIDO	35.95
MONOPOLY	32.95
OVERLORD	32.95
POPULOUS	29.95
POPULOUS DATA DISK #1	18.95
SIMCITY	32.49
TERRAIN EDITOR	13.95
ANCIENT CITIES	23.95
FUTURE CITIES	23.95
STAR CONTROL	29.95
STELLAR-7	23.95
TETRIS	19.95
FACES...TRIS III	24.95
WELLTRIS	24.95

WAR/STRATEGY

CARTHAGE	25.95
CENTURION	34.95
DAS BOOT	34.95
EMPIRE	34.95
GENGHIS KHAN	38.95
GUNBOAT	32.95
HARPOON	41.95
BATTLESET #2	20.95

BATTLESET #3	20.95
SCENARIO EDITOR	27.95
RENEGADE LEGION:	
INTERCEPTOR	38.95
M1 TANK PLATOON	35.95
NOBUNAGA'S AMBITION	38.95
POWERMONGER	33.95
RISK	25.95
ROMANCE OF 3 KINGDOMS	44.95
SILENT SERVICE	13.95
UNIVERSAL MILITARY SIM II	34.95
WARLORDS	29.95
WOLF PACK	35.95

ADULT

CENTERFOLD SQUARES	19.95
FEMME FATALE	20.95
DATA DISKS(EA)	13.95
LEISURE SUIT LARRY II	35.95
LEISURE SUIT LARRY III	35.95
SEX OLYMPICS	24.95
STRIP POKER	
DATA DISKS(EA)	12.95
STRIP POKER II	25.95

NEW GAMES

ARMADA 25/25	CALL
ARMOUR-GEDDON	28.95
ALICE IN WONDERLAND	38.95
ATOMINO	32.95
BATTLE CHESS II:	
CHINESE CHESS	32.95
BATTLE COMMAND	34.95
BATTLE ISLE	34.95
BIRDS OF PREY	34.95
CARDINAL OF THE KREMLIN	32.95
CRIME DOES NOT PAY	32.95
CONFLICT MIDDLE EAST	38.95
CYBERCON	35.95
DEATH KNIGHTS OF KRYNN	24.95
F-15 STRIKE EAGLE II	39.95
FAST EDDIE'S POOL	24.95
GATEWAY TO THE	
SAVAGE FRONTIER	34.95
HARD NOVA	34.95
HARPOON CHALLENGER PAK	59.95
JAMES BOND:	
THE STEALTH AFFAIR	35.95
KILLING CLOUD	28.95

KING'S BOUNTY	32.95
LIFE AND DEATH	32.95
MEDIEVAL WARRIORS	28.95
MEGATRAVELLER 1	38.95
MIG 29 FULCRUM PAL VERS	49.95
PREHISTORIC	28.95
POOLS OF DARKNESS	38.95
POWERMONGER DATA DISK:	
WORLD WAR I EDITION	18.95
RAILROAD TYCOON	39.95
RULES OF ENGAGEMENT	38.95
SECRET OF THE	
SILVER BLADES	34.95
SHADOW SORCERER	34.95
STARFLIGHT II	34.95
STORM BALL	32.95
STREET ROD II	27.95
SWIV (SILKWORM 2)	32.95
TEAM YANKEE	38.95
TERMINATOR	34.95
THEME PARK MYSTERY	28.95
TOKI	32.95
VAXINE	25.95
ZONE WARRIOR	27.95

VIDEOTAPES

AMIGA HARD DRIVES VIDEO	38.95
AMIGA PRIMER	24.95
AMIGA VIDEO MAGAZINE	14.95
AMIGA WORLD VIDEOTAPE	18.95
ANIMATION 101 TUTORIAL	24.95
DCTV: A GUIDED TOUR	28.95
DELUXE PAINT 3 VIDEO	19.95
DIRECTOR TUTORIAL VIDEO	28.95
FRACTAL FANTASY	21.95
FRESH VIDEO PORTFOLIO '90	21.95
FRESH VIDEO PORTFOLIO '91	21.95
HELPFUL LIGHTWAVE HINTS 1	33.95
HOT RODDING YOUR AMIGA	18.95
IMAGINE: A GUIDED TOUR	28.95
IMAGINE: GUIDED TOUR PAL	28.95
LIGHTWAVE TUTORIAL VIDEO	32.95
MANDELBROT/JULIA VIDEO	24.95
MUSICAL AMIGA VIDEO	23.95
THE MIND'S EYE	18.95
TODD RUNGREN VIDEO	CALL
ULTIMATE VIDEO PROD 1	32.49
ULTIMATE VIDEO PROD 2	38.95

ProWrite

The all-time best selling word processor for the Amiga!

- Audio/Video Scriptwriting.
- Arexx support.
- 100,000 word Spell Checker.
- Thesaurus with 300,000 word cross reference.
- Supports columns.
- Wraps text around graphics.
- Mail Merge

\$89⁹⁵

The Art Department Professional

Art Department Pro gives you the most powerful image processing system ever offered for the Amiga \$139⁰⁰

Epson Scanner. \$1199⁰⁰

600 DPI, 24-Bit full page color scanner.
With ASDG Driver Bundle \$1299⁰⁰

ES-300C

Draw 4D Pro

Finally! Professional, USER FRIENDLY 3D rendering & animation for the Amiga! Renders any Amiga mode plus 24-Bit. EASY texture mapping! Great Manual, Direct DCTV support! Output 3D PDraw Clips! Video and Publishing!

- Unlimited Lights that animate
- Parallel Spaces to work in
- Double buffered real-time editor
- Phong, Gouraud/Facet
- Built-in Font Editor
- Unlimited points per poly
- IFF/IFF24/Anim/Clip output

\$199⁰⁰

The Works Platinum



\$89⁹⁵

Word processor,
Spreadsheet, Database,
Telecommunications,
Sideways print utility. All
Programs integrated on 512K.

Distant Suns 4.0!

- Features include:
- Arexx support.
- Animation capability.
- Interface / overscan.
- Double buffering.
- Off-earth viewpoints.
- Math co-processor version.
- Comets, asteroids, and more stars.
- Full-screen images of solar system.
- Plus much more...

\$57⁹⁵

1 meg required — 3 Disk set — NTSC or PAL available

SCREEN-MAKER

Top 40 HAM
Images
\$49⁹⁵



Kara Fonts
**Toaster
Fonts 1**
\$62⁹⁵



Kara Fonts
**Toaster
Fonts 2**
\$62⁹⁵

Vista Professional

24 bit output!
\$87⁹⁵
(Req. 3 meg ram)

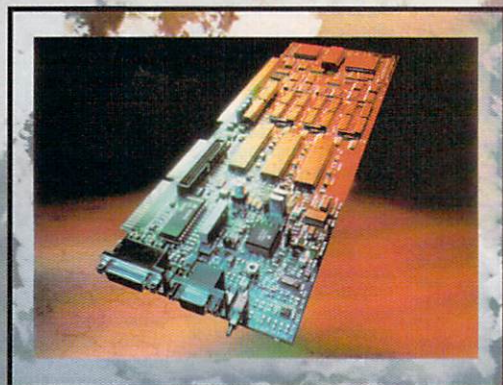


OFFER CODE: P1A40111

OFFER VALID September 1, 1991



The Largest GVP Dealer in the World Introduces:



Impact Vision 24

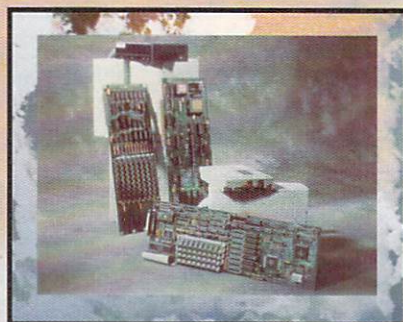
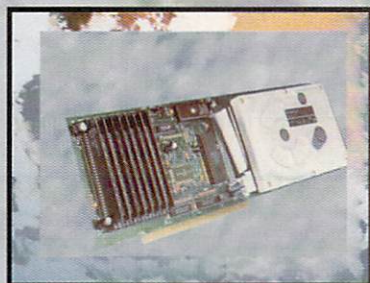
16 Million colors, 24-Bit Frame Buffer +
Genlock + Framegrabber + Flicker-
Eliminator + PIP + Video Titler +
3D Modelling System.

A3000-IV24 \$2149⁰⁰
A2000-IV24 Adapter \$49⁰⁰

Accelerators

The New Faster and more Expandable A3050 50MHz Accelerator
will Turbo-charge your Amiga 2000 beyond your wildest dreams!
Now expandable to 32MB of 32-Bit RAM!

A2000-Combo 22/1 \$815⁰⁰
A2000-Combo 33/4 \$1519⁰⁰
A3050-4/0 \$2099⁰⁰



Hard Cards

Series II A2000 SCSI Hard Disk and RAM Card:
State-of-the-Art integration packs GVP's high-performance SCSI
controller, 8MB Fast RAM expansion and a 3.5" hard drive into a single
A2000 Expansion Slot!

A2000-HC8+0/52Q-LPS (Quantum 52Mb Hard disk) \$399⁰⁰
A2000-HC8+0/105Q-LPS (Quantum 105Mb Hard disk) \$549⁰⁰

A500 HD+

The Series A500 HD8+ uses the same technologies of it's powerful A2000 cousins
and additional features like: Exclusive Game Switch, Fast RAM Expansion up to
8MB, External SCSI Port, Free dedicated universal power supply!

Ask about our Amiga 500 DS Computer/GVP Hard drive bundles.
A500-HD+/52Q (Quantum 52Mb Hard disk) \$549⁰⁰
A500-HD+/105Q (Quantum 105Mb Hard disk) \$769⁰⁰



OUR POLICIES

CUSTOMER SERVICE: for tech support call 213-642-2282 from 11 a.m. to 7 p.m. PST.
Call for all other shipping information. Educational, corporate and aerospace purchase orders accepted. No surcharge for Visa/MasterCard; 4%
surcharge for American Express; 1% surcharge for Discover.
RETURN POLICY: Call Customer Service at (213) 214-8000 for return authorization. All returns without authorization number (RMA#) will be refused.
Returned products must be in original condition and packaging and must be sent back within 30 days of our invoice date. No refunds, please. Defective
product exchanges only. We make no guarantee for product performance. Exchanges with unlike products are at our option and subject to a 20% re-
stocking fee.
CONDITIONS: Prices and availability of product are subject to change without notice.

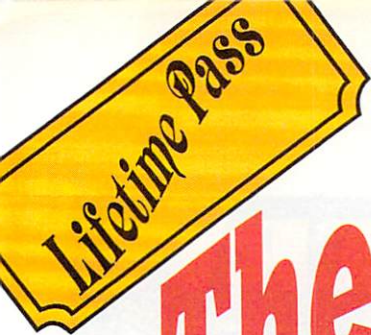
MAIL-IN ORDERS: Send money orders or cashiers check for fastest service. Personal checks - up to 10 days to clear. Include: Name, Address
and telephone number (no P.O. Boxes, please). If ordering by credit card include expiration date and billing address. Call for exact shipping rates.
INTERNATIONAL TOLL FREE ORDERING POLICIES: For Canada, JPN, RPO - Minimum order \$50. All other countries: minimum order \$100. For VISA
and MasterCard orders you must FAX or mail a signed photocopy of your credit card - front and back. Please have your credit card number
ready before calling.
INTERNATIONAL PHONE NUMBERS: Orders only please. Canada 1-800-548-2512; Italy 1678-74080; United Kingdom 0800 88-1176; France 18-
0500-1080; Australia 0014-800-125-712; Switzerland 040-95-5428
****PRICE GUARANTEE:** U.S. Only. Applies to all merchandise advertised by all authorized dealers except merchandise on sale. We will give you
our "delivered" price lower than the other dealer's "delivered" price.



Overnight Shipping via:



GVP
Great Valley
Products



The Penny Arcade

Only \$19.⁹⁵ *

Solitaire

Try your hand at everyone's favorite card game. Choose which version of solitaire and cardback designs you want, then see if you can beat the deck! Solitaire is a game you will play for a long time, with excellent graphics and stimulating sounds as a bonus.

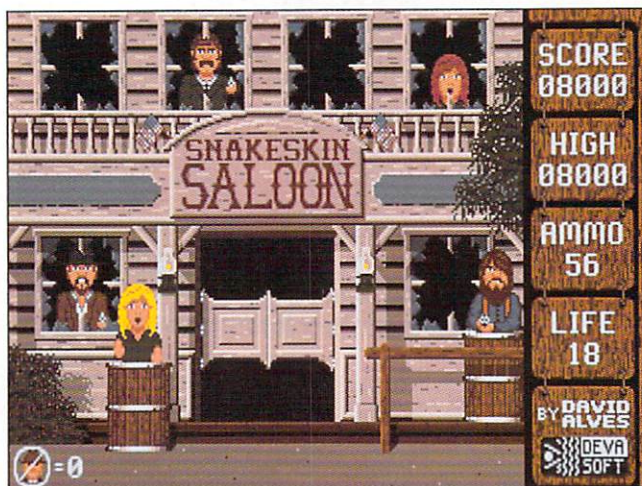
Trampoline

Some types of games are classics and Trampoline fits the description in every sense of the word. Similar to popular arcade classics like Breakout and Arkanoid, Trampoline is a multilevel game of action. You use a trampoline to help the "little tramp" bounce and break the balloons with his umbrella, some of which are stuffed with money! The trick is to catch the coins without dropping our hero!

GeoRoll

This unique two-player dice game uses dice with geometric patterns instead of numbers. The idea is to roll the best hand, trying for a full house, three, four or five of a kind, as well as a variety of other combinations. Good graphics and solid game play!

* Get 3 jam-packed disks.
That's less than \$1.55 per game!



Snakeskin Saloon

Following in the tradition of great shoot-em-ups like Capone comes this high speed game of action and rescue. Your job as sheriff is to save the ladies from the clutches of the desperados who are hiding in the saloon! Shoot your 44 Magnum fast and true, while looking out for the dynamite! From its detailed graphics to digitized sound, Snakeskin Saloon is guaranteed to make your day!

Poker

For those who want the thrill of Vegas without the fear of going broke, Deluxe Poker is the game you have been looking for. Using a point and click interface, you can play draw poker all night long, and if you do go broke, who cares!

Lunatic

Forget strategy - Lunatic is pure arcade action! It requires a steady hand on the joystick as you fight gravity and maneuver your spacecraft between the hills and valleys of an alien terrain. Once you manage to find the proper landing site, you still must avoid the zombies, mummies and sharks as you attempt to recover the sacred Ghetto Blaster!

Also includes:

- Skewer
- Idhan
- Pinochle
- Ma Jong
- Tiny Ball 1.1
- Name that Note
- Play that Note
- Tic Tac Toe

Add more fun to your life today!

Call

1-800-343-0728

to order

The Penny Arcade

or clip this coupon
and mail to:

AmigaWorld Special Products
80 Elm Street
Peterborough, N.H. 03458
1-603-924-0100

Name _____

Address _____

City _____ State _____ Zip _____

Please send \$19.95 for each set ordered.

California orders add 6.25% state tax;

Canadian orders add 7% GST (GST reg. #126038405).

Add cost of shipping required: U.S. surface \$2.50; Canada/Mexico surface \$3.50;

Canada/Mexico Air \$4.50; Other Foreign Surface \$4; Other Foreign Air \$10.

☐ Total amount \$ _____ ☐ Check/money order enclosed

☐ Charge my: ☐ MasterCard ☐ American Express ☐ Visa ☐ Discover

Card# _____ Exp. _____

Signature _____ GD1091

THE GAME PRESERVE

CENTURION: DEFENDER OF ROME

By Louis R. Wallace

If you enjoy conquering the world—or at least the known world in 275 B.C.—check out Electronic Arts' new strategy game, *Centurion* (\$49.95).

You start as a simple Roman officer in charge of a small legion of troops. To rise through the ranks and become Caesar you must add to Rome's greatness, and the easiest method is via the military. Each turn (which counts as a year) you can move your legion to one of the neighboring countries which you attempt to place under Roman control by either diplomatic discussions or battle. If successful, your actions bring riches to Rome and glory to you, which in turn can mean an increase in your rank and an improvement in your military power. If you lose, you suffer a decrease in your social status.

Each new province added to the empire increases the overall wealth by a rate dependent on the tax structure you set up. Harsher taxes mean more money, but they also make the people angry and increase the chance of rebellion. As you move up in rank, you can use the money to fund more legions or upgrade existing ones. This in turn gives you more options for expansion or defense. Part of the strategy in the game is to determine how to spend your funds and where to place your troops so they can be of best use, as well as a defense



Will you have all Rome at your feet, or be trampled in the fray?

against the armies of the barbarians, which grow stronger with each turn of the game.

Taking a province by force and clashing with the defending army face to face is one of the best parts of the game, because you actually see and control your legions in the battle. You can specify your troops' initial posture as well as their defensive plans and manipulate individual groups under your general. Sounds of swords, horses, elephants, and screams serenade the squads of soldiers and calvary running around the battlefield either fighting or escaping. Once you or the enemy has been routed from the field, the battle ends and, in true Roman tradition, you go home a hero or on your shield.

Winning wars is only part of the requirement to be-

come Caesar, you must also placate the masses and impress them with your virtues. One method is to build a Colosseum and throw games. You also must buy the lions, tigers, slaves, and gladiators that will fight to the death. The gladiator fights are arcade sequences in which you control one of the combatants, always trying to give the crowd a good show.

To demonstrate your personal abilities, you can participate in arcade-sequence chariot races. The winner gains significant amounts of social status (and receives promotions faster). While it's possible to win fair and square, I found it more fun to make offerings to the gods, hire a physician, and bribe my opponents while making some side bets on the race.

All the action is not land based, however, as you can ▶

Crib Notes

By Peter Olafson

• Sometimes a clue will generate as many questions as the game itself. Witness the torrent of notes I've received asking for more details on the solution to the crane puzzle in *Shadow of the Beast II* (Psygnosis, \$59.95). The writers typically have successfully picked up the stone pillar and dropped it on the spike, but cannot push the shard over to the teeter-totter as instructed. Seems there's this little matter of an acid pool in the way.

The problem is that you're getting ahead of yourselves. Most of the puzzles in this game are chained; that is, one must be solved correctly to complete the next. Unfortunately, the puzzle you have to solve to make the crane puzzle solvable is among the toughest in the game. (I suspect people are skipping it just out of frustration.)

Let's backtrack a bit: Heading left from the start, before you even reach the teeter-totter, you'll come across a rope. I'm not going to hold your hand all the way up there, but suffice to say the rope leads to an elevator and the elevator to a pit with a chain hanging down into it.

Down in the pit, there's a beast in a cage (to the left), a creature dozing at a table (in the middle), and a wall with two switches (at the right). You want to hit the lower switch to create the bridge over the acid pit in the crane puzzle. Above all, this requires caution and fast reflexes. Drop carefully off the left side of the rope—without disturbing the creature—whomp the dreamer as though he just accidentally reformatted your hard drive, and while he's shaking it off, hit the bottom switch and leap for the chain. Upon returning to the crane, you'll find the bothersome acid ▶

To locate developers of the games reviewed, see the "Manufacturers/Distributors Addresses" list on p. 118.



FOR ONLY
\$ 69.99

**NOW YOU CAN BACK-UP ANY
DISK IN AROUND 50 SECONDS!!**

❑ YES IT'S TRUE!! SYNCRO EXPRESS IS A HARDWARE/SOFTWARE SYSTEM THAT WORKS WITH "DIGITAL IMAGE COPYING". THIS IS THE METHOD THAT COMMERCIAL DUPLICATORS ACTUALLY USE TO MAKE THE ORIGINAL FROM THE MASTER DISK. DATA IS TRANSFERRED AS RAW DIGITAL INFORMATION.

❑ UNMATCHED PERFORMANCE!! It's hard to draw comparisons between Syncro Express and old fashioned Disk Copiers. Because they use parameters, they are almost guaranteed NOT to copy your latest purchase since parameters are not made available until several months after the release. But with the Syncro Express image copy method you can get a backup of all the latest programs, including blockbusters and utilities, quickly & easily. Start protecting your software investment NOW!!

❑ Menu Driven Control Program couldn't be simpler!! Select Number of Tracks, and that's it!! Don't be misled by outrageous claims for "Nibbler" programs. This system can guarantee success by using the very Hardware/Software techniques that made the original!!

❑ Now with a **SUPER POWERFUL "SYNCRO" MODE** that actually synchronises your Disk Drives for even greater accuracy!!

❑ Can be switched OUT when not in use - totally transparent.
❑ Make up to 2 copies simultaneously*. ❑ At least one External Drive required.

PLUS MANY NEW FEATURES INCLUDING ...

❑ **DRIVE SPEED CHECKER** - now you can check the speed of your drives - DF0-DF3. Easy and very accurate.

❑ **DISK TOOLKIT** - Syncro III now includes a range of Disk Tools - Fast Format, File Copy, Hard Drive File Copy, Ram Disk, Disk Rename etc. etc.

Why will Syncro Express succeed where others fail?

❑ Some programs now have very sophisticated protection including long tracks, Incryption, etc. But remember, whatever the programmer comes up with, the disk then has to be commercially duplicated. That's where Syncro Express beats all others - it transfers data at MFM/TTL level, just like the

POWER BY DESIGN

❑ Syncro Express is designed in Europe where "Digital Image Copying" is the present sensation. This device, with it's own custom chip, goes even further by offering a complete system for under \$70!!



PLEASE STATE AMIGA
500*/1000*/1500/2000/3000
WHEN ORDERING



THE WORLD'S MOST POWERFUL FREEZER-UTILITY CARTRIDGE IS NOW EVEN BETTER AMIGA ACTION REPLAY II

A2000 VERSION
AVAILABLE

\$119.99

PLEASE STATE WHICH COMPUTER
YOU HAVE WHEN ORDERING

IS HERE!!

STILL ONLY
\$99.99
FOR THE A300/1000

AMIGA ACTION REPLAY PLUGS INTO THE EXPANSION PORT OF YOUR AMIGA AND WORKS BY TAKING A SNAPSHOT OF THE WHOLE PROGRAM IN MEMORY AND SAVING IT TO DISK. THE BACKUPS WILL RELOAD COMPLETELY INDEPENDENTLY OF THE CARTRIDGE.

BUT THAT'S NOT ALL... AMIGA ACTION REPLAY GOES EVEN FURTHER BY PROVIDING AN UNBELIEVABLE RANGE OF TOOLS FOR BOTH THE HACKER AND PROGRAMMER ALIKE

● **SAVE THE ENTIRE PROGRAM IN MEMORY TO DISK** Special compacting techniques enable up to 3 programs to fit on one disk. Now saves directly to disk as Amiga Dos - reloads independently of the cartridge - even transfer to hard drive! Works with up to 2 Megs of Ram - even 1 Meg Chip Mem (Fatter Agnus).

● **UNIQUE INFINITE LIFE/TRAINER MODE - NOW MORE POWERFUL** Allows you to generate more and even infinite lives, fuel, ammo, etc. Perfect as a trainer mode to get you past that "impossible" level. Very easy to use.

● **IMPROVED SPRITE EDITOR** The full Sprite Editor allows you to view/modify the whole sprite set including any "attached" sprites.

RANGE OF IMPROVED FEATURES. ● **VIRUS DETECTION** Comprehensive virus detection and removal features to protect your software investment. Works with all presently known viruses.

● **SAVE PICTURES AND MUSIC TO DISK** Pictures and sound samples can be saved to disk. Files are saved directly IFF format suitable for use with all the major graphic and music packages. Samples are displayed as screen waveform.

● **SLOW MOTION MODE** Now you can slow down the action to your own pace. Easily adjustable from full speed to 20% speed. Ideal to help you through the tricky parts!

● **RESTART THE PROGRAM** Simply press a key and the program will continue where you left off.

● **FULL STATUS REPORTING** At the press of a key now you can view the Machine Status, including Fast Ram, Chip Ram, RamDisk, Drive Status, etc.

● **POWERFUL PICTURE EDITOR** Now you can manipulate and search for screens throughout memory. Over 50 commands to edit the picture plus unique on screen status "overlay" shows all the information you could ever need to work on screens. No other product comes close to offering such dynamic screen handling of frozen programs!!

● **MUSIC SOUND TRACKER** With Sound Tracker you can extract the complete music in programs, demos, etc. and save them to disk. Saves in format suitable for most track player programs. Works with loads of programs!!

● **AUTOFIRE MANAGER** From the Action Replay II preference screen you can now set up autofire from 0 to 100%. Just imagine continuous fire power? Joystick 1 and 2 are set separately for that extra advantage!

● **DISKCODER** With the new "Diskcoder" option you can now 'tag' your disks with a unique code that will prevent the disk from being loaded by anyone else. 'Tagged' disks will only reload when you enter the code. Very useful for security.

● **PREFERENCES** Action Replay II now has screen colour preferences with menu setup. Customise your screens to suit your taste.

● **DISK MONITOR** Invaluable disk monitor - displays disk information in easy to understand format. Full modify/save options.

● **DOS COMMANDS** Now you have a selection of DOS commands available at all times - DIR, FORMAT, COPY, DEVICE, etc.

● **DISK COPY** Disk Copy at the press of a button - faster than Dos Copy.

● **BOOT SELECTOR** Either DF0 or DF1 can be selected as the boot drive when working with Amiga Dos disks.

PLUS AN EVEN MORE POWERFUL MACHINE CODE FREEZER/MONITOR

EVEN MORE FEATURES INCLUDING 80 COLUMN DISPLAY AND 2 WAY SCROLLING:
● Full M68000 Assembler/Disassembler ● Full Screen Editor ● Load/Save Block ● Write string to memory ● Jump to specific address ● Show RAM as text ● Show frozen picture ● Play resident sample ● Show and edit all CPU registers and flags ● Calculator ● Help Command ● Full search feature ● Unique Custom Chip Editor allows you to see and modify all chip registers - even Write Only registers ● Notepad ● Disk handling - show actual track, Disk Sync pattern, etc. ● Dynamic breakpoint handling ● Show memory as HEX, ASCII, Assembler, Decimal ● Copper assemble/disassemble
REMEMBER AT ALL TIMES YOU ARE INTERRUPTING THE PROGRAM WITH IT'S FROZEN STATE WITH ALL MEMORY AND REGISTERS IMPACT - RESPONSIBLE FOR THE DE-SUGGER OR JUST THE INQUIRITIVE!

CALL TOLL FREE-

ORDERS **1-800-962-0494** ONLY
COAST TO COAST TECHNOLOGIES INC.,

1855 S. R.434, SUITE#208
LONGWOOD, FLORIDA 32750

TECHNICAL/CUSTOMER SERVICE (407) 767 - 0779

*ADD \$4.00 SHIPPING AND HANDLING (\$10.00 CANADA/MEXICO)

ALL GOODS SHIPPED 2nd DAY AIR UPS

WE ACCEPT MASTERCARD/VISA/CHECKS/MONEY ORDERS or COD's (ADD \$2)
ORDERS NORMALLY DESPATCHED WITHIN 48Hrs.

PREMIER PRODUCTS OF THE MONTH



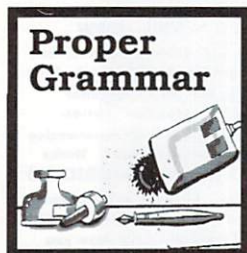
Presents the ...

Grand Slam

THE ULTIMATE SCSI HARD DRIVE CONTROLLER FOR THE AMIGA 500/2000

- Expands to 8MB of 16 bit fast RAM
 - Contains a second Parallel Printer Port for your Audio /Video Digitizer
 - Clocks at 1.97MB per Second
 - Non-DMA Controller: State-of-the-Art VLSI Technology
 - **The GRAND SLAM Includes:**
Hard Disk Drive Mounting Brackets, All Power & Interface Cables
 - **Software Includes:**
SCSI Disk Configuration Utility, Memory Test & I/O Port Configuration
- For Pricing of the GRAND SLAM & other IVS SCSI Controllers, Trumpcard & Trumpcard Professional- See Hard Disk Drive Grid on next page*

SoftWood, Inc.



- Utilizes a powerful expert system that uses context-sensitive rules of grammar to analyze writing and to detect and correct errors in syntax, usage, punctuation, spelling and style
- First language-aid system that corrects documents by identifying the grammatical function and relationships among words

\$57.95

SUPRA MODEMS

SupraModem[™]
2400 AMIGA 500 & 2000 **\$87**

External with **FREE MODEM CABLE!**

SupraModem[™]
2400^{Plus} **\$135**

External Modem with MNP5 + V.42 Bis

SupraModem
2400zi^{Plus} **\$155**

Includes
ATALK 3!

Internal Modem with MNP5 + V.42 Bis

SupraModem
9600 EXTERNAL **\$479**

NEW!

V.32 • V.42

Transfer Data up to 16 times
faster than 2400bps modems

ComputAbility
Consumer Electronics

For More Product &
Ordering Information
See Pages 78 & 79

800-558-0003

AMW 10-91

GAME PRESERVE

also invest some money in building a fleet. These ships can be used for transporting troops to providences across the sea or for defense against seafaring barbarians. Like other aspects of the game, when two opposing fleets are engaged it becomes a colorful game of action where you must shoot Greek fire and arrows at the other ship while trying to avoid getting hit.

Centurion offers the player multiple levels of difficulty. At the Galley Slave level

you can become Caesar in an evening, while higher levels might take several nights. I have yet to make much progress at the Emperor setting. I found the game to be quite entertaining on several levels: simple enough that it was easy to get started, but with enough depth to keep me interested for quite a while. (Plus, the game is AmigaDOS 2.0 compatible, hard-drive installable, and copy protected by a look-up copy protection scheme.)

WONDERLAND

By Peter Olafson

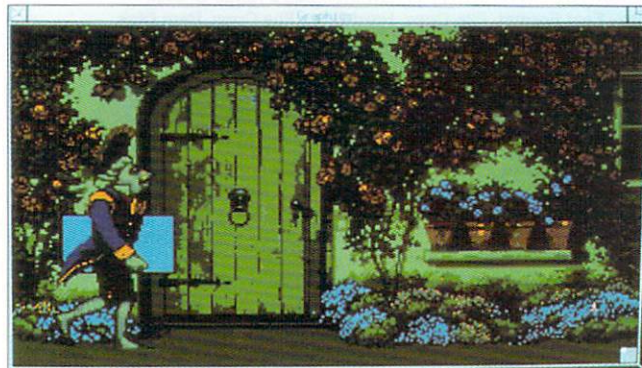
Somebody snuck into our home the other night, but he didn't steal a thing. In fact, he left something behind—a neatly installed Macintosh emulator in my Amiga.

How can I tell? Well, how else do you explain Wonderland (Virgin Mastertronic, \$59.99)? It's either a Mac game or it has the most unabashedly Mac-like interface I've ever seen.

Normally I might get all huffy at the idea of a Mac

restore interest in that sadly vanishing genre.

Frankly, the game is an almost unalloyed delight. The pleasure comes partly from the handsome, data-rich, windowed game system—mildly reminiscent of the one Infocom used for its Mac-only Quarterstaff—and partly from the game itself. Essentially, Wonderland permits text, graphics, inventory, a map, a compass, and objects in the room (or any



Does Alice live here anymore?

interface on the Amiga, but it works and who am I to quarrel with success? Wonderland is the first game in ages from the Magnetic Scrolls design team (The Pawn, Guild of Thieves, Fish, and so forth), and it's a solid text-with-graphics-and-a-whole-lot-more adventure destined to

combination thereof) to appear within separate resizable windows. The graphics are sharp, beautiful, and often animated (dig the foot-

tapping chair!), and the small-size format makes them more intense. The game also has terrific music, all in the appropriate places.

While the game is based on Lewis Carroll's *Alice's Adventures in Wonderland*, it's not at all glued to it. You may find the level of play difficult in spots, but generally it is easy enough so that you won't feel you're stumbling blindly from trap to trap. (I am curious, though, to see how a trio of earlier Magnetic Scrolls games, scheduled to be converted to this system, will bear up.)

Wonderland, however, should have taken a cue from the rushing White Rabbit in Carroll's story. Playing it from hard disk on a 68000-based machine (its

four disks make having a hard drive a big plus), I found the game decidedly turtle-ish in doing just about everything—resizing windows, pulling down menus, or just giving you a look at your inventory. I'm not even counting the 45 minutes or so it took to install the game on hard disk and to decompress the graphics files. (Wonderland does run on the A3000, and I suspect it is correspondingly faster on that machine.)

So, hey, Virgin, this is the Amiga, remember? The one with the custom graphics hardware? I love your game, and the new look, but don't forget who's going to be playing it!

Continued on p. 80.

pool has been bridged.

An alternate solution: If you push further into the cavern to the right of the pit—a sort of nasty business—you'll find a key. You can use it to loose the caged creature on the sleeper, then take advantage of the resultant mayhem. (Just be sure to get out of the way.)

• Last time, I promised help with the two big sticking points with *Elvira: Mistress of Dark* (Accolade, \$59.95). Since then, a few more have turned up.

One is the cook in the kitchen. Definitely an unpleasant character; what's to be done with her? Well, think about her job. There's one particular condiment that will throw her over your shoulder. Have you checked out the Torture Chamber? (Appropriate spot! Don't neglect it as a resource for other items as well.)

It's tempting to play *Elvira* as a graphic adventure and neglect the role-playing elements, but you can do that for only so long. Magic will work wonders for your progress, and you need to collect ingredients in the herb garden and dungeon whenever possible.

So, on your first trip to the kitchen, be sure to prepare the Herbal Honey spell. (The honey is here, and the hay is at the stable.) It'll allow you to see what's what when

you go herb-shopping in the Great Outdoors.

Another problem people are having—killing the werewolf in the stable—isn't so cut-and-dried, as it's not just a matter of finding something in one place and using it in another. You'll need to prepare your weapon first. For starters, get the crossbow from the armory just inside the castle entrance. You should find crossbow bolts in one of the upstairs bedrooms. Take them all, for you'll need them for other tasks (notably for killing off the Gray Knight.)

Are we there yet? No, I said werewolf. Think silver. Out in the garden there's a shed with some very nasty contents. Don't neglect them—you'll need the maggots for your spellcasting—but do be sure to collect the cross. You're almost ready.

Now, get thee to the foundry. In the box beside the wall, you'll find a crucible. Put the cross in the crucible and the crucible in the fire and a crossbow bolt in the melted silver. Ta-dah! Now go hunting, and be sure to check out the stable thoroughly afterward. That last stall conceals a vital item.

I've also heard from a few people stuck in the endgame. They've finally opened the trunk and taken the scroll and dagger, but don't

Continued on p. 80.

PREMIER PRODUCTS OF THE MONTH

GOLDENIMAGE®

NEW!

Cordless Mouse with Deluxe Paint II

- Infra-red Signal Transmission
- 200dpi
- 3 Buttons



\$75

NEW!

Cordless TrackBall with Deluxe Paint II

- Up to 5 Meter Range of Infra-red Signal Transmission
- 300dpi
- 3 Buttons



\$85

SHOWMAKER



Makes Desktop Video a Reality!

- Synchronize video & sound to the beat!
- Control external devices like the Video Toaster, LaserDisc, VCRs, Writable Optical Disks, MIDI!

\$215.95

Professional Page 2.0



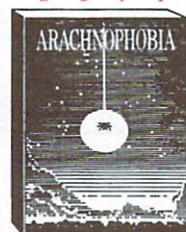
Powerful, Easy to Use, Desktop Publishing!

- Free training video
- Excellent dot matrix output
- Built-in word processor & spell checker
- Rotate text or graphics!

\$185.95

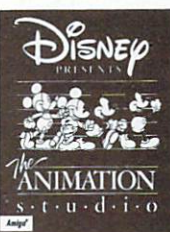
Disney

SOFTWARE



The Fate
of North
& South
America
is in Your
Hands!

\$24.95



NEW
LOW
PRICE!

Utilize
State-of-
the-Art
Cell
Animation
Techniques!

\$74.95

Computability
Consumer Electronics

For More Product &
Ordering Information
See Pages 78 & 79

800-558-0003

AMW 10-91



HOURS: CST
Mon - Fri: 9am - 9pm
Sat: 11am - 5pm



Since 1982
ComputAbility
Consumer Electronics

800-558-0003 AMW 10-91
TECH INFO: (414) 357-8181
FAX: (414) 357-7814

AMIGA EXTRAS

AD Speed (all Amiga Computers)	\$219	Flicker Fixer	\$235
AT Once - PC Emulator - 500 only	\$259	Flicker Free Video 500/1000/2000	\$299
Audition	\$59	GVP 150 MB Tape Streamer	\$619
Air Drive Int 3.5"-A3000	\$89	Gravis Adv. Joystick	\$31
AMAXX II	\$137	Gravis Mouse Stick	\$59
Ami Gen/Mini Gen	\$89/185	HAM/E Plus	\$389
Big Foot Power Supply	\$95	Hitachi KPC 5010	\$929
Bodega Bay	\$279	Hitachi KPC 501G Cam	\$1079
Bodega Bay w/Malibu Board	\$379	ICD AD RAM Exp. to 4MB	\$99
Chroma Key/ Switcher	\$315	Impulse Foundation	\$139
Colorburst	\$659	IVS Power Supply	\$89
Color Splitter	\$105	Internal Drive 2000	\$79
CSA Mega Midget Economy		Kitchen Sync	Call
25MHz (No MMU)	\$479	META 4 OK	\$109
33MHz (No MMU)	\$549	MIDI Gold A500	\$55
CSA Mega Midget Racers		MIDI Gold Insider A2000	\$59
25MHz w/ 68030 OK		Personal SFC (Nucleus)	\$349
Expandable to 8MB	\$599	Perfect Sound	\$65
Mem Card 4MB Exp. 8MB	\$749	Roctec Internal 500 Drive	\$79
Optional 68882 Math Cop	\$199	Safeskin 2000/500	\$17
Data Flyer RAM Card OK	\$89	Secure Key for 2000	\$99
Digiview Gold	\$115	Taco Single Frame Animator Controller	\$1,739
ECE Midi Interface	\$48	Video Blender	Call
Firecracker 2400 2 Meg	CALL	Video Master	\$999

Call For Prices!

VIDEO TOASTER

PERSONAL TBC

DC TV

AMIGA 500 UPGRADE KIT

880K Disk Drive + 512K RAM Expansion

\$119



AD-IDE

For the A500 Amiga
Internal Hard Drive Packages

40 Meg Seagate A500 \$325	52 LPS Quantum A500 \$365	105 LPS Quantum A500 \$479
------------------------------------	------------------------------------	-------------------------------------

Package Includes: AD-IDE, cables, Software, Drive, Mounting Hardware & Shuffleboard

Commodore AMIGA 500 STARTER KIT

INCLUDES:

- Amiga 500 Personal Computer
- Amiga Mouse
- Joystick
- Amiga Power Adaptor
- 9 Disks: •Workbench 1.3, •Workbench 1.3 Extras, •KindWords (3 Disks), •Fusion-Paint, •Indiana Jones & the Last Crusade, •F40 Pursuit, •F/A-18 Interceptor
- Manuals: the Comprehensive Software Instructions & Amiga Owner's Guide

Call for Low, Low Price!



VIDEO PACKAGE

- PANASONIC 1410 CAMERA
- COPYSTAND WITH LIGHTS
- DIGIVIEW GOLD 4.0

NEW LOW PRICE!

price includes 16mm lens with:
VARIABLE IRIS FIXED IRIS

\$349 \$319

SupraDrive Hard Disk System

500 XP

20 Meg w/512K	\$329
52 Meg w/ 512K	\$475
52 Meg w/2MB (1Mx4)	\$549
105 XPS w/512K	\$669
105 XPS w/2 MB (1Mx4)	\$719

EVERYDAY LOW PRICES!

SupraRam Expandable to 8MB 500RX

1MB	2MB
\$125	\$185
8MB	• NEW! • • Fully Populated • • Factory Installed •
\$405	

SupraRam

2000	500
2 MB \$167	1/2MB
4 MB \$229	Exp. - A500
6 MB \$299	\$45
8 MB \$365	

Panasonic

LOWER PRICES!

star

LOWER PRICES!

CITIZEN

KX-P 1180	\$149	KX-P 2624	\$439	NX 1001 Multifont NEW	\$145	200GX	\$159	GSX 130	\$239
KX-P 1123	\$209	KX-P 1654	\$535	NX 1020 Rainbow NEW	\$185	200GX-15	\$299	GSX 140 PLUS	\$299
KX-P 1124i	\$279	KX-P 4420	\$789	NX 2420 Rainbow	\$299	GSX 145 Wide - 24 pin			\$379
KX-P 1624	\$339	KX-P 4450i	Call	NX 2420	\$279	Color Kit - 200GX/GSX140 PLUS			\$49
						Color Kit GSX - 145			\$65

Seagate AMIGA 500/2000 HARD DRIVE PACKAGES

DRIVES	DRIVE ALONE	TRUMPCARD		TRUMPCARD		GRAND SLAM	GRAND SLAM	SUPRA WORD-	GVP Ser II HC	GVP SerII HC	DataFlyer		Malibu Board
		2000	PRO2000	500	PR 500	500 OK Exp to 8MB	2000 OK Exp to 8MB	SYNC 2000	OMB -Not Exp.	OMB Exp to 8MB	2000	500	2000
ST 157N-1 49MB/28MS	\$209	\$309	\$359	\$389	\$445	\$499	\$439	\$309	\$359	\$389	\$289	\$349	\$329
ST 296N 80MB/28MS	\$269	\$365	\$415	---	---	---	---	\$359	----	----	\$339	-----	----
ST 1096N 80MB/20MS	\$285	\$385	\$435	\$455	\$509	\$575	\$505	\$379	\$435	\$455	\$359	\$419	\$495

New Low Prices On
Trumpcard &
Trumpcard Pro
Packages

Quantum Drives

LOW PRICES!

DRIVES	DRIVE ALONE	TRUMPCARD		TRUMPCARD		GRAND SLAM 500 OK Exp to 8MB	GRAND SLAM 2000 OK Exp to 8MB	SUPRA WORD- SYNC 2000	GVP Ser II HC 0MB -Not Exp.	GVP SerII HC 0MB Exp- 8MB	DataFlyer		Malibu Board 2000
		2000	PRO2000	500	PR 500						2000	500	
52LPS	\$229	\$325	\$375	\$405	\$459	\$519	\$455	\$325	\$375	\$405	\$299	\$365	\$335
105LPS	\$355	\$455	\$499	\$529	\$585	\$589	\$579	\$455	\$489	\$529	\$435	\$485	\$465
210MB	\$685	\$779	\$829	\$855	\$915	\$969	\$905	\$779	\$819	\$859	\$759	\$815	\$799

800-558-0003

Since 1982
ComputAbility
Consumer Electronics

AMW 10-91

800-558-0003

GOLDENIMAGE®**Cordless Mouse**

with Deluxe Paint II\$75

Cordless TrackBall

with Deluxe Paint II\$85

The Brush

with Deluxe Paint II\$99

Hand Scanner

with Migraph Touch-Up

Software & Deluxe Paint II\$229

DRIVES:**Master 3A-1 - The Original**

3.5" Micro Floppy External for

500/1000/2000\$79

Master 3A-1D

3.5" Micro Floppy External

with LED Track Display for

500/1000/2000\$99

MICE:**Optical Mouse**

with Special Mouse Pad\$45

Amiga Mouse

Replacement\$35

Showline Video**Digital Time Base
Correctors and
Frame Synchronizers****SINGLE****DUAL**

500C - \$749

900C - \$1279

500SC - \$1149

1000C - \$1649

750SC - \$1649

1000SC - \$2379

**NEW FEATURES OF DELUXEPAINT IV**

- LightTable
- Metamorphosis
- New Animation Control Panel
- Enhanced Gradients
- All New Color Mixer
- Powerful Stencil Paint Mode

**FULL FEATURED
PAINT &
ANIMATION
PROGRAM**

Includes the
ability to paint
and animate
with all 4096 colors
in Amiga's
HAM mode!

NEW!
\$97.95
Quantities Limited!



**Series II
A500 HD +**

ØK Expandable to 8MB

A500 w/ 52 MB

\$539

A500 w/ 105 MB

\$789**68030 ACCELERATORS****Series II for 2000 w/SCSI Controller****22MHz w/1MB exp. to 13 & Math Co ..\$819****33MHz w/4MB exp. to 16 & Math Co \$1529****IDE CONTROLLER****50MHz A3050 w/4MB + Math Cop....\$2199**

Call for Quantum AT/IDE Drive Configurations

**See Opposite page for Series II
Hard Card Packages**

A10 Tank Killer	30.95	Chuck Yaeger AFT 2.0	25.95
Abyss	24.95	Civil War	37.95
Action Stations	30.95	Conan the Cimmerian	30.95
All In One	43.95	Comic Setter	41.95
Altered Destiny	36.95	Conflict: Middle East	36.95
Amiga Classics Trilogy: (Starglider II, Carrier Command, Midwinter)	36.95	Conquest of Camelot	36.95
Anarchy	24.95	Continuum	30.95
Arachnophobia	24.95	Crime Does Not Pay	30.95
Armour Geddon	28.95	Curse/Azure Bonds	31.95
Atomino	31.95	Das Boot Submarine	31.95
BAT	31.95	Death Knights of Krynn	31.95
Back To The Future II	24.95	Dragon's Lair	30.95
Ball Game	24.95	Dragon's Lair II/Time Warp	34.95
Bane/Cosmic Forge 1Meg	36.95	Dragon Wars	30.95
Bard's Tale III	31.95	Duck Tales	28.95
Battle Chess	28.95	Dungeon Master	24.95
Battle Chess II	30.95	ECO Phantoms	24.95
Battle Isle	31.95	Eagle's Rider	30.95
Battlestorm	30.95	East vs West Berlin	24.95
Baud Bandit	28.95	Elvira	36.95
Bald & Ted's Adventure	24.95	Empire	31.95
Bill Elliot Nascar Challenge	30.95	Escape from Singes Castle	28.95
Billy the Kid	23.95	Eyes of the Beholder	37.95
Birds of Prey	31.95	F-15 Strike Eagle II	36.95
Black Gold	24.95	F-29 Retaliator	31.95
Blades of Steel	28.95	Falcon	30.95
Blitzkrieg	30.95	Operation Counterstrike	16.95
Blue Relations	31.95	Operation Fire Fighter	19.95
Blue Max	31.95	Fire and Forget II	28.95
Captive	29.95	Flames of Freedom	30.95
Cardinal of the Kremlin	30.95	Flight of the Intruder	36.95
Carmen San Diego/Each	30.95	Flight Simulator II	30.95
Carmen San Diego - America	36.95	Chaos- Dungeon Master 2	24.95
Centurion	31.95	Chessmaster 2100	31.95
Champions of Krynn	31.95		
Chaos- Dungeon Master 2	24.95		
Chaosmaster 2100	31.95		

A Talk III	59.95	Data Tax	46.95
Ami Back Moonlighter	44.95	Deluxe Music Construction	61.95
AMOS	57.95	Deluxe Paint IV	94.95
AMOS Compiler	44.95	Deluxe Photo Lab	94.95
AMOS 3D	44.95	Deluxe Print II	51.95
Arex	27.95	Deluxe Productions	128.95
Art Department Pro	127.95	Dix Video III w/Del Photolab	94.95
ASDG Art Department	57.95	Design Works	67.95
Audio Master 3	64.95	Digidroid	59.95
Audition 4	57.95	Digimate 3	24.95
Artex C Developer V5.0	177.95	Digipaint 3.0	49.95
Artex C Pro V5.0	119.95	Design Gold	114.95
BAD 4.0	28.95	Director 2.0	69.95
Bars & Pipes Pro	194.95	Discovery 2.0	24.95
Baud Bandit	28.95	Discovery Educational Pak	41.95
Broadcast Tiler 2.0	204.95	Disk Labeler	24.95
Byte N' Back	39.95	Disk Master 2	39.95
Can Do	39.95	Disney Animation Studio	74.95
Pro Pack 1	24.95	Distant Suns Version 4.0	61.95
Comic Art Disks ea.	20.95	Dos 2 Dos	30.95
Comic Setter	41.95	Draw 4D Professional	184.95
Copyright	28.95	Dyna Cadd 649	79.95
Cross DOS 2.0	24.95		

RECREATION

Gateway to the Savage Frontier	31.95	Knight Force	28.95
Genghis Khan	36.95	Knights of the Crystalline	36.95
Germ Crazy	24.95	Knights in the Sky	36.95
Gold of the Aztec	30.95	Leisure Suit Larry I Enhanced	36.95
Golden Axe	17.95	Leisure Suit Larry 2 or 3	36.95
Gunboat	30.95	Lemmings	30.95
Gunship	34.95	Lost Patrol	31.95
Halls of Montezuma	30.95	M-1 Tank Platoon	31.95
Hardball	17.95	Maverick	24.95
Hardball II	30.95	Mavis Beacon Typing	31.95
Hard Nova	31.95	McGee Fun Fair	24.95
Harpoon	37.95	Mega Fortress	37.95
Battleset 2, 3 or 4	20.95	Mega Traveller 1	36.95
Scenario Editor	25.95	Mercenaries	37.95
Harpoon Challenger Pak	57.95	Medieval Warrior	30.95
Heart of China	36.95	Mind Link	30.95
Heroes Quest	36.95	Mixed-Up Mother Goose Ent	36.95
Holyes Book of Games 1 or 2	21.95	Monday Night Football	36.95
Holyes Book of Games 3	30.95	Monopoly	30.95
Immortal	31.95	Nations at War	37.95
Imperium	25.95	New York Warriors 1 Meg	30.95
Indy Jones 4: Fate of Atlantis	37.95	Night Shift	17.95
Indianapolis 500	31.95	Nitro	28.95
Jack Nicklaus Unlimited	36.95	Nobunga's Ambition	36.95
Course Disk #1-#5	15.95	Obitus	36.95
Greatest 18 Holes	19.95	Obitus	36.95
Designer's Clip Art V.1	17.95	PGA Tour Golf	31.95
James Bond/The Stealth Aff	34.95	Perfect General	36.95
Jones in the Fast Lane	24.95	Pick 'n' Pile	25.95
Keys To Maramon	30.95	Planet of Lust	24.95
Killing Game Show	28.95	Police Quest 1	30.95
King's Quest I Enhanced	24.95	Police Quest 2	36.95
King's Quest 2 or 3	30.95	Pools of Darkness	37.95
King's Quest 4 or 5	36.95	Pools of Radiance	31.95
King's Quest 5	36.95	Populous	31.95

PRODUCTIVITY

Elan Performer 2.0	87.95	Music X	169.95
Excellence V2.0	104.95	On Line Platinum	39.95
Font Pack1 /Broadcast Tiler	107.95	Page Renderer 3.0	94.95
Font Enhancer/BC Tiler	107.95	Page Stream V2.1	165.95
GFA Basic 3.5	87.95	PC Globe 4.0	36.95
Gold Disk Advantage	99.95	Pelican Press	62.95
Gold Disk Office	154.95	Pen Pal	67.95
Image Finder	41.95	Phasar 4.0	54.95
Imagine	174.95	Photo Paint 2.0	87.95
Invision +	174.95	Pix Mate	37.95
Karafonts ea.	27.95	Pixel 3D	74.95
Lattice C SAS	187.95	Power Windows 2.5	49.95
Macro Master	78.95	Pro Textures	35.95
Map Paint /Lightwave 3D	57.95	Pro Video Gold	139.95
Material Textures Library V.2	30.95	Pro Video Post	189.95
Math Blaster Plus	30.95	Pro Write 3.1	84.95
Maverick	24.95	Professional Draw	112.95
Mavis Beacon Typing	31.95	Professional Page 2.0	185.95
Maxiplan 3	147.95	Structured Clip Art	36.95
Meta Paint	174.95	Templates	63.95
Movie Setter	41.95	Project D V2.0	35.95
MRBackup Professional	31.95	Proper Grammar	57.95

Powermonger	31.95	Strip Poker 2	24.95
Data Disk WWI Edition	20.95	Super Off Road Racing	25.95
Prince of Persia	24.95	Swap	30.95
Pro Tennis Tour 2	31.95	Team Yankee	36.95
Quest for Glory 1 or 2	36.95	Teenage Mutant Ninja Turtles	28.95
Quicksilver Pinball	24.95	Terrain Envoy	28.95
Railroad Tycoon	36.95	Test Drive III	CALL
Red Baron	36.95	Their Finest Hour	20.95
Renegade Legion	37.95	Theme Park Mystery	30.95
Rise of the Dragon	36.95	Thunderstrike	30.95
Risk	24.95	Tie Break Tennis	24.95
Robocop II	28.95	Time Machine	34.95
Romance of 3 Kingdoms	42.95	Tracon II	41.95
Rules of Engagement	37.95	Turrican	24.95
Scrabble	24.95	Ultima 4	36.95
Secret of Monkey Isl 1 or 2	37.95	Ultima 5	36.95
Secret of the Silver Blades	31.95	UMS: Nations at War	36.95
Sex Vixens-Outer Space	22.95	Universe 3	31.95
Sextimates	30.95	Vaxine	24.95
Shadow of the Beast II	36.95	Vette	30.95
Shadow Sorcerer	31.95	Viking Child	23.95
Sim City	30.95	Warhead	31.95
Graphic 1 or 2	22.95	Warlord	30.95
Terrain Editor	14.95	Weird Dreams	24.95
Sim Earth	30.95	Welltris	21.95
Ski or Die	31.95	Western Front	37.95
Space Quest 2	30.95	Where in the	30.95
Space Quest 3 or 4	36.95	White Death	30.95
Spellbound	24.95	Wolf Pak	34.95
Spirit of Excalibur	30.95	Wonderland	36.95
Star Control	30.95	World Atlas	35.95
Star Fields	36.95	World Class Soccer	24.95
Star Flight I or II	31.95	Worlds at War	30.95
Stellar 7	21.95	Yeager's Adv. Train 2.0	25.95
Stunt Track Racer	24.95	Zone Warrior	25.95
Stratego	30.95		
Street Rod II	25.95		
Strike Aces	19.95		

More Titles Available!

ProVector	187.95	Turbo Silver w/Terrain	56.95
Quarter Back	39.95	Turbo Text	57.95
Quarter Back Tools	49.95	TV Text	64.95
Quick Write	43.95	TV Text Professional	99.95
Raw Copy V.J.	36.95	Ultra Design	164.95
Roll'em	86.95	Ultracard Plus	57.95
RX Tools	35.95	Video Effects 3-D	106.95
Saxon Publisher	209.95	Video Tiler V1.5	85.95
Scala	Call	Video Tools	172.95
Scene Generator	29.95	Vista	64.95
Scenery Animator	57.95	Vista Professional	77.95
Screen Maker - 36 Disk Pkg	219.95	Viva	122.95
Screen Mkr Syquest Cartridge	269.95	Voice Recognition	109.95
Screen Maker Starter Kit	27.95	Word Perfect	144.95
Showmaker	215.95	Word, Platinum	99.95
Soft Clips Vol. 1, 2, 3 or 4	44.95	World Atlas 2.0	28.95
Sound Master	134.95	World Class Leaderboard	44.95
Spectracolor	57.95	X Copy Professional	39.95
Sterling Service BBS	84.95	X Copy V2.9	34.95
Superbase 4	284.95	Your Family Tree	39.95
Title Page	104.95	Zootrope	44.95
Toaster Fonts V.1-5 each	41.95		
Transwrite	39.95		

More Titles Available!

INFORMATION
414-357-8181 FAX 414-357-7814
P.O. BOX 17882
Milwaukee, WI 53217
HOURS-CST
MON-FRI 9am-9pm
SAT 11am-5pm
NO CREDIT CARD SURCHARGE

CALL US TODAY!
AMIGA
& Commodore®
FOR ALL YOUR NEEDS

ORDERING INFO: Specify system. For fast delivery send cashier's check or money order. Personal & company checks allow 14 business days to clear. P.O.'s welcome. **C.O.D. charges are \$4.00** in Continental U.S.A. include \$4.00 for software orders 5% shipping for hardware, minimum \$5.00. MasterCard & Visa orders please include card #, expiration date and signature. WI residents please include 5% sales tax. HI, AK, FPO, APO, Puerto Rico and Canadian orders, please add 6% shipping, minimum \$6.00. All other foreign orders add 15% shipping, min \$15.00. All orders shipped outside the Continental U.S.A. are shipped first class insured U.S. mail, where available. If foreign shipping charges exceed the minimum amount, you will be charged the additional amount. All goods are new and include factory warranty. We do not guarantee compatibility & version #s. Due to our low prices all sales are final. **All Defective returns must have a return authorization number.** Call (414) 357-8181 to obtain an R.A. # or your return will not be accepted. Prices and availability subject to change without notice. Shipping & handling are non-refundable. We ship the latest versions available to us, updates must be handled by end user directly with the manufacturer. Not responsible for typographical errors. In an effort to be complete, some new products may not be available from the manufacturer at press time.

From p. 77.

THE SECRET OF MONKEY ISLAND

By Jeff James

Ale swilling, treasure hunting, and damsel rescuing head the bill of fare in *The Secret of Monkey Island* (Lucasfilm, \$59.95). Patterned after Lucasfilm's earlier adventure games, *Loom* and *Maniac Mansion*, *Secret* serves up an entertaining helping of swash-buckling adventure.

Once you deal with *Secret*'s code-wheel copy protection, the game begins with a flourish of excellent opening music, a fusion of Caribbean swing and pirate ditty, that exemplifies the quality of music offered throughout the entire game.

After the introductory fanfare, you're off to enigmatic Melee Island with your adventuresome alter-ego, young Guybrush Threepwood. Guybrush's goal in life is to become a pirate, a quest facilitated by Lucasfilm's "SCUMM" point-and-click interface. Used in *Loom* and *Maniac Mansion*, SCUMM involves selecting from a list of verbs at the bottom of the playing screen that form sentences telling Guybrush what to do. After giving Guybrush a command, you see the animated results of your behest displayed in the

remainder of the screen.

The action starts by chatting with a comically myopic island lookout, who informs Guybrush that he must speak with three "important-looking" pirates in the local tavern to begin his quest. Once located, this trio of buccaneers explains that Guybrush must complete three trials before he can be considered worthy of being a pirate. These trials, which consist of mastering the skills of swordsmanship, thievery, and "treasure-huntary," take Guybrush from one end of Melee Island to the other, where he encounters a variety of colorful characters and humorous situations.

Unfortunately, *Secret* is obviously an IBM-port, with lackluster graphics and sluggish screen animation (at least on a stock A500). In addition, *Secret* offers no capability to allow the user to turn off the music other than manually adjusting the speaker volume. But good game design always seems to overcome the problems of format conversion, and *Secret* does have a lot going for it. The slow animation and screen scrolling seen when running on an A500 disappear when played on

an accelerated Amiga or on an A3000 running Amiga-DOS 2.0.

The dialogue between Guybrush and the colorful characters he meets can provoke anything from smirks to belly laughter. You guide Guybrush through encounters with nutritionally conscious cannibals, curmudgeonly shopkeepers, timid pirates, and absent-minded castaways. Guybrush even gets the opportunity to banter with an animated head. *Secret* boasts some of the wittier and more humorous pixelized patter that this reviewer has ever had the pleasure to read. Throw in a surprise ending and a little romance, and *Secret* begins to develop into a fairly entertaining adventure.

If you can live with *Secret*'s shortcomings, you'll be rewarded by a lengthy and involved four-disk adventure of sailing under the Jolly Roger, trading insults with unwashed ruffians and haggling with used ship salesmen. You need at least 1MB to run *Secret*, and it can be installed into your hard drive. If you've enjoyed any of Lucasfilm's earlier game offerings, *Secret* just might be your mug o'grog.

know how to use them. As you may have gathered, the catacombs is the final stop. Find the recess in the floor, and use the stone you took from the monster you killed in the catacombs earlier. (Killing him is also a sore point for some, but as far as I can tell, it just requires perseverance and good swordfighting.) This'll open a hidden doorway. Check your health—you will need lots of it—and go on in.

Emelda herself is at the end of the the passage. (She's been sitting down here waiting for you for the whole game, so she's plenty ticked.) There's just one way to handle her. First, put inside the pentangle the sword you found beneath the chapel altar. (If you're looking at your copy of *AW* as though I'd just told you to go swim in the moat, go back and use Elvira's ring in the cross.) Use the scroll from the trunk, stick Emelda with the dagger and sit back and (ahem) enjoy the show.

Actually, go swim in the moat! It's required to get one of the keys and getting out is proving a mucky business for some folks. Where there's a well, there's a way, but check topside first to be certain the well rope is in the down position.

- You knew we'd eventually get around to *The Immortal* (Electronic Arts, \$49.95), right? Some people are stuck on Level 2; they've learned how to get out from the head goblin, but they don't have quite the means. They're missing a gem. Instead, they have this gross rock.

Well, perhaps it's not a rock. Could be just a dirty gem. Maybe if you let the slimes in the level entryway kill you once or twice you'll get the idea, eh?

- Here's a leftover from last issue's hints on the graphic adventure version of *Indiana Jones and the Last Crusade* (Lucasfilm, \$49.95). Yes, you do need to pull that giant cork in the catacombs, as it's the only way to get past the water-filled room above. You'll need to borrow something from a skeleton to get a grip on it, though. Then whip it, whip it good.

(However, before you do so, be sure to note in inscriptions in the room at the far end of the bridge, as you'll need them for the endgame.) ▶

BATTLE COMMAND

By Peter Olafson

The much-delayed follow-up to *Carrier Command*, *Battle Command* (Ocean / Electronic Arts, \$34.95), has finally made it over the Atlantic. While it may not be as spectacular as the original, it still offers a lot of excitement and realistic action.

You guide a futuristic supertank (a "mauler")

through 16 missions behind enemy lines, using an assortment of weapons (don't neglect the radar-guided missiles) and go up against a number of spunky and aggressive enemy units—all rendered in solid-3D.

Movement is speedy and quite smooth—the clearest carryover from *CC*—and designer Realtime Software

used geometric shapes well to create a fireball effect when a vehicle or installation explodes in shards. These moments achieve a sort of vicious reality. I like it! (There are lots of installations, by the way, so you'll never be at a loss for some-

▶

A source of technical information for the serious Amiga professional.

SAVE \$35.75

Introducing *The AmigaWorld Tech Journal*, the new source to turn to for the advanced technical information you crave.

Whether you're a programmer or a developer of software or hardware, you simply can't find a more useful publication than this. Each big, bi-monthly issue is packed with fresh, authoritative strategies to help you fuel the power of your computing.

Trying to get better results from your BASIC compiler? Looking for good Public Domain programming tools on the networks and bulletin boards? Like to keep current on Commodore's new standards? Want to dig deeper into your operating system and even write your own libraries? Then *The AmigaWorld Tech Journal* is for you!

Our authors are programmers themselves, seasoned professionals who rank among the Amiga community's foremost experts. You'll benefit from their knowledge and insight on C, BASIC, Assembly, Modula-2, AREXX and the operating system—in addition to advanced video, MIDI, speech and lots more.

Sure, other programming publications may include some technical information, but none devote every single page to heavyweight techniques, hard-core tutorials, invaluable reviews, listings and utilities as we do.



Every issue includes a valuable companion disk!

And only *The AmigaWorld Tech Journal* boasts a technical advisory board composed of industry peers. Indeed, our articles undergo a scrupulous editing and screening process. So you can rest assured our contents are not only accurate, but completely up-to-date as well.

PLUS! Each issue comes with a valuable companion disk, including executable code, source

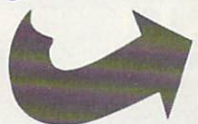
code and the required libraries for all our program examples—plus the recommended PD utilities, demos of new commercial tools and other helpful surprises. These disks will save you the time, money and hassle of downloading PD utilities, typing in exhaustive listings, tracking down errors or making phone calls to on-line networks.

In every issue of *The AmigaWorld Tech Journal*, you'll find...

- Practical hardware and software reviews, including detailed comparisons, benchmark results and specs.
- Step-by-step, high-end tutorials on such topics as porting your work to 2.0, debugging, using SMPTE time code, etc.
- The latest in graphics programming, featuring algorithms and techniques for texture mapping, hidden-line removal and more.
- TNT (tips, news and tools), a column covering commercial software, books and talk on the networks.
- Programming utilities from PD disks, bulletin board systems and networks.
- Wise buys in new products—from language system upgrades to accelerator boards to editing systems and more.

The fact is, there's no other publication like *The AmigaWorld Tech Journal* available. It's all the tips and techniques you need. All in one single source. So subscribe now and get the most out of your Amiga programming. Get six fact-filled issues. And six jam-packed disks. Call 1-800-343-0728 or complete and return the savings form below—today!

To order, use this handy savings form.



☐ **Yes!** Enter my one-year (6 issues, plus 6 invaluable disks) Subscription to *The AmigaWorld Tech Journal* for just \$59.95. That's a special saving of \$35.75 off the single-copy price. If at any time I'm not satisfied with *The AmigaWorld Tech Journal*, I'm entitled to receive a full refund — no questions asked!

Name _____
Address _____
City _____ State _____ Zip _____
☐ Check or money order enclosed. ☐ Charge my:
☐ MasterCard ☐ Visa ☐ Discover ☐ American Express
Account No. _____ Exp. Date _____
Signature _____

Satisfaction Guaranteed!

Or your money back!

Canada and Mexico, \$74.95.
Foreign surface, \$84.97.
Foreign airmail, \$99.95.
Payment required in U.S. funds drawn on U.S. bank.

Complete and mail to:

The AmigaWorld Tech Journal

P.O. Box 802, 80 Elm Street
Peterborough, NH 03458

TJ1091

For faster service, call toll-free 1-800-343-0728.

thing interesting to savage with your arsenal.)

Moreover, Battle Command's missions are agreeably tough, even the first. The enemy is often on you from the time the helicarrier dumps you out—a nice bit

of animation here—and they have a nasty habit of moving laterally as they fire, which can make them devilishly hard to hit at closer ranges. It's tough getting to your mission destination; sometimes it's tough just *finding* it.

It can be even tougher getting to the pickup point with whatever ammo you have left, as your chopper approaches and enemy tanks circle like vultures.

And yet...I don't know: I want to love it, but Battle Command seems to be missing that certain something that would kick into the same class as its classic predecessor.

Although the game is billed as an arcade-strategy hybrid, enemy units are quite thick on the ground, and hence it seems weighted toward shooting. In addi-

tion, while the environment for each mission is sizeable, I do miss the open-ended, continuous flow of Carrier Command. Some of the graphics—black borders on hills, the triangle-over-a-rectangle of trees—struck me as C64-crude. Finally, the game has both on- and off-disk copy protection and no provision for hard-disk installation.

But when the fuel dump goes up, and the fireballs blossom, somehow I forget about that stuff, turn the mauler around, and head for home. ■



At the controls of a Mauler, you'll be ready for anything.

• Some odds and ends. We've got a new address: 222 Henry St., Garden Apt., Brooklyn, NY 11201. (Please write, rather than calling.) Also, on GENIE I can now be reached at POLAFSON1, though the old address of POLAFSON is also good for the time being. With PeopleLink's

demise, I can no longer be reached via that route. However, I may join Portal, and will keep you advised of my address there if and when I do. Finally, remember to send a SASE if you would like a personal reply.

Next time: The Secret of Monkey Island.

The Godfather™

WE'RE GOING TO MAKE YOU AN OFFER YOU CAN'T REFUSE!

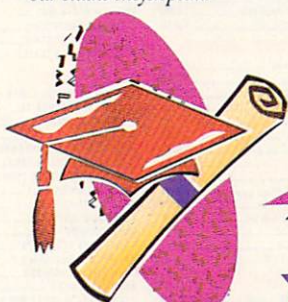
TM and © 1991 Paramount Pictures. All rights reserved. The GODFATHER is a trademark of Paramount Pictures. U.S. Gold Authorized User.

Get over 100 GENie services and the time to enjoy them. Just \$4.95 a month.



Get top news and weather reports

Learn from our online encyclopedia



Send and receive electronic mail

Play single player games



WALL ST.



Check current stock closings

Dozens of informative bulletin boards.



Book flights with EAAasy Sabre



Shop over 25 popular stores



JUST \$4.95

Moneyback guarantee
Sign-up now. If you're not satisfied after using GENie for one month, we'll refund your \$4.95.

Now enjoy unlimited non-prime time usage of over 100 popular GENieSM services for just \$4.95 a month*. You get everything from electronic mail, stock closings, single-player games and a wide range of bulletin boards to news, weather, flight schedules, shopping services and more.

And for an additional \$6 per non-prime-time hour*, you can also enjoy access to a variety of other valuable features like software libraries, computer bulletin boards and multi-player games.

Sign-up today.

1. Set your communications software for half duplex (local echo), at 300, 1200 or 2400 baud.
2. Dial toll free 1-800-638-8369 (or in Canada, 1-800-387-8330). Upon connection, enter HHH

3. At the U# prompt, enter XTX99425, AMIGA then press <RETURN>.

4. Have a major credit card ready. In the U.S., you may also use your checking account number.

For more information in the U.S. or Canada, call 1-800-638-9636.



We bring good things to life.

*Applies only in U.S. Mon. - Fri., 6 PM - 8 AM local time and all day Sat., Sun., and select holidays. Prime-time hourly rate \$18 up to 2400 baud. Some features subject to surcharge and may not be available outside U.S. Prices stated are U.S. rates as of Sept. 1, 1991 and are subject to change. Telecommunication surcharges may apply. Guarantee limited to one per customer and applies only to first month of use. Not applicable when accessed at 9600 baud.

Circle 18 on Reader Service card.

GO AMIGO!

800-BE-AMIGA (800-232-6442)

ACCELERATORS

MEGA MIDGET RACER 25MHz	699.00
MEGA MIDGET RACER 30MHz	799.00
MEGA MIDGET RCR 25MHz ECO	499.00
MEGA MIDGET RCR 30MHz ECO	599.00

AUDIO HARDWARE

AMAS MIDI SAMPLER	129.00
CM1 MIDI 1 (EXT)	59.95
CM1 MIDI 1000	49.95
EC1 MIDI PLUS	49.95
MIDI GOLD 500	59.95
MIDI GOLD INSIDER	84.95
PERFECT SOUND 500/2000	89.95
SOUNDMASTER	139.00

COMMODORE

A10 STEREO SPEAKERS	39.95
A2060 ARCADE LAN	199.00
A2065 ETHERNET LAN	289.00
A2091 AUTOBOOT CTRLN	149.00
A2232 MULTI-SERIAL AD	299.00
A2300 INT GENLOCK/2000	239.00
A2320 DISPLAY ENHANCER	239.00
A2500 COMP. ADAPTER	41.95
A2000 DRIVE REPLACMT	89.95

FLOPPY DRIVES

AE HIGH DENSITY DRIVE	104.00
ROCTEC 5.25" FLOPPY	159.00
ROCTEC SLIM EXT. 3.5"	94.95

MEMORY EXPANSION

ADRAM 505 INT 512K	59.95
ADRAM 540 D4 MER INT	89.00
ADRAM 500D 2 MEG AS40	CALL
BASEBOARD AS500 4/AMB	111.00
MINIMES 1000 2MB	259.00
MINIMES AS500 2MB	249.00
SUPRAM 500 1/2 MEG	59.95
SUPRAM 500X 1MB	124.00
SUPRAM 500X 2 MB	189.00

MODERS

BAUD BANDET MODER	105.00
BAUD BANDET MODER LS	189.00
GALAXY APOLLO 9600	449.00
SUPRA 2400 BAUD MODER	89.00
SUPRA 2400 BAUD MNP	159.00
SUPRA 2400 BONDUP	105.00
SUPRA 2400 INT. MODER	119.00
SUPRA 9600 X.32	499.00

MONITORS

NEC MULTISYNC 30	699.00
NEC MULTISYNC IIA	659.00
SEKO 1440 MULTISYNC	929.00
SONY 1304 MULTISYNC	779.00

PRINTERS

CITIZEN GSX140 24 PIN	329.00
CITIZEN GSX200 9 PIN	195.00
LASERJET II PRINTER	CALL
LENI PS-410 LASER	2499.00
STAR NX1000 II PRINTER	169.00
STAR NX1020 RIBBON	219.00

VIDEO HARDWARE

AMIGEN GENLOCK	97.95
ASOS EPROM DRIVER	129.00
RCO 5000	1995.00
COLOR SPLITTER	109.00
DENISE EXTENDER BUS	85.00
DIGI VIEW GOLD V4.0	119.00
DIGIVIEW GOLD 4.0 PAL	134.00
EPSON SE-300C SCANNER	1395.00
FIXER TO GENLOCK	97.95
FLICKER FIXER	249.00
FLICKER FIXER PAL	309.00
FRAMEGRABBER	449.00
FRAMEGRAB PAL VRS	659.00
FRAMEGRAB/256 GRAY	829.00
FRAMEGRAB/256 PAL	659.00
NAM-E PLUS	877.00
LENS 16MM NO IRIS	19.95
LENS 16MM W/IRIS	59.00
LIVE 1000	249.00
LIVE 2000	349.00
LIVE 500	309.00
MAGNI 4004	1049.00
MAGNI 4004S	1049.00
MINIGEN GENLOCK	189.00
MINIGEN PAL GENLOCK	249.00
NEIKI GENLOCK	1799.00
NUCLEAS PERSONAL SFC	399.00
PANASONIC WV1410	109.00
PANASONIC WV1500X	319.00
PERSONAL TBC	CALL
SHARP JX300 SCANNER	2095.00
SHARP JX450 SCANNER	5195.00
SUPERGEN 2000S	1359.00
SUPERGEN GENLOCK	649.00
TCR102	649.00
VIDEO MASTER GENLOCK	995.00
VIDI CHROME COLOR MOD	29.95
VIDEOTECH SCANLOCK	789.00

VIDEOTECH SCANLOCK PAL	1149.00
VIDEO BLENDER	1129.00
VIP VIDEO INTERFACE	97.95

MISC. HARDWARE

A MAX II MAC EMULATOR	125.00
AUTOLINK	44.95
BIGFOOT 150 POWER SUP	87.95
CM1 MULTIPORT BOARD	185.00
CM1 STQUEST 45MB HD	499.00
STQUEST CARTRIDGE	90.00
DAKOTA SKETCH MASTER	419.00
SKETCH MASTER 12X10	619.00
DOUBLE TALK A2000	399.00
DUAL SERIAL BOARD	269.00
FATTER AG SWITCH A500	21.95
FATTER AGNUS SWITCH'R	21.95
GOLDEN IMG. HAND SCAN	289.00
IC AGNUS: SUPER FAT	89.00
IYS GRAND SLAM 2000	CALL
KICKSTART 1.3 ROM	39.00
MEGACOMP 2000	259.00
OMNIVIEW ULTRA	132.00
PROFESSIONAL SCANLAB	CALL

ACCESSORIES

DISKETTES/DISK ACCESSORIES	
BANK DISKETTE BOX	14.95
DISKETTES, 50 PACK	44.00
SONY DISK 10 PACK	12.95
SONY COLOR DISK 10 PACK	13.95
SONY DISK 5.25" 10 PK	7.95
SONY DISK 5.25" DSHD	11.95
SONY DISK DSHD 5 PACK	9.95
SONY DISK DSHD 10 PACK	19.95
WOODEN DISKBOX 2 DRAWER	45.00
WOODEN DISKBOX 3 DRAWER	55.00
WOODEN DISKBOX 4 DRAWER	65.00

DUST COVERS

COVER UPS A1004 MON	9.95
COVER UPS A1950 MON	9.95
COVER UPS A2000 CPU	5.95
COVER UPS A2000 KEYBD	2.99
COVER UPS A2000 SYSTM	10.95
COVER UPS A3000 CPU	5.95
COVER UPS A3000/AT150	10.95
COVER UPS A500 CPU	5.95
DUST COVER LASERJET	29.95
DUST COVER LASERJET III	25.95
DUST COVER LASERJET IIP	19.95
SAFESKIN / A2000	17.95
SAFESKIN / A3000	17.95
SAFESKIN / A500	17.95

MICE

A1352 MOUSE	89.95
BEETLE MOUSE (VAR. COLORS)	39.95
BOING OPTICAL MOUSE	CALL
GOLDEN IMAGE MOUSE	39.95
MOUSE MATS	9.95

JOYSTICKS

BOSS JOYSTICK	14.95
ERGO STICK	17.95
SOOKJ SPEEDKING	14.95
FREEDOM CONNECTION	25.95
GRAVITY CLEAR JOYSTICK	35.95
GRAVITY MASTER JOYSTICK	84.95
GRAVITY SWITCH JOYSTICK	32.49
LIGHT GUN, PHASAR	32.49
MAXX YOK JOYSTICK	79.95
POWERPLAYERS JOYSTICK	14.95
SLIK STIK JOYSTICK	7.95
TAC-2 JOYSTICK	10.95
3-WAY JOYSTICK	22.95
WICO BAT HANDLE STICK	18.95
WICO RED BALL JOYSTICK	18.95
WINNER JOYSTICK	14.95
ZOOMER JOYSTICK	47.95

PRINTER ACCESSORIES

DATA SWITCH 2-WAY	13.95
DATA SWITCH 4-WAY	22.95
DEKJET BLK CARTRIDGE	16.95
DEKJET FULL COLOR KIT	34.95
DEKJET REFILL BLACK	13.95
DEKJET REFILL BLUE	13.95
DEKJET REFILL BROWN	13.95
DEKJET REFILL GOLD	13.95
DEKJET REFILL MAGENTA	13.95
DEKJET REFILL YELLOW	13.95
DEKJET STAND/ORGANIZER	89.00
PAINTJET BLK CARTRIDGE	25.95
PAINTJET COLOR CARTRIDGE	29.95
PAINTJET CUT PAPER	17.95
PAINTJET 2-FOLD PAPER	17.95
SPACE NKX410 RIBBON	7.49
STAR RAINBOW RIBBON	8.95

MISC. ACCESSORIES

AMTOTE A2000	69.95
AMTOTE A500	69.95
AMTOTE A1004	69.95
AUTO DROU	59.95
CLEANING KIT SMALL	5.95

CLEANING KIT LARGE	12.95
COMPUTER SERVICE KIT	18.95
COPY/CAMERA STAND	59.95
DIGI DROU	67.95
MONITOR STAND A500	27.95
PERFECT SOUND ADAPTER	10.95
X-SPCS 3D	84.95

HOT GRAPHICS SOFTWARE

3D TEXT ANIMATOR	29.95
ANIMAGIC	87.95
BUDDY SYS/PAINT III	29.95
DELUXE PAINT III	59.95
DIGI PAINT 3	54.95
DIGI PAINT 3 PAL	59.95
DIGIMATE III	23.95
DISNEY ANIMATION	79.95
MACRO PAINT	81.95
PHOTON PAINT 2.0	99.95
SCRIPT ANIMATE 4.0	299.00
SCRIPT ANIMATE 4.0 JR	99.95
SPECTRACOLOR	64.95
TURBO SILVER 3.0	69.00
VIDEOSCAPE 3D V2.0	119.00

DESKTOP VIDEO

ART DEPARTMENT	52.95
ART DEPARTMENT PRO	129.00
BROADCAST TITLER II	229.00
BROADCAST TITLER II PAL	239.00
CINELINK FOR IMAGLINK	175.00
CREDIT TEXT SCROLLER	23.95
DELUXE VHS/PHOTO LAB ENL	99.95
INVISIO VIDEO TOOLS ON TAP	99.95
PERFORMER (ELAN)	97.95
PHOTON TRANSPORT CONT	105.95
PHOTON VIDEO EDLP	299.00
PIXMATE	40.95
PRO VIDEO PAL PAL	189.00
PRO VIDEO POST	199.00
PRO VIDEO POST PAL	179.00
SCALA	249.00
SCREEN MAKER	229.00
ON REQUEST CARTRIDGE	299.00
SCREEN MAKER STARTER SET	34.95
SHOWMAKER	209.00
ISAGLINK FOR IMAGLINK	175.00
TV GRAPHICS 2	29.95
TV GRAPHICS 2	29.95
TVSHOW	59.95
TVTEXT PROFESSIONAL	89.95
VIDEO EFFECTS 3D	119.00
VIDEO EFFECTS 3D PAL	139.95
VIDEO PAGE	93.95
VIDEO TOOLS	179.00
VIDEOTITLER 50	93.95
VIGEN 1.0	93.95

3D RENDERING

3D PROFESSIONAL	189.00
3D PROFESSIONAL PAL	189.00
DIGITAL LANDSCAPE	79.95
IMAGINE	177.00
MAP MASTER	45.95
PRO TEXTURES	36.95
SURFACE MASTER	25.95
IMAGINE BUDDY SYSTEM	29.95
INTERCHANGE	29.95
INTERCHANGE 2.1	179.00
INTERCHANGE 2.1	179.00
MAP MASTER FOR LIGHTWAVE	29.95
MODELER 3D	64.95
PIXEL 3D AUTOTRACING	52.95
SCAPE MAKER	24.95
SCENE GENERATOR	29.95
SCRIPT SOX	109.00
VISTA 1.2	27.95
VISTA PAL	59.95
VISTA PROFESSIONAL	79.95
GRAND CANYON 1	49.95
GRAND CANYON 2	49.95
JACKSON HOLE 1	49.95
SCAPES CALIFORNIA #1	49.95
SCAPES MARI	49.95
WESTERN U.S.	49.95
WYOMING 1	49.95
WYOMING 2	49.95

DESIGN DISKS

(SPECIFY SCRIPT/SILVER/VSCAPE)	
AIRSHED '87 OF THE 20TH CENT	23.95
ARCHITECTURE	22.95
DINOSAUR	25.95
FUTURE	22.95
HUMAN	22.95
INTERIORS	22.95
MICROBIOLOGICS	22.95
NY CITY ICONS	25.95
SPACE	25.95
VINTAGE AIRCRAFT	25.95
WOODLAND	25.95

CLIP ART

AIRCRAFT PICS	31.95
COLOR CLIP ART VOL #1-3 (EA)	17.95
CLIP ART #1-9 (EACH)	12.95
ECLIPS PROFESSIONAL	69.95

ECLIPS PROFESSIONAL II	64.95
MAP PICS - US	34.95
MAP PICS - WORLD	37.95
PRO FILLS	17.95
PROF. PAGE STRUCTURED	39.95
SOFTCLIPS: 1-4 (EA)	44.95
INT TWO SOFTCLIPS	85.00
ALL FOUR SOFTCLIPS	169.00
SUPER CLIPS 1-3 (EACH)	18.95

BOOKS

1ST PRIZE TOASTER FONTS 1	40.95
IMAGINE BROADCAST 3D	29.95
FONTS VOLUME 1-3	39.95
INTERFONTS	69.95
GOLD DISK DECORATOR FONT	34.95
GOLD DISK DESIGNER FONT	34.95
GOLD DISK PUBLISHER FONT	34.95
GOLD DISK VIDEO FONT	34.95
KARA FONTS 1	29.95
KARA FONTS 2	29.95
KARA FONTS HEADLINES	44.95
KARA FONTS HEADLINES 2	39.95
KARA FONTS SUBHEADS	39.95
KARA STARFIELDS	34.95
KARA TOASTER FONTS VOL 1	62.95
KARA TOASTER FONTS VOL 2	62.95
MASTERPEACE FONTS	129.00
MASTERPEACE TOASTER FONTS	89.95
PAGESTREAM PLUS PACK	49.95
PAGESTREAM. FONTS PK. (4 SETS)	49.95
PROWRITE PRO FONTS VOL I	22.95
PROWRITE PRO FONTS VOL II	22.95
PROWRITE LIBRARY	49.95
PROF. PAGE OUTLINE CG	129.00

MISC. GRAPHICS

ACAD TRANSLATOR	139.95
AUTOSCRIP	81.95
FRACAL PHD	69.95
FRAMEGRABBER V2.5 FTWR	69.95
IMAGE LINK	119.00
PRO/MOTION	59.95
RESEP	51.95

DRAWING/CAD

DECKBUILDERS CAD	69.95
YCA CAD	99.00
FLO FLOORPLAN CNSTRCT	29.95
HOMEBUILDERS CAD 2.0	124.00
HOMEBUILDERS CAD 2.0	124.00
HOMEBUILDERS CAD 2.0	124.00
HOMEBUILDERS CHOICE	59.95
HOMEBUILDERS LIB. 1	29.95
HOMEBUILDERS LIB. 2	29.95
INTROCAD	49.95
INTROCAD PLUS	64.95
ULTRA DESIGN	189.00
XCAD DESIGNER	89.95
XCAD DESIGNER PAL	89.95
XCAD PROFESSIONAL	129.00
XCAD PROFESSIONAL PAL	CALL
XREEL	124.00

DESKTOP PUBLISHING

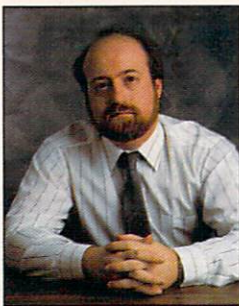
AWARD MAKER PLUS	32.49
DESIGN WORKS	79.95
DRAW 4D	164.00
PAGESTREAM 2.1	179.00
PAGESTREAM FORMS	29.95
PELICAN PRESS	84.95
PRINTMASTER PLUS	25.95
PROFESSIONAL PAGE 2.0	129.00
PROFESSIONAL PAGE 2.0	167.00
PROF. PAGE TEMPLATES	35.95
PROVECTOR	169.00

MUSIC SOFTWARE

BARNS AND PIPES	139.00
BARNS AND PIPES PROF.	209.00
BARNS AND PIPES MULTIMEDIA	34.95
BARNS AND PIPES MUSICBOX A	34.95
BARNS AND PIPES MUSICBOX B	34.95
BARNS AND PIPES INT. SOUNDS	34.95
BARNS AND PIPES RULES	35.95
C-2AR	9.95
DR. T'S COPYIST APPRENTICE	75.95
DR. T'S COPYIST DTP	199.00
DR. T'S KCS 3.0	159.00
DR. T'S KCS LEVEL II	224.00
DR. T'S KCS LEVEL II 3.5	229.00
DR. T'S KCS/COPYIST	219.00
DR. T'S MT-32 EDITOR/ARRANGER	87.95
MASTER TRACKS PRO	259.00

ARMADA 25/25	38.95
ARMOUR-GEDDONS	29.95
Alice IN WONDERLAND	38.95
ATOMINO	32.95
BATTLE COMMAND	34.95
CARDINAL OF THE KREMLIN	32.95
CRIME DOES NOT PAY	32.95
CONFLICT MIDDLE EAST	38.95
CYBERCON	35.95
Death KNIGHTS OF KRYNN	34.95
F-15 STRIKE Eagle	24.95
F-15 LOUIS'S POOL	24.95
JAMES BOND: THE STEALTH AFFAIR	25.95
KILLING CLOUD	38.95
KING'S BOUNTY	32.95
LIFE AND DEATH	32.95
MEDEVAC WARRIORS	32.95
MEGATRAVELLER 1	38.95
MIG 28 FULCRUM PAL YERS	48.95
RAILROAD TYCOON	34.95
SECRET OF THE SILVER BLADES	38.95
STORM	34.95
STRIFE ROAD II	27.95
SUEV (SILKWOORM 2)	32.95
TEAM YANKEE	34.95
TERMINATOR	34.95
THEME PARK MYSTERY	32.95
WOLF	32.95
YAXINE	25.95

Circle 13 on Reader Service card.



HELP KEY

Whether on Syquest drives or genlocks, autobooting or CDTV development, Lou delivers words of wisdom.

By Louis R. Wallace

MOUNTAINS OF MEGABYTES

Q: *I've been planning on buying a new hard disk to supplement the 40-megabytes in my A2000, and after reading the article on removable media in AmigaWorld, I started thinking about getting a Syquest 44-megabyte cartridge drive. But now I hear Syquest has a new 88-meg removable drive. Is this Amiga-compatible? What will I need to do in order to use one in my A2000?*

J. Williams
Minneapolis, Minn.

A: The new 88-megabyte Syquest drives are indeed Amiga-compatible. I just added one to my A2500 system (equipped with the A2091 controller), and it works like a charm. All you need is a SCSI hard-disk controller that can support removable media. According to Syquest, they have set up the 88-meg drive on their Amigas using the GVP Series II as well as the CBM A2091 hard-disk controllers, and the drive should work on other SCSI controllers that support the older 44-meg machine. You should keep in mind that this new drive mechanism is capable of reading the older 44-meg Syquest cartridges, but it cannot write to them. Depending on where you buy it, you can expect to pay in the range of \$750–1000 for an external drive, and \$650–900 for the internal version. Even though Syquest does not sell directly to the public, you can write or call them at the following address for technical information or the address of a dealer: Syquest Technology, 47071 Bayside Parkway, Fremont, CA 94538, 415/226-4000, 415/226-4100 (FAX).

GEM OF A GENLOCK

Q: *I have an A2000 with a 1084S monitor, and I'm interested in writing some interactive multimedia applications for my company. I was hoping you could suggest a good genlock, as I plan on using video from*

either a laserdisc player or a computer-controllable VCR like the PC-VCR from NEC. I do not plan on recording any video through the genlock, so it doesn't have to be "broadcast" quality. Any suggestions?

B. Trevaro
Phoenix, Ariz.

A: It sounds as though you need Commodore's A2300 genlock. The video and computer graphics output can be displayed directly on your RGB monitor in RGB mode, making it perfect for interactive multimedia. It is also relatively inexpensive, as far as genlocks go. Finally, even though you don't plan on recording your applications to tape, the A2300 also has an NTSC output that enables you to send the signal to a composite monitor or television for display, or to a VCR for recording.

A RUNNING START

Q: *I understand that it is possible to add statements to the Amiga's Startup-Sequence in order to run programs and utilities when the computer first starts up. I'm really not very good at using the CLI, but it seems that some programs that work just fine when I double-click on them from Workbench don't work as well when started from the CLI. I have an A3000, and part of the reason I bought it was that it supposedly had a more advanced Workbench. Isn't there some easy way to start Workbench programs automatically?*

W.W. Smith
Denver, Colo.

A: As long as you are using Workbench 2.0, there is a very easy method to do exactly what you want. On your Workbench drive is a drawer called WBStartup. To have Workbench programs automatically executed when the machine boots, just place a copy of the program in that drawer. If you have more than one program in WBStartup and want them to start in a particular order, you can use the STARTPRI i

command in the program's Tool Types. To do this, click once on the program's icon to highlight it, and then select INFORMATION from the Workbench Icons menu. To add a Tool Type, click on the button labelled NEW. This will place an active cursor in the small text input field to the right, from which you can enter the Tool Type you require. In the case of STARTPRI i, you would set the i to any number between –128 and 127. Those programs with the highest STARTPRI values get executed first.

CDTV SOFTWARE DEVELOPMENT

Q: *I am considering developing some software for Commodore's new CDTV system, but I want to use a high-level development language and definitely don't want to resort to C, assembly or other similar languages. Do you think AmigaVision would be suitable for CDTV development? What other "multimedia" languages would work?*

B. Maloski
Cleveland, Ohio

A: In some ways, AmigaVision is a perfect CDTV development language, but it does not produce stand-alone programs. Programs written with it require AmigaVision in order to run, and on CDTV that wouldn't leave a lot of memory for the application. I have heard that a special developers' version of AmigaVision is coming for authoring CDTV applications, but no release date has been announced.

There are several other high-level authoring packages you should be able to use for CDTV development. These include The Director Version 2 (Right Answers Group) and CanDo v1.5 (IN-OVAtronic). In addition, the new Foundation authoring language (Impulse) sounds as if it would work as well. All three of these sophisticated programming tools support the various multimedia elements you'd want to have in a CDTV program. ■

AMIGA WORLD

STEP INTO THE WORLD OF AMIGA...



The Pathway To Your Imagination

For a computer as extraordinary as the Amiga,™ you need a magazine that can match its excellence, AmigaWorld.

AmigaWorld is the only magazine which provides you with ideas and information to get maximum performance from the Amiga's tremendous power and versatility.

Each issue gives you valuable insights to boost your productivity and enhance your creativity.

Whether you choose the Amiga as a serious business tool for its speed and multi-tasking capabilities... or for its superb graphics, drawing, color, (over 4,000 colors), and animation... or for its state-of-the-art music and speech... or for its scientific and CAD abilities, AmigaWorld can help you achieve superior results.

With its timely news features, product announcements and reviews, useful operating tips, and stunning graphics, AmigaWorld is as dynamic as the market covers.

Don't wait! Become a subscriber and save nearly 47% off the cover price. Return the coupon or for immediate service, call toll-free 1-800-258-5473.

Save 47% ☐ Yes!

I want to discover the full potential of this powerful machine. And save nearly 47% off the cover price. Enter my one year subscription to AmigaWorld for the low price of \$24.97. If I'm not satisfied at any time, I will receive a full refund—no questions asked.

☐ Payment Enclosed ☐ Bill Me

Name _____
Address _____
City _____
State _____ Zip _____

Canada \$34.97, Mexico \$32.97, Foreign Surface \$47.97, Foreign Airmail \$82.97 (U.S. Funds drawn on U.S. Bank). All rates are one year only. Please allow 6-8 weeks for delivery.

AmigaWorld

P.O. Box 58804, Boulder, CO 80322-8804

Amiga is a trademark of Commodore-Amiga, Inc.

Briwall -- Your Total Solution Mailorder Company...

ACCELERATORS

Adding speed to your system gives you more time working, and less time waiting. Once you experience it, you'll never go back! Let us help you experience this satisfaction.

AdSpeed	\$219
GVP Combo 22MHz w/1MB	\$809
GVP Combo 33MHz w/4MB	\$1,659
GVP3050 50MHz w/4MB	\$2,299
Fusion Forty 25MHz w/4MB	\$2,299
MegaMidget 030EC 25MHz	\$499
MegaMidget 030EC 33MHz	\$599
MegaMidget 68030 33MHz	\$699
Progressive 68040/3000	\$1,499
VXL30 25MHz EC	\$349
VXL30 40MHz EC	\$499
1MB and 4MB SIMMS	Scall
Math Coprocessors	Scall

PRINTERS

You need a printer that shows off your ideas on paper. But resolution, printer drivers, and software all effect the right choice. Tell us your needs and we'll be happy to help.

CBM 1270 Ink Jet	\$249
Canon PJ1080a Color Ink Jet	\$499
Citizen GX140 (24 pin)	\$299
Citizen GX145 (wide)	\$399
Citizen GX200 (9 pin)	\$189
HP DeskJet 500	\$519
HP Laser Series IIP	\$969
Okidata Laser 400	\$689
Sharp JX730 Color Ink Jet	\$1,699
Star XR1520 (wide, 420cps!)	\$529
Star XR1020 (420cps!)	\$399

MODEMS & SOFTWARE

Fast, accurate file transfers are now affordable. With file sizes increasing and modem prices dropping, slow modems just don't make sense. If you have questions, we'll be glad to help.

AM24 Mini Modem	\$79
Courier HST 38.4	\$599
Courier HST Dual Standard	\$899
DataLink Express MNP&SendFax	\$239
Datalink Internal MNP	\$159
SupraModem 2400	\$98
SupraModem 2400+ MNP v.42bis	\$175

Telecommunication Software

Atalk III Terminal Software	\$63
Baud Bandit Software	\$29
Online Platinum	\$39
Sterling Service BBS	\$89

Call the new, improved Briwall BBS at (215) 683-7499.
300/1200/2400 baud, 24-hours, with a full catalog and ordering online!

INPUT DEVICES

Simplify your work. From new mouses to scanners, always use an input device that matches your needs. Don't know what these products do? Call us and we'll be glad to explain.

Alphadata Optical Mouse	\$65
Alphadata Trackball (2 button)	\$59
Alphadata Trackball (3 button)	\$68
Amtrac Trackball	\$68
AproDraw 12x12	\$489
Beetle Mouse	\$42
Boing Optical Mouse	\$89
GI Hand Scanner	\$269
Golden Image Mouse	\$36
GI Optical Mouse	\$65
Gravis Joystick	\$35
Gravis Mousestick	\$69
RocTec Mouse	\$39
Sharp Color Scanners	call
Sharp JX100 w/Scanlab	\$699
SketchMaster 12x12	\$429
Wico Ergo Stick	\$18

HARD DRIVES

Free yourself from stacks and cartons of floppies. You need the freedom and safety of a spacious hard drive. We offer the best hard drives available and controllers that make sense for your system. Your selection arrives ready to run because we pre-test and format it.

SCSI Hard Drives

Maxtor 080MB LP	\$379
Maxtor 213MB HH	\$699
Quantum 052MB LP	\$269
Quantum 105MB LP	\$419
Quantum 210MB HH	\$749
Syquest 044MB Removable	\$409
Syquest 044MB external	\$629
Xetec CD-ROM	\$579
Tape Backup Units	Scall
Laser and Optical Drives	Scall

SCSI Controllers

Dataflyer	\$85
GrandSlam	\$239
GVP Series 2 HC	\$159
GVP Series 2 HC8	\$199
IVS Trumpeard	\$125
Malibu	\$139
Nexus	\$239

AT Hard Drives

Maxtor 080MB LP	\$339
Maxtor 213MB HH	\$699
Quantum 052MB LP	\$269
Quantum 105MB LP	\$399
Quantum 210MB HH	\$749

AT Controllers

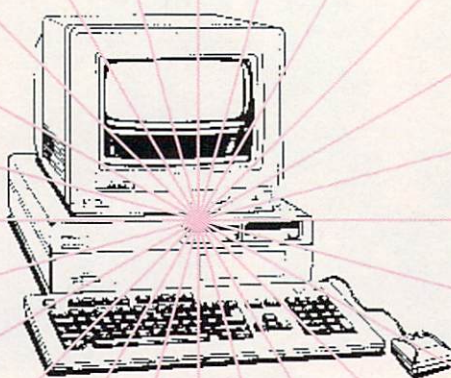
GVP3050 w/4MB	\$2299
AdIDE 40	\$109
AdIDE 40kit (Prima)	\$139

A500 SCSI Packages

GVP 52MB Quantum	\$599
GVP 105MB Quantum	\$809
DataFlyer 500	\$149*
IVS Trumpeard	\$199*
IVS GrandSlam	\$319*
Xetec Fasttrack	\$239*

* add any SCSI hard drive

BRIWALL

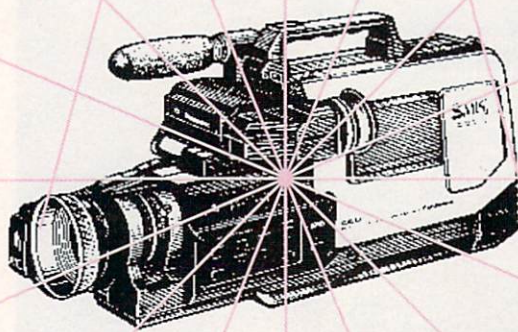


1-800-638-5757

VIDEO

Create. Merge computer, video and still images in ways never before imagined. An Amiga, a camcorder or VCR and the right tools are all it takes. The technology is expanding so rapidly it's hard to keep up, but we can help you make the right selections.

16mm Lens w/variable iris	\$48
Amigen Titling Kit	\$199
AirLink 2	\$39
BCD2000A	\$859
BCD5000	Scall
CBM2320 Display Board	\$249
Chroma Key Switcher	\$329
Colorburst	Scall
Color Splitter	\$105
DCTV	\$389
DPS Personal TBC	\$779
DQ-TACO	Scall
Firecracker 2400	\$929
Flicker Free Video	\$309
Frame Grabber	\$459
GVP Impactvision	Scall
HAM-E	\$289
HAM-E Plus	\$399
Hitachi KPC501B	\$1,019
Kitchen Sync	Scall
Minigen	\$189
Panasonic 1410 Camera	\$179
SFC/Personal	\$425
Showline TBC's from	\$799
Sony 1304 Monitor	\$689
SuperGen 2000s	\$1,399
Supergen	\$649
VideoToaster	\$1,419



MEMORY EXPANSION

More memory means bigger files, longer animations and higher resolutions. All of your applications will appreciate it. We can explain your options and help you add the most efficient memory to your system.

Roctec 501	\$49
Baseboard w/1MB	\$139
Baseboard w/2MB	\$189
Supra 500RX w/1MB	\$139
Supra 500RX w/2MB	\$209

	2MB	4MB	8MB
8-up!	\$179	\$249	\$379
GVP	\$199	\$309	\$479
Supra8	\$209	\$299	\$469
Dataflyer	\$189	\$279	\$449

	1MB	4MB	8MB
SCRAM's	\$89	\$319	\$539

Combo SIMM's, SIMM's, DIP's, ZIP's we carry it all -- just call!

FLOPPIES

Eliminate disk-swappers' cramp! Sure, you can get exercise from a computer. But who wants to? You just need another floppy.

A500 3.5" internal	\$89
AE High Density 3.5"	\$199
Air 3.5"	\$85
AMAX Compatible 3.5"	\$189
Master 3A-1D 3.5"	\$97
Chinon A2000 int. 3.5"	\$82
Roctec 5.25"	\$149
Roctec Slimline 3.5"	\$94

EXTRAS

Expand and Enhance. It's part of the fun of owning a computer. Call us when you want to try something new.

A500 BigFoot 150w	\$92
ATOnce A500	\$279
ATOnce w/2000 adapt.	\$349
Bodega Bay	\$279
Bomac Tower A2000	\$269
CBM Speakers	\$38
CBM520 Vid Adaptor	\$45
Copy Stand	\$64
Covers, Cables, Disks	Scall
Extac Hard drive Case	\$85
Inkum HP500 color kit	\$34
Shuffle Board	\$29
Switchbox a/b/c/d	\$29

GRAPHICS SOFTWARE

Produce perfection. Whether in print, on screen, or in video, your work is a reflection of you, and it must be as you visualize it. Make it so. The graphics, presentation and video tools you need are here today.

3D Professional	\$179
Amiga Vision	\$89
Art Department Pro	\$145
Broadcast Titler II	\$229
CanDo v1.5	\$89
Deluxe Paint IV	\$119
Deluxe Paint III	\$89
Deluxe Video III	\$89
Digipaint v3.0	\$59
Digiview v4.0	\$122
Disney	\$79
Hyperbook	\$64
Imagine	\$199
Professional Draw 2.0	\$119
Pro Video Post	\$219
Scala	\$239
Scenery Animator	\$62
Screen Maker 36	\$239
Showmaker	\$229
Sculpt/Animate 4D	\$359
Spectra Color	\$59
TV Text Pro	\$99
Vista Pro	\$89

BRIWALL

Solid Products and Solid Support

AMIGA
1000
000

Continue expanding your Amiga 1000 with any of these exciting expansion products. Add memory, storage, speed, or all three. Call if you have any questions about these products.

Adspeed	\$219
Fastrak SCSI + Case	\$289
Insider II (0K)	\$199
Insider II (1.5MB)	\$289
Keyboard	\$119
Kwikstart IA1000	\$75
Kwikstart II A1000	\$88
MegaMidget Racer 25mhz	\$499
MegaMidget Racer 33mhz	\$599
Minimegs 2MB	\$call
Rejuvenator 1000w/Agnus	\$419
Rejuvenator w/2MB Agnus	\$call

SOFTWARE
PACKAGES

Even choosing software is difficult these days. We help you sort out the issues, and can help you get your software installed.

Productivity

Best Business v3.0	\$129
PHASAR v4.0	\$59
PageStream 2.1	\$179
Pelican Press	\$59
PenPal	\$89
Proper Grammar	\$62
Prowrite v3.0	\$99
Superbase V4.0	\$329
Wordperfect	\$159

Utilities

Ami...Alignment	\$25
AmiBack	\$49
Arexx V1.0	\$29
Blitz BASIC	\$79
CrossDOS v4.0	\$26
Doctor Ami..	\$24
Janus V2.0	\$27
Lattice/SAS C v5.1	\$199
Project D v2.0	\$36
Quarterback v4.0	\$43
Quarterback Tools	\$53
RX Tools	\$39

Music

AudioMaster III	\$59
Bars & Pipes Pro	\$229
Dr T KCS V3.5	\$249
Dr T Tiger Cub	\$59
MIDI Internal/External	\$call
Perfect Sound 3.0	\$65
Phantom (SMPTE)	\$229
Sound Master	\$129

Call for pricing and availability of education and entertainment software, books, and videos.

BODEGA BAY

Bodega Bay, Malibu SCSI controller and a Quantum 52MB LP hard drive

"Total Solution" Package Price \$649

EXPANSION SYSTEMS

The Best Quality at the Best Price

DataFlyer SCSI	
High performance -- low cost	
A500 w/case	\$149
A2000	\$85
DataFlyer RAM	
8MB board, also fits DF500	
2MB	\$189
8MB	\$449
BaseBoard	
4MB A500 internal memory	
2MB	\$189
4MB	\$289

Scenery Animator

from Natural Graphics
New, powerful, 3D landscape animation software.

Briwall Price -- \$62
Requires 68020 or 68030 and 2MB.

AMIGA 2.0 ROM's

Now A500, A1000 and A2000 owners can switch between 1.3 and 2.0 ROM's. Easy installation, with no soldering required!

Multistart II	\$79
Kwikstart II	\$79

Call for complete ROM packages

Fusion-Forty

RCS Management's Motorola MC68040 accelerator board for the Amiga. With a clock speed of 25MHz the Fusion-Forty boasts incredible processing power of 18-25 MIPS and 3.5-8.0 MFLOPS.

- Features include:
- 4MB of 32-bit RAM, expandable to 32MB
 - Hardware select switch to disable accelerator
 - One year warranty
 - 6-layer board with separate power and ground planes to minimize noise

Briwall Price \$2299



ROCTEC
GREAT PRODUCTS
AT LOW PRICES!

CDTV Floppy --3.5" slim and light external drive that matches CDTV color. **\$94**

RocTec 512K RAM expander for A500 **\$49**

RocTec Amiga Mouse **\$39**

RocTec 3.5" ultra-slim 880K external floppy drive with low power consumption **\$94**

RocTec 5.25" 360/720K external drive **\$149**

RocKnight -- Hardware-based anti-virus protection **\$45**

DKB

Innovative solutions to specific needs

Megachip 2000 (A2000) \$239
Install 2MB of chip RAM with this great board. Just add a 2MB Agnus.

Multistart II \$85
Switch between Kickstart 1.3 and 2.0 with the keyboard!

Insider II (A1000) .5MB \$239
(1MB-\$259 1.5MB-\$289)
Battery-backed clock and calendar, with up to 1.5MB of internal RAM.

Kwikstart II \$88
Install both Kickstart 1.3 and 2.0 with this handy little board.

Secure Key \$99
Hardware password protection!

New From Citizen!

PN48 Portable \$379
Thermal fusion, laser quality print on paper, labels, and transparencies. Bottom and rear paper feed. Weighs only 2.5 lbs!

GX130 \$279
24-pin, 180cps, wide carriage with great graphics resolution. Color kit option is available.

Digiview Bundle

Digiview Gold 4.0,
Panasonic 1410 camera w/variable iris lens, copystand and all cables
Complete Package \$379

Courier HST

The best and fastest modem on the market. Why settle for second best when you can get a Courier!

HST 38.4 v42bis	\$599
HST Dual Standard	\$899

Mega-Midget Racer

The upgradable alternative from CSA

If you're going to invest in an accelerator, why lock yourself into a non-upgradable 'solution'? The Mega-Midget gives you the option to upgrade with:

- ▲20-33MHz 68030 using the same board
- ▲20-50MHz 68881/2 using the same board
- ▲Up to 8MB of 32-bit RAM (while maintaining all 9MB of your existing system RAM!)
- ▲Up to 2MB of fast, static 32-bit RAM (for the ROM Kernel, and super-fast screen updates.)

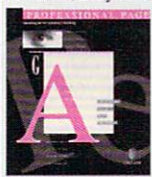
Mega-Midget Racer runs in the A500, A2000 and A1000 (call on the A1000), and is compatible with the Toaster, DTP programs, ray-tracing packages, and all other 68030-compatible software.

Mega-Midget Racer 33MHz w/68030, 33MHz 68882, 512K of SRAM and 4MB of 32-bit RAM **\$1699**

Many other configurations available. Call for details

Professional Page 2.0

Powerful, Easy to Use, Desktop Publishing!



- Free Training Video!
- Excellent Dot Matrix Output!
- Rotate Text or Graphics!
- Built-in Word Processor & Spell checker!
- 1000 Colors on Screen!

ONLY \$195

BRIWALL's Choice for our in-house DTP needs!

IVS GrandSlam

The Ultimate Multifunction Card

- ▲Super Fast SCSI w/ full SCSI Share Network and Autoboot
- ▲Room for up to 8MB of SIMM RAM
- ▲PrinterFace Parallel Printer Port (free's up parallel port)
- ▲Autoboot ROM's, TCutils, Mounting Brackets, all cables and a case for the A500 version

A2000 -- \$235 A500 -- \$299

(Intro Pricing)

1-800-638-5757

(USA and CANADA)

Outside USA: (215) 683-5661 Tech Support (215) 683-5699
Customer Service (215) 683-5433 FAX (215) 683-8567

- Any Visa and MasterCard accepted with NO surcharge
- Hardware shipping charges vary depending on weight and value. Call for best method and cost.
- Software shipping charges are \$5.00 per total order via UPS ground to anywhere in the continental USA
- All orders over \$300 are insured at customer's expense.

Federal Express®

Charges for all orders under 20 pounds
2nd Day Delivery \$12
Next Day Delivery \$17

DHL

Canadian and Overseas customers are shipped DHL.
Rates as low as \$15 to Canada!

BRIWALL

P.O. Box 129/58 Noble St.
Kutztown, PA 19530

Order lines are open 24 hours (Briwallians are in 9-8 EST)
Store hours: Monday - Friday 9AM-6PM, Saturday 9AM-12PM

Check our delivered price!
Our freight charges are fair!

From p. 20.

of your creation before you render so that it appears placed at the correct angle. After you have framed your object, you can record its placement so that when you go back to modeling or forward to the next section, which is rendering, the observer position will correspond to the new location.

In Wireframe mode, you can also record your movements around an object to create limited animations. While Real3D provides no computer in-betweening or ease-ins, you can, however, create some basic animations with macros and by drawing paths in tri-view.

The third and final section is where you set up your rendering. This area has a very nice layout with lots of controls for overlighting, base lighting, background color, antialiasing, aspect ratios, recursion depth, screen size—all of which are amply explained in the comprehensive, easy-to-read manual. Real3D lets you determine what level of rendering complexity you desire, allowing you to start at a low (fast) mode and working your way up to a higher (slower) mode so that you can make sure that everything is how you want it before committing to something that may take a lot of time.

The images that you can create directly with Real3D are in HAM. If you want images in an Amiga format other than HAM, you must render them in 24-bit format first and then convert them with a program such as Art Department Pro (ASDG) to another resolution. You can import Sculpt 4D objects using the utility provided, but since Real3D is not a vertex-based program, you cannot export objects to other 3-D programs such as Sculpt or Imagine. Real3D provides support for 24-bit IFF.IBM formats.

I am very impressed by the overall logic of Real3D. It is a well-thought-out program that adheres to its concepts. You do not get the feeling that anything was just stuck in at the last minute. Each screen is very well laid out, with lots of buttons and keyboard equivalents to maximize speed and ease of use.

At first, it may seem a little stiff to make everything in the world out of primitive shapes, especially free-form objects like human beings and plants, but as you become familiar with the process, you will soon find that the speed at which you can create objects more than makes up for it. Also, I have

heard that the future of this product holds in store a free-form object tool kit. I am looking forward to it. (*Editor's note: The developer had plans at press time to release a significant upgrade during September. Activision promises more than 65 new functions, including free-form modeling and point editing.*)

On the whole, I find Real3D to be a good, professional, extremely easy-to-use package. The manual is well-written, and reading it was an education. With Real3D, we are one step closer to creating real-world representations of our dreams.

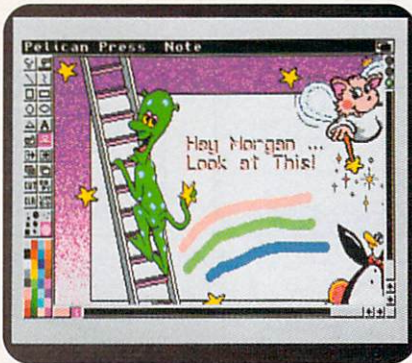
PELICAN PRESS

It's going to be a banner year!

By Rick Manasa

BY ITS LIGHTHEARTED name, you may guess that this banner- and poster-generating program is geared toward the home and school set. That doesn't mean, however, that you cannot use it for more serious projects. *Queue's* Pelican Press (\$99.95) packs some pretty powerful features into what might otherwise be dismissed as kids' stuff.

The program comes on one bootable disk, with two disks of clip art, and it is both Workbench 1.3- and 2.0-compatible.



Pelican Press lets you combine clip art with your own text and graphics.

ble. The manual makes no assumptions about your previous experience, and describes almost everything you need to know to get rolling with a minimum of fuss. The hard-disk install program is Spartan, but efficient. After performing the suggested assigns, I was up and running in no time.

Pelican Press runs on a 512K Amiga, but I strongly recommend 1MB of RAM. Some of the larger formats may limit the amount and size of the clip

art and text you can use. You can monitor the amount of memory available by means of the miniature traffic light located in the upper right-hand corner of the main screen. The manual provides a section of hints and work-arounds on how to get the most out of a standard Amiga when running Pelican Press. In fact, a great deal of care is taken throughout the manual to anticipate any problems you might run into, including everything from the possible consequences of using the program on a 512K system to the basics of using the Amiga operating system.

SHORTS

There are many hot-key equivalents to the menu commands. Some are of the key-combination variety, while others are single-key equivalents, like those found in DeluxePaint (Electronic Arts). As you become familiar with the program, you will appreciate this more and more. The ability to access menu functions from the keyboard leaves the mouse positioned for editing or drawing, where you need it most.

While the tutorial is good, you should be familiar with the operation of the Amiga and paint programs before walking a youngster through it. By the time you have both completed the exercise, you will have a solid working knowledge of the program's fundamentals.

One of the most helpful sections of the manual is the Creativity Guide. This is a collection of design tips that point out some not-so-obvious ways to use the many tools and features in the program. Many of these tips are not specific to Pelican Press, and can be used in other paint or graphics program.

There are six design formats in Pelican Press, called Poster, Sign, Note, Card, Calendar, and Banner. All formats are made up of three layers—one each for backgrounds, frames, and clip art and text. You can either create your own background with the drawing tools or load one from the Backgrounds and Posters disk provided. Then, you can lay frames, clip art, and text over your background.

Posters, Signs, and Notes are identical in every way except in scale: Posters are three screens high, Signs are two, and Notes are one. Cards are composed of four Signs arranged so that when folded they form a standard greeting card. Calendars include space for information in each date and a ►

The GRAPEVINE GROUP Inc.

AMIGA™
COMPARE
OUR
PRICES

AMIGA UPGRADE CHIPS

Fatter Agnus (1 and 2 Meg).....**See below**
8362 Denise Half Bright.....**\$25.50**
8373 New Super Denise.....**See below**
8364 Paula chip.....**\$25.50**
5719 Gary chip.....**\$12.95**
8520A CIA chip.....**\$15.50**
1.3 ROM Kickstart.....**\$24.95**
2.0 ROM Kickstart (unavailable at press time).....**\$24.95**
A500 Keyboard.....**\$109.50**
A2000 Keyboard.....**\$114.95**
Rockwell Agnus chip puller.....**\$6.95**

OUR 12TH YEAR

MEMORY EXPANSION

Rejuvenator for A1000. Upgrade to the specs of the A2000. Includes \$30 diagnostic software at no charge. **\$479.00**
Rejuvenator upgrade (utilize 2MB of chip RAM) Includes add. meg. or RAM. **\$215.00**
1x4/80 SC Zip for A3000.....**\$26.95**
1x1/100NS.....**\$5.95**
256x4/12 all ICD, GVP, etc.....**\$5.50**
1x8/80 SIMM.....**\$44.00**
4x8/80 SIMM.....**\$188.88**
HP Laser Memory (II/IID, IIP, & HP III)
2 Megs.....**\$137.95**
4 Megs.....**\$199.95**

AMIGA POWER SUPPLIES

A500 45 watt (heavy duty).....**\$67.50**
A500 BIG FOOT 150 watt/fan.....**See below**
A1000 Standard Replacement.....**\$127.00**
A2000 Standard Replacement.....**\$210.00**

Printhead Problems?

Don't throw out your old worn printhead. For a fraction of the cost of a new one, we will refurbish or remanufacture it to factory specs for you and give you a year warranty, which you don't get when you buy a new unit. **SAVE UP TO 70% 5 day turnaround (400 types done). Call us.**

MISCELLANEOUS PRODUCTS

FlickerFixer (by Microway).....**\$227.95**
Printer Port Adapter (runs any Commodore Printer to PC).....**\$34.95**
Video Interface Professional (converts Amiga RGB to composite output).....**\$99.95**
Kickboard is a ROM selector switch for A500/2000. (An absolute must for 2.0.) Similar to MultiStart below.....**\$37.95**
Video Crisper. Makes your Amiga display sharp with vivid colors. No cutting/soldering. Really works!.....**\$44.95**
Service Manuals & SAMS Computerfacts available.....**Call**

150 WATT BIG FOOT POWER SUPPLY

150 Watt "Big Foot" A500 Universal Power Supply with fan and external cabling for hard disks, etc. An absolute must for those adding on more memory/peripherals.....**\$83.95**

DIAGNOSTICS

STU (System Test Utility) Terrific complete diagnostic trouble-shooting software. An absolute must for all Amiga users. Professionally written by Custom Services, Inc.**\$29.95**
Amiga Diagnostician. Diagnose up to 28 common problems. Comes with software and booklet. Save a lot of money by locating faulty chips yourself.....**\$14.95**
The Final Test, JUST RELEASED. This diagnostic diskette tests out keyboard, display, graphics, new Workbench, sound, timing, real time clock, RAM test (both chip & fast) by Global Upgrades, Inc.**\$15.95**
Dr. Ami (Free Spirit). Memory & hard disk diagnostic program. Scans all system/expansion memory. Locates defective chips & bad memory location.....**\$29.35**
AMI Alignment System (Free Spirit). Precision disk alignment/performance package...**\$28.50**

* EXCLUSIVE * AMIGA A500 PC (MOTHER) BOARD

(Limited Quantity) • Assemble your own (full) Amiga computer • Each board is populated (all chips), tested & ready to go. Also sold unpopulated • Keep as a spare (cost of the chips alone far exceed the cost of this board) • All other parts (power supply, drive, etc.) are available from us • Fantastic savings over purchasing a new unit • Overseas? We will convert it to PAL format for you • Also contains a newly released full Amiga diagnostic diskette that tests everything • Available in different configurations • Includes full warranty.
TENTATIVE PRICE • CALL FOR MORE INFORMATION
\$229.00 Tested and Populated (also sold unpopulated)

ENHANCED CHIP SET

SUPER DENISE 8373 UPGRADE—Now utilize productivity and scan mode, etc. Super hi-res mode (1280 x 200 pixels). An absolute must with 2.0.....**\$54.50** (tentative price)
1 MEG FATTER AGNUS CHIP (8372A)—Comes with FREE Rockwell Agnus chip puller (a necessity). Complete instructions for all Amigas and a special BONUS Agnus diagnostic diskette.....**\$84.95**
2 MEG SUPER FAT AGNUS (8372B)—This is the high technology chip used in the A3000 that can now go into your A500/2000 when installed with DKB's MegAChip. (Gives 2 megs of chip RAM.) Chip sold separately, but included with MegAChip (includes chip puller). **\$89.00**

+ AMIGA EMERGENCY STARTUP KIT +

Stop sending out your Amiga A500/A2000 for repairs. It is now possible to save a lot of time and money by repairing your own Amiga computer in a simple manner. Each kit includes all one needs to "start up" or revive a broken computer. All chips provided in the kit are direct socket plug-ins and do not require soldering. Originally "blister" packaged for government PXs worldwide and now available to the general public. **Total cost savings far exceeds purchasing chips on an individual basis.** 28 different symptoms (faulty parts) with their remedies are laid out in the Amiga Diagnostician and Diagnostician booklet, which is supplied as part of this Emergency Startup Kit.
DIA 14 KIT CONTAINS: Buster Chip (U800), 8520A CIA Chip, 8362 half Bright Denise, 8370 Agnus Chip, 5719 Gary Chip, PLCC Chip Puller, Basic Schematic, Amiga Diagnostician Booklet and Special Test Diskette with the following tests: Keyboard, Hi Res, half Bright, Double Buffered Animation, Mouse & Agnus Tests.
A \$210.20 value for.....\$99.50

LOW COST COMMODORE CHIPS AVAILABLE

ICD THE ICD ADVANTAGE

AdSCSI 2000. Hard drive interface with unmatched speed and flexibility.....**\$127.50**
AdSCSI 2080. Hard drive interface with up to 8 megs of FAST RAM.....**\$177.95**
Each additional meg of memory add.....**\$44.00**
AdSpeed. Best overall performance of any accelerator in its price range.....**\$203.95**
Flicker Free Video. Eliminates interface flicker for any Amiga computer.....**\$274.95**
AdRAM 540. Add up to 4 megs of RAM internally in your Amiga 500
with 1 meg.....**\$131.95**
with 2 meg.....**\$166.95**
Each additional meg of memory add.....**\$35.00**
AdRAM 2080. 8 meg internally in your 2000/2500...**\$114.50**
Each meg of memory add.....**\$35.00**
AdIDE. Smallest Amiga hard drive interface made.
For IDE (AT) drives
IDE 44 (for 2.5" hard drive).....**\$108.95**
IDE 40 (for 3.5" hard drive).....**\$99.00**
Novia 20i. The smallest hard drive and interface in the world for your A500. Fits internally.....**\$457.00**
Prima 52i. Now mount a 3.5" IDE drive internally in your 500, 1000, 2000.....**\$499.95**
Shuffle Board. Reroutes DFO: to the external floppy connector. Boot from an external floppy for A500/1000.....**\$28.50**

DKB PRODUCTS

MegAChip 2000™ With Agnus Chip
2 MB of Chip RAM for A500/2000 Sizeable Rebate on 1 Meg Agnus
In Stock! Now Available for the Amiga 500
STOP RUNNING OUT OF CHIP RAM. If you use your Amiga for Desktop Video, 3D Rendering & Animation, Multimedia or Desktop Publishing, then you need the MegAChip 2000. Fully compatible with Workbench 2.0, the ECS Denise chip, GVP's and Commodore's 68030 accelerators. Why upgrade to 1 meg of RAM when you can have the same high tech 2 meg chip RAM as the A3000? Includes FREE Rockwell chip puller (a necessity), diagnostic Agnus diskette program and 2 meg Agnus.....**\$329.95**
SecureKey™
Access Security for the A2000/3000
Do you need to keep your system safe from unauthorized use? The SecureKey will not allow access to your Amiga without the right security code. Furthermore, you can't boot off of a floppy or bypass it in any manner. No one can delete files from your hard drive or steal your work. Requires 1.3 or above.....**\$98.50**
Insider II™
Allows A1000 owners to add up to 1.5 meg of Fast RAM internally. User expandable in 512K increments using 256K x 4 Drams. Includes battery backed clock calendar. Simple installation. No soldering required. Compatible with the KwikStart II and most processor accelerators.....**\$198.95**
With 1.5 meg.....**\$265.50**
KwikStart II™
Utilize 1.3 and 2.0 ROMS
Allows A1000 owners to install 1.3 and 2.0 Kickstart ROMS and switch between them. Upgrade to the latest operating system and still be compatible with software that requires Kickstart 1.3.....**\$68.95**
MultiStart II™
Switch between ROMs
Allows A500/2000 owners to install Kickstart 1.3 and 2.0 and switch between them with the keyboard. Can also install a third ROM. A sizable percentage of present software will be incompatible with the new 2.0. This simple device allows you to be compatible with all your software. No external wires or switches required. **IMPORTANT NOTICE TO A500 OWNERS:** The 2.0 Kickstarts will not work in your Amiga, rev. 5 or lower, without a MultiStart II type switch!.....**\$77.77**

SEND FOR OUR FREE 36 PAGE CATALOG

3 Chestnut Street, Suffern, New York 10901

Add UPS charges to above.

Customer Service (914) 357-2424 Fax (914) 357-6243

Order line only 1-800-292-7445

Hours: 9-6 EST Mon.-Fri.

We have a terrific catalog with hard-to-find Amiga items.

All trademarks and logos for ICD and DKB are from their respective companies and are solely used for identification purposes. Amiga is a registered trademark of Commodore Business Machines Corp.



PRICES SUBJECT TO CHANGE
WE SHIP WORLDWIDE



ALL COMMODORE CHIPS
AND PARTS AVAILABLE

Note-sized graphic on top. Banners use their own fonts, which are not compatible with system fonts. While you cannot have backgrounds or frames with Banners, you can sprinkle clip art and text throughout the letters.

Pelican Press also allows you to import IFF files. If you've created a favorite border in another paint program, or scanned an image from your photo collection, you can load them directly into Pelican Press—in any layer and design format. If you decide you want to touch up a piece of clip art, you can do it with the program's extensive array of drawing tools. Conversely, if you save all your projects as IFF files, you can use them with other paint and graphics programs. These are tremendous advantages over the first versions of PrintMaster (Unison World) and Deluxe Print (Electronic Arts), the two Amiga programs most similar to Pelican Press.

Pelican Press's Tool Box comes with a full complement of paint-box drawing and editing tools for working on backgrounds or clip art. The program also includes other features that lend credence to the claim that Pelican Press is a publishing program. You can move or copy a piece of clip art, position various clips in front of or behind other pieces, and delete those already in place. While you would expect to see these features in a desktop-publishing program, they are not normally found in a paint program.

The program's Menu items allow you to load and save your work, change your palette, and select and place your graphics and text. Some features, however, are more thoroughly developed than others. The Print requester reminds me of the one in DeluxePaint with lots of choices and parameters for designing your final output. You can create your own patterns for tiling a background, using any enclosed or user-supplied IFF graphic. You can even layer background patterns and stamp clip art into the background.

THE BIRD LANDS

As much as I like Pelican Press, there are some things I would have done differently. There should either be a wider selection of Banner fonts—the program provides only two—or a way to convert system fonts for making banners. Also, the Preview mode is ineffective for examining your layout; it's strictly for getting a broad sense of your design. In addition, although

there are many hot-key equivalents, there is no on-screen help to jog your memory. A simple text screen attached to the Help key would suffice. A magnify feature would certainly make detailing easier, and it would be wonderful if Undo worked its magic on any action, not just the last action involving a drawing tool.

The developers at Queue really did a nice job with Pelican Press. You would have a hard time finding one with this much power and versatility that's easier to use. It provides all the tools and features we have come to expect from a program of this type, plus an integrated paint program. It enables you to express your creativity in a format that is easy to understand and fun to use. My ten-year-old whisked it away from me the day the review copy arrived, and she's been making impressive banners and posters ever since. Now she wants a color printer for her birthday, so she won't have to hand-color the printouts!

NORGEN/YOUR FAMILY TREE

For those who dig roots.

By Betty Clay

IN JUST ABOUT any family, there is always one person who keeps track of all family members, living or dead. She's the only one who knows who is related to whom, and she's also the one who can identify all those strangers in the family albums. Genealogy is a keen interest of many. Then there are those who make it their life's study to scrupulously unravel—and link themselves to—the past.

Many people take their genealogy very seriously. Those who delve deep into musty records and spend hours looking for clues are pretty demanding when it comes to trusting the fruits of their labor to a computer. The Amiga's graphics, multitasking, and large memory capacity all make it excellent for genealogy. In addition, its compatibility with other platforms—via hardware such as Commodore's Bridgeboards or ReadySoft's A-Max, or conversion software such as CrossDOS (Consultron) or DOS-2-DOS (Central Coast Software)—make it ideal for exchanging data with other genealogists using foreign equipment.

While it would seem that the Amiga has every right to be the computer of

choice for genealogists, the appropriate software has been somewhat scarce. Only two such Amiga programs are now available: Norgen (\$99.95), from *Norris Software*, and Your Family Tree (\$79.95), from *MicroMaster*.

THE ACID TEST

Hard-disk installation for both Norgen and Your Family Tree (YFT), each with its own installation script, leaves something to be desired. With Norgen, all you do is double-click the install icon, but only if your setup agrees with the drive and partition names in the script. Should you need to change the name of the drive or partition, you must use an editor to change the actual installation script, save it to your disk, and then execute the edited script.

YFT has no icon for its script, and the earliest versions did not run because of syntax errors. The latest version (v2.1) works well, but it still has no icon, and the instructions never mention the script.

Anyone who can fill out a form on a typewriter will find data entry extremely easy in either of these programs. YFT is a far more attractive program visually. Its screens are colorful and thoughtfully laid out. Norgen's screens are easy to understand, as well, but they are plain and unimaginative. The program would profit greatly from some good artwork.

Norgen, a family-based program, presents you with a page that stores the name of an individual, along with information about his birth and death, the names of both his parents and all of his siblings, the name of his spouse, with wedding date and place, a list of their children, and a section for holding free-form text about this person. The completed page covers the entire family of the subject.

Once you have entered the siblings and the children of an individual, Norgen automatically transfers that data to a family sheet for each of those siblings or spouses. When working from my oldest ancestors towards the present, I found this to work reliably. When working from the present to the past, I frequently received an error message saying that the record could not be found, and I had to retype all of the data. This is a really useful feature, but it needs to be more dependable. For all its intended ease of entry, Norgen re-

Sideline Software

Hold On! How Low Can We Go???

1-800-888-9273

840 N.W. 57th Court Ft. Lauderdale Fla. 33309-Need Info? Call (305)-491-0398 Fax (305)-772-0334

Shipping Charges. Mastercard, Visa, American Express U.P.S. Ground \$5.00 For Up To 3 Pieces.

C.O.D. (Cash Only) U.P.S. Ground \$9.00 For Up To 3 Pieces. Next Day And Second Day Air Available!

We Ship All Over The World Please Call For Charges. Prices And Availability Are Subject To Change!

3D International Pool	13.95	Gunship	16.95	Starflight	18.95
3 Stooges	14.95	Hard Driving II	17.95	Starglider 2	14.95
Airstrike U.S.A.	17.95	Hollywood Poker Pro	9.95	Strider 2	18.95
Anarchy	14.95	Hotrod	9.95	Stunt Car Racer	16.95
Arcade Fever (2 Games)	16.95	Impossible Mission 2	14.95	Super Hangon	14.95
Archipelagos	9.95	It Came From The Desert	23.95	Super Off Road	16.95
Arkonoid 2	14.95	James Pond	16.95	Super Ice Hockey	14.95
Atomic Robokid	16.95	Journey	16.95	Sword Of Sodor	9.95
Austerlitz	14.95	Karate Kid 2	9.95	Swords Of Twilight	14.95
Baal	9.95	Keef The Thief	14.95	T.V. Basketball	23.95
Badlands	16.95	Killing Game Show	21.95	T.V. Sports Football	18.95
Ballgame	23.95	Kingdoms Of England	12.95	Test Drive	14.95
Ballistix	14.95	Klaxx	14.95	Theme Park Mystery	16.95
Bards Tale 2	14.95	Kult	14.95	Thunderblade	14.95
Batman The Movie	14.95	Legend Of Faragah	19.95	Thunderstrike	14.95
Battle Command	18.95	Light Corridor	14.95	Time Machine	18.95
Battle Tech	14.95	Line Of Fire	16.95	Tournament Golf	16.95
Betrayal	18.95	Loom	19.95	Treasure Trap	16.95
Blasteroids	14.95	Lords Of The Rising Sun	18.95	Tunnels-Armageddon	14.95
Blockout	14.95	Master Blazer	16.95	Turrican 2	23.95
Bloodmoney	14.95	Mean Streets	16.95	Vegas Gambler	14.95
Bloodwych	9.95	Midwinter	19.95	Viz	16.95
Budakon	18.95	Mighty Bomb Jack	16.95	Warhead	18.95
Cadaver	24.95	Monty Python	17.95	Warzone	23.95
California Games	14.95	M.U.D.S.	16.95	Waterloo	14.95
Captain Blood	9.95	Mystery Of The Mummy	9.95	Weird Dreams	14.95
Carrier Command	14.95	Narco Police	16.95	White Death	17.95
Carthage	17.95	Neuromancer	16.95	Windwalker	14.95
Chronoquest 2	14.95	Nightbreed	16.95	Wings	21.95
Collosus Chess X	16.95	Nightshift	16.95	Wings Of Death	16.95
Commando	16.95	Ninja Spirits	14.95	Wings Of Fury	16.95
Conflict In Europe	14.95	North & South	14.95	World Leaderboard	14.95
Conquerer	16.95	Overlander	13.95	Xenon 2	14.95
Corporation	19.95	P-47 Thunderbolt	14.95	Zak McKracken &	Both
Crackdown	14.95	Pacland	16.95	Indy Jones Advent.	21.95
Danarius	14.95	Pacmania	16.95	New Stuff!!	
Deathbringer	14.95	Paperboy	16.95	Gods	35.00
Demons Tomb	16.95	Paradroid 90	14.95	Hunter	35.00
Dig Dug	9.95	Pictionary	14.95	Metel Mutants	35.00
Distant Armies	19.95	Pirates	14.95	Gauntlet 3	35.00
Dragonbreed	14.95	Photon Paint 1.0	19.95	Dueteros	35.00
Dragons Breath	16.95	Photon Video	16.95	Epic	40.00
Dragon Flight	16.95	Plotting	18.95	Cadaver/Payoff	23.00
Dynasty Wars	14.95	Projectile	14.95	Life & Death	35.00
E-Swat	17.95	R-Type	19.95	Switchblade 2	35.00
Escape From Colditz	23.95	Red Storm Rising	14.95	Super Monaco Gp	35.00
Escape/Robot Monsters	17.95	Resolution 101	14.95	Bladewarrior	35.00
F/A 18 Interceptor	14.95	Rick Dangerous	14.95	Flight Of Intruder	42.00
Ferrari Formula 1	14.95	Road Blasters	12.95	Darkman	35.00
Firepower	16.95	Satan	18.95	Cruise For Corpse	40.00
Flintstones	14.95	Savage!	16.95	Midwinter 2	42.00
Flood	18.95	Shadow Of The Beast	13.95	Hero's Quest (UK)	35.00
Forgotten Worlds	14.95	Sherman M4	16.95	Railroad Tycoon	32.00
Frontline	19.95	Shockwave	14.95	F-15 Strike Eagle 2	32.00
Future Basketball	16.95	Shogun	16.95	Stratego	35.00
Games Summer Edition	14.95	Silent Service	16.95	Final Fight	35.00
Gauntlet 2	14.95	Silkworm	16.95	Shadow Dancer	35.00
Germ Crazy	23.95	Sly Spy	16.95		
Gold Of The Aztecs	17.95	Spy Who Loved Me	16.95		
Gremlins II	16.95	Spindizzy Worlds	17.95		

COMPILATIONS!!

Wheels Of Fire

Includes:
Turbo Outrun-Hard Driving
Chase H.Q.-Powerdrift
All For-\$19.95

T-N-T

Includes:
Dragon Spirit-Toobin
A.P.B.-Hard Driving-Xybots
All For--\$19.95

Heroes

Includes:
Star Wars-Barbarian 2
Running Man-License To Kill
All For--\$18.95

Monster Pack

Includes:
Shadow Of The Beast
Nitro-Infestation
All For--\$34.95

Amiga Classics

Includes:
Carrier Command
Starglider 2-Midwinter
All For--\$34.95

Power Pack

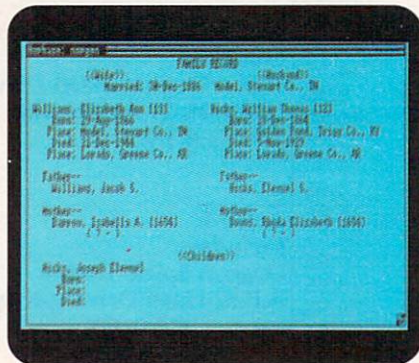
Includes:
T.V. Sports Football
Xenon 2-Bloodwych
Lombard Road Rally
All For--\$24.95

Euromags!

Amiga Format W/Disk	10.00
Amiga Action W/Disk	10.00
Amiga Power W/Disk	10.00
C.U. Amiga W/Disk	10.00
Amiga User W/Disk	10.00
Amiga Comp. W/Disk	10.00
Amiga Games W/Disk	10.00
Ace	6.00

quired me to retype many items that should be transferred automatically.

YFT is individual-based. It presents a page that asks for the name of the subject, the date and place of his birth, christening, death, and burial, his place of residence, his occupation, and his religion. After you complete the individual records of the subject and his parents, you link them into a family record on the screen provided. Then, all of the children of that set of parents are entered into another form, thereby linking all of the parents and children of a single family together.



Norgen lets you enter information about whole families.

This is a strong point in YFT's favor, because the data is easy to enter, and every screen shows you whether you have completed the information for the subject's family, parents, notes, and pictures. A click of the mouse lets you move to the next or previous individual, and a menu item permits you to jump to the record of any person in

the database.

WHO, WHAT, WHEN, AND WHERE

Entering dates is frequently a problem area, and each of these programs expects you to use a standard date format, with Norgen being especially picky. YFT will warn you if a date does not match the format, but you can disable this function if you wish.

Norgen insists that every date follow the pattern dd-mmm-yyyy, but it accepts question marks for digits about which you are unsure, and it will accept years without months or days. This is helpful, but not nearly as useful as the before-about-after dates that can be used in YFT.

YFT accepts up to eight marriages per individual, and up to 40 children per couple. I entered more than 20 marriages and more than 40 children in Norgen and still found no limit. Both programs place length restrictions on names: Norgen allows 30 characters each, but you can use a function key to get more space. YFT permits three separate first names, each up to 20 characters, and allows 60 spaces for place names. Both programs provide unlimited note space for each family or individual.

Both Norgen and YFT rely far too heavily on the use of ID numbers. While YFT will permit you to assign any number you wish to any person, including Ahnentafel and Henry numbers, you must know the ID before you can link records. With a database of thousands of names, this is ridiculous. At least each program prints alphabetical lists of names from the

database, with corresponding ID numbers. (YFT allows you to search by birthdate, as well.)

Neither program uses the Soundex system to account for variants in spelling, though YFT will permit searches using phonetic spelling. Norgen makes an effort to allow for spelling variations by permitting each person to have an alias.

Both Norgen and YFT boast a unique feature: Each can store and display IFF pictures of any individual or document. With Norgen, you must assign a User-Defined Field in order to



Individuals make up the branches of a family in Your Family Tree.

access this feature, with one picture per person allowed. On the other hand, YFT permits as many pictures as you like, and keeps track of them for you.

The most serious shortcoming of these programs is that they do not permit documentation of individual data items. Neither one has provision for a bibliography, and neither prints

The Experts — We Speak AMIGA World's Largest Seller of Amiga Specific Chips

The Speed Shop At Memory World

CSA Memory Nobody Cheaper!

68030 20 mhz.....450.00
68030 25 mhz.....539.00
68030 33 mhz.....599.00

All of the above with MMU
RAM & Math Chip Additional
Unbelievable package deals.

Mega Midget Racer Upgrades

Static RAM
128 x 8 70ns \$41.95 ea.

Memory Boards
4 Mg — \$599.00
8 Mg — \$799.00

Save 20% off any coprocessor with
purchase of MMR.

Exclusive at Memory World
Wholesale & Retail
APO / FPO, AK & HI, FOREIGN
FAX or Call for Shipping Charges

CSA Mega Midget Racer
38 Special
030 - 50 mhz/38 mhz
68882 - 50 mhz
with MMU \$799.00

CSA Mega Midget Racer
030 - 20 mhz with MMU
68881 - 20 mhz math chip
Nobody cheaper!
\$479.00

Memory Board
for HP Laser Printer
1 meg — \$89.00 2 meg — \$139.00
4 meg — \$205.00
Call for memory boards on other brand laser
printers. Oki — Panasonic — T.I. — Epson — others

MEMORY WORLD
Street Rd. & Bristol Pike
Plaza II, Suite 134
Bensalem, PA 19020
Attn: Amiga Dept.



WOW! AMIGA 1000
Memory
IN 1000 by Spirit
Internal 1 1/2 meg \$225.00

XRAM by Spirit
External 2 meg — \$299.00
expandable to 8 meg
for 500 or 1000

A3000 Memory
1 x 4 - 80 \$25.75 ea.
70ns — Call
Static Column Zips
1 x 4 DIPS — Call
1 x 4 Page ZIPS — Call

215-244-7930
FAX 215-244-7932
Add \$4.00 S/H Add \$4.00 COD
Visa / MC / Check / COD

SPECIAL
PURCHASE
1 x 8 - 100ns
SIMMS
\$39.95 ea.
4 x 8 - SIMMS Call
1 x 8 - 70ns \$50.50 ea.

GVP Accelerators In Stock
Accelerator Memory
4 meg — \$329.00
1 x 8 - 80ns Nibble Mode SIMMS
SIMM/32 Memory — Nobody Cheaper

GVP
A500 52 meg
Hard Drive \$549.00

GVP
A2000 Memory Brd.
Series II Impact
w/2 meg \$169.00
w/4 meg \$263.00

THE NEW MK II VERSION IS HERE!!



ONLY

\$99.99

AMIGA 2000 VERSION

\$119.99

SHIPPING & HANDLING \$4.00

NOW YOU CAN FREEZE MOST ANY PROGRAM AND MAKE A BACKUP AT THE PRESS OF A BUTTON!

YES, AMIGA ACTION REPLAY PLUGS INTO THE EXPANSION PORT OF YOUR AMIGA AND WORKS BY TAKING A SNAPSHOT OF THE WHOLE PROGRAM IN MEMORY AND SAVING IT TO DISK. THE BACKUPS WILL RELOAD COMPLETELY INDEPENDENTLY OF THE CARTRIDGE

BUT THAT'S NOT ALL... AMIGA ACTION REPLAY GOES EVEN FURTHER BY PROVIDING AN UNBELIEVABLE RANGE OF TOOLS FOR BOTH THE HACKER AND PROGRAMMER ALIKE

● SAVE THE ENTIRE PROGRAM IN MEMORY TO DISK

Special compacting techniques enable up to 3 programs to fit on one disk. Now saves directly to disk as Amiga Dos - reloads independently of the cartridge - even transfer to hard drive! Works with up to 2 Megs of Ram - even 1 Meg Chip Mem (Fatter Agnus).

● UNIQUE INFINITE LIFE/TRAINER MODE ● NOW MORE POWERFUL

Allows you to generate more and even infinite lives, fuel, ammo, etc. Perfect as a trainer mode to get you past that "impossible" level. Very easy to use.

● IMPROVED SPRITE EDITOR

The full Sprite Editor allows you to view/modify the whole sprite set including any "attached" sprites. RANGE OF IMPROVED FEATURES.

● VIRUS DETECTION

Comprehensive virus detection and removal features to protect your software investment. Works with all presently known viruses.

● SAVE PICTURES AND MUSIC TO DISK

Pictures and sound samples can be saved to disk. Files are saved directly IFF format suitable for use with all the major graphic and music packages. Samples are displayed as screen waveform.

● SLOW MOTION MODE

Now you can slow down the action to your own pace. Easily adjustable from full speed to 20% speed. Ideal to help you through the tricky parts!

● RESTART THE PROGRAM

Simply press a key and the program will continue where you left off.

● FULL STATUS REPORTING

At the press of a key now you can view the Machine Status, including Fast Ram, Chip Ram, RamDisk, Drive Status, etc.

● POWERFUL PICTURE EDITOR

Now you can manipulate and search for screens throughout memory. Over 50

commands to edit the picture plus unique on-screen status "overlay" shows all the information you could ever need to work on screens. No other product comes close to offering such dynamic screen handling of frozen programs!!

● MUSIC SOUND TRACKER

With Sound Tracker you can extract the complete music in programs, demos, etc. and save them to disk. Saves in format suitable for most track player programs. Works with loads of programs!!

● AUTOFIRE MANAGER

From the Action Replay II preference screen you can now set up autofire from 0 to 100%. Just imagine continuous fire power? Joystick 1 and 2 are set separately for that extra advantage!

● DISKCODER

With the new "Diskcoder" option you can now "tag" your disks with a unique code that will prevent the disk from being loaded by anyone else. "Tagged" disks will only reload when you enter the code. Very useful for security.

● PREFERENCES

Action Replay II now has screen colour preferences with menu setup. Customise your screens to suit your taste. Very simple to use.

● DISK MONITOR

invaluable disk monitor displays disk information in easy to understand format. Full modify/save options.

● DOS COMMANDS

Now you have a selection of DOS commands available at all times - DIR, FORMAT, COPY, DEVICE, etc.

● DISK COPY

Disk Copy at the press of a button - faster than Dos Copy. No need to load Workbench - available at all times.

● BOOT SELECTOR

Either DF0 or DF1 can be selected as the boot drive when working with Amiga Dos disks. Very useful to be able to boot from your external drive.

PLUS AN EVEN MORE POWERFUL MACHINE CODE FREEZER/MONITOR

EVEN MORE FEATURES INCLUDING 80 COLUMN DISPLAY AND 2 WAY SCROLLING:-

- Full M68000 Assembler/Disassembler
- Full Screen Editor
- Load/Save block
- Write string to memory
- Jump to specific address
- Show RAM as text
- Show frozen picture
- Play resident sample
- Show and edit all CPU registers and flags
- Calculator
- Help Command
- Full search feature
- Unique Custom Chip Editor allows you to see and modify all chip registers - even Write Only registers
- Notepad
- Disk handling - show actual track, Disk Sync pattern, etc.
- Dynamic breakpoint handling
- Show memory as HEX, ASCII, Assembler, Decimal
- Copper assemble/disassemble

REMEMBER AT ALL TIMES YOU ARE INTERROGATING THE PROGRAM IN ITS FROZEN STATE WITH ALL MEMORY AND REGISTERS INTACT - INVALUABLE FOR THE DE-BUGGER OR JUST THE INQUIRIOUS!

HOW TO GET YOUR Amiga Action Replay...

CALL TOLL FREE - 1-800-962-0494 - ORDERS ONLY

WE WILL PROCESS YOUR ORDER QUICKLY & EFFICIENTLY TO ENABLE YOU TO START RECEIVING THE BENEFITS OF YOUR AMIGA ACTION REPLAY WITHIN DAYS, NOT WEEKS. OUR MULTI-USER XENIX BASED ORDER PROCESSING SYSTEM CONTROLS YOUR ORDER FROM THE MOMENT YOU PLACE IT RIGHT THROUGH TO DESPATCH. ORDERS NORMALLY DESPATCHED WITHIN 48HRS.

COAST TO COAST TECHNOLOGIES INC.,

1855 W S.R.434, SUITE #208, LONGWOOD, FLORIDA 32750. TECHNICAL/CUSTOMER SERVICE (407) 767-0938



WE ACCEPT MASTERCARD
VISA/CHECKS/MONEY ORDERS
or COD's (ADD \$2)



*ADD \$4.00 SHIPPING AND HANDLING
(\$10.00 CANADA/MEXICO)
WE SHIP ALL GOODS 2nd DAY AIR UPS



out documentation on any kind of report. This makes them unsuitable for professional use.

It is true that you can include documentation in the space provided for notes, but this mixes documentation of line items with narratives. It is clumsy and inadequate. There should be separate provisions for footnotes and bibliographies.

Another area that needs improvement is error identification. In YFT, I was allowed to marry off a ten-year-old child without a complaint, although it did warn about a child born before the date of the parents' marriage! Norgen did not seem to mind a wife born a hundred years before her husband, nor was it bothered by a child born after his parents' death. Also, whereas Norgen would not accept a duplicate record, YFT accepted one without so much as a warning. Although genealogists ought to be particularly careful, typing errors happen, and checking for them makes a program far more valuable.

THE SEARCH

Both Norgen and YFT can search their databases to locate any individual or

group of individuals, and they permit the use of logical statements such as AND, OR, or EQUALS in order to select the individuals who fit the criteria. Each program lets you set up and save search criteria, and each offers extensive search options. Both programs' searching ability is outstanding for any genealogy program on any platform.

Norgen's reports are basic. It lists all individuals in the database alphabetically or by ID number. It makes pedigree charts, descendant charts (to 30 generations), family group records, and calendars of family anniversaries or events, and it will print out the entire database or search report. It also lets you print any screen with the touch of a key, and the results are attractive.

YFT's greater variety of reports includes descendant (to 99 generations) and pedigree charts, individual and family group sheets, and lists of individuals in the database. It also offers several forms of each of the standard charts. While it makes reports that are similar to Ahnentafel and Tiny Tafel charts, it does not follow the standard format required for them,

and the reports made by YFT could not be used to exchange data on the NGS or FIDO bulletin boards.

I did not find the YFT default charts to be as nicely formatted on the page as I would like, but the reports can be printed to disk, and then edited in any word processor before printing. YFT provides many ways for you to customize reports, whereas Norgen merely prints them according to its default standard.

THROWING THE BOOK AT THEM

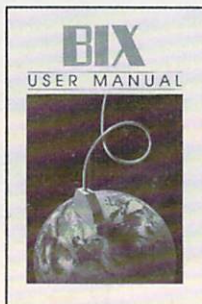
Publishing genealogists require software that converts input data into book format, complete with tables of contents, footnotes, and page indexes. It should be able to combine the information in the database with that in the text base (and even the picture base, if possible) to create a book that takes very little editing. This facility is available for a number of genealogy programs for other computers, but neither Norgen nor YFT has attempted such a capability. Perhaps this will come later.

While the developers of both programs say that they will provide GED-
Continued on p. 102.

Who helps Amiga Pros...

- ✓ Get quick answers to tough coding questions
- ✓ Interact with other Amiga Developers
- ✓ Download source code, utilities and other programs for the Amiga
- ✓ Keep up with the latest Amiga developments
- ✓ Send and receive private e-mail with binary attachments
- ✓ Chat with other Amiga users in real time

BIX - the online service for people who know Amiga.



800-227-2983 or 603-924-7681

For just \$39 every three months plus \$3 per connect hour weeknights and weekends or \$6 per connect hour weekdays you can tap the resources of BIX.

Don't miss out! Just have your computer and modem call 800-225-4129 or 617-861-9767 and subscribe on-line. It's easy, at the login prompt enter **bix** and at the Name? prompt enter **bix.amiga**.

BIX THE BIX SYSTEM

Circle 54 on Reader Service card.

TOASTER READY!

VIDEO CLIPSE™ by GSI

Amiga™ graphic enhancements for the Video Professional

- 20 BIG super-clean bitmap fonts
Hi-Res - from 100 to 160 points tall!!
Amiga™ & Toaster formats included
- 3 clip-art fonts (key assigned graphics)
special occasion / commercial / multi-use
- IFF backgrounds & brush patterns
Static: marble, wood, granite, sky...
Anims: starfield, countdown, globe...

SEE YOUR LOCAL DEALER

\$99.95 407/626-3447

Graphically Speaking, Inc.
2574 PGA Blvd., Suite 107
Palm Beach Gardens, FL 33410

7 DISK SET

Circle 70 on Reader Service card.

THE BUDDY SYSTEM™

- Learn by Using at YOUR pace!
- Hypermedia interface (*except DPaint III)
- Realtime Visual Demonstrations
- Speech Narration & Captioning
- Insightful, Enjoyable & Effective

Flattens The Learning Curves For:

DPaint III™, PageStream™, Imagine™, AmigaDOS™ 2.0...
*sold separately by their respective companies

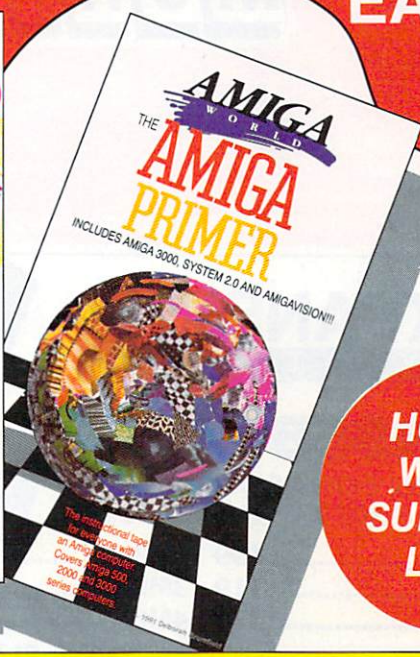
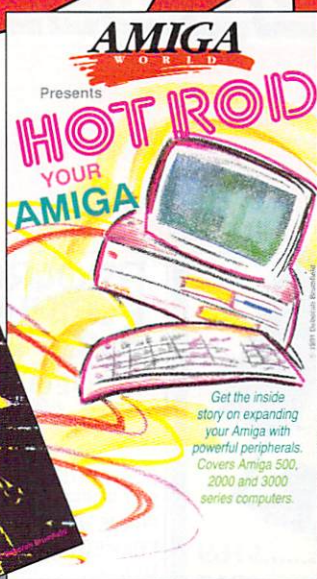
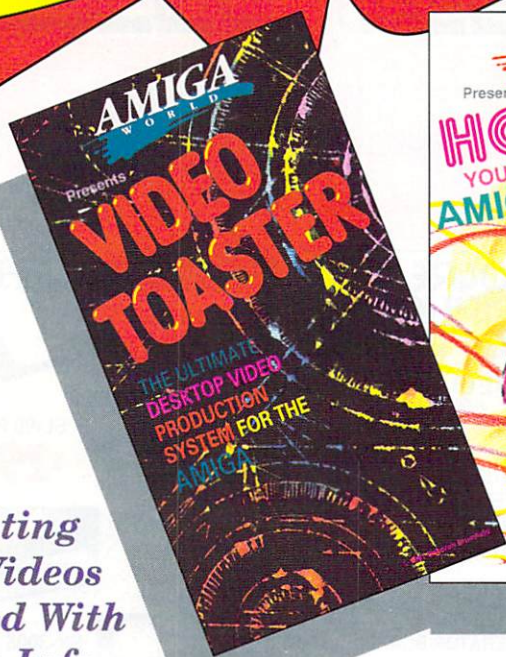
\$49.95 Suggested Retail

At Your Local Amiga™ Dealer
HelpDisk, Inc. (407) 694-1756
6671 W. Indiantown Rd. Jupiter, FL 33458

Circle 95 on Reader Service card.

**NEW 1991
RELEASES!**

**SAVE \$5!
EACH**



**HURRY
WHILE
SUPPLIES
LAST!**

**3 Exciting
New Videos
Packed With
Inside Info
And Hot Tips!**

VIDEO TOASTER

The Video Toaster® from NewTek is hailed as the world's first video computer card enabling broadcast-quality production on desktop! The VIDEO TOASTER videotape is indispensable for Amiga owners considering the purchase of a Toaster or those curious about all the excitement over this "revolutionary breakthrough in technology."

VIDEO TOASTER provides in-depth, comprehensive information on the Toaster's wide array of features and amazing capabilities. Topics covered include installing the Toaster in the Amiga 2000; adding and testing other essential equipment; selecting source material; and manipulation of the many digital video effects, including flips, tumbles, mirrors, spins, splits and titles. This video also illustrates how to generate and then superimpose letters over pictures, how to produce three-dimensional animations and how to paint on video images.

See for yourself what the excitement is all about!

HOT ROD!

HOT ROD YOUR AMIGA provides authoritative advice on how to achieve maximum power with your machine, whether you own a series 500, 2000 or 3000 Amiga.

HOT ROD YOUR AMIGA teaches you how to expand memory internally and externally. It provides valuable, in-depth information on selecting and installing hard drives, memory boards and accelerators; back-up software and utilities; RAM and drive space differences; and other "hot rodding" tips. It also covers high-end peripherals such as DCTV and the revolutionary Video Toaster®. Don't wait to soup up your Amiga!

PRIMER

The AMIGA PRIMER video provides step-by-step instructions covering the many features of the Amiga. Whether you're a new owner or an experienced user, this easy-to-follow video will prove invaluable. Packed with over 75 minutes of detailed information, THE AMIGA PRIMER teaches you in an entertaining format with vibrant graphics and upbeat music.

Gain the full benefits that the Amiga has to offer with this simple, quick and thorough video. The video includes information on all Amiga models, System 2.0 and AmigaVision®. It also covers the Amiga workbench, the CLI, peripherals and utilities. There's no easier way to master your Amiga!

1-800-343-0728

CALL TOLL FREE or mail this coupon.

☐ **YES!** I am eager to become an expert! Please send me the following videos:

- | | | | |
|--|---------|--------------------|----------------|
| <input type="checkbox"/> Video Toaster™ | \$24.95 | \$24.95 | \$19.95 |
| <input type="checkbox"/> Hot Rod Your Amiga..... | \$24.95 | \$24.95 | \$19.95 |
| <input type="checkbox"/> The Amiga Primer | \$29.95 | \$29.95 | \$24.95 |
| <input type="checkbox"/> Animation Video, Vol. One ... | \$19.95 | \$19.95 | \$14.95 |
| <input type="checkbox"/> Desktop Video, Vol. One | \$29.95 | \$29.95 | \$24.95 |
| <input type="checkbox"/> Amiga Graphics, Vol. One | \$29.95 | \$29.95 | \$24.95 |
| <input type="checkbox"/> The Musical Amiga | \$29.95 | \$29.95 | \$24.95 |
| <input type="checkbox"/> Animation Video, Vol. Two... | \$24.95 | \$24.95 | \$19.95 |

☐ Check/Money Order ☐ MasterCard ☐ VISA ☐ AmEx

Make checks payable to TechMedia Video.

☐ Discover

Please include \$2.95 shipping & handling for one video, \$5.00 for two or more.

Canadian orders add 7% GST (GST reg. #126038405) Total Amt. \$ _____

Acct. # _____ Exp. Date _____

Signature _____

Name _____

Address _____

City/State/Zip _____

VID1091

**TECHMEDIA
VIDEO**

PO Box 802, 80 Elm Street, Peterborough, NH 03458 603-924-0100
An IDG Communications Company

Available in VHS only. Please allow 4-6 weeks for delivery. Foreign orders: add \$7.50 for airmail delivery; \$18 for two or more videos. Payment must be made in U.S. funds drawn on U.S. banks. TechMedia Video is the licensed North American distributor of AmigaWorld Videos. © 1989, 1990, 1991 by Razza Video USA. All Rights Reserved. Amiga is a registered trademark of Commodore Business Machines, Inc. Video Toaster is a trademark of NewTek, Inc. DCTV is a trademark of Digital Creations.

FOR ORDERS &
INFORMATION IN USA
AND CANADA CALL

1 (800) 759-6565

OUTSIDE USA & CANADA CALL (718) 965-9077

Order Hrs. Mon-Thurs: 9-7/Fri:9-5/CLOSED Sat/OPEN Sun:9-30-6(ET)

ESTABLISHED
1967

AMIGA WORLD 10.91

MONTGOMERY GRANT

OR WRITE TO

MONTGOMERY GRANT
MAIL ORDER DEPARTMENT
33 34TH STREET DEPT. A,
BROOKLYN, NY 11232

RETAIL OUTLET

PENN STATION, MAIN CONCOURSE, NYC, 10001
(Beneath Madison Square Garden)

OPEN: Mon-Thurs 9:30-7/Fri 8:30-5/CLOSED Sat/
OPEN Sun 9:30-7(ET)

FOR CUSTOMER SERVICE & ORDER STATUS CALL
(718) 965-9285

CUSTOMER SERVICE HOURS
Mon-Thurs:9-5/ Fri:9-4 / Sun: 10-4 (ET)

FAX #718-965-8689/ TELEX 422132MGRANT

WE INVITE CORPORATE AND EDUCATIONAL CUSTOMERS • DISCOUNTS FOR QUANTITY ORDERS • NEXT DAY & SECOND DAY DELIVERY AVAILABLE ON REQUEST

EXPANSION SYSTEMS

BASEBOARD

MEMORY EXPANSION FOR A-500
(USES A-501 EXPANSION SLOT)

OK.....	\$99	2MB.....	\$169
512K.....	\$119	3MB.....	\$219
1MB.....	\$129	4MB.....	\$249

HEAVY DUTY
POWER SUPPLY FOR
AMIGA 500

\$79

DATA FLYER

LOW COST SCSI INTERFACE

A-2000.....	\$85
A-500.....	\$139

EXP. SYSTEMS RAM BOARD 8/O...CALL

PROGRESSIVE PERIPHERALS & SOFTWARE

VIDEO BLENDER \$1139

DISKMASTER II.....	\$49.95
3D PROFESSIONAL 2.0.....	\$239
FRAMEGRABBER 256.....	\$499
FRAMEGRABBER.....	\$419
MINIGEN.....	\$179
VIDEO SWITCHER.....	\$379

NEW 68040/3000
ACCELERATOR BOARD.....\$1495

68040/2000 ACCELERATOR BOARD

(exp. to 32MB RAM)

\$1695

SEIKOSHA

LT-20

\$289



SL-90 PLUS

\$299



SP-2415

\$299



SK-3005 PLUS

\$399



SP-2000 PLUS

\$309

AMIGA 500 & AMIGA 2000 COMPATIBLE HARD DRIVE PACKAGES

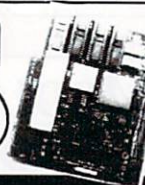
INCLUDES
CABLE &
SOFTWARE

SCSI CONTROLLERS

DRIVE	DRIVE PRICE	AdSCSI 2080 A-2000 (exp. to 8MB)	CALIF ACCESS MALIBU BOARD 2000	DATA FLYER A-2000 (exp. to 8MB)	GRAND SLAM 2000 (exp. to 8MB)	GVP Series II HC A-2000	GVP Series II HC80 A-2000	RAPID ACCESS TURBO A-2000 (exp. to 8MB)	TRUMP CARD 2000 (exp. to 4MB)	DATA FLYER A-500 (exp. to 8MB)	GRAND SLAM 500 (exp. to 8MB)	RAPID ACCESS TURBO 500 A-500 (exp. to 8MB)	TRUMP CARD A500 (exp. to 4MB)	XETEC FASTTRACK A 500/A 1000 (exp. to 8MB)
SEAGATE ST-325N (20MB)	\$159	\$329	\$279	\$229	\$399	\$299	\$349	\$379	\$269	\$289	\$455	\$419	\$349	\$449
SEAGATE ST-157N-1 (49MB 28MS)	\$215	\$369	\$329	\$279	\$449	\$349	\$395	\$439	\$319	\$339	\$519	\$479	\$399	\$515
SEAGATE ST-1096N (80MB 3.5")	\$325	\$479	\$429	\$389	\$549	\$455	\$499	\$554	\$429	\$429	\$619	\$589	\$499	\$624
QUANTUM (52MB Low Profile)	\$249	\$395	\$369	\$319	\$489	\$389	\$429	\$469	\$359	\$365	\$549	\$509	\$429	\$529
QUANTUM (105MB Low Profile)	\$379	\$539	\$499	\$449	\$619	\$519	\$559	\$619	\$489	\$499	\$679	\$639	\$569	\$669
QUANTUM (210MB)	\$719	\$869	\$809	\$779	\$929	\$839	\$879	\$939	\$809	\$839	\$999	\$979	\$879	\$1009

CSA

Math
Co-processor
& 32 bit memory
boards
available



MEGAMIDGET ECONOMY (A-500, A-2000)

25MHz
\$475

33MHz
\$555

MEGAMIDGET RACER (A-500, A-2000)

25MHz
\$589

33MHz
\$679

BODEGA BAY By CALIFORNIA ACCESS

Expansion Console -
Turn your Amiga 500 into
a A-2000 Compatible

CALL

FOR LOW PRICE!



NEW!

CALIFORNIA
ACCESS & MALIBU
BOARD BUNDLE
CALL

Certified check, Bank Check Money Orders, Approved P.O.s, Visa, Mastercard, Amex, Optima, Diners Club, Carte-Blanche, COD's & Wire Transfers accepted. Please call before submitting P.O.s. Non-certified checks must wait 2-4 weeks for clearance. Prices and availability subject to change without notice. Not responsible for typographic errors. Return of defective merchandise must have prior return authorization number or returns will not be accepted. Please add 5% shipping & handling (minimum \$3). Orders over \$1200 are discounted to 3% shipping & handling. Orders over \$3000 are discounted to 2% shipping & handling. Canadian orders please call for shipping rates. APO FPO orders please add 10% shipping & handling, minimum \$15. (Over \$1200-8%, Over \$3000-5%). All APO FPO orders are shipped first class priority air. Second day & Next day Air available at extra cost. We check for credit card theft. DCA #800233. Amiga is a registered trademark of Commodore Amiga, Inc.

VIDEO TOASTER

CALL for our LOW, LOW PRICE!

NEWTEK
VIDEO
TOASTER BOX
ALL-IN-ONE
VIDEO
PRODUCTION
SYSTEM-CALL
FOR LOW
PRICE

DPS Personal TBC

\$729

MANY OTHER TIME BASE
CORRECTORS AVAILABLE

TOASTER
TUTORIAL
TAPES

\$19.95



SPECIAL!
NEW LOW
PRICING

GRANDSLAM
500
\$279

GRANDSLAM
2000
\$229

TRUMPCARD 500 PRO.....\$229

TRUMPCARD 2000 PRO.....\$179

SEE OUR HARD DRIVE PRICING FOR
GREAT PACKAGE DEALS!



SUPRA
RAM 500 **\$47**

SUPRA RAM 500RX

1MB...**\$128** 2MB...**\$189**

**500XP HARD DRIVE
KITS**

Expandable to 8MB

512K, 20MB	\$349
512K, 52MB	\$475
512K, 80MB	\$559
512K, 105MB	\$655
2MB, 20MB	\$459
2MB, 52MB	\$499
2MB, 52MB, (1MBx4)	\$555
2MB, 80MB	\$639
2MB, 105MB	\$715
2MB, 105MB (1MBx4)	\$725



SUPRA RAM 2000

OK.....	\$105
2MB.....	\$169
4MB.....	\$235
6MB.....	\$299
8MB.....	\$369

SUPRA MODEMS

2400B External w/cable	\$95
2400 MNP	\$145
2400 PLUS w/MNP5V. 42 bis	\$139
2400 Zi PLUS Internal	\$159
9600 PLUS	\$499

SUPRA WORDSYNC CONTROLLER	\$99
SUPRA 3.5 EXTERNAL DRIVE	\$98



PRIMA 52i
\$499

PRIMA 105i
\$699

AD-SPEED ACCELERATOR **\$219**
For All AMIGA Computers
(14.3 MHz)

AD-RAM 2080 Memory Expansion for A-2000.....	\$129
AdSCSI 2000.....	\$139
AdSCSI 2080 Expandable to 8MB.....	\$169

NOVIA 20i 20MB Internal
Drive for A-500 **\$459**

NOVIA 40i.....	\$699
NOVIA 60i.....	\$899

ADIDE 40	\$99
ADIDE 44	\$119

**FLICKER FREE
VIDEO \$299**

ICD AD-RAM **\$96**
540 OK

ICD AD-RAM 540 1MB.....	\$135
ICD AD-RAM 540 2MB.....	\$179
ICD AD-RAM 540 3MB.....	\$219
ICD AD-RAM 540 4MB.....	\$249

ADIDE INTERNAL HARD DRIVE PACKAGES FOR AMIGA 500

SEAGATE 20MB	SEAGATE 40MB	QUANTUM 52MB LPS	QUANTUM 105MB LPS
\$279	\$339	\$369	\$529

Package includes: ADIDE, Shuffleboard, Software, Cables and Mounting Hardware

AMIGA 500
AMIGA 2500
AMIGA 3000

AMIGA™

AMIGA 2000
AMIGA 2000 HD
AMIGA 3000

COMMODORE
CDTV
New!
CALL!

**ALL MODELS
PRICED SO LOW
WE ARE NOT PERMITTED
TO PRINT THEM!!**

UNIX



NEXUS 8/0 HD
CONTROLLER
\$239

ADVANCED
STORAGE SYSTEMS

FLASHBACK \$42.95

SPECTRUM 24 Bit Real Time Fram Grabber	CALL
NEXUS 500 8/0 Chassis	CALL



AMTRAC
TRACKBALL
\$62.95

Specials!!
COMMODORE
1084
RGB COLOR **\$269**
MONITOR
COMMODORE
1950
MULTISCAN **\$509**
MONITOR



TURN PAGE FOR
MORE AMIGA VALUES

FOR ORDERS &
INFORMATION IN USA
AND CANADA CALL

1 (800) 759-6565

OUTSIDE USA & CANADA CALL (718) 965-9077
Order Hrs. Mon-Thurs: 9-7/Fri:9-5/CLOSED Sat/OPEN Sun:9-30-6(ET)

ESTABLISHED
1967

AMIGA WORLD 10.91

MONTGOMERY GRANT

OR WRITE TO

MONTGOMERY GRANT
MAIL ORDER DEPARTMENT
33 34TH STREET DEPT. A,
BROOKLYN, NY 11232

RETAIL OUTLET

PENN STATION, MAIN CONCOURSE, NYC, 10001
(Beneath Madison Square Garden)

OPEN: Mon-Thurs 9:30-7/Fri 8:30-5/CLOSED Sat/
OPEN Sun 9:30-7(ET)

FOR CUSTOMER SERVICE & ORDER STATUS CALL
(718) 965-9285

CUSTOMER SERVICE HOURS
Mon-Thurs: 9-5/ Fri: 9-4 / Sun: 10-4 (ET)

FAX #718-965-8689/ TELEX 422132MGRANT



• NO SURCHARGE FOR CREDIT CARD ORDERS • CUSTOMER TOLL-FREE TECHNICAL SUPPORT



ALLSOP

**COMPLETE
OFFICE CARE KIT \$22.00**

Disk File/60 \$8.50
Disk File/60 w/lock \$9.95
Disk File/30 Micro \$7.95
Disk File/30 Micro w/lock \$9.50
Disk File/10 \$3.95
Disk File/10 Micro \$3.95
Cleaning System (3.5" & 5.25") \$10.95

MOUSE CATCH w/Cleaning Kit \$6.00

Drive Maintenance Kit \$4.50
Printer Stand \$9.95
Printer Stand w/Paper Tray \$13.95
Copy Catch \$3.95
Air Duster \$8.95

GOLD DISK

SHOWMAKER

\$215

**ADVENTURES
IN MATH**

\$21.95

**SEX
OLYMPICS**

\$23.50

GOLD DISK

PROFESSIONAL

PAGE 2.0 \$185
GOLD DISK OFFICE \$159
HYPERBOOK \$69
PAGESETTER II \$69
TRANWRITE \$39
PRO DRAW 2.0 \$119

AMIGA SOFTWARE SPECIALS

CDTV TITLES	
ADV. MILITARY SYSTEMS	\$27.95
ALL DOGS GO TO HEAVEN	\$32.95
AMERICAN HERITAGE DICTIONARY	\$49.95
BARNEY BEAR CAMP	\$25.95
BARNEY BEAR SCHOOL	\$19.95
BARNEY BEAR SPACE	\$19.95
CASE OF THE CONDOR	\$32.95
CLASSIC BOARD GAMES	\$30.95
FRED FISH COLLECTION	\$45.95
LEMMINGS	\$34.95
MY PAINT	\$32.95
SEMI CITY	\$51.95
TIMETABLE SCIENCE	\$42.95
WORLD VISTA	\$62.95
WRATH OF THE DEMON	\$30.95
EDUCATION	
ADVENTURES IN MATH	\$21.95
BARNEY BEAR CAMP	\$19.95
BARNEY BEAR FARM	\$19.95
BARNEY BEAR SCHOOL	\$19.95
BARNEY BEAR SPACE	\$19.95
DISCOVERY 2.0 EDUCATIONAL	\$44.95
HOW TO ADDITION	\$19.95
HOW TO SUBTRACTION	\$19.95
INTRODUCING MAPS	\$37.95
NATIONS OF THE WORLD	\$75.95
FONTS	
1 ST PRIZE TOASTER FONTS	\$40.50
CINNAMON TOAST FONTS VOL. 2	\$59.95
INTERFONTS	\$67.95
KARAFONTS	\$29.95
KARAFONTS	\$29.95
HEADLINES II	\$43.95
SUBHEADS	\$39.95
MASTERPIECE 3D FONTS	\$63.95
MASTERPIECE FONTS	\$139.95
MASTERPIECE TOASTER	\$97.95
PAGESTREAM FONTS	\$25.95
PRO FONTS 1	\$19.95
PRO FONTS 2	\$19.95
ULTRA DESIGN	\$139.00
ZUMA FONT PACK I	\$54.95
ZUMA FONT PACK II	\$54.95
DRAWING/CAD	
AEGISDRAW 2000	\$165.00
DECKBUILDER SCAD	\$49.95
DRAW 4-D	\$147.00
DYNA-CADD	\$699.00
HOMEBUILDER SCAD	\$119.00
INTRO CAD	\$36.95
INTRO CAD PLUS	\$64.95
PRODRAW 2.0	\$105.00
X-CAD DESIGNER II	\$70.00
X-CAD PROFESSIONAL	\$129.95
X-SHELL	\$115.00
GRAPHICS PROGRAMS	
3D PROFESSIONAL 3.0	\$239.95
ART DEPARTMENT	\$51.95
ART DEPARTMENT PRO	\$129.00
AUTOSCRIPT	\$79.95
BROADCAST TITLER II	\$211.00
SCALA	\$263.00
SCREEN GENERATOR	\$29.95
SCREEN ANIMATOR	\$65.00
SCREEN MAKER	\$239.00
SAMPLER	\$64.95
SCULPT 3D XL	\$111.00
SOFT CLIPS	\$44.95

CALIGARI CONSUMER	\$154.95
CELL PRO	\$51.95
CREDIT SETTER II	\$40.00
CREDIT TEXT SCROLLER	\$25.95
DELUXE PAINT III	\$92.50
DELUXE PAINT IV	\$119.95
DELUXE VIDEO III	\$104.95
DIGIPAIN III	\$62.00
DIGIWORKS 3D	\$83.50
DIRECTOR, THE	\$64.50
DISTANT SUNS V4.0	\$59.95
ELAN PERFORMER	\$89.95
FRACAL PRO	\$55.95
HAMITUP	\$23.00
IMAGELINK	\$118.00
IMAGINE	\$179.00
INVISION PLUS	\$180.00
MACROPAINT	\$78.00
MATHWISCON	\$50.95
MEGAPAIN	\$169.00
MODELER 3D	\$64.95
MY PAINT 2.0	\$29.50
MY PAINT w/DATA DISK	\$31.95
PAGERENDER 3D	\$92.50
PHOTON PAINT 2.0	\$85.95
PIXIMATE	\$40.50
PRO MOTION	\$62.95
PRO PAGE OUTLINE CG	\$127.00
PROJECTOR	\$177.00
SCALA	\$263.00
SCENE GENERATOR	\$29.95
SCREEN ANIMATOR	\$65.00
SCREEN MAKER	\$239.00
SAMPLER	\$64.95
SCULPT 3D XL	\$111.00
SOFT CLIPS	\$44.95
SPECTRACOLOR	\$60.50/HE
MULTI MEDIA KIT	\$34.00
TITLE PAGE	\$109.00
TV GRAPHICS	\$27.95
TV SHOW VERSION 2	\$56.95
TV TEXT PRO	\$95.00
VIDEO EFFECTS 3-D	\$105.00
VIDEO TITLES 3-D	\$89.95
VIDEO TOOLS	\$180.00
VISTA 1.2	\$54.50
VISTA PRO	\$81.00
XOR	\$199.00
MUSIC SOFTWARE	
AUDIOMASTER III	\$60.50
AUDITION	\$62.95
BARS AND PIPES	\$115.00
BARS AND PIPES PRO	\$205.00
DELUXE MUSIC CONSTRUCTION	\$68.95
DR. T COPYIST APPR	\$73.95
DR. T COPYIST DTP	\$185.00
DR. T'S KC'S COPYIST	\$209.00
DR. T'S KC'S 3.0	\$157.00
DR. T'S KC'S LEVEL II	\$215.00
EASY FM	\$37.95
HYPERCORD	\$93.95
INTERNAL SOUND KITS	\$34.00
MASTERTRAX PRO	\$219.00
MIDI X	\$179.95
MUSIC BOX	\$34.00
MUSIC X JR	\$92.95
PHANTOM MIDI	\$199.00
PIXOUND	\$60.95
SONIX	\$49.50
SOUNDQUEST	\$139.00
MIDQUEST	\$74.95
SYNTHIA II	\$236.00
SYNTHIA PRO	\$236.00
TIGER CUB	\$62.95
TRAX MIDISTUDIO	\$56.00
PRODUCTIVITY	
ACCOUNTANT	\$184.95
ADVANTAGE	\$109.00
AMIGA APPETIZER	\$19.95
AMOS	\$57.95
ANALYZE	\$62.95
CANDO	\$83.50
CANDO (PAL)	\$99.50
DB MAN V	\$174.00
DESKTOP BUDGET	\$40.50
EASYLEDGER	\$189.00
EXCELLENCE 2.0	\$104.95
FLOW	\$56.00
GOLD DISK OFFICE	\$172.00
MAXIPLANPLUS	\$60.50
PAGESETTER II	\$69.00
PAGESTREAM 2.1	\$174.00
PHASAR 4.0	\$54.50
POWERWORKS VER. 2	\$122.95
PRINTMASTER PLUS	\$25.95
PRO PAGE 2.0	\$185.00
PROWRITE 3.1	\$91.00
PROPER GRAMMAR	\$59.95
PROSCRIPT	\$37.00
QUICKWRITE	\$43.95

QUICKFORMS	\$25.95
PAGESTREAM	\$25.95
SAXON PUBLISHER	\$219.00
SCRIBBLE PLATINUM	\$58.50
SECRETARY	\$31.95
SUPERBASE IV	\$299.00
SUPERBASE PERSONAL	\$279.95
SUPERBASE PRO	\$188.00
SUPERPLAN	\$89.95
TEACHERS TOOL KIT	\$35.95
TRANWRITE	\$39.00
TURBOTEXT	\$62.95
VIP PRO	\$61.95
WORDPERFECT	\$160.00
WORKS PLATINUM	\$99.95
DOCTOR AMI	\$28.95
DOS 2 DOS	\$30.95
DRIVE ALIGNMENT KIT	\$27.95
DUNLAP UTILITIES	\$45.00
EXPRESS COPY V1.5	\$29.00
FLASHBACK	\$42.95
HYPERHELPERS	\$37.95
PROJECT D	\$31.95
QUARTERBACK 4.2	\$58.00
QUARTERBACK TOOLS	\$49.50
RAW COPY	\$34.95
SCANNERY	\$24.00
RULES FOR TOOLS	\$189.00
SUPERBACK	\$51.95
VOR ONE	\$109.00
W-SHELL	\$27.95
X-COPY PRO	\$45.00
PROGRAMMING	
A.C.BASIC	\$125.00
A.C.FORTRAN	\$169.00
AMIGA VISION	\$74.50
ARREX	\$29.95
AZTEC C PRO	\$119.00
AZTEC COMPILER	\$119.00
DEV V.5.0 A	\$175.00
BLITZ BASIC	\$99.95
DEV PACK ASSEMBLER	\$63.95
LATTICE C++	\$105.00
LATTICE C.5.1	\$192.00
UTILITY SOFTWARE	
ALIGNMENT KIT	\$29.00
B.A.D. V4	\$30.50
BYTE 'N BACK	\$29.95
CANDO INTRAPAK	\$23.95
CANDO PROPAK 1	\$23.50
COPYRIGHT	\$34.95
CROSS DOS VERSION IV	\$23.95
D.U.D.E	\$32.00
DISK MASTER II	\$44.95
VIDEO SOFTWARE	
3D TEXT ANIMATOR	\$29.95
ALTER IMAGE FX	\$129.95
ANIMAG	\$86.50
CELL ANIMATOR	\$89.95
DIGIMATE II	\$23.50
DIGIVIEW GOLD 4.0	\$119.00
DISNEY ANIMATION STUDIO	\$79.95
MOVIESETTER	\$38.95
PRO VIDEO GOLD	\$131.00
PRO VIDEO PLUS (PAL)	\$189.00
PRO VIDEO POST	\$139.00
PRO VIDEO POST (PAL)	\$179.00
SCULPT 4D	\$319.00
SCULPT 4D JR	\$92.95
SHOWMAKER	\$215.00
TURBO SILVER 3.0	\$58.00
TURBO SILVER	\$109.95
W-TERRAIN	\$109.95
VIDEOSCAPE 3D	\$120.00

**ZUMA
TV SHOW ver. 2
\$56.95**

TV TEXT PRO \$95.00
ZUMA FONT PACK 1 \$54.95
ZUMA FONT PACK 2 \$54.95

**MICROPROSE
F-15 STRIKE
EAGLE II
\$32.95**

RAILROAD TYCOON \$32.95
UNIVERSAL MILITARY SIMULATOR II \$34.95
F19 STEALTH \$31.95

**SoftWood,
PROPER
GRAMMER
\$57.95**

SOFT CLIPS \$44.95
Buy Any Amiga Word Processor & Proper Grammer together & save \$5 off our already discounted price.
Buy All Four Volumes of Soft Clips Clip Art for the Incredible price of \$160 for All four.

**THE OTHER GUYS
SYNTHIA
PRO
\$236**

SYNTHIA II \$74.95
EASY FM \$37.95

AMIGA COMPATIBLE ACCESSORIES AND PERIPHERALS

AMIGA 1000 RF Modulator	\$19
AMIGA 1.3 ROM (8850)	\$39
AMIGA 1MB Fatter Agnus Chip (8372A)	\$99
AMIGA 2MB Super Agnus Chip	\$109
AMAX II Emulator	\$129
CHINON Internal Drive A-2000	\$79
CHROMAKEY	\$329
COLORBURST	\$679
COLOR SPLITTER	\$105
DAKOTA Sketchmaster 12 x 12	\$369
DAKOTA Sketchmaster 12 x 18	\$569
EPSON Full Page Color Scanner	\$1199
FLICKER FIXER	\$219
HAM E	\$289
HAM E Plus	\$419
GOLDEN IMAGE Cordless Mouse	CALL
GOLDEN IMAGE Cordless Trackball	CALL
Master 3A-1 Disk Drive	\$79
Monitor Stand	\$23.50
NEC 3D-S Monitor	\$599
Golden Image Handsanner	\$239
PANASONIC 1410 Camera & Accessories	CALL

JOYSTICK

EPYX 500JX Joystick	\$16.00
Freedom Connection Joystick	\$26.00
Gravis Clear Joystick	\$35.50
Gravis Switch Joystick	\$32.00
Gravis Mousestick	\$64.00
Max Yoke Joystick	\$76.95
Slick Stick Joystick	\$7.95
Wico Black Max Joystick	\$9.95
Wico Ergostick	\$17.50
Zoomer Joystick	\$45.00

ROCTEC ROCKNIGHT Virus Protector	\$45
ROCTEC 3.5" External Drive	\$89
ROCTEC 5.25" External Drive	\$149
Sharp JX-100 Color Scanner	
w/Software & Cables	\$645
SHARP JX-450	\$4999
Stereo Speakers	\$29
SYQUEST 44MB Removable HD w/Cartridge	\$399
SYQUEST 88MB Removable HD w/Cartridge	\$639

DUST COVER

A1084	\$6.50	A2000	\$5.95
A1950	\$6.50	A3000	\$5.95
A500	\$5.95	A2000 & 1084	\$10.95
A3000 & A1950	\$10.95		

DCTV \$369

SUPERGEN \$599 KITCHEN SYNC CALL

AMIGA 500 EXPANSION KIT \$119

• MASTER 3A-1 DRIVE
• GOLDEN IMAGE 512K w/CLOCK CALENDAR

SAFESKIN

A500	\$16.95	A2000	\$16.95
A1000	\$16.95	A3000	\$16.95

GENLOCKS

Minigen	\$184	Supergen	\$599
Rocgen	\$229	Supergen 2000S	\$1339
Magni 4004S			\$1029

PRINTER SPECIALS

HEWLETT PACKARD		PANASONIC	
DESKJET 500	\$549	KXP-1180	\$169
LASERJET IIP w/Toner	\$949	KXP-1123	\$249
LASERJET III w/Toner	\$1649	KXP-1124i	\$319
LASERJET III P w/Toner	\$1149	KXP-1624	\$399
		KXP-1654	\$629

CITIZEN		STAR	
GSX-130	\$259	NX-1001	\$159
GSX-140	\$279	NX-1020R	\$199
GSX-145 (wide carriage)	\$399	NX-2020	\$299
GSX-140 PLUS	\$319	NX-2420R	\$329
GX-200	\$169		
GX-200-15	\$319	COMMODORE	
COLOR OPTION KITS	CALL	MPS-1270 INKJET	\$139.95

THE BLUE RIBBON SOUNDWORKS LTD



BAR & PIPES PRO \$205

BAR & PIPES	\$104.95
MULTIMEDIA KIT	\$34.00
MUSIC BOX A	\$34.00
MUSIC BOX B	\$34.00
INTERNAL SOUND KITS	\$34.00
RULES FOR TOOLS	\$34.00



VISTA PRO

24 Bit Color, Trees

\$81

ASDG

ART DEPARTMENT PROFESSIONAL

Image Processing's Common Ground!

\$129

EPSON ES-300 C DRIVER FOR ADPRO
Includes Stand-alone scan-to-disk driver and ADPRO module. No special board needed!

\$129

EPSON ES-300 C Full Page
Color Scanner w/ADPRO Driver & Cables \$1299

MICRO R&D

MOUSE SWITCH BOX \$21.95

BIGFOOT

150 W Power Supply for A-500.
Powers 5 Hard & 5 Floppy Drives
& at same time can power
an XP or Trumppcard
w/proper adaptor

\$89

ORDER BY PHONE -OR- MAIL IN THIS FORM

- See disclaimer at bottom of this page for shipping information.
- Mail this order form to: Montgomery Grant at: 33 34th Street, Dept. A, Brooklyn, NY 11232

Name _____
Address _____
City _____ State _____ Zip _____
Country _____
Day Phone # () _____ Night Phone # () _____

QTY.	PRODUCT NAME	UNIT PRICE	TOTAL

SHIPPING METHOD: (Call for rates) SALES TAX (NY Residents only)
☐ UPS Ground ☐ Other _____ SHIPPING _____

METHOD OF PAYMENT
☐ Check ☐ Money Order ☐ Visa ☐ MasterCard ☐ American Express ☐ Diner's Club / Carteblanche

CREDIT CARD USERS ONLY:
Credit Card # _____ Exp. Date _____

Signature _____

AMIGA GAMES SOFTWARE

688 ATTACK SUB	\$37.95	CENTERFOLD SQUARES	\$19.50
A-10 TANK KILLER	\$30.95	CENTURIAN	\$36.95
ABYSS	\$25.00	DEFEND ROME	\$34.00
ACTION STATIONS	\$31.95	CHAMPIONS OF KRYNN	\$36.95
ADV. FLT. TRAINER 2.0	\$29.00	CHAOS STRIKES BACK	\$23.50
AFRIKA KOPES	\$31.95	CHARGE OF THE LIGHT	\$31.95
AMERICAN DREAMS	\$31.95	CHECKMATE	\$34.50
ARACHNOPHOBIA	\$27.95	CHESSMASTER 2100	\$32.95
ARCADE FEVER	\$29.00	CODE NAME ICEMAN	\$36.50
ARMADA 25-25	\$34.50	CONTINUUM	\$31.95
ARMOR-GEDDON	\$28.00	COWARD FORCE	\$39.95
AT-II	\$38.95	CRACKDOWN	\$31.95
ATOMINO	\$31.95	CRACKDOWN	\$31.95
AWESOME	\$36.50	CRIME DOES NOT PAY	\$31.95
BACK TO THE FUTURE II	\$25.50	CRIME WAVE	\$32.95
BANDIT KINGS OF CHINA	\$36.50	CYBERCON II	\$31.95
BANE OF THE		DARK CENTURY	\$29.00
COSMIC FORCE	\$37.00	DAS BOOT	\$34.00
BARD STALE II	\$35.50	DEATH KNIGHTS	
BAT	\$39.95	OF KRYNN	\$34.50
BATMAN THE MOVIE	\$29.95	DEFENDERS	
BATTLE CHESS	\$31.95	OF THE EARTH	\$25.95
BATTLE CHESS II	\$31.95	DESIGNWORKS	\$69.95
BATTLE COMMAND	\$27.95	DICK TRACY	\$30.95
BATTLE HAWKS	\$37.95	DINOWARS	\$23.50
BATTLE SET 2	\$20.50	DISTANT ARMIES	\$29.50
BATTLE SET 3	\$20.50	DOUBLE DRAGON II	\$25.50
BATTLE SET 4	\$23.95	DRAWN FORCE	\$32.95
BIG BUSINESS	\$28.95	DRAGON LORD	\$35.50
BILLY THE KID	\$28.95	DRAGON STRIKE	\$31.95
BLACK GOLD	\$24.00	DRAGON WARS	\$31.95
BLITZKRIEG	\$37.95	DRAGON'S LAIR	\$32.95
BLOCKOUT	\$27.95	DRAGON'S LAIR II	\$34.50
BLOOD MONEY	\$29.50	DRAGON'S	
BRIDGE COMMANDER	\$29.50	LAIR/TIMEWARP	\$33.00
BUCK ROGERS		DRAKKEN	\$37.95
DOOMSDAY	\$36.50	DUCK TALES QUEST	\$27.95
BUDOKAN	\$28.95	DUNGEON MASTER II	\$22.50
CALIFORNIA CHALLENGE	\$14.00	DYNASTY WARS	\$31.95
CAPTIVE	\$28.95		
CARDINAL OF KREMLIN	\$31.95		

AMIGA GAMES SOFTWARE

ELVIRA	\$36.50	INFESTATION	\$23.95	MIG 29	\$40.95
EMPIRE	\$31.95	ISHIDO	\$34.00	MONTY PYTHON'S CIRCEUS	\$29.95
EYE OF THE BEHOLDER	\$40.50	IT CAME FROM		MOONBASE	\$31.95
F-15 STRIKE EAGLE II	\$32.95	THE DESERT	\$31.95	MOONSHINE RACERS	\$32.95
F-16 COMBAT PILOT	\$13.95	JACK NICKLAUS GOLF	\$31.95	MUSCLE CARS	\$14.50
F-19 STEALTH FIGHTER	\$31.95	KHALAN	\$25.95	N.Y. WARRIORS	\$32.00
F-29 RETALIATOR	\$31.50	KILLING CLOUD	\$31.95	NAVY SEALS	\$37.95
FALCON	\$29.95	KILLING GAME SHOW	\$25.50	NITRO	\$26.95
F-15 STRIKE EAGLE II	\$32.95	KING'S BOUNTY	\$36.50	NOBUNGA'S AMBITION	\$36.50
FEMME FATALE NEW YER	\$24.00	KING'S QUEST I	\$30.95	OBITUARY	\$34.00
FIRE BRIGADE	\$29.95	KING'S QUEST II	\$30.95	ONSLAUGHT	\$31.95
FLIGHT OF THE INTRUDER	\$36.50	KING'S QUEST III	\$30.95	OPERATION STEALTH	\$38.95
FLIGHT SIMULATOR II	\$30.95	KING'S QUEST IV	\$36.95	OPERATION WOLF	\$14.50
FUTURE WARS	\$31.50	LAND, SEA AND AIR	\$40.95	OVERRUN	\$44.50
GALACTIC EMPIRE	\$31.95	LEISURE SUIT LARRY I	\$21.95	PGA GOLF TOUR	\$34.50
GAUNTLET II	\$19.95	LEISURE SUIT LARRY II	\$35.50	PICK 'N' FILE	\$30.50
GERM CRAZY	\$25.95	LEISURE SUIT LARRY III	\$36.50	PICITIONARY	\$25.50
GODS	\$34.95	LEMMINGS	\$28.95	PLANET OF LUST	\$25.50
GOLD RUSH	\$25.50	LOOM	\$37.95	POLICE QUEST	\$31.95
GRETSKY HOCKEY	\$31.95	LORD OF CHAOS	\$31.95	POLICE QUEST II	\$38.95
GRIDIRON w/DATA DISK	\$19.50	LORD OF THE		POOL OF RADIANCE	\$31.95
GUNBOAT	\$35.50	LOST PATROL	\$36.50	POPULOUS	\$35.50
GUNSHIP	\$35.50	M-1 TANK PLATOON	\$36.95	POWER PINBALL	\$23.00
HALLS OF MONTEZUMA	\$31.95	MAGIC BASKETBALL	\$31.95	POWERMONGER	\$34.50
HARD DRIVEN II	\$31.95	MANHUNTER-NEW YORK	\$30.95	CLUE BOOK	\$9.95
HARDBALL 2	\$30.95	MANICAMANSION	\$15.00	PRO FLIGHT	\$50.95
HARPOON	\$40.50	MARBLE MADNESS	\$14.95	PRO FOOTBALL	
HEART OF THE DRAGON	\$29.00	MEAN STREETS	\$31.95	SIMULATION	\$21.50
HEROES QUEST	\$37.00	MEGA WARRIORS	\$29.00	PRO TENNIS TOUR II	\$34.50
HEROES QUEST II	\$31.50	MEGA FORTRESS-FLIGHT		PURSUIT TO EARTH	\$25.95
HOVER FORCE	\$30.50	OF THE OLD DOG	\$40.50	RAILROAD TYCOON	\$32.95
HUNT FOR RED OCTOBER	\$19.95	MEGA TRAVELLER I	\$36.50	RAMIFY	\$25.95
HYPERBOOK	\$56.95	MERCIS	\$31.95	RBI BASEBALL II	\$42.95
IMMORTAL	\$31.95	METAL MUTANT	\$31.95	RED STORM RISING	\$19.95
INDY 500	\$34.00				

RENEGADE LEGION/ INTERCEPTOR	\$40.50	TEENAGE MUTANT NINJA TURTLES	\$28.95
ROMANCE OF 3 KINGDOMS	\$42.95	TENNIS CUP	\$24.00
SCENERIO EDITOR	\$26.50	TERMINATOR	\$24.00
SCRABBLE	\$25.50	TEST DRIVE II: THE DUEL	\$23.95
SEARCH FOR THE KING	\$37.95	TETRIS	\$21.50
SECRET MONKEY ISLAND	\$40.50	THEME PARK MYSTERY	\$31.50
SECRET OF THE SILVER BLADES	\$34.00	THUNDERSTRIKE	\$31.95
SEX VIXENS FROM SPACE	\$22.95	TIE BREAK TENNIS	\$22.95
SHADOW DANCER	\$31.95	TRIAL BY FIRE	\$37.00
SHADOW OF THE BEAST	\$31.95	TUNNELS OF	
SHADOW OF THE BEAST II	\$34.95	TURRICAN	\$21.50
SIM CITY	\$31.50	TV SPORTS BASKETBALL	\$31.95
SIRFRED THE LEGEND	\$31.95	TV SPORTS FOOTBALL	\$31.95
SKIORIE	\$36.50	ULTIMA IV	\$36.50
SPACE ACE	\$34.00	ULTIMA V	\$36.50
SPACE QUEST	\$30.95	UNIVERSAL	
SPACE QUEST II	\$24.95	MILITARY SIM. II	\$34.95
SPACE QUEST III	\$36.95	UNREAL	\$35.95
SPEEDBLADE	\$16.95	UNTOUCHABLES	\$29.50
SPELLBOUND	\$23.50	VAXINE	\$25.50
SPOT	\$24.50	WAR IN MIDDLE EARTH	\$31.50
STAR CONTROL	\$31.95	WAR LORDS	\$29.00
STAR FLIGHT	\$37.95	WARLOCK	\$19.95
STARFLIGHT II	\$34.00	WARZONE	\$23.50
STELLAR	\$22.95	WEB OF TERROR	\$25.95
STORMBALL	\$31.95	WEIRD DREAMS	\$25.50
STREET HOCKEY	\$38.95	WELLTRIS	\$22.95
STREET ROD II	\$27.95	WHERE IN EUROPE	\$31.95
STRIDER II	\$38.95	WHERE IN THE USA IS CARMEN	\$31.95
STRIP POKE II	\$31.95	US IS CARMEN	\$30.95
SUPER CARS	\$14.95	WHEN? WHERE?	\$56.95
SUPER SKEWEE	\$25.95	WINGS OF FURY	\$25.50
SUPREMACY	\$31.50	WIPE OUT	\$25.95
SWIV	\$31.95	WOLF PACK	\$34.00
SWORD OF ARAGON	\$35.50	WORLD CLASS SOCCER	\$25.50
SWORD OF SODEN	\$15.95	WRATH OF THE DEMON	\$25.95
TEAM YANKEE	\$38.95	ZONE WARRIOR	\$26.95

DKB Software

MULTISTART II

Switch between Kickstart 2.0 & 1.3 w/the keyboard A-500 & A-2000

\$69

QUICKSTART II

Install Kickstart 2.0 & 1.3 ROMS in your A-1000 & switch w/the keyboard

\$75

SECUREKEY

Access security control for A-2000 & A-3000

\$99

INSIDER II

512K	\$219	Internal Memory for A-1000
1MB	\$249	OK exp. to 1.5MB w/Onboard Clock
1.5MB	\$279	

MEGACHIP 500/2000
Get 2MB of chip ram for the A500/2000 as in the A-3000

\$219

MEGACHIP 500/2000 & AMIGA SUPER AGNUS
(Less \$50 for 1MB Fatter Agnus Chip)

\$309



BEETLE MOUSE

\$39

DESIGNING MINDS

TOP FORM II

\$49

ROL 'EM

\$69

HOME FRONT

\$49

ChromaPaint	\$24	Spell A-Fair	\$25
Math Doctor	\$25	Great States II	\$25
Crossword Construct	\$25		
Pooman	\$25		
Talking Storybook	\$19		
World Tour Series	\$25		

From p. 96.

COM at some future date, neither program has it now. Had it been available, I could have moved my own database of a couple of thousand names into these programs, and could have told you much more about how the programs perform with large amounts of data. Instead, I had to type records into each program as though I were beginning from scratch.

GEDCOM is an invaluable aid to those who exchange data, which almost all genealogists do. Without it, one must manually enter every record obtained from colleagues. Norgen actually has a menu item for GEDCOM, but it is not yet implemented. YFT merely has a questionnaire asking if purchasers would be interested in buying it as an extra utility at a later date. These programs must have GEDCOM if they are to be of service to truly serious genealogists.

Comparing a program to an ideal wish list is tough, for no program will have all of the features on the list. Their lack of some desirable features, however, should not discourage you from using either of these programs if what they can do meets your requirements.

For beginning genealogists, for those who do not plan to publish, and for those who prefer working with entire families at one time, Norgen would be a good choice. For those who demand more, and who do not mind a higher learning curve, YFT is more powerful and dependable. Each of these programs answers various needs, and your choice should be determined by your own preferences and expectations.

RxTOOLS

Puts a spin on ARexx.

By Dave McClellan

AREXX APPEARED ON the scene when the Amiga was badly in need of a good scripting language. Back then, the CLI was only slightly better than MS-DOS batch files (not good) for writing intelligent scripts.

While ARexx provides excellent program communication facilities, flow

control, and variable string processing, its own user interface is somewhat primitive. With ARexx, you use the SAY command to display strings on screen and PULL or PARSE PULL to read strings in. This is a far cry from Intuition, but if you are only writing macros, aesthetics are not important. Because many of us use ARexx for all kinds of scripts—not just for editor macros—there really is a need for a more elegant interface. This is where RxTools (\$54.95) from *TTR Development* comes in.

As a function host for ARexx, RxTools provides methods for creating Intuition-like windows that feature menus, gadgets, requesters, editing functions, file requesters, and the like. The object-oriented RxTools lets you pass messages and call functions through windows and other objects you create.

STRUNG OUT

The RxTools' function host implements four ARexx functions: `_send`, `send`, `kill`, and `self`. The multipurpose `_send` and `send` functions implement RxTools functions by transmitting messages to RxTools classes and objects. For example, to open a window and place a string into it, you first create a window by sending an `_OPEN` message to the `rx_console` class. Then you send to the new window object the message:

"PUT_STRING" and a string:

```
new_win = _send('rx_console',
_OPEN, 10, 10, 200, 100,
"Win", my_port )
call send new_win,
_PUT_STRING, 'Some string text'
```

The `_send` function, which sends messages to classes, here sends the `_OPEN` message to the `rx_console` class with position, size, title and message port parameters. The `send` function on the other hand (no leading underscore), sends messages to objects created from RxTools classes. In the preceding example, it sends the `_PUT_STRING` message and a string argument to the window object `new_win`. Using these two functions, and knowing which messages return useful values, you can use most of Intuition from ARexx.

The other two functions are rarely used in ordinary programming. `SELF` returns a pointer to the RxTools function host and carries special messages. `KILL` tells the function host to exit and

free up all script-created RxTools objects.

The following ARexx script demonstrates more available functions and implements a window for deleting or editing files.

```
/* Beginning of script */
rx_tools_init = getclip(
'rx_tools_init' )
interpret rx_tools_init
/* Create and open window */
fwin = _send('rx_console', _OPEN,
10, 20, 200, 100, ,
"Files", my_port )
number_of_open_windows = 1
/* Create button gadgets */
call send fwin, _ADD_HIT_GAD-
GET, DEL_HDLR, 20, 60, 'Del'
call send fwin, _ADD_HIT_GAD-
GET, EDIT_HDLR, 100, 60, 'Edit'
event_handler = getclip(
'rx_tools_event_handler' )
interpret event_handler
/* Event Handlers */
DEL_HDLR: procedure
parse arg from_win
f_req = _send('file_requester',
_CREATE, from_win )
the_file_name = send( f_req,
_POST )
if the_file_name ~= "" then
'DELETE' the_file_name
call send f_req, _FREE
return
EDIT_HDLR:
parse arg from_win
f_req = _send('file_requester',
_CREATE, from_win )
the_file_name = send( f_req,
_POST )
if the_file_name ~= "" then
'C:emacs' the_file_name
call send f_req, _FREE
return
CLOSEWINDOW: procedure expose
number_of_open_windows packet
parse arg f_win
call send f_win, _CLOSE
call send f_win, _DELETE
number_of_open_windows = num-
ber_of_open_windows - 1
if number_of_open_windows = 0
then
do
call reply packet, 0
exit 0
end
else
return
end
/* End of script DelEd.rexx */ ►
```




The Software Shop, Inc.

Orders Only Call 1-800-752-0050

"Give us the chance to meet or beat any advertised price."

**WE ACCEPT
MASTERCARD
& VISA.**

Amiga 2000	Quantum	Quantum	For	Quantum	Syquest	AMIGA 2000	Memory Expansion			
HDrives	52LPS	105LPS	Software	205MEG	W/CART.		2MG	4MG	6MG	8MG
Harddrive Prices	\$259	\$379	and	\$729	\$569	8UP A2000	\$179	\$249	\$319	\$379
GVP A2000-HC/OSRS II	\$399	\$559	Hardware	\$899	\$739	ADD SCSI 2080	\$249	\$299	\$419	\$499
GVP A2000-HC8/OSRS II	\$439	\$599	Not	\$929	\$783	ADRAM A2080	\$169	\$225	\$299	\$399
Hardframe 2000	\$439	\$559	Listed,	\$899	\$729	GVP A2000-HC8RSII	\$299	\$389	\$489	\$579
Supra Wordsync	\$389	\$559	CALL	\$899	\$682	RAMWORKS 2000	\$189	\$239	\$309	\$349
AddSCSI 2080-8+0	\$449	\$599		\$929	\$748	SUPRAM A2000	\$189	\$239	\$299	\$389
A500 SCSI HDrives	Q52LPS	Q105LPS	A500 IDE Internal Harddrives			Amiga 500 Memory	1MG	2MG	3MG	4MG
GVP A500 HD8/0 SRS II	\$599	\$799	Teac 40 MG	Q52LPSA	Q105LPSA	Base Board	\$145	\$179	\$225	\$259
Supra 500XP-512K	\$579	\$799	\$329	\$399	\$599	AdRAM 540	\$145	\$179	\$225	\$259

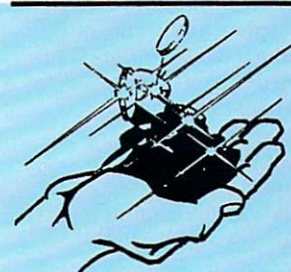
Authorized Amiga Dealer and Service Center

Accelerators

GVP Combo 22mhz w/1MB	\$889
GVP3033 33mhz w/4MB	\$1599
GVP3050 50mhz w/4MB	\$2399
MegaMidget Racer 25mhz	\$499
MegaMidget Racer 33mhz	\$599
AdSpeed	\$229

Memory Chips

256K Each	\$2
256x4 Each	\$6
1x1 Each	\$6
1x4 Zip Each	\$30
1x8 Sim Mod	\$49
256x4 Zip	\$6



Save on your Amiga Software & Hardware

CAD

Home Builder Choice	\$53
Home Builder Library	\$32
Home Builders Sculpt	\$79
Home Builder CAD	\$169
Intro CAD Plus	\$99
Ultra Design	\$199
X-CADdesigner Pro	\$199
X-CADdesigner II	\$74

Communication

Atalk III	\$65
Baud bandits telecom.	\$33
BBS pc	\$96
Online Platinum	\$49
Skyline BBS	\$99

Database

Desktop budget	\$46
Home Front	\$59
Organize	\$49
Project Master	\$129
Superbase pers. II	\$99
Superbase Pro. 3.0	\$219
Superbase 4	Call

Desktop WordProc.

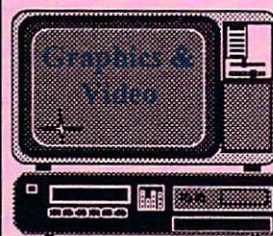
Becker Text	\$79
City Desk 2.0	\$79
Electronic Thesaurus	\$33
Excellence! 2.0	\$109
Gold Spell II	\$30
Gold Disk Office	\$189
Page Setter II	\$89
PageStream 2.0	\$189
PageStream Fonts 1-15	\$29
Pen Pal	\$102
Professional Page 2.0	\$189
Professional Draw	\$119
Pro-Page Template	\$42
Prowrite v.3.01	\$99
Structured Clip Art	\$39
Super Clips	\$22
WordPerfect	\$159
WPLibrary	\$79

Education

Aesop's fables	\$32
All about America	\$35
Animal kingdom	\$32
Decimal dungeon	\$32
Designasaurus	\$32
Fraction action	\$32
Kinderama	\$32
Math wizard	\$35
Mavis beacon typing	\$33
Read-a-rama	\$32
Read & rhyme	\$32
Tales from Arabia	\$32
WhereinBurpe.C.Sdiego	\$35
WhereintheU.S.	\$35
WhereinWorldC.S.	\$32
Wordmaster	\$32
World Tour Canada	\$30
Worldtour Mid East	\$29

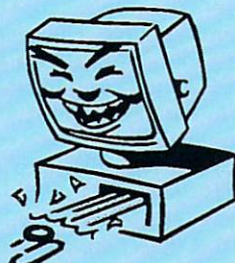
Fonts

cg fonts	\$129
Inter font	\$76
Kara fonts color	\$50
Kara fonts Headline 2	\$48
Kara fonts subheads	\$48
Kara Anim font 1	\$35
Kara Anim Font 2	\$35
Kara Star Field Font	\$35
Type Fonts	\$39



3D Options	\$40
3D Professional	\$346
Amiga Vision	\$99
Animagic	\$95
Animate 3D	\$99
Animation Studio	\$111
Animation Titler	\$59
Art Dept. Pro.	\$159
Broadcast Titler v.2.0	\$229
Caligari	\$159
CanDo	\$99
CanDo Pro Pack 1	\$29
Chroma Key	\$329
Deluxe Paint III	\$102
Deluxe Print II	\$59
Deluxe Video III	\$106
Design 3D	\$67
Digi-Paint 3	\$69

Digi View Gold 4.0	\$131
Imagine	\$229
Modeler 3D	\$64
Movie Clips	\$29
Movie Setter	\$65
Page Flipper FX	\$95
Pagerender 3D	\$105
Pro Video Post	\$220
Scala	\$239
Scene Generator	\$29
ShowMaker	Call
Spectrocolor	Call
Title Page	\$129
TV*Show 2.0	\$64
The Director 2.0	\$69
TV Text Prof.	\$111
Video Effects 3D	\$121
Videoscape 3D	\$120
Video Titler 3D	\$99
Vista Pro	\$95
Zootrope	\$91



Call for all Amiga
line of computers

Hardware

A2320 Video Enh.	\$249
AdIDE Controller	\$119
AdSpeed	\$249
Ae-datalink 2000 W/fax	\$224
Ae-datalink Exprs. W/fax	\$209
AE External Drive	\$109
AE 3.5External Dr.HD	\$215
Ae-power Supply	\$92
Air Drive External	\$89
Amaz II Emulator	\$155
A/B/C/D Switchbox	\$39
Copy Stand	\$69
Ergo Joystick	\$17
Golden Image Mouse	\$39
Golden Image Optical	\$69
Modem cable 2000/500	\$15
Monitor Stand	\$32
Printer cable 2000/500	\$15
Baud Bandit level 5	\$139
Color Splitter	\$120
Ece Midi 1000	\$52

Ece Midi 500/2000	\$52
Flicker Free Video	\$309
Future snd. A500/A2000	\$92
Internal 3.5drive A2000	\$89
Migraph Scanner	\$349
Mini Gen	\$210
Perfect sound V.3.0	\$75
Scanlock	\$789
Sharp JX 100 Scanner	\$789
Super Gen	\$695
Supergen 2000S	Call
Supra 2400bd internal	\$149
Supra modem 2400bd	\$119
USRobotics9600bd.HST	\$669
Video Toaster	\$1499

Languages Utilities

A/C basic	\$129
A/C fortan	\$195
Arex	\$33
Assem pro	\$65
Benchmark c lib.	\$62
Benchmark SrcLevDebug	\$62
Benchmark iff library	\$62
Benchmark C library	\$62
Benchmark modula 2	\$128
Benchmark simplified	\$62
Cross Dos 4.0	\$29
Cygnus Professional	\$65
Data Tax	\$52
Disk master 1.4	\$33
Disk mechanic	\$59
Dos 2 dos	\$35
Lattice Dev. System 5.1	\$199
Mac 2 DOS	\$99
Power Windows v.2.5	\$58
Project D 2.0	\$39
Quarterback 4.1	\$45
Quarterback Tools	\$55
Workbench Mgmt. 2.0	\$31

Monitors

NEC 3D multisync	\$699
Sieko Cml440 Monitor	\$599
Zenith14'FlatCRT	\$625

Printers

Citizen 200GX	\$210
Citizen GSX140 Color	\$399
Star nx rainbow	\$225

Sound & Music



4-op deluxe	\$112
Audio Master 3	\$65
Audio master II	\$67

Back songbook	\$27
Bars & Pipes	\$179
Copyist II 3.0	\$179
D-50	\$99
Deluxe music	\$69
Dr T's Keyboard	\$160
Dr T's Midi Rec.Studio	\$47
Dynamic studio	\$129
Hyper Chord	\$105
Kcs Level II	\$225
Matrix 6	\$97
Mt-32	\$97
Musix-X	\$205
Promidi studio	\$129
Sonix	\$51
Tiger Cub	\$62

SpreadSheet

Advantage	\$119
Super Plan	\$97
VIP Professional	\$65

Terms & Policy:
TO ORDER BY FAX CALL:
1-508-799-9354
FOR PRODUCTS NOT
LISTED CALL:
1-508-756-6452

PLEASE SEND ALL CORRE-
SPONDENCE TO:
THE SOFTWARE SHOP, INC.
22 FRONT ST. P.O. BOX 22
WORCESTER, MA 01614

PRICES TERMS, AVAILABILITY
ARE SUBJECT TO CHANGE
WITHOUT NOTICE.

POLICIES:

- 1-We accept Vis and Mastercard
- 2-Minimum Shipping \$6.00
- 3-COD charges \$5.50
- 4-Hardware Shipping 5%.
- 6-International Shipping 15%
- 7-APO & FPO 10%
- 8-2nd. day air Available
- 9-Next day air Available
- 10>Returns are subject to 15% restocking fee.
- 11-Product must have RMA# to be returned.

CALL FOR ENTERTAINMENT
SOFTWARE.

Circle 50 on Reader Service card.

AAMIGA WAREHOUSE

The Memory Specialist

MEMORY

DRAMS

256x1 - 15	\$1.30
256x1 - 10	\$1.60
256x1 - 80	\$1.75
256x4 - 80	\$5.75
1x1-8	\$5.75

SIMMS

1x8 - 100	\$43.00
1x8 - 80	\$46.50
4x8 - 80	\$185.00

A3000 MEMORY

STATIC ZIPS	
1X4 - 80	\$25.75
1X4 - 70	\$29.95
256X4 - 80	\$6.95
PAGE ZIPS	
500RX memory	
1x4 - 80	\$28.96
256x4 - 100	\$5.95

PRICES SUBJECT
TO CHANGE
WITHOUT NOTICE

DKB Software

INSIDER II

W/1 1/2megs	\$269.95
A1000 INTERNAL MEMORY BRD	

SWITCH BETWEEN YOUR ROMS

KWICKSTART II	
A1000 ROM BRD	
W/O ROM	\$69.95

MULTISTART II

A500/2000 ROM BRD	
W/O ROM	\$79.95

MegAChip 2000

2MB OF CHIP RAM!	\$333.00
W/PULLER	
W/Rebate for 1meg agnus	

WHY UPGRADE TO
ONLY 1MEG OF
CHIP RAM?
PERFECT FOR VIDEO
APPLICATIONS

SecureKey

INTERNAL SECURITY CARD	
A2000/3000	\$94.75

SUPRA

501CLONE	\$47.00
----------	---------

500RX	
W/2megs	\$191.00
w/4megs	\$327.00
w/8megs	\$525.00

2400	\$98.00
Baud Modem	

2400 Plus	\$175.00
-----------	----------

EXPANSION SYSTEMS

DATAFLYER	
500	\$145.00

DATAFLYER 500	
w/40meg	\$349.00

DATAFLYER	
2000	\$85.00

NEW

DATAFLYER RAM	
500/2000	
2megs	\$169.00

BASEBOARD	
W/2megs	\$175.00

GVP PRODUCTS

IN STOCK!

GOLDENIMAGE

MASTER 3A1-A	\$79.95
MASTER 3A1-D	\$93.95
Optical Mouse	\$52.00
Opto-Mech Mouse	\$36.00
Cordless Mouse	\$74.00
Cordless Trackball	\$84.00
BRUSH W/DPII	\$99.00
HAND SCANNER	
W/DPII	\$289.00

ROCTEC

SLIM LINE DRIVE	\$94.00
ROGGEN PLUS	\$N/A
512K W/Clock	\$49.00

ICD

AdSpeed	\$219.00
Addide 40 Kit w/o HD	\$125.00
AdScsi 2000	\$129.00
Flicker Free	\$300.00

Hard Drives

Quantum 105s lps	19ms	\$389
Quantum 52s lps	19ms	\$245
Connor 40 lps	24ms	\$179

IDE'S INSTOCK CALL

A1000 Hard Drive Kit
A COMPLETE HD SYSTEM
Quantum 52MEG
HURRY LIMITED SUPPLY
\$449

**AMIGA 500
REMOVABLE
KEYBOARDS
CALL**

Aamiga Warehouse
TECH SUPPORT 714-283-0499

ORDERS ONLY
800-942-9505



Policies: Money orders, P.O.'s, and checks accepted, COD's add \$4.00.
Visa/Mastercard add 3%
15% restocking fee on all returned, non-defective product. All defective
product must have an RMA# Call (714) 283-0499 within 30 days of purchase
to receive an authorization.
We cannot guarantee hardware compatibility.
Upgrades must be done through the manufacturer.

Circle 98 on Reader Service card.

REVIEWS

The first line establishes the RxTools environment, including the constants needed for function calls. Then the script opens a window and records the number of open windows for exit processing. Then it adds two pushbutton gadgets to the window by sending it `_ADD_HIT_GADGET` messages. That message tells RxTools which ARexx procedures to call when the buttons are clicked (`DEL_HDLR` and `EDIT_HDLR` respectively), where to put them in the window, and what text to put into them (Del and Edit).

After installing the buttons, the next two lines correspond to event processing, which means watching for gadget selects and `CLOSEWINDOW` events. You must provide a `CLOSEWINDOW` procedure for any window with a close-button located in its upper left-hand corner. RxTools can selectively remove any system window gadget as long as you tell it to do so before you open the window. The interpret event handler line loops until one of the procedures exits the ARexx script, which is what the `CLOSEWINDOW` procedure does at the end. It uses `my_port`, established in the `_OPEN` window call, to receive events.

The first procedure is `DEL_HDLR`. It is called whenever a user clicks on the "Del" button, with one argument—a "pointer" to the window containing the button. When it's called, `DEL_HDLR` pops up a file requester (via the `_CREATE` message to the file requester class, followed by the `_POST` message to the new requester). If the file requester `f_req` returns a name, `DEL_HDLR` deletes that file; if the user selects the `CANCEL` button on the requester, it returns no name, and `DEL_HDLR` does nothing except free the file requester. After it finishes, `DEL_HDLR` returns to event loop processing so the script can wait for the next event.

The `EDIT_HDLR` procedure basically does the same thing, substituting a call to the emacs editor. The final procedure, `CLOSEWINDOW`, is called when the user hits the window's close-button. It takes care of shutting down open windows and exiting the script.

THE FULL COURSE

Installing menus in a window is a little more involved up front, as you must name each menu-bar item and then describe all the menu choices belonging to it, including their respective procedures and shortcut keys. Processing menu events works exactly the same as the gadget event handling

above. Simple requesters are not much more complicated. To build your requester, you merely `_CREATE` it and add each gadget to it (with its own procedures), along with two more procedures to be called when the requester appears on screen. The "req clear" procedure, which is called when the requester completes, is the one you use to extract the string or number or whatever your requester asked for, for use in the rest of the script. But if you get complicated, it can be a lot more work; more on this later.

Briefly, the rest of RxTools provides classes and methods for all sorts of gadgets such as boolean, string, integer, and proportional. These include notification boxes; borders and some simple drawing methods; console windows with accompanying page-viewer and editor methods (cursor move, cut/paste, search and replace, etc.); custom-screen and window methods; file-requester and directory-listing methods; and methods for managing the RxTools function host and RxTools classes.

There are also some nice data structures present that you can use as well—a doubly-linked list class, an AVL tree, and bag and stack classes. These come with a minimal "class browser" to help determine all the messages these classes and objects accept.

Not everything, however, is rosy with RxTools. The manual is not nearly thorough enough to describe the product, and it counts on the browser and your own intuition a little too much. The 80-odd page booklet is full of programmer-ese (the implementer wrote it), and while it starts off with a couple of acceptable tutorials, it finishes with an incomplete reference section that lists only the commonly used messages of most classes and their parameters. Not nearly all the messages are present, nor does it go into some more complex programming, such as that needed for calling hand-built requesters from within gadget-handlers—I hung up a script a few times doing that.

The manual relies on your using the browser to determine all of a class's messages. The browser is an ARexx script that can either list all classes (and phylums—parents to a set or class), or a single class's messages and argument types. It is woefully insufficient. TTR does provide a decent set of example scripts, but they cover only the basics of using the various classes.

In the company's defense, TTR is remedying this insufficiency. I called ▶

HOW THE AMIGAWEST WAS WON

Pioneers of Value and Service



We're paving the path to:

- * The Lowest Prices
- * Superior Support
- * Consistent Customer Satisfaction

APPLIED ENGINEERING

TimeMaster 500
(Clock/Calendar) 36

AIR

A2010 Int. 3.5 Drive (Amiga 2000) 91
A3010 Int. 3.5 Drive (Amiga 3000) 103
A5010 Int. 3.5 Drive (Amiga 500) 81

ASDG

Art Department Professional 129

AVATAR

Heart of the Dragon 14

CALIFORNIA ACCESS

Bodega Bay 339
CA-880 External 3.5" Drive 94

CSA

ECONO M M R, 25 MHz 497
ECONO M M R, 35 MHz 597
M M R 25 MHz (500/2000) 589
M M R 33 MHz (500/2000) 729
Midget Racer
68020/7 MHz (500/2000) 270

Math Co-Processor
for Midget Racer 89

CURTIS

3.5" Starter Kit 29

DIGITAL CREATIONS

Supergen 2000 Internal 1339

DIGITAL PROCESSING

Personal TBC (Time Base Corrector) 799

ELECTRONIC ARTS

Deluxe Paint III 80

Deluxe Photo Lab 80

EXPANSION SYSTEMS

2000 DataFlyer w/SCSI 89
500 BaseBoard w/Clock
@ 1MB 129
500 X-RAM Upgrade for
Baseboard, 1 MB 99
500 DataFlyer w/SCSI + Chassis 155

GREAT VALLEY PRODUCTS

2000 Streaming Tape Backup
(In Bay) 635
3050 Accelerator (50 MHz/4 MB) 2349
Combo (22 MHz/1 MB) 899
Combo (33 MHz/4 MB) 1599
HC Series II + RAM w/No HD 199
HC Series II w/No HD 155
Impact 500 Series II w/52MB HD 629



Watch for Roger's
**POWER BURST
SPECIALS!**

These prices just can't be
beat. And don't forget to
call **WEEKLY** for the
LATEST HOT DEALS!

GOLD DISK

Outline Fonts-35 CG Hi Res Fonts 124
Professional Draw 2.0 109
Professional Page 2.0 217

GOLDEN IMAGE

512 RAM Card w/Clock & Cal 49
G.I. Hand Scanner 239
Opto-Mechanical Mouse 35

ICD

AdRAM 2080 8/2MB 205
AdRAM 540 w/Clock @ 1MB 157
AdSCSI 2080 8/2MB w/SCSI 273
AdSpeed - All Amigas 233
Novia 40i HD 710
Prima 105i 500 HD 723

IMPULSE

Imagine v1.1 195

IVS

Meta 4, 2 MB 279
Trumpcard Professional (2000) 209

**1,000's of products
available!**

**Fill out the Reader Service
Card for a FREE Catalog**

MAGNAVOX

RGB Color Monitor 294

MEGA MICRO

1 MB DRAM Chips, 100 ns(set of 8) 64
1 MB SIMMs 65
256K x 4 DRAM Chips (set of 2) 19

NEWTEK

CS-1 Copy Stand & Lights 55
DigiView Gold 4.0 119
Panasonic 1410 Camera-
Variable Lens 209
Video Bundle 358
Video Toaster (2000) 1399

OXXI

Atalk 3 (Communications) 59

SOFT LOGIC

Pagestream 2.1 167

by **STRATEGIC STUDIES**



Warlords \$30

A huge, eight player strategy game
of empires, castles, armies, heroes,
monsters and dragons. Only one
empire will prevail in a ruthless
struggle for supreme power.

SUNRIZE

Color Splitter 109

SUPRA CORP.

3.5" External Drive 95
2000 SupraDrive 40 MB 364
2000 WordSync SCSI Interface 109
500 SupraRAM RX
w/1 MB 123
2400 Baud External Modem 89
2400 Plus w/MNP5 & v42bis 149
500XP 105 MB w/512K 699
500XP 52 MB w/512K 499
9600 Baud w/MNP5 & v.42bis 519

US ROBOTICS

Courier HST 9600E Modem 619

VORTEX

ATonce (IBM AT Emulator) 279

WORDPERFECT

WordPerfect v4.1 159

HOW TO ORDER:

Orders only: 1-800-438-2883

FAX: 1-619-274-2440

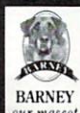
15% (\$15/min. restocking fee on
refunded items only)

Price quotes & technical support:

1-619-274-1253

8am-5pm PST Monday-Friday

Committed to Value Since 1985



Roger Coats

P.O. Box 171466
San Diego, CA 92197

Circle 43 on Reader Service card.

OUR FINE PRINT:

*Certain limitations apply to \$5 offer:

1. Advertised price must be published in this magazine.
 2. We reserve the right to question misprints.
 3. Limited to items we carry & stock on hand, excluding games.
 4. Management reserves the right to make final decision.
- We accept the following methods of payment:
- School Purchase Order • VISA & MasterCard
 - Bank Wires • Certified Checks • Money Orders • NO C.O.D.s
 - Sorry, No Software Refunds
 - Not responsible for product compatibility
 - Sorry, no shipping, handling, or insurance refunds
 - FOB San Diego • We really appreciate your business!



their support number with a few questions, and they not only had answers, but they also set me up on their support BBS to download a bugfix release of RxTools. (TTR's BBS is available to registered users of the product.) TTR also told me that we can expect a completely overhauled manual. By the time you read this, a new several-hundred-page reference book should be ready, along with an improved version of RxTools.

In conclusion, I like RxTools. ARexx has needed something like it for quite a while, and RxTools lets you access almost all of Intuition with a fair degree of precision. When the new manual is out (perhaps this fall), it will be a great programmer's tool. But until then, purchasers should be prepared to spend a lot of time doing guess-and-try-it programming.

PROTEXT

Give us the word!

By Bill Frazier

WHEN IT COMES to the heavy-duty mechanics of traditional word-processing programs, Protext (\$199.95, *Arnor/MichTron*) excels. In addition to the standard text manipulations, it automatically generates tables of contents from text headings and indexes from marked words or phrases. It plows through multiline footnotes and endnotes, handles headers and footers in neat fashion, and supports mail-merge and a variety of other advanced word-processing features. Best of all, Protext is easy to learn and simple to use. In short, the program is versatile enough to meet the demands of advanced users and beginners alike.

Where it falls down, however, is in the area of Amiga-specific features and feel. It suffers from port-over hangover, lacks true WYSIWYG screen display, and does not incorporate graphics with text.

Let's look at the pros and cons of Protext a little more closely and see how it fits into the repertoire of existing Amiga word processors.

WHAT YOU GET

The entire package comes on three noncopy-protected disks—program, dictionary, and printer drivers—each



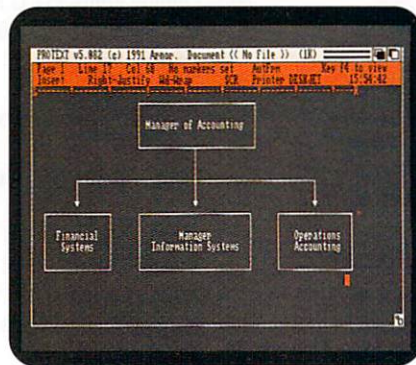
YOUR TURN!

Protext's best feature is its macro capability. It's a real time saver and a convenience I've come to depend upon.

*Cheryl Rieck
Indianapolis, Indiana*

of which you can easily install on your hard drive with the provided script. The three-volume manual comprises a tutorial, a guide to the printer drivers, and a User Guide and Reference.

Once installed, Protext's system configuration lets you select and save your own default start-up preferences. The program requires a minimum of 1MB of RAM and Workbench 1.2 or later. Although ignoring the Work-



With Protext, you can draw boxes around text to make flowcharts.

bench printer drivers in favor of Protext's own drivers may seem redundant at first, the developers actually provide a great service by including every option available for each of the 150 popular printers that Protext currently supports (with more of them under development).

The manuals supplied with Protext are among the most complete and easy to use of any I've worked with. They are arranged logically, include an extensive table of contents and index, and are simple to read and understand. The occasional use of "whilst" and similar words reflects the program's origin, but the User Guide as a whole is an excellent document. All manuals were created using Protext, and they provide further proof of the quality output possible when using this program.

Following Intuition guidelines, Protext provides the usual Amiga menu line and includes a large number of pull-down menu items. Nearly all menu selections are accessible to experienced users by way of keyboard shortcuts.

Protext provides a file-menu selection called Catalogue Files, which, when selected, displays a full screen showing the contents of the current directory. From this screen it is possible to open, view, erase, rename, and copy files. You can change the directory being shown at any time. It is also possible to display a graphic directory tree from this screen. Using this feature, you can manipulate files in almost any manner you wish.

If you need to produce a simple box around text or to draw lines (with or without arrows), within a document, Protext provides the tools. Pressing the proper function key allows the cursor keys to double as line-drawing keys. This option makes it easy to box items and set them off from the text or to produce simple organizational charts. Printed lines are clean and smooth, without jagged edges.

Using Protext's Programming mode, you can write source code for assemblers and compilers or set up auto-indenting routines. Auto indent modifies the action of the Return key so that instead of going back to column 1 in the normal way, the cursor will return to the column that contains the first nonblank character in the line above.

NOT PICTURE PERFECT

Protext does have a problem or two. Primary among these would be the lack of true WYSIWYG text layout on the monitor. While the program takes advantage of nearly every resident font available on whatever printer you happen to be using, it limits the text shown on the screen to just one size—making it difficult to visualize what the final product will actually look like.

Protext does offer one unusual feature, although its implementation falls short of being useful. It can look up anagrams (words in which the letters are transposed to form an entirely new word), albeit slowly.

Another drawback Amiga owners may find hard to do without is Protext's inability to incorporate graphics or clip art with text. Today, most of the top Amiga word processors provide this feature, and this alone could influence

some Amiga users to shun the program.

Although Protext provides excellent spell-checking, it does not include a built-in thesaurus. Many word-processing programs now have such a feature, and I find myself using a thesaurus more and more each time I write. While you could use a stand-alone thesaurus program with Protext, this is not a very convenient solution.

Protext does not have the "look and feel" of a native Amiga program. Because it is available on a number of other systems—including MS-DOS machines and the Atari ST—you can transport documents created on one system for use on any other platform supported by Protext (either directly or by use of a conversion program). Such portability will be of value to many, but it is also reflected in the program design.

The value of any word processor lies in its ability to easily produce attractive, quality documents. Protext does this, using the fonts and options available on any printer you happen to be using. If you can put up with the lack of certain features that most Amiga users have come to expect, Protext is an excellent word processor.

INFOFILE

Less for less money

By Greg Morris

DO YOU FIND yourself buried under a mountain of papers and notes that somehow have to be organized in a reasonable manner? InfoFile (\$69.95), a database program from *The Disc Company*, attempts to create order from disorder. Whether you are dealing with budgets, phone numbers, mailing lists, or even a video collection, InfoFile can help you organize your information for easy retrieval whenever you need it.

You define your database by setting up columns and rows containing numbers, text information, dates, or calculations, depending on your need. Called the "List" screen, this arrangement of columns and rows gives you a total view of the database and allows you to display selected information. Via simple mouse movements, you can easily make changes in your List screen—vary column widths, reorder columns, and so on—although certain more complex revisions may involve

additional intermediary steps. A variety of column formats is available for displaying financial and date information, which increases the flexibility of the program.

The "Form" screen is used to enter data into the database. Unlike the List screen, it shows just one entry in the database and its associated fields. For instance, in a mailing-list database, you would see such fields as "Name," "Street," and "City" for a particular person. The Form screen offers the same kind of flexibility as the List screen in that you can adjust each field's position, increase or decrease its size, and more. Just point and click with the mouse on any field, then enter or modify information from your keyboard.

Once your data-entry phase is complete, you can return to the List screen and manipulate the data you just entered. InfoFile allows you to perform various operations on your data, including sorting and searching of information. For example, if you create a mailing list and want to see only those people from Los Angeles, you would first click on the column that represents the city, then proceed to the ►

True digital photography for your Amiga computer



Through a special arrangement with Quintar™ Co., Liquid Light is now offering the Bell & Howell CDI-IV™ color digital film recorder for use with all Amiga computer models. The CDI-IV offers true color capability for all your Amiga images including IFF and HAM. All you add is the film and the imagination. Whether you need high quality 35mm slides, instant prints, overhead transparencies or even instant slides the CDI-IV has you covered.

The CDI-IV is shipped to you complete with a 35mm camera, instant print camera, software and cables. Everything you need to produce stunning images is right in the box. It plugs into the serial port of your computer so you can install it in minutes.

The manufacturers suggested retail for this system is \$3,995, but for a limited time you can purchase the complete CDI-IV at an introductory price of only \$1,895. Quantities are limited and this price will last for just a short while.

So give us a call today, with the CDI-IV you'll see your images in a whole new light.

Liquid Light
Presentation Graphics Peripherals

CDI-IV introductory price only \$1,895.

To order call 213 618-0274

American Liquid Light, Inc., 2341 West 205th Street, Torrance, CA 90501 Tel: 213 618-0274, Fax: 213 618-1982
Bell & Howell, Quintar Co. and CDI-IV are registered trademarks of Bell & Howell Quintar Company.

Circle 2 on Reader Service card.

menu by pressing the right mouse button and choose to search "by example." A requester appears, asking what you are searching for. You can search not only for exact matches, but also for those that are "greater than," "less than," "not equal to," and so forth—which is especially useful when you want to display numerical items within a specified range. In a real estate database, for instance, you could use this feature to display only those houses costing between \$200,000 and \$300,000.

You can save each InfoFile request to display specific criteria to disk as a "View." One View might always show a sorted list of names, while another could display only people named Jones who live in Los Angeles. Views make it easier to use the same database for displaying different aspects of information without having to select the various options every time you need them.

InfoFile allows you to print information in two ways. In List mode, it prints your information in row-and-column format, much like the List display you see on the screen. In Form mode, however, the program prints labels in whatever format you choose according to

the way you move the fields around on the screen with the mouse.

PICTURE AND SOUND REFERENCES

In addition to more standard database functions, InfoFile provides some unique features, including the ability to store references to picture or sound files in the database. When you click on a reference to a picture file, InfoFile displays that picture on the screen. Similarly, by simply clicking on the name of an audio file in the database, you can hear the actual sound produced through the Amiga's audio port. This capability adds new dimensions, for example, to databases set up for music collections, because you can store not only text information about the music, but also the actual digitized sound.

InfoFile's user interface works well, and its response to keyboard input is fast because the program keeps the entire database in RAM as long as there is enough memory available.

While InfoFile functions well for its intended purpose, it lacks the sophisticated features of a professional database program. It works best as an elec-

tronic index-card file system. For the price, you can hardly expect the power and features of a Superbase, but the fact remains that InfoFile is a generation behind current database programs. An example of its backwardness is its option to "set system date/time," a useless function unless you have an Amiga 1000, which does not have a battery-backed internal clock.

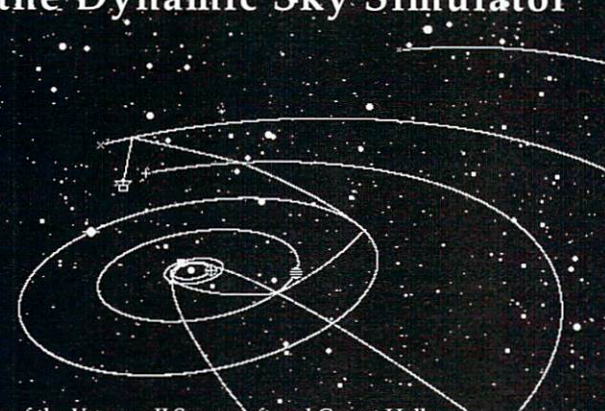
The 70-page manual covers the product in a satisfactory fashion, including a tutorial as well as several examples. The program provides several sample databases and Views on disk to get you started, while also detailing some of its possible uses.

If you want to organize data in a simple fashion without a lot of bells and whistles, InfoFile could fit your requirements, especially if you use picture and sound files that you would like to retrieve directly from the database. On the other hand, if your database needs involve extensive manipulation of data and elaborate printing capabilities that go beyond basic lists and labels, you would be better off with a more sophisticated relational-database package.

Announcing:

Voyager

the Dynamic Sky Simulator™



Path of the Voyager II Spacecraft and Comet Halley.

Voyager is a new generation of astronomical software, re-creating the sky for any time and any location. It is a powerful learning tool for astronomers of all ages and levels. Animate the motions of the planets as you travel from the Earth to the fringes of the Solar System. Let **Voyager** open your imagination to the wonders of the universe.

\$124.95 Visa and MC accepted.
Ask about our special introductory offer.
Requires 1 megabyte Amiga.

Carina Software
830 Williams Street
San Leandro, CA 94577
(510) 352-7332

Circle 77 on Reader Service card.

ATTENTION SUBSCRIBERS

We occasionally make our mailing list available to other companies or organizations with products or services which we feel might be of interest to you. If you prefer that your name be deleted from such a list, please fill out the coupon below or affix a copy of your mailing label and mail it to:

IDG Communications/Peterborough
AmigaWorld
P.O. Box 58804
Boulder, CO 80322-8804

Please delete my name from mailing lists sent to other companies or organizations.

AmigaWorld

Name _____

Address _____

City _____

State _____

Zip _____

AmigaWorld, P.O. Box 58804, Boulder, CO 80322-8804

AUDIO ENGINEER PLUS SOUNDMASTER

Eight-bit hold-outs.

By Micheal Hanish

WHILE THE WAVE of the future in sound may lie with the emerging 12- and 16-bit audio-digitizing technology, two recent arrivals on the sound-sampler market prove that 8-bit technology is still alive and kicking. Both Audio Engineer Plus (\$349, *RamScan/Micro-Pace*) and SoundMaster (\$199.95, \$99.95 without software, *Oxxi*) produce excellent samples for playback at just about the highest level that the Amiga's native sound capabilities can handle.

Ironically, both samplers ship with virtually the same software controller, namely, Oxxi's AudioMaster III, although RamScan refers to its software as Audio Engineer (the hardware is called Audio Imager). The superb sample-editing features of AudioMaster III have been well documented in previous issues of *AmigaWorld* (see Mar. '91, p. 13, for a complete review, and also

"Accent on Audio," p. 42 in this issue). Suffice it to say that by using AudioMaster III, you can do virtually anything you wish to the sample with the utmost precision and speed.

For the purposes of this review, we will focus on the hardware capabilities of each sampler. In a strict sense, a comparative review of the two packages is not quite fair, as Audio Engineer costs quite a bit more than SoundMaster. While the former holds a narrow performance edge, the latter represents good quality at excellent value.

SOUNDMASTER

SoundMaster is a 1x4x6-inch box that attaches to your Amiga's parallel port with a meter-long cable. The unit's input-level slider and the overload LED are located on the top panel along with the microphone-level inputs. The slider's long, smooth track controls both microphone- or line-input channels simultaneously. You can easily make software adjustments to the balance after recording a sample, but you will get the best results by using a mixer. The actual sampling is done by one analog-to-digital converter, rapidly

switching between channels to achieve stereo.

SoundMaster's line inputs are actually RCA jacks, the kind found on virtually all audio equipment from CD players, tape decks, amplifiers, to camcorders. The microphone inputs are high-impedance mini-plugs, which I found to be somewhat noisy. Both sets of inputs automatically produce mono samples when you make a connection to the right channel only. You activate the internal microphone by pressing a hot-key combination before sampling.

The internal microphone can remain active simultaneously with other inputs, which makes it possible to produce, for example, a voice over a stereo sound effect. In practice, however, I recommend avoiding the internal microphone as it is low-fidelity and omnidirectional. The microphone's proximity causes it pick up computer noises. It would be far better to use an external mixer or even one of the microphone inputs.

All in all, SoundMaster functions quite well. The long cable makes desktop placement and control easy. The

Continued on p. 113.

F A X F A S T

9 6 0 0 B A U D

CLICKFAX

FULL RECEIVE AND TRANSMIT FAX SYSTEM FOR THE AMIGA

Introducing the extinction of the manual FAX. ClickFAX is a feature-packed, full-spectrum FAX system for all Amiga computers. The system includes an external modem, cable and complete support software.

SUPER FAST
CONVENIENT
THREE COMPLETE USER INTERFACES
ECONOMICAL

ClickFAX supports both sending and receiving FAX documents at up to 9600 baud, with 1D or 2D compression—Up to four times faster than other Amiga FAX modems.

The standard telecomm modem capability supports 300, 1200 and 2400 baud with MNP level 3, 4 and 5 support. You never have to disconnect ClickFAX to get onto BBS systems, networks and other services. ClickFAX can read ASCII text files, IFF graphics files and precompressed ".fax" files created by itself or the AE "SendFAX."

You can utilize all of the system's features from the WorkBench using the mouse, from your CLI or Shell using simple typed commands, or via ARExx from any application, script or macro.

All the speed, versatility and convenience of the ClickFAX system, including modem, cable and software, is only \$449.95.

FREE DEMONSTRATION

For more information, call (406) 367-5509, and we'll FAX you all the specs and an example of the high quality transmission you can enjoy with ClickFAX.

BLACK BELT SYSTEMS

398 JOHNSON RD., GLASGOW, MT 59230
SALES: (800) TK-AMIGA INTERNATIONAL SALES (406) 367-5513 BBS: (406) 367-ABBS FAX: (406) 367-AFAX
Amiga™ Commodore Business Machines: ClickFAX™ Black Belt Systems

MANTA

COMPUTERS & SOFTWARE

Order Toll Free
1-800-477-7706

Call for current price quotes & latest releases!
Many more items in stock at the lowest prices!

PRODUCTIVITY

Advantage.....	\$119	Pelikan Press.....	\$64
All in One.....	\$1.95	Pen Pal.....	85
Buddy System DOS.....	35	Pro Page 2.0.....	169
Buddy System PageStream.....	35	Pro Write.....	90
Can Do.....	84	Project D 2.0.....	39
Compugraphic Fonts.....	119	Proper Grammar.....	57
Cygnus Ed Pro.....	61	Screenmaker.....	CALL
Deluxe Print II.....	50.95	Showmaker.....	209
Design Works.....	75	Softclips People, Classics.....	49
Desktop Budget.....	44	Structured Clip Art.....	39
Diskmaster 2.....	40	Superbase IV.....	289
NAG Plus 4.1.....	62	Wordperfect.....	155
Office.....	109	X-Cad 3D.....	279
Pagesetter.....	74	X-Cad Professional.....	125
PageStream.....	169		

DAKOTA

SKETCHMASTER 12x12.....\$399
SKETCHMASTER 12x18.....\$589

BCD - 2000A

Amiga Video Animation Controller

The BCD-2000A Animation Controller provides frame-accurate control of most industrial and broadcast video tape and disc machines.

- Plug in Card • Serial/Parallel Machine Control
- SMPTE time Code • Standard • Drop/Non Drop Frame
- Supported by most popular animation systems including • Sculpt Animate • Lightwave • Imagine

CSA

Call For Pricing

Mega Midget Racer
• 25 MHZ • 33 MHZ •
Magnum 40/4 040 Accelerator
Math Co's and Static RAM Available

GRAPHICS AND VIDEO DEPARTMENT

VIDEO TOASTER

Let MANTA upgrade your Amiga system to take full advantage of New Tek's Video Toaster... • GVP Accelerator Boards 22-50 MHZ • Memory Upgrades • Hard Drive Packages • Removable Media • T.B.C. • Training Tapes...

MANTA's video consultants will tailor a package for your needs

CALL FOR BEST PACKAGE PRICES

DPS PERSONAL TBC

Finally a Low End TBC Solution... • Fits inside an Amiga • Full NTSC and SVHS • Full Frame Storage • Fully compatible with all VCR's & NewTek's Video Toaster • Genlocks to any stable video source. CALL!

VIDEOS & BOOKS

Abacus Desktop Video Book.....	17	C for Beginners.....	14
Amiga for Beginners.....	15	Desktop Video 2nd Edition.....	19
Amiga World Toaster Tape.....	20	Desktop Video Workbook.....	29
Amiga DOS 2.0 Companion.....	20	Dos In and Out 1.3/2.0.....	17
Amigavision Handbook.....	20	Lightwave 3D Video.....	35
Animation Video #2.....	20	Toaster Microwave.....	\$32
C for Advanced.....	29	Ultimate Guide to Video Toaster.....	34

TOASTER FONTS

Bread & Butter Fonts.....	\$55
Cinnamon Toast Fonts.....	55
Masterpiece Fonts.....	129
First Prize Toaster Fonts 1-5.....	20
Kara Font 1&2.....	59
Video Fonts 2.....	64

FONTS

Font Enhancer.....	\$99
Font Pack.....	99
Interfont.....	75
Kara Fonts.....	49
Pro Video 1-5.....	39
Video Clips.....	CALL

GRAPHICS & VIDEO

Amigavision.....	\$89	Mapmaster for Lightwave.....	\$59
Animagic.....	88	Pixel 3D.....	52
Art Department.....	52	Pro Conversion Pak.....	50
Art Department Pro.....	129	Pro-Video Gold.....	147
Color Splitter.....	105	Pro-Video Post.....	147
Disney Animator.....	97	Scala.....	239
Deluxe Paint 3.....	89	Scene Generator.....	28
Digimate 3.....	23	Scenery Animator.....	47
Digipaint 3.....	62	Showmaker.....	219
Digiview Gold 4.0.....	119	Spectra Color.....	CALL
Director 2.0.....	73	Titler II.....	219
Draw 4D.....	35	Turbo Silver.....	59
Foundation.....	135	T.V. Show 2.0.....	58
Image Finder.....	40	T.V. Text Pro.....	98
Imagine.....	179	Video Clipse.....	49.98
Imagine Guided Tour.....	35	Vista Pro.....	85

MEMORY

1x4 SIMMS.....	Call
256 k x 4 80ns DRAM.....	Call
1MG x 1 80ns DRAM.....	Call
3000 Memory Upgrade.....	Call
GVP SIMM32 Memory for Accelerators.....	Call

HARDWARE

SyQuest Removable Drives

44mg \$399
88mg \$629

Citizen Printers

GSX440 24 pin \$289 • GSX 200 9 pin
New GSX 130 & 140 CALL

Quantum LPS

52mg • 105mg
Low Prices

Monitors

NEC Multisync 3D.....	\$589
Seiko CM 1440.....	\$499
Seiko CM 1450.....	\$649

Genlocks

MiniGen.....	\$185
SuperGen.....	\$599
SuperGen 2000s.....	\$1299
Videomaster.....	\$999

DMI Resolver.....	CALL
DCTV.....	CALL
Firecracker 24/2 Mg.....	\$829
Fusion 40.....	CALL
Int. Floppy A500/2000.....	CALL
Ham-E Plus.....	CALL
Maxtor 213S.....	\$649
Personal SFC.....	\$349
JX-100 Scanner.....	\$639
Showline TBC's.....	CALL
Video Blender.....	CALL



The ICD Advantage

AdSCSI 2000

Hard drive interface with unmatched speed and flexibility.

AdSCSI 2080

Hard drive interface with up to 8 megs of FAST RAM.

AdSpeed

Best overall performance of any accelerator in its price range.

Flicker Free Video

Eliminates interface flicker for any Amiga computer.

AdRAM 540

Add up to 4 meg of RAM internally in your Amiga 500

AdRAM 2080

8 meg internally in your 2000/2500.

New From ICD

AdIDE

Smallest Amiga hard drive interface made. For IDE (AT) drives. IDE 44 for your 2.5 inch hard drives. IDE 40 for your 3.5 inch hard drive.

Novia 20i

The small hard drive and interface in the world for your Amiga 500. Fits internally.

Novia 60i

Now you can have the Novia with a 60 meg 2.5 inch hard drive.

Prima 52i

Now mount a 3.5 inch IDE drive internally in your Amiga 500, 1000 or 2000.

Prima 105i

105 megs internally in your 500, 100 or 2000.

Shuffle Board

Reroutes DFO: to the external floppy connector. Boot from an external floppy. For an Amiga 500 or 100.

Special

AdSpeed \$205
Flicker Free Video \$299

Call For Other Prices



Supra Corporation

SupraDrive 500XP

20 MB 512 K.....	\$329
52 MB 512 K.....	475
80 MB 512 K.....	555
105 MB 512 K.....	650



\$129

Supra 9600 Plus \$479 • 2400 Bd External \$79

Supra Wordsync.....\$99

Supra RAM 500 RX

1 MB.....	\$119
2 MB.....	189
8 MB.....	405

Supra RAM 2000

2 MB.....	\$165
4 MB.....	235
6 MB.....	299
8 MB.....	369

AUTHORIZED AMIGA SALES & SERVICE CENTER

EXPANSION SYSTEMS

THE BEST QUALITY AT THE BEST PRICE.

DataFlyer SCSI

High performance low cost SCSI interface.

A500 w/ chassis\$139.00
A2000.....\$85.00

DataFlyer RAM

8 MB A2000 RAM card also fits in DF500 chassis.

oK memory.....\$95.00
1Mb.....\$165.00
2Mb.....\$229.00

BaseBoard

4MB internal memory for A500 with clock.

oK memory.....\$95.00
1Mb.....\$129.00
2Mb.....\$169.00



GREAT VALLEY PRODUCTS, INC.

Enhance your Amiga Systems with GVP's Outstanding Quality & Performance

Manta carries the full line of GVP products!

Optical Drives • Removable Media

Accelerators: 68030 22 MHZ • 33 MHZ • 50 MHZ

Series II Controllers • A500 HD • 52 • 100 mg

GVP 24 Bit Display Card

**CALL
Super
Pricing**

Is Your Amiga Sick?

MANTA is a Full Amiga Service Center

We have the parts to put you back on track:

- Power Supplies
- Fatter Agnus
- Rom Chips
- Keyboards
- Drives



2.0 operating system call for price & availability

Deluxe Paint IV \$99.95

Paint and animate in HAM using 4096 colors

NEW Animation Features

NEW Paint Tools

PLUS All the power of

Deluxe Paint III

**New
Product**

Auto

BASIC™

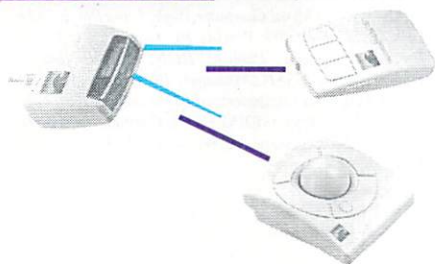
\$45.00

A powerful C.A.S.E. tool for the Amiga

Generate Amiga BASIC Code from drawings. Produce in minutes what used to take hours.

GOLDEN IMAGE™

NEW ITEM CORDLESS TRACKBALL & MOUSE



Cordless Mouse
\$69

Cordless Trackball
\$79

MASTER 3A-1 3.5, 880K disk drive	\$79
HAND SCANNER with touchup, high resolution	\$239
OPTICAL MOUSE	\$50
OPTO MECHANICAL MOUSE	\$36
AMIGA RC-500 512K RAM with clock for A500	\$49

1 Year warranty on all Golden Image products.

MISCELLANEOUS

Amax II	\$150
Amtrack	65
Apro Draw	459
Arexx	28.95
AudioMaster 3	64
Audition	62
Bars & Pipes Pro	224
Cross DOS	25.95
ECT Mid 500/2000	49
JSTK Power Play	9
Keyboard Skin	17.49
500/2000/3000	7
Mouse Mat	CALL
Mr. Backup	69
Perfect Sound	39.95
Quarterback	52
Quarterback Tools	189
SAS/Lattice C 5.1	CALL
Soundmaster	CALL
Stereo Speakers	65
Tiger Cub	

**International Orders
Welcome**

CDTV Titles in stock

**Entertainment
Software
Available**

**European Imports &
Magazines**

**Call for Complete Software
and Hardware Listing**

DKB

MegaChip 2000/500 • \$229

Two megabytes of Chip Ram. Doubles your graphic memory for desktop video, publishing, 3D rendering and multimedia. Compatible with Video Toaster!

Call for 2mg Agnus Price

MultiStart II • \$69

Install 2.0 and 1.3 ROMS in your Amiga 500 or 2000. Switch between 2.0 and 1.3 ROMS with the keyboard.

Call for 2.0 operating system

Insider II A1000 • \$179

Battery backed clock and calendar with up to 1.5 mg RAM.

Call for RAM prices

Kwickstart II • \$79

Puts Kickstart 2.0 and 1.3 in your Amiga 1000 Boots faster and auto boots most harddrives.

Secure Key • \$95

System Security for the Amiga 2000 or 3000. Keep your system safe from unauthorized use with this hardware security device.



NEW

Grand Slam

Multifunction Card • SCSI Controller

Add up to 8 mg RAM • Printer face parallel port

Grandslam.....	A500 • \$299	A2000 • \$229
Trumpcard.....	A500 • \$179	A2000 • \$109
Trumpcard Pro.....	A500 • \$235	A2000 • \$159

Call for Lowest Hard Drive Packages

FAX
(908) 542-3654
In NJ Call
(908) 542-1251

**ORDER TOLL FREE
1-800-477-7706**

Walk in Traffic Welcome

115 Route 35
Eatontown, NJ
07724
OPEN 7 DAYS

• Terms VISA/MASTERCARD, Discover, certified checks and money orders welcome. School & Corporate Purchase accepted. Most items shipped 1-2 Business days. • Returns: all items returned must have RMA # before returning. Defective products exchanged for same item only. Hardware items will be replaced or repaired. All returned items subject to a restocking fee. Shipping non-refundable. Call for complete details. • Amiga Computers sold to walk in traffic only. • Ad prices subject to change without notice. Prices may differ in retail location - Software Concepts, Eatontown. Not responsible for typographical errors.

LIST OF ADVERTISERS

Reader Service Number	98	Aamiga Warehouse, 104	25, 26	Great Valley Products, Inc., 7
	59	Activa International, 18	27, 28	Great Valley Products, Inc., 11
	76	Amazing Computers Southeast, 125	29, 30	Great Valley Products, Inc., 9
	97	Amazing Computers Southeast, 125	95	Help Disk, Inc., 96
	2	American Liquid Light, 107	31	ICD, Inc., 53
	*	AmigaWorld	75	INOVAtronic, Inc., CIII
		Subscription, 55	78	Mahoneysoft, 125
		Animation II, 64	34	Manta, 110-111
		Games Disk, 73	93	Memory World, 94
		Tech Journal, 81	94	Memory World, 125
		Videos, 97	80	Micropose Software, 59
		Tool Chest, 124	35	Montgomery Grant, 98-101
		Back Issues, xx	64	New Horizons Software, 13
	3	AmigaWorld Expo, 116-117	36	New Horizons Software, 43
	54	BIX, 96	38	NewTek, Inc., CII
	6	Black Belt Systems, 109	37	NewTek, Inc., CIV
	7	Briwall, 88-89	62	Pysgnosis, 45
	77	Carina Software, 108	1	RCS Management, 55
	8	Coast to Coast Technologies, 75	40	ReadySoft, Inc., 2
	71	Coast to Coast Technologies, 95	43	Roger Coats, 105
	10	Computability, 76-79	44	Safe Harbor, 120
	12	Computer Basics, 118-119	40	SAS Institute, 62
	13	Creative Computers, 65-72	45	Sideline Software, 93
	14	DevWare, Inc., 122-123	90	SMC Software Publishers, 125
	15	Digital Creations, 61	46	SoftLogik Corp., 47
	64	Digital Micros, 37	88	Software Hut, 125
	61	Ditek International, 51	89	Software Hut, 125
	17	Dr. T's Music Store, 20	47	Software Support Int'l, 121
	73	Electronic Arts, 63	48	SoftWood, Inc., 15
	18	Enic Information Services, 83	*	Supra Corp., 19
	13	Go Amigo, 84-85	*	Supra Corp., 21
	19	Gold Disk, Inc., 1	50	The Software Shop, 103
	20	Grapevine Group, The, 91	87	TriMedia Incorporated, 125
	70	Graphically Speaking, 96	74	US Gold, 82
	21, 22	Great Valley Products, Inc., 4	58	Virtual Reality Laboratory, 48
	23, 24	Great Valley Products, Inc., 5	86	Visionsoft, 125

This index is provided as an additional service. The publisher does not assume liability for errors or omissions.

* This advertiser prefers to be contacted directly.

NOTICE TO ADVERTISERS

All advertising is subject to the approval of the Publisher and *AmigaWorld* reserves the right to refuse advertising without notice.

The advertising herein that has been typeset and/or designed by *AmigaWorld* is the property of *AmigaWorld*, and not that of the advertiser. The advertiser has purchased the right of reproduction in *AmigaWorld* only, and does not have the right to reproduce the ad in any other publication, without the expressed written consent of *AmigaWorld*.

Advertisers and/or their agencies assume the responsibility for the condition of the contents of the advertising printed herein and agree to indemnify the Publisher of *AmigaWorld* for any claims and/or expenses incurred therefrom.

AmigaWorld is not responsible for changes to artwork after the given advertising deadlines, nor assumes responsibility for mistakes, misprints, or typographical errors, and will not issue credits of any kind for such errors.

AmigaWorld advises advertisers that statements regarding shipping and handling charges, warranties and/or money-back guarantees should be included within all forms of advertising in *AmigaWorld*.

The opinions expressed in the articles and advertising appearing herein are those of the authors and/or advertisers and are not necessarily those of *AmigaWorld*.

Manuscripts: Contributions in the form of manuscripts with drawings and/or photographs are welcome and will be considered for possible publication. *AmigaWorld* assumes no responsibility for loss or damage to any material. Please enclose a self-addressed, stamped envelope with each submission. Payment for the use of any unsolicited material will be made upon publication. All contributions and editorial correspondence (typed and double-spaced, please) should be directed to *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458; telephone: 603-924-0100. **Advertising Inquiries** should be directed to Advertising Offices, *AmigaWorld*, 80 Elm St., Peterborough, NH 03458; telephone: 800-441-4403. **Subscription problems or address changes:** Call 1-800-365-1364 (in CO, 1-303-447-9330) or write to *AmigaWorld*, Subscription Dept., PO Box 58804, Boulder, CO 80332-8804. **Problems with advertisers:** Send a description of the problem and your current address to: *AmigaWorld*, 80 Elm St., Peterborough, NH 03458, ATTN.: Margot L. Swanson, Customer Service Representative.

FYI If you have any questions or concerns about advertisers in *AmigaWorld*, please contact: Margot L. Swanson, Customer Service Representative, *AmigaWorld* Magazine, 80 Elm St., Peterborough, NH 03458. As a service to its readers, *AmigaWorld* will periodically publish the names of companies who are having difficulties meeting their customer obligations or who have gone out of business. Through our customer service representative, *AmigaWorld* assists readers with problems they may have with advertisers. However, *AmigaWorld* does not assume any liability for advertiser's claims. Readers are advised to contact *AmigaWorld* before dealing with these companies: Micro Computer Services; Computer Mart, C Ltd., and Ingenuity, Inc. are out of business.

AmigaWorld is a publication of International Data Group, the world's largest publisher of computer-related information. International Data Group publishes over 150 computer publications in 49 countries. Over 25 million people read International Data Group's publications each month. International Data Group's publications include: ARGENTINA's *Computerworld Argentina*; ASIA's *Asian Computerworld*; AUSTRALIA's *Computerworld Australia*, *PC World*, *Macworld*; AUSTRIA's *Computwelt Oesterreich*; BRAZIL's *DataNews*, *PC Mundo*; CANADA's *Computer Data*; CHILE's *Informatica*, *Computacion Personal*; COLUMBIA's *Computerworld Columbia*; DENMARK's *CAD/CAM WORLD*, *Computerworld Denmark*, *PC World*, *Macworld*, *Unix World*; FINLAND's *Mikro PC*, *Tietoviikko*; FRANCE's *Le Monde Informatique*, *Distributive*, *InfoPC*, *Telecom International*; HUNGARY's *Computerworld SZT*, *Mikrovilag*; INDIA's *Computers & Communications*; ISRAEL's *People & Computers*; ITALY's *Computerworld Italia*, *PC World Italia*; JAPAN's *Computerworld Japan*, *Infoworld*, *Publish*; KOREA's *Hi-Tech Information/Computerworld*; MEXICO's *Computerworld Mexico*, *PC Journal*; THE NETHERLANDS' *Computerworld Netherlands*, *PC World*, *AmigaWorld*; NEW ZEALAND's *Computerworld New Zealand*, *PC World New Zealand*; NIGERIA's *PC World Africa*; NORWAY's *Computerworld Norge*, *PC World Norge*; CAD/CAM, *Macworld Norge*; PEOPLES REPUBLIC OF CHINA's *China Computerworld*, *China Computerworld Monthly*; POLAND's *Computers*; SPAIN's *CIM World*, *Comunicaciones World*, *Computerworld Espana*, *PC World*, *AmigaWorld*; SWEDEN's *ComputerSweden*, *Mikrodatorn*, *PC/Nyheterna*, *PC World*, *Macworld*; SWITZERLAND's *Computerworld Schweiz*; TAIWAN's *Computerworld Taiwan*, *PC World*; UNITED KINGDOM's *Graduate Computerworld*, *PC Business World*, *ICL Today*, *Lotus UK*, *Macworld U.K.*; UNITED STATES' *AmigaWorld*, *CIO*, *Computerworld*, *Digital News*, *Federal Computer Week*, *GamePro*, *inCider*, *InfoWorld*, *Network World*, *PC Games*, *PC World*, *Portable Computing*, *Publish!*, *RUN*, *SunTech Journal*; USSR's *World USSR*, *Manager*, *PC Express*, *Network*; VENEZUELA's *Computerworld Venezuela*, *Micro Computerworld*; WEST GERMANY's *Computerwoche*, *Information Management*, *PC Woche*, *PC Welt*, *AmigaWelt*, *Macwelt*.

From p. 109.

overload LED gives you a fairly accurate indication of your hardware's peak saturation point. If you use the LED with the software's sampler controls, you can get samples with as wide a dynamic range as the original. The hardware has a dynamic range of about 48 dB and a wide frequency response (20–20,000 Hz); this is plenty of leeway for capturing sounds in all their fidelity with a minimum of cross talk.

There are, however, two questionable items concerning the hardware design. While an uncommon feature for samplers, parallel-port pass-through really should be provided. Without pass-through, you are forced either to power down and change connections or purchase a switch box (which can add noise) in order to use a printer. The second design feature of which I became wary concerns the input plugs located on top of the unit. Because these are facing up, they have the potential to become dust catchers (if unused).

AUDIO ENGINEER PLUS

The GSOF Audio Imager, the hardware part of the Audio Engineer Plus package, offers a much more rugged

and feature-packed design, at a higher price. The main controls, left and right input level knobs and mic/line selector switches for each channel, are on the front panel of a 6½×1½×6½-inch metal box. It attaches to and gets power from the parallel port with a cable 1½ feet long. The front panel also provides mini-plug, mic-level inputs (high impedance) and an LED overload indicator. Audio Engineer's line inputs are located on the rear panel, along with a parallel-port pass-through that's controlled by a switch on the front panel. Since each channel can accept mic or line-level inputs independently, it is easy to combine and control sources without a separate mixer (although they are helpful when sampling).

There are two analog-to-digital converters, one for each channel, yielding noticeably better sample fidelity and less cross talk. The level-control knobs have a large adjustment range to accommodate a wide variety of input levels. While these produce some noise during initial use, it disappears after they rotate a few times.

If you need to adjust the DC offset (bias adjustment), you can do so with a small recessed screw on the rear panel.

This operation is part of the set-up procedure, done with a supplied program, to prevent residual line noise as a result of excessive preamplification.

Audio Imager's dynamic range is more than 48 dB, and frequency response goes way beyond the usual 20–20,000 Hz. With Audio Imager, you will get samples of a quality that very likely surpasses most requirements. Even the most complex stereo samples are clear, well-defined and accurate, with virtually no cross talk. Even when resampling, yields are very small and very clean.

PICK A SAMPLE, ANY SAMPLE

It's an interesting exercise to be able to compare two different pieces of hardware designed to work with essentially the same software. The software is excellent, and you won't be disappointed with either piece of hardware. Both are very good in design and performance. The Audio Imager is superior by a notch in engineering, design, and results, although I found SoundMaster's extra cable length convenient. SoundMaster does an almost equally excellent job and costs less. Consider your needs and your budget. ■



B A C K T A L K

CANDID RESPONSES TO AMIGAWORLD REVIEWS

Image Manipulation Gone Haywire

I must bring to your attention statements appearing in the September issue which are inaccurate and/or misleading to your readers. Additionally, I call into question the journalistic ethics of printing clearly skewed comparison articles under the guise of objective reviews. The "review" of RasterLink by Mitch Wells is one example.

An objective review does not normally begin with several paragraphs describing the failings of other products. In fact, responsible journalists tend to limit references to other products (good or bad) only when writing comparisons.

When these ill-placed paragraphs contain falsehoods, they reflect very poorly on your publication. To wit: "Besides all that, ADPro will not dis-

play 24-bit images." ADPro, in fact, directly supports 24-bit display devices that are mentioned in the article (Firecracker and Harlequin) as well as a number of others.

Another error occurs when the author says that he cannot work with an image larger than a single screen even though he has 7MB of memory. Well, with only 5MB of fast memory, ADPro owners can manipulate true color images larger than 1024×1024 pixels. This is considerably larger than "a single screen" size of 768×480.

Another misrepresentation occurs in the very next paragraph (beginning "Thankfully...") where Mr. Wells suggests that for \$199.95, the RasterLink purchaser gets the ability to directly control Targa display boards and film recorders. Checking with the "Amazing Computing Buyers Guide" reveals that TGA Link (sold separately) is an additional \$299.95, and Cine-

Link (sold separately) is another additional \$299.95. Mr. Wells specifically states that these are included capabilities "not found in other image-conversion packages."

The review points to the ability to process images in small chunks as being an unmitigated advantage of RasterLink. The article fails to point out that disk-based processing is slower in performance. Fast performance is something which animators require and other products deliver. Further, the reviewer does not mention any of RasterLink's memory failings.

In summary, your magazine stands as one of the front running publications in the Amiga market. Your editorial policies should also be first rate. Unfortunately, they are not. You instituted a policy of "fact checking" when you joined *AmigaWorld*. Clearly that policy is not being carried out as checking with either Active Circuits or ▶

ASDG would have alerted your editors as to the serious deficiencies in this article.

—Perry Kivolowitz
ASDG

Editor's Notes: Perry makes a number of very valid points. Some of our statements about ADPro could be misinterpreted. Our fact checking sometimes fails, and when it does, we admit it. In this case, since the review was not of ADPro, the AmigaWorld staff did not check these facts with ASDG. In the future, we will check facts with manufacturers even if they are not the focus of the review.

—Doug Barney

Due to space constraints, several lines of text were cut from Mitch's introductory material including 'ADPro will allow display of 24-bit files provided you have the proper hardware combination like the Mimetics FrameBuffer of the Impulse Firecracker 24).

While editing, too much was cut thereby

changing the meaning. This is unfortunately the case with this review. My apologies to Mitch.

—J. Jackson

On Time

We take issue with several parts of August's Video Suite column, where the IVT-7 and IVT-9 Plus TBCs are concerned. The first prominent error in the article that both the IVT-7 and IVT-9Plus have their Proc AMP controls located behind the front panel. This is incorrect. Only the IVT-7 has the Proc AMP control behind the front panel.

Then, the article states that the Proc AMP controls would not eliminate fuzziness. Eliminating fuzziness is not the function of the Proc AMP. Fuzziness is sometimes caused by misadjustment of the noise reduction pot VR-10. Correct adjustment of VR-10 and R-Y, B-Y balance should remove fuzziness as indicated in the opera-

tional manual of the unit.

—Joe Han Tonkingkeo
I.DEN Videotronics

Note: The placement of the Proc AMP controls became a bit confused in the re-writing process. Concerning the fuzziness, I did not mean to imply that the Proc AMP controls would eliminate fuzziness, we tested all the units without opening them up and fiddling with the internal settings. We did perform all the phasing and timing adjustments externally. If the noise reduction circuitry is that in need of adjustment, perhaps they should consider designing more accessible controls. All in all, the VRT-7 and IVT-9Plus performed quite within reason, they just performed on the lower end of those tested.

—Mike Hanish

Yakkity yak...do talk back! Send your comments on reviews to Back Talk, AmigaWorld Editorial, 80 Elm St., Peterborough, NH 03458. Letters may be edited for space and clarity. ■

DON'T MISS A BEAT!

Send for your missing back issues and complete your **AMIGA WORLD** library today!

July 1991. Annual Review Issue. Expanded coverage of the hottest hardware and software products. Plus debut of AmigaWorld's monthly column, "Video Suite."

June 1991. Special on CDTV with comprehensive Buyer's Guide to CD titles. Plus tips-and-techniques features on animation and optimizing your system resources.

May 1991. Leading-edge Amiga graphics and the newest 3-D animation programs. Plus an "AmigaWorld Special Report" on the A3000 Tower machine, a "Beginner's Guide" to Amiga music, and conclusion to A500 Upgrade series.

April 1991. Power Hardware Special. Plus Part 3 of A500 Upgrade Series.

March 1991. Tips and Techniques on using seven Amiga 3-D programs. Plus four hard drives for the A500 in Part 2 of the Amiga 500 Upgrade Series.

February 1991. Multimedia Special. Also debut of AmigaWorld's four-part A500 Upgrade Series.

January 1991. 2-D Graphics Special: Buyer's Guide to Amiga paint programs. Plus tutorials on image-processing, portraits, slide-making, painting and 2-D to 3-D graphics conversion.

December 1990. Buyer's Special: MIDI sequencers, telecommunications software and video font collections. Plus guide to mail order buying and a 25-page special Review section.

November 1990. Annual Games Special: Top 20 games of 1990, plus 1991 previews and PD favorites. Also AmigaVision multimedia tutorial and guide to Amiga networking products.

October 1990. An "AmigaWorld Exclusive" on the revolutionary Video Toaster from NewTek. Plus a desktop-video studio builder buyer's guide and a hands-on preview of Workbench 2.0.

September 1990. Animation Special. Plus tips and techniques on palette design and assembling AmigaDOS scripts.

August 1990. Programming Special. Plus guide to maintaining hard-drive efficiency, safety, and performance.

Each information
packed issue of
AmigaWorld is only
\$3.95, plus \$1 for
postage and handling.

Call toll free or mail this coupon today!

1-800-343-0728

Mail order to: AmigaWorld Back Issues P.O. Box 802, 80 Elm Street, Peterborough, NH 03458 800-343-0728/603-924-0100	
<input type="checkbox"/> July 1991	<input type="checkbox"/> March 1991
<input type="checkbox"/> June 1991	<input type="checkbox"/> February 1991
<input type="checkbox"/> May 1991	<input type="checkbox"/> January 1991
<input type="checkbox"/> April 1991	<input type="checkbox"/> December 1990
<input type="checkbox"/> November 1990	<input type="checkbox"/> October 1990
<input type="checkbox"/> September 1990	<input type="checkbox"/> August 1990
I have checked ___ back issues x \$3.95 \$_____	
California orders add 6.25% state tax \$_____	
Canadian orders add 7% GST \$_____	
(GST reg. # 126038405)	
Add postage/handling:	
U.S. surface orders - \$1	\$_____
Canadian surface - \$2	\$_____
Canadian air mail - \$3	\$_____
Foreign surface \$3/ air mail \$7	\$_____
Total Enclosed \$_____	
<input type="checkbox"/> Check/money order enclosed	
Charge my:	
<input type="checkbox"/> Mastercard	<input type="checkbox"/> Visa
<input type="checkbox"/> American Express	<input type="checkbox"/> Discover
Card # _____	Exp- _____
Signature _____	
Name _____	
Address _____	
City, State, Zip _____	

AWBI1091

AMIGA PROFILE



Mighty Mouse and the Amiga

suited Colón, a cartoonist with 38 years of experience, who ditched his Macintosh II a year ago in favor of an Amiga 500.

We got an early black-and-white version, which gave

CARTOON HERO MIGHTY MOUSE is usually created with the traditional method, a pen and a piece of paper. But for parts of "Mighty Mouse, In the Mode," artist Ernie Colón used another tool; his Amiga.

The change made sense for this particular Marvel Comics episode, since the Amiga is a central plot element. It also

us a jump on the story, most of which we are willing to share. Mighty Mouse, a computer neophyte, visits a school and confronts this new "educational tool." Once alone with the Amiga, our fearless mouse is sucked inside the computer's circuitry, which leaves a tell-tale burp on its monitor.

Come to find out, Mighty

Mouse has been drawn in by the wily Dot Matrix, who wants him to defeat a giant viral worm that threatens a huge computer network. The self-absorbed mouse has no interest in saving bank records or military codes, but when he hears that baseball statistics are in peril, the cartoon rodent springs into action.

Before defeating the slimy intruder (had you any doubts?), Mighty Mouse confronts a huge pile of worm parts in the shape of floppy discs, zips through a maze, and gets caught in a huge grid. Just as Popeye has his spinach, Mighty Mouse eats a special snack that gives him extra power.

All's well that ends well, and

the kids' favorite mouse comes through unscathed and computer literate. Look for the issue wherever fine periodicals are sold.

And look for more Amiga art from the man behind the lines of Casper the Friendly Ghost in upcoming comics. He has already upgraded his A500 to 9MB of RAM, and has added a scanner, hard drive, Deluxe-Paint III (Electronic Arts), and Sketchmaster drawing tablet (Dakota Corp.).

Colón's ultimate aim is to create full color, high-res frames that are photographed and turned directly into the finished comic, leaving pen and paper entirely behind.

—Doug Barney

Become a part of the *AmigaWorld* Programming Team

We're looking for quality programs to support the growth of the *AmigaWorld* product line and we need your help.

We offer competitive payment and an opportunity for fame.

- GAMES ■ ANIMATION ■ 3D ■ UTILITIES
- CLIP ART ■ AMIGAVISION APPLICATIONS
- OTHER STAND-ALONE APPLICATIONS

Send your submissions
or contact us for
guidelines:

Amiga Product Submissions

Mare-Anne Jarvela

(603) 924-0100

80 Elm Street, Peterborough, NH 03458

THE AMIGA EVENT 2.0

AmiEXPO OAKLAND, CALIFORNIA

AmiEXPO brings the Amiga™ Event to Oakland Convention Center, October 4-6, 1991! Don't miss:

- ★ State of the Art Video, Graphics, and 3D Software
- ★ Hardware to Expand your Amiga to the Max
- ★ Bargains on the Hottest Software and Hardware
- ★ Amiga Classes, Seminars and Keynote Events
- ★ World Premieres of Major Amiga Products



KEYNOTE PRESENTATIONS WOW 'EM!

Each meeting day a special presentation will highlight the best in Amiga technology:

Friday, 5:00 PM

THE AMIGA VIDEO MACHINE

Special MultiMedia Event

AMIGA WORLD PREMIERE

Saturday, 12:00 Noon

THE CDTV EXPERIENCE

The Future of Home Entertainment

AMIGA WORLD PREMIERE

Sunday, 12:00 Noon

THE ART OF THE AMIGA

Next Generation Graphics Today

AMIGA WORLD PREMIERE

The Parc Oakland Hotel is the official AmiEXPO headquarters hotel, and is located at 1001 Broadway, adjacent to the Oakland Convention Center. Rooms are available for a special AmiEXPO discount rate: \$105 Single or \$125 Double. To make a reservation, call the Parc Oakland directly at 415-451-4000. HOTEL DEADLINE IS SEPTEMBER 18, 1991.

American Airlines, the official carrier for AmiEXPO is pleased to offer a 5% discount off any fare to Bay Area airports. Call American at (800) 433-1790 and give them Star File # 07Z14K.

TICKETS NOW AVAILABLE

Advance registration will save you \$5 off the on-site fee - and time in line. Call us at 1-800-32-AMIGA with a Visa or MasterCard or return the coupon with a personal check or money order made out to AmiEXPO. **PRE-REGISTRATION DEADLINE IS SEPTEMBER 12, 1991**

SINGLE DAY TICKET \$15.00

MULTI-DAY TICKET \$20.00

These prices already reflect the \$5 discount. Prices are \$5 more at the door. No refunds or cancellations after the pre-registration deadline. Your registration to AmiEXPO includes admission to the Exhibition, Keynote Sessions, Amiga Seminars, and the AmiEXPO Artists Theatre. This Preliminary Program is subject to change.

PLEASE NOTE: You will receive a confirmation of your registration. No tickets will be mailed to you. When arriving at show site, go to Advance Registration to claim your tickets. If you are registering more than one person, please use a separate coupon for each person.

FREE AMIGA SEMINARS

AmiEXPO Seminars and Panels are all included FREE with your admission to the Exhibits. Each day, experience the best and the latest that Amiga developers and users have to offer.

FRIDAY

- 1:00 AMIGA MUSIC/VIDEOS
- 2:30 GRAPHICS OF THE 1991 ART & VIDEO AWARDS
- 3:00 INSIDE WORKBENCH 2.0
- 5:00 SPECIAL KEYNOTE PRESENTATION

SATURDAY

- 11:00 VIDEOS OF THE 1991 ART & VIDEO AWARDS
- 12:00 SPECIAL KEYNOTE PRESENTATION
- 1:30 AMIGA MULTIMEDIA
- 3:00 GRAPHICS OF THE 1991 ART & VIDEO AWARDS
- 4:00 EXTENDED GRAPHIC DISPLAYS

SUNDAY

- 12:00 SPECIAL KEYNOTE PRESENTATION
- 1:30 VIDEO PRODUCTION FUNDAMENTALS
- 3:00 VIDEOS OF THE 1991 ART & VIDEO AWARDS
- 4:00 NEXT GENERATION AMIGA GRAPHICS

SHOW HOURS

October 4

Friday

1 PM to 6 PM

October 5

Saturday

10 AM to 6 PM

October 6

Sunday

10 AM to 5 PM

AmiEXPO is a registered trademark of AmiEXPO, Inc.

Amiga is a registered trademark of Commodore-Amiga, Inc.

AmigaWorld Magazine is a registered trademark of IDG Communications, Inc.

Circle 3 on Reader Service card.

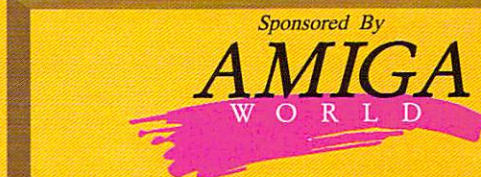
OCTOBER 4-6 RELEASE

NOVICE CLASSES MAKE IT EASY

AmiEXPO offers two Novice Classes for those beginning with the Amiga and computing in general. Each class is 3 hours long, costs \$30 per person and is limited to 40 students.

BASIC AMIGA CONCEPTS 10-1, Fri. & Sun.; 2-5, Sat.

- Introduction to All Amiga Models • All Peripheral Expansion
- Workbench 2.0 Coverage • Beginning CLI



UNDERSTANDING THE CLI 2-5, Fri. & Sun.; 10-1, Sat.

- Unleash your Amiga's Power • Most Essential CLI Commands
- Exploring Public Domain • The World of Telecommunications

MASTER CLASSES - MEET THE EXPERTS

To efficiently get the most out of your Amiga, you need an expert. Amiga Master Classes are designed to provide information on important professional topics.

There are six different topic areas, divided into Introductory (I) and Advanced (II). Each class runs 3 hours, costs \$60 per person and is limited to 40 students.

AMIGA VIDEO

Instructor: Oran J. Sands III

VIDEO I 10-1, Friday and Saturday

- Basic Video & Amiga Relationship • Video Hardware
- S-Video vs NTSC • Video Software Overview

VIDEO II 2-5, Friday and Saturday

- Continuation of Video I • Optimizing Video Output
- Video Toaster • Pro Video Post • Genlock Comparison

AMIGA ANIMATION

Instructor: Steve Segal

ANIMATION I 10-1, Saturday and Sunday

- 2D Character Animation • Digitized Animation
- Storyboarding • Character Design • Recording The Work

ANIMATION II 2-5, Saturday and Sunday

- 3D Animation • Character Modelling •
- Texture & Bump Mapping • Solid Modeling • Ray Tracing

AMIGA AREXX

Instructor: R. L. Stockton

AREXX I 10-1, Sunday

- Basic Language Structure • Libraries
- Host Addresses • String Handling

AREXX II 2-5, Sunday

- Commercial Applications • Non-Amiga Rexx
- ARexx in WB 2.0 • Graphical User Interfaces

AMIGA GRAPHICS

Instructor: Jim Sachs

GRAPHICS I 10-1, Friday and Saturday

- Basic Graphic Concepts • Anti-aliasing • HAM Painting
- Palette Selection • Brush Painting • Stencils

GRAPHICS II 2-5, Friday and Saturday

- Advanced Graphic Displays • Image Processing
- Animation Planning • Beyond Bitmaps • Going to Print

AMIGA 3D

Instructor: Tony Dispoto

3D I 10-1, Saturday and Sunday

- 3D Concepts • Modeling • Rendering Engines • Lighting
- Sculpt-Animate 4D • Turbo Silver • Imagine

3D II 2-5, Saturday and Sunday

- Continuation of 3D I • 24 Bit Rendering • Use of Paths
- Optical Disk Recording • 3D Animation •

AMIGA MULTIMEDIA

Instructor: Steve Gillmor

MULTIMEDIA I 10-1, Friday

- Multimedia Defined • Choosing Your Tools
- Hypertext and Hypermedia • Analysis of Student Projects

MULTIMEDIA II 2-5, Friday

- Commercial Applications • ARexx in Multimedia
- Multimedia Design • CDTV and CD-Rom Development

**Now Here: AmiEXPO SUMMER VIDEO • COVERING EXHIBITS, SEMINARS, & CLASSES
A FULL HOUR OF THE LATEST AMIGA INFO • ONLY \$20 (+ \$1.50 S&H) • ORDER BELOW!**

**Registration is
\$5 More At The Door**

AmiEXPO - FALL

Single Day - \$15 _____

Multi-Days - \$20 _____

Novice Class(es) - List Class and Time - \$30 Each

Master Class(es) - List Class and Time - \$60 Each

AmiEXPO Summer Video Tape - \$21.50 _____

Total Amount Enclosed _____

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

For _____ MasterCard or _____ VISA Payment

Expiration Date _____

Account Number _____

Name as it appears on card: _____

Signature _____

Make Check or Money Order Payable to:
AmiEXPO • 465 Columbus Ave., Ste. 285
Valhalla, NY 10595
800-32-AMIGA • 914-741-6500

Manufacturers'/Distributors' Addresses

Activa International
Keienbergweg 95
1101 GE Amsterdam,
Holland
011-31-20-97-00-35
Distributed by Programs
Plus & Video

Addison-Wesley Publishing
Jacob Way
Reading, MA 01867
617/944-3700

Aegis Development
See Oxix

Axiom Software
1221 E. Center St. S.E.
Rochester, MN 55904
507/289-8677

Black Belt Systems
398 Johnson Rd.
Glasgow, MT 59230
406/367-5513
800/TK-AMIGA

Blue Ribbon SoundWorks
1293 Briardale N.E.
Atlanta, GA 30306
404/377-1514

**California Institute of
The Arts**
24700 McBean Pkwy.
Valencia, CA 91355
805/255-1050

Centaur Software
PO Box 4400
Redondo Beach, CA 90278
213/542-2226

**Commodore Business
Machines**
1200 Wilson Dr.
West Chester, PA 19380
215/431-9100
215/436-4200

Co-Tronics Engineering
PO Box 1546
Glendale, AZ 85312
314/429-2644

CSA
7564 Trade St.
San Diego, CA 92121
619/566-3911

Desktop Utilities
PO Box 3053
Manuka, ACT 2603
Australia
61-6-2395568

Digital Creations
2865 Sunrise Blvd., Suite 103
Rancho Cordova, CA 95742
916/344-4825

Dr. T's Music Software
100 Crescent Rd., Suite 1B
Needham, MA 02194
617/455-1454

EasyScript!
10006 Covington Dr.
Huntsville, AL 35803
205/881-6297

Elan Design
PO Box 3136
Half Moon Bay, CA 94019
415/726-5097

Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404
415/571-7171
800/245-4525

Great Valley Products
600 Clark Ave.
King of Prussia, PA 19406
215/337-8770

Haitex Resources
PO Box 20609
Charleston, SC 29413
803/881-7518

Hash Enterprises
2800 E. Evergreen Blvd.
Vancouver, WA 98661
206/573-9427

ICD
1220 Rock St.
Rockford, IL 61101
815/968-2228
800/373-7700

IDEN Videotronics
9620 Chesapeake Dr.
Suite 204
San Diego, CA 92123
800/874-IDEN

Impulse
6870 Shingle Creek
Parkway, Suite 112
Minneapolis, MN 55430
612/566-0221

INOVAtronic
8499 Greenville Ave.
Suite 209B
Dallas, TX 75231
214/340-4991

Intercore Development
7 Dover Hill Dr.
Nesconset, NY 11767
516/361-6998

ITAC Systems
3121 Benton St.
Garland, TX 75042
214/494-3073

Software

Original

BARS&PIPES

Only \$109
Give Your Ideas a Chance to Sing with
this Best-Selling Music Package

BARS & PIPES PROFESSIONAL \$219

Virtual Reality

DISTANT SUNS v4.0

1MB Required \$57

Distant Suns 3.0 \$35

512K req.

VISTA PRO \$85

24 BIT COLOR
Requires 3MB RAM

VISTA 1.2 \$35

Requires 1MB RAM

TTR

MRBackup

Professional

The New Wave
in backup capability
\$35

Workbench
Management
System v2.0

Now a single click
launches your
application.
\$32

Teacher's

Toolkit

Complete
Classroom
Management.
\$35

RXTools

Create windows &
gadgets for Arexx.
\$35

Brigade

Commander

Desert Storm Data
Disk included!
\$28

ABACUS BOOKS

Amiga for Beginners \$13
Amiga Dos Q&A Ref. Guide \$8
Amiga Dos Inside & Out \$19
Amiga Basic Inside & Out \$19
Machine Language \$15
Graphics Inside & Out \$15
Amiga C for Beginners \$15
Amiga C for Advanced \$26
3D Graphic Prog. in BASIC \$15
Desktop Video Power \$23
Best of Amiga Tricks & Tips \$23
Making Music on Amiga \$26
Amiga Printers Inside Out \$26

24 BIT IMAGE
PROCESSING
SOFTWARE



ONLY \$139

1st Prize Toasted Fonts

are the Video Art
Director's first choice for
scroll & crawl pages in
the Video Toaster®
Character Generator.

Each of five sets offers a
range of mix 'n' match
alphabets in the most often
needed sizes.
39 premium type faces for
any video job customer
requirement!
\$47 ea.
all 5 sets \$159
call for complete listing

VIDEO TAPES

Amiga Primer \$24
AmigaWorld Animation #2 \$19
Desktop Video Volume #1 \$24
Imagine: A Guided Tour \$29
Pro. Techniques w/ DPaint \$24
World of Turbo Silver \$29
CDTV
Adv. Military Systems \$27
All Dogs Go to Heaven \$33
Barney Bear School \$26
Case of Cautious Condor \$33
CD Caddy \$15
Classic Board Games \$33
Fred Fish Collection \$48
Hound of the Baskervilles \$37
Illustrated Dictionary \$44
Illustrated Holy Bible KJV \$37
Illustrated Shakespeare \$37
Lemmings \$33
My Paint \$30
New Basics Cookbook \$44
Psycho Killer \$37
Team Yankee \$33
Time Table Business \$44
Desktop Video Power \$23
World Vista \$64
Women in Motion \$37
Wrath of the Demon \$33
Call For New Titles

EDUCATION

Algebra \$31
Barney Bear (ea) \$22
Carmen Sandiego (ea) \$31
Dinosaur Discovery Kit \$25
Katie's Farm \$25
Math Talk \$25
Math Talk Fractions \$25
Math Blaster Plus \$31
McGee Fun Fair \$25
Puzzle Storybook \$25
Rhyming Notebook \$25
Talking Animator \$41
Talking Coloring Book \$19

GAME OF THE MONTH

**Knights of
CRYSTALLION** BY US GOAT
Retail \$59.95

Knights of
CRYSTALLION BY US GOAT

ENTERTAINMENT

Altered Destiny \$37
Armour-Gedden \$28
Atomino \$31
Awesome \$37
Bane of Cosmic Forge \$37
Battle Chess 2 \$31
Brigade Commander \$28
Death Knights of Krynn \$34
Dragon's Lair 2 (Time Warp) \$37
Drakken \$37
Dungeon Master 2 \$25
Elvira: Mistress of the Dark \$37
Eye of the Beholder \$39
F15 Strike Eagle II \$37
Falcon \$31
Falcon Missions 1 or 2 \$19
Flight of the Intruder \$37
Full Metal Planet \$31
Gold of the Aztecs \$31
Hoverforce \$31
Immortal \$34
Jack Nicklaus Unlimited \$37
Killing Game Show \$28
Kings Bounty \$34
Lemmings \$31
M1 Tank Platoon \$37
Mean Streets \$31
Monopoly \$31
Overdrive \$37
Overlord \$31
PGA Golf \$34
PowerMonger \$34
Quest for Glory 2 \$37
Railroad Tycoon \$37
Search for the King \$37
Secret of Monkey Island \$39
Secret of the Silver Blades \$34
Shadow of the Beast 2 \$37
Sim City \$31
Sim City Graphics 1 or 2 \$23
Sim City Terrain \$12
Team Yankee \$37
Ultima V \$37
Wonderland \$37
Wolf Pack \$34

PRODUCTIVITY

AmigaVision \$89
Arexx \$31
A-Talk III \$62
Bars and Pipes Pro \$219
Baud Bandit \$30
Broadcast Tiltler II \$229
Delux Music Const. Set \$69
Designworks \$75
Digi-Paint 3 \$62
Digi-View Gold 4.0 \$129
DiskMaster II \$44
Disney Anim. Studio \$79
Dr. T's Copyist Apprentice \$94
Dr. T's Copyist DTP \$218
Dr. T's K.C.S. Level II v3.5 \$249
Dr. T's Tiger Cub \$87
Excellence 2.0 \$125
Ham-E Plus \$389
Internal Sound Kit \$38
Maxi Plan Plus 2.0 \$62
Music Box A \$38
Page Stream 2.1 \$169
Pelican Press \$62
ProWrite \$89
Professional Draw 2.0 \$125
Professional Page 2.0 \$169
Proper Grammar \$62
Project D 2.0 \$37
Pro Video Post \$209
RX Tools \$35
Scala \$275
Screen Maker \$249
Showmaker \$229
Spectracolor \$62
SuperBase Personal 2 \$94
SuperBase Prof. 4 \$329
Turbo Silver 3.0 \$59
WordPerfect \$169
Workbench Management \$35
XOR \$203

**Computer
Basics Inc.**
1490 N. Hermitage Rd., Hermitage, PA 16148

No One Knows Amiga Better
Authorized Commodore Dealer
Since 1980

● KNOWLEDGEABLE OPERATORS
● FAST SERVICE
● LOW PRICES

T-Shirt
 2 Styles Only \$9
 User Group Discounts on "Show Offs" - CALL

Mouse Mat \$9

ONLY AMIGA
 MAKES IT POSSIBLE

AMIGA CAP
 Blue on White Corduroy \$8

Polo Shirt
 White on Dk Blue \$19

Limited Offer
Free Mug
 with every order over \$200.00
 Only \$3.99 with orders over \$100.

AMIGA MUG
 White on Blue Ceramic \$8

DKB Software

MegAChip 2000 2MB of Chip Mem.	\$245
SecureKey Prevents access to A2000/3000	\$99
MultiStart II Use V1.3 or V2.0 on A2000	\$75
Insider II A1000 Ram OK \$169 1.5MB	\$239
Kwikstart II Use V1.3 or V2.0 Roms on A1000	\$85

GVP

A2000 ACCELERATORS	
22MHz/1MB w/520	\$869
22MHz/1MB w/520	\$1138
22MHz/1MB w/105Q	\$1318
33MHz/4MB w/520	\$1599
33MHz/4MB w/105Q	\$1868
50MHz/4MB	\$2289
4MB 32Bit extra RAM	\$330

GOLDEN IMAGE FOR AMIGA

New Cordless
Mouse \$75
TrackBall \$85
FREE Deluxe Paint II

New Brush Mouse
FREE Deluxe Paint II
 • Opto-mechanical
 • 250 DPI
 • 2 buttons
 • Brush Holder • 1 year warranty \$99

Amiga compatible Mouses
 Opto-Mechanical \$39
 Optical \$59

MASTER 3A1
 880K External Disk Drive \$79

HANDSCANNER
 W/TOUCHUP SOFTWARE FOR A500, A2000, A3000 \$265

MASTER 3A1D
 880K External Disk drive W/LED Display \$99

AMIGA 500 EXPANSION SET
 512K RAM & 880K Drive w/Clock/Calendar/Bat. Master 3A1 External ONLY \$125

RC500 RAM Expander
 512K RAM w/Clock, Calendar, Bat. \$49

COMPLETE AMIGA 500 PACKAGES AVAILABLE
 YOUR COMMODORE OWNER'S MANUAL IS WORTH BIG\$\$ OFF AN AMIGA 500
 CALL FOR DETAILS



9 - 8 M - F (West Coast customers call up to 5PM PST), 10 - 5 Sat
1-800-262-0533 Orders only
 IN CANADA 1(800) 258-0533 Orders only
 24 Hour Fax line (412) 962-0279 Customer Service (412) 962-0533

A500 RAM	
SupraRam 500	\$59
SupraRam 500RX (1-2MB)	\$129
SupraRam 500RX (2-8MB)	\$219
Floppy Drives	
AIR Drive 880K external	\$89
Revo Ultra Slim external	\$95
A2000 internal drive	\$89
Digitizers	
AutoDroid	\$48
Color Splitter	\$109
Copy Stand	\$62
DCTV	\$389
DigiDroid	\$67
Scanners	
JX100 Scanner w/Software	\$699
JX300 Scanner w/Software	\$2999
Panasonic 1410 Camera	\$179
A500 Hard Drives	
GVP A500-HDS +0520	\$389
GVP A500-HDS +0105Q	\$829
DataFlyer500 w/52Q	\$398
Midi's	
ECE Midi	\$49
Midi Gold 500	\$56
Midi Gold Insider	\$65
Midi Connector w/cables	\$59
Phantom SMPTE MIDI	\$229
Midi cable 6ft	\$8

Audio	
Audio Engineer	\$229
Audiomaster 3	\$62
Audition 4	\$62
Perfect Sound 3.1	\$69
SoundMaster	\$139
Modems	
Supramodem 2400ext	\$89
Supramodem 2400 Plus	\$149
Supramodem 2400 z Plus	\$169
Supramodem 9600 Plus	\$549

Video	
Chroma Key	\$329
MiniGen	\$209
Supergen	\$649
Supergen 2000S	\$1449
Video Blender	Call
Video Master	\$1029
Video Toaster	\$1399
Personal TBC	\$799
A2000 HD Controllers	
DataFlyer 2000	\$85
GVP HC/O Series II	\$149
GVPHC8/O/O Series II	\$189
Supra Wordsync	\$109
Hard Drives	
52MB Quantum LPS	\$259
105MB Quantum LPS	\$429

Misc.	
AT-Once	\$279
AT-Once A2000 adapter	\$99
Double-Talk Network	Call
Flicker Fixer	\$249
Flicker Fixer's DEB 2000	\$99
Ad Flicker Free Video	\$309
Star Printers	Call
Panasonic Printers	Call

Import Software and Magazines available - Call

Goliath
 A500 Power Supply 135 Watts
 Big, Ugly & Powerful \$69

Expansion Systems

BASEBOARD

Expand your Amiga 500 RAM 512K to 4MB	
0K	\$99
512K	\$124
1MB	\$149
2MB	\$199
4MB	\$299

DataFlyer

500	
Budget Hard drive solution for your A500	
Controller only	\$149
W/52MB Quantum	\$398

DataFlyer

2000	
Budget hard drive solution for your A2000	
Controller only	\$85
W/52 MB Quantum HD	\$334

DataFlyer

RAM	
For DataFlyer2000 & DataFlyer500	
0K	\$99
2MB	\$199
4MB	\$299

CSA's Mega Midget Racer

The Max-Speed Alternative for those on a budget for your Amiga 500, 1000, and 2000

25MHz Economy	\$499
25MHz w/MMU*	\$629
33MHz Economy	\$579
33MHz w/MMU*	\$769
Math co-processor 25MHz	\$245
Math co-processor 33MHz	\$295
Mega Memory Board 1MB - \$385, 2MB - \$425 (32Bit)	
4MB - \$795, 8MB - \$1585	

*MMU primary use is for UNIX applications, and is not needed for 99% of Amiga software applications.

BODEGA BAY \$299
 MODULAR EXPANSION CONSOLE
 With the Bodega Bay you can expand your Amiga 500
 • 4 A2000 compatible slots
 • 3 overlapping IBM AT slots
 • High wattage power supply
 • Room for 3 internal disk drives
 • Monitor stand
 w/ Malibu SCSI controller \$389

Perfect to use with Disney's Animation Studio, DigiPaint 3, Deluxe Paint III, and more

DAKOTA SketchMaster
 12x12 Tablet \$429
 12x18 Tablet \$599

ICD

The ICD Advantage
AdSCSI 2000 \$129
 Hard drive interface with un-matched speed and flexibility

AdSCSI 2080 \$189
 Hard drive interface with up to 8 megs of FAST RAM

AdSpeed \$216
 Best Overall performance of any accelerator in its price range

Flicker Free Video \$309
 Eliminates interface flicker for any Amiga Computer

AdRAM 540 \$109
 Add up to 4 meg of RAM internally in your Amiga 500

AdRAM 2080 \$123
 8meg internally in your 2000/2500

New From ICD

AdIDE
 Smallest Amiga hard drive interface made for IDE(AT) drives
IDE44 \$123
 for your 2.5 inch hard drives
IDE40 \$109
 for your 3.5 inch hard drives

Novia 201 \$499
 The Smallest hard drive and interface in the world for your Amiga 500. Fits internally

Novia 601 \$999
 Now you can have the Novia with a 60 meg 2.5 inch hard drive.

Prima 521 \$599
 Now mount a 3.5 inch IDE drive internally in your Amiga 500, 1000, or 2000

Prima 1051 \$799
 105megs internally in your 500, 1000 or 2000

Shuffle Board \$34
 Reroutes dfl: to the external floppy connector. Boot from external floppy

SHIPPING - WITHIN 2 BUSINESS DAYS	
UPS GROUND	
- \$99	5% MIN \$4
\$100 TO \$199	4% MIN \$5
\$200 TO \$499	3% MIN \$8
\$500 -	2% MIN \$15
UPS Blue add \$5.00 to UPS Ground	
UPS Red add \$10.00 to UPS Ground	

APO/FPO/CANADA add \$10 to Ground
 PR, HI, ALASKA add \$10 to Blue or Red
 MASTERCARD, VISA, DISCOVER no surcharge
 AMERICAN EXPRESS 3% Surcharge
 Defectives replaced with same item
 15% Restocking fee for non-defective returns
 Prices subject to change without notice



Spotlight on Software

Ami-Back	47.99
AMOS	69.99
AMOS 3D	42.99
AMOS Compiler + 1.3 Upgrade	36.99
Armour-Geddon	31.99
Art Department Professional	149.00
Art Dept Pro Conversion Pack	55.00
AudioMaster III	60.00
Audition 4	64.00
B.A.D. 4.0	31.99
Bane of the Cosmic Forge	35.99
Bane/Cosmic Forge Survival Kit	13.00
Bars & Pipes Professional	215.00
Bars & Pipes Multi-Media Kit	37.99
Battle Chess II	31.99
Baud Bandit	31.99
Big Business	31.99
Brigade Commander	29.99
Buddy System: Amiga DOS 2.0	31.99
CanDo 1.5	85.00
Centurion	34.99
Cross DOS 4.0	24.99
Death Knights of Krynn	35.99
Deluxe Paint IV	125.00
Design Works	75.00
Discovery Math/Spelling 2.0	45.00
Distant Suns 4.0	59.99

Softwood, Inc.

Animal or People Clip Art	45.99
Classic or Collector's Clip Art	45.99
Electric Thesaurus	31.99
Pen Pal	85.99
Proper Grammar	59.99
Back to School Special	
Purchase ANY word processor and get Proper Grammar for only	55.00

E-Z FM Synthesizer	36.99
Eye of the Beholder	43.99
F-15 Strike Eagle II	35.99
Flight of the Intruder	35.99
Gunboat	31.99
Halls of Montezuma	31.99
Harpoon	43.99
HiSoft BASIC Professional	57.99
Hyperbook	64.99
ImageFinder	42.99
Imagine	189.00
Imagine Companion	23.99
Interface Design Kit	36.99
King's Quest V	35.99
Lattice C SAS/C	199.00
Lemmings	31.99
Lunar Construction Set	19.99
MR Back-Up Professional	34.99
Map Master - Imagine	45.99
Map Master - LightWave	59.99
Maverick	25.99
Mad Plan +	58.99
Medieval Warriors	31.99
PageStream 2.1	185.00
PageStream Forms: Business	24.99
Pelican Press	58.99
Pick 'N Pile	28.99
Pixel 3D (New Version!!)	Call
PowerMonger	35.99
PowerPacker Professional	19.99
Pro Vector	175.00
Pro Write 3.0	89.99
QuarterBack	43.00
QuarterBack Tools	53.00
Quickforms for PageStream	25.99
Railroad Tycoon	35.99
RX Tools	34.99
Scala	249.00
Scenery Animator	59.99
Screen Maker	239.00
Secret of the Silver Blades	35.99
Secret of Monkey Island	42.99
ShowMaker	215.00
SpectraColor	58.99

Great Prices! Superb Service!

For information or price listing:

414-548-8125

Pursuitable BBS:

414-548-8140

Speedball II	31.99
Street Road II	28.99
SuperBase Professional 4	315.00
Teacher's Toolkit	29.99
Team Yankee	35.99
Vista Professional	88.00
Wonderland	35.99
Workbench Management System	32.99
World Class Soccer	24.99

ICD, Inc.

Ad IDE 40	99.00
Ad IDE 40 Shuffle Board	32.99
AdRAM 540 OK	109.00
AdSCSI 2080	185.00
AdSpeed	209.00
Flicker Free Video	295.00
Prima 52Q	489.00
Prima 105Q	685.00

Spotlight on Hardware

Accelerator, GVP SCSI 22 MHz	849.00
Accelerator, GVP SCSI 33 MHz	1585.00
Accelerator, Sapphire 68020	249.00
AirLink (IN Stock!)	45.99
Amiga 500 Upgrade Kit	119.00
Atonce	269.00
Bodega Bay	299.00
Bornac Tower	245.00
Color Splitter	106.00
DC TV	385.00
Fatter Agnus Chip w/ Instructions	85.00
FireCracker Board	889.00
Floppy Drive, Internal 500	89.00
Floppy Drive, Internal 2000	89.00
Floppy Drive, RocTec Slim	89.00
Genlock, VideoMaster	999.00
Genlock, Alter Image	189.00
HAM-E Plus	395.00
Harddrive 105Q LPS (Bare)	379.00
Harddrive 52Q LPS (Bare)	249.00
IllumiLink	89.99
MIDI, ECE 500/2000/3000	52.00
Modem, Courier HST Dual Stand	915.00
Modem, Courier V.32bis 14.4	629.00
Mouse, Alpha Data Optical	49.00
Mouse, Beetle Mouse	39.00
Mouse, Golden Image	39.99

Supra Corporation

Floppy Drive, SupraDrive	95.00
Hardcard, 52Q w/ Word/Sync	359.00
Harddrive, Supra 500XP 52/2	575.00
Harddrive, Supra 500XP 105/2	755.00
Memory Module, 2 MB	219.00
Memory, SupraRAM 2000 2 Migs	185.00
Memory, SupraRAM 2000 4 Migs	249.00
Memory, SupraRAM 500RX 8/1	129.00
Memory, SupraRAM 500RX 8/2	199.00
Modem, 2400+ (MNP & V.42bis)	139.00
Modem, 2400 (MNP Levels 2-5)	129.00
Modem, 9600 (MNP & V.32)	499.00
Modem, 2400zi+ with A-Talk III	159.00
SCSI Controller, 500XP	199.00
SCSI Controller, Word/Sync	110.00

Perfect Sound 3.0	69.00
Personal Single Frame Controller	399.00
Personal TBC	779.00
Power Supply, Big Foot 500	99.00
SCSI Controller, GVP Series II 0/0	155.00
SCSI Controller, GVP Series II 8/0	209.00
SCSI Controller, Nexus	225.00
SCSI Controller, TrumpCard Pro	215.00
Scanner, JX-100	629.00
Sound Master	129.00
Syquest 44 MB Int w/Word Sync	579.00
Syquest 44 MB Removable	405.00
Syquest Cartridge	89.00
Trackball, 3-Button (NICE!)	55.00
Video Toaster	1395.00

Orders Only Please:

800-544-6599

Visa/MC/CODs

Make Safe Harbor YOUR Computer Port

Manufacturers'/Distributors' Addresses Continued

JVC

41 Slater Dr.
Elmwood Park, NJ 07407
201/794-3900
800/247-3608

Lucasfilm Games

PO Box 10307
San Rafael, CA 94912
800/STAR-WARS

MichTron

3201 Drummond Plaza
Newark, DE 19711
302/454-7946

MicroIllusions

PO Box 3475
Granada Hills, CA 91394
818/785-7345

MicroMaster

1085-A Brodhead Rd.
Aliquippa, PA 15001
412/775-3000

MicroPace

604 N. Country Fair
Champaign, IL 61821
217/356-1885

Mr. Hardware

PO Box 148
Central Islip, NY 11722
516/234-8110

Myriad Visual Adventures

1219 N.W. 79th St.
Oklahoma City, OK 73114
(No phone listed)

NerveWare

171 E. 99th St. #20
New York, NY 10029
212/369-1733

NewTek

215 S.E. 8th St.
Topeka, KS 66603
913/354-1146
800/843-8934

Norris Software

3208 W. Lake St., Suite 65
Minneapolis, MN 55416
612/827-2766

Nucleus Electronics

PO Box 1025
Nobleton, Ont.
Canada L0G 1N0
416/859-5218

Ocean Software

Distributed by Electronic Arts

Octree Software

311 W. 43rd St., Suite 904
New York, NY 10036
212/262-3116

Oxxi

1339 East 28th St.
Long Beach, CA 90806
213/427-1227

PassPort Designs

625 Miramontes St., #103
Half Moon Bay, CA 94019
415/726-0280

Pelican Software

338 Commerce Drive
Fairfield, CT 06430
800/232-2224

Precision Software

8404 Sterling St., Suite A
Irving, TX 75063
214/929-4888

Programs Plus & Video

544 Queen St.
Chatham, Ont.
Canada N7M 2J6
519/436-0988

Progressive Peripherals & Software

464 Kalamath St.
Denver, CO 80204
303/825-4144

RamScan

Distributed by MicroPace

RCS Management

120 McGill St.
Montreal, Que.
Canada H2Y 2E5
514/288-7825

SunRize Industries

2959 S. Winchester Blvd.
Suite 204
Campbell, CA 95008
408/374-4962

The Disk Company

11040 Santa Monica Blvd.
Suite 300
Los Angeles, CA 90025
213/478-6767

TTR Development

6701 Seybold Rd.
Madison, WI 53719
608/277-8071

Virgin Mastertronic

18061 Fitch, Suite C
Irvine, CA 92714
714/833-8710

Walt Disney Computer Software

500 S. Buena Vista St.
Burbank, CA 91521
818/567-5360 ■

SOFTWARE SUPPORT INTERNATIONAL

[illegible]

WE CARRY A COMPLETE LINE OF ACCESSORIES FOR YOUR COMPUTER — ASK FOR OUR FREE CATALOG

SOFTWARE SUPPORT

800-356-1179
Monday - Friday 6AM/5PM Pacific Time
NEW - Saturday 7AM/3PM Pacific Time

**AMIGA
COMMODORE
AND IBM**
Please call or
write for our
FREE CATALOG
Overseas customers
please remit 3.00
U.S. funds to help
defray shipping costs

NOW ACCEPTING FAX ORDERS
206-695-0059

TECHNICAL SUPPORT LINE
206-695-9648

METHODS OF PAYMENTS - We accept money orders, certified checks, Visa, M.C. and Discover. Previous customers may also pay by COD or personal check. All monies **MUST** be paid in US funds.

SHIPPING AND HANDLING CHARGES - USA (48 states), FPO, APO, US Possessions: Please add \$4.00 per order. US shipping is usually by UPS Ground. Fast UPS 2nd Day Air is available (US 48 states only) by adding \$3.00 per pound (1st lb.) and \$1.00 per additional pound (each software item averages 1 lb.). Alaska & Hawaii Shipping is usually by UPS 2nd Day Air. Please add \$8.50 per order. Canada: Software \$5.00 for the first piece & \$1.00 for each additional piece per shipment. Canadian Hardware Overweight orders & Foreign Countries: S&H varies per order, please call. **Person to call:** 1-800-368-6868

If You Prefer, You May Mail Your Order To:
Software Support International
 E. Andresen Road, Suite A-10, Vancouver, WA 98661

COD CHARGES: - COD available to previous customers only in all 50 US states. Please add \$3.75 in addition to your S&H charges.

OTHER POLICIES - Washington State residents must add 7.6% to their order for state sales tax. Defective items are replaced at no charge, but must be returned to us postpaid within 30 days of invoice date. All in stock orders are processed within 24 hours. US (48 state) software orders over \$100 will be shipped 2nd Day Air at no additional charge above the normal \$4.00 S&H fee. All prices, policies, and specifications are subject to change without notice. All policies apply unless otherwise noted by management.



**We Accept
VISA, M/C,
& Discover**

Public Domain Library

Guarantee

We believe so strongly in our product that we offer a full lifetime, complete satisfaction guarantee. No questions asked.

We have been the official Public Domain Library of all of the best Amiga magazines. Find out why these magazines choose us! Each of our disks are jam packed with only the best programs. The first two letters on each disk indicate the orientation of the disk; DD# intermediate to advanced - often contains source, WB# general interest - most programs can be run from the workbench, and FD# games and entertainment. Order our disk based catalog and receive a coupon for a complimentary volume with your next purchase. We have always used only SONY blank disks!

Featured Disk

FD39a & b: Star Trek, The New Generation - This is a, completely different version of Star Trek than that found on FD12. This one was created by the German author Tobias. Now with English instructions. Very Excellent!!! Counts as two disks.

New Disks

FD66: GameTease2 - Contains playable demos of ChuckRock and Torvak

FD65: GameTease1 - Contains playable demos of Atomino and Turrican II

FD64: Games - Wizzy's Quest - a "great" 50 level game with great graphics, Cubus - a 3-dimensional Tetris type game (rotate and move in 3 dimensions), Husker Du - Colors and pattern rather than shape in this Tetris-esque game; 5 screens and 3 levels of difficulty. Requires Fat Agnus (1 Meg of Chip)

FD63: Quizzzshol - an interactive multimedia quiz game show program that tests your knowledge of DpaintIII. The questions can be changed so you may quiz on whatever topic you'd like.

FD62: PomPom Gunner - An extremely smooth and well done World War II gunner simulation. Requires 1 meg chip memory.

FD61: Games Solitaire - great graphics, plays two versions, Kluge; an interesting piece of eye candy. Extreme Violence; 2 player kill or be killed game. YATC; A Tetris clone with Artificial Intelligence. Genesis; create realistic 3d fractal worlds.

FD60: Games In Nebula - race over a 3d world to destroy enemy installations. Interferon; a great Dr. Mario clone. Enigma; is it a game or a puzzle?

WB97: Molecule3D - An Interactive 3d solid modeling program for molecules; creates stunning 3D pictures of molecules. Disk also includes a mailing list manager.

WB96: Dupers - Contains XcopyIII & Nib which will backup copy-protected programs. FreeCopy removes copy protection from several programs, and SuperDuper will crank-out fast AmigaDOS copies.

WB95: Checkbook Accountant 2.0 This program is definitely commercial grade; we've seen many checkbook programs and this is absolutely the best. Full budgeting, transaction recording and report generation.

WB93: Workbench Extras #2 This disk contains the utilities that Commodore should have shipped with the Amiga: VirusX4.0, Snap, FixDisk (recover corrupt/deleted files), Disk Optimizer (floppy & hard), MachIII (screen blanker, hotkey, mouse accel., macro, clock utility), GOMF (a gurbuster) and PrintStudio.

DD80: VFont System - A font rendering system that extends the Amiga so that it will be able to use vectorized outline fonts. Fast rendering, rotating, and sizing. Use in your own programs!

Other Great Disks!

FD5: Tactical Games - BullRun - a Civil war battle game. Metro you play the role of a city planner. Build wisely and your system will be a success, but poor planning will lead to disaster and financial ruin. Very very habit forming.

FD6: GAMES! - This disk is chock full of games including: Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.

FD7: PACMAN - This disk contains several pacman type games including: PacMan87, MazMan and Zonix.

FD9: Moria - This has great graphic controls, multiple spells, similar to Larn and Hack. Play time several weeks!

FD10: HackLite - A dungeon adventure game. Considered a must-have classic. This is the second release of this game on the Amiga. Great graphic interface. Play time several weeks!

FD11: Las Vegas and Card Games - Las Vegas Craps - The best Las Vegas Craps simulation every written for any computer. Contains extensive HELP features. Also Thirty-One, VideoPoker and more.

FD12A, FD12B: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).

FD13: Board Games - contains multiplayer Monopoly, Dominoes, Paranoias, and others.

FD14: Dungeon Master Hints and Arcade Games - DM maps, spells, item location, and hints and more, also on this disk. Hball - an arkanoid/breakout type game, Trix - a Qix type clone.

FD17: Educational Games - This disk includes several games for the younger members including geography, math, science, and word games, also includes Wheel of Fortune.

FD20: Tactical Games - MechForce(3.72); A game that simulates combat between two or more giant, robot-like machines. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.

FD26: Arcade Games - Marble, slide, this is a truly commercial quality game. Similar to a Lucas game named PipeDreams,

excellent playability and entertainment, Mutants, a small version of the arcade game of the same name, also SuperBreakout a pong/arkanoids type game.

FD27: Arcade Games - This disk is loaded with some great games. Includes, Raceorama a great racing car game with ten different courses, MiniBlast a helicopter gunship type clone, Shark in the same class as frogger, and SBreakout the original breakout with more.

FD29: Shoot'em up's - WWII - you're the pilot of a WWII plane flying through enemy territory, you've just been spotted, good luck on your mission, SpKiller - try and penetrate enemy lines with this game, and Retaliator - another great game.

FD31: Games! - Air Traffic Control - a good ATC simulation game, Black Jack Lab - a full featured set of card games, ChessTel - play chess with your friend in distant and remote places with this game and a modem, labyrnth - a well done text adventure game (like an infocom game), and MouseTrap - a 3d maze game.

FD32: Flight Simulator - Includes an instrument flight simulator for a DC10.

FD33: Arcade Games - Freddy a mario brothers type of game, Gerbilis a target practice game, Pipeline a German interpretation of Pipe Dreams, Tron a light cycles version, and troids a wonderful version of asteroids with a hilarious twist.

FD35 Omega (v.1.3) - A new outstanding dungeon and outdoors adventure game in a similar vein as hack, rouge, and



moria. This version is considerably faster and better than all previous versions. Play time several weeks or months.

FD37a & b: Tactical Games - Empire (2.2w) This great game comes highly recommended. With a full-graphic front end.

FD38: Games - Cribbage Master - A great cribbage game and tutor, Spades - a well done card game, ChineseCheckers - A computer version of this classic, Puz - a slide piece puzzle game and construction set.

FD44: Game - Mechlight is an out of this world role-playing adventure comparable to hack and moria. The setting, interplanetary colonies and space stations. In your quest to explore the world, take time out to liberate bad guys or two most valuable possessions, engage in a mortal combat or two against robots and alien life forms, pick up a new amiga 9000. Most of all, don't forget to stay alive...

FD49: Chaos Cheats - This disk contains an everything you wanted to know about cheat set for Chaos Strikes Back, including full maps, spells, object locations, super characters and more.

FD50: Submarine Game - Sealance, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.

FD52: Classics Games - PetersQuest a well done Mario brothers type of game, Jymbc a two player missile command clone, and Vstank a tank commander game.

FD53: Great Arcade - On this disk is a wonderful implementation of the ever popular classic arcade game Defender. Also contain Air Race a WWII flying ace arcade game, and Psycoblast new creation idea game.

FD56: Arcade - Includes SpaceWar, HueyRaid a well done helicopter arcade game, and PowerPong a great expanded pong game.

FD57: Arcade Games Includes 2 true commercial quality games. MegaBall is the successor to Ball; features 5 full musical scores, multiple levels and addicting gameplay. Gravity Attack is a psychadelic trip through several different worlds--each distinctly different.

FD58: GAMES! Includes Steinschlag; a great Tetris clone from Germany with music. SCombat: simulate battle between up to 40 players & monsters. Imperium Romanum: Battle up to 4 players for control of the Mediterranean in this Risk-esque game.

FD59: Game Potpourri Xenon III is an almost exact clone of the commercial game of the same name...a great shoot'em up. Crossword will take lists of words & automatically generate crossword puzzles for any Epson compatible printer.

WB4: Telecommunication - This disk contains several excellent pd communication programs designed to get you on line quickly and easily. Access (1.42) - A very nice ANSI term program based on Comm v1.34, but with the addition of transfer protocols, Comm (1.34) - Last version of one of the best public domain communications programs ever made on

the Amiga, Handshake (2.12a) Handshake is a Full featured VT52/100/102/220

WB5 - Fonts #1 - Several fonts (35) for the Amiga, also included are five PageStream fonts, and ShowFont - a font display program.

WB6: Video Fonts #2 - ShowFont(4.0) This program allows you to quickly and painlessly view all 256 characters in a typical font. Large AmigaDOS system fonts (many up to 56pts).

WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.

WB9: Icons - Truly a multitude of various types and kinds. Also includes IconMiester, IconLab, and others great utilities to help generate icons.

WB10: Virus Killers - The latest and best VirusX(4.0), Kv(2.1), and ZeroVirus(1.3).

WB11: Business - Clerk(4.0), finally a full featured business accounting PD program for the small to medium company. Includes receivables, payables, end of month and uch more.

WB12: Disk Utilities - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts of file manipulation. A must have!

WB13: Printer Drivers and Generator - over 70 different drivers, and if these don't do it, with PtdrvGen you can make your own.

WB14: Video - on this disk are several utilities for the video enthusiast. We have included multiple slides, video titling, Bars and Tone, Gray Scale, Screen fades and wipes, Interface toggles, and SMPTE Calculators. Also on this disk is a full featured video cataloging program.

WB15: Business - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).

WB16: Business - This disk contains an inventory manager, a loan analysis program, a great calendar/scheduler, a rolodex program, and pennywise a good "Cash Book" accounting for home or office.

WB18: Word/Text Processors - This disk contains the best editors. Includes TextPlus (v2.2e) a full featured word processor, Dme(v1.35) a great programmers editor with strong macro features, TextED(v2.8) an enhanced Emacs type editor, and a spell checker.

WB20: General Interest - DiskSalv V1.42 a disk recovery

\$5.95 ea
1-9 Disks

\$4.95* ea
10-24Disks

\$3.95* ea
25+ Disks

* Anti-Virus Free on all orders with 15 or more disks!

program for all Amiga file systems, FixDisk V1.0 another file recovery program with features. DiskSalv doesn't have, 3DLookt gives a 3D appearance to your WorkBench, Clean V1.01 a program to de-fragment memory, Tracer - trace any part of an image.

WB22: Fonts #3 - Several more great fonts. These, like the other font disks work great with Dpaint and WYSIWYG word processors.

WB23: Graphics and Plotting - Plot (20b) a three dimensional mathematical function plotter. Can plot any user defined function, BezSurf2 - produce awesome pictures of objects one could turn on a lathe. Can also map if image files onto any surface that it can draw. Now compatible with most 3D packages, and VScreen - makes a virtual screen anywhere, great for DTP.

WB25: Educational - On this disk are two programs that can generate maps of differing types, World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.

WB26: Disk Utilities #2 - MrBackup, KwickBackup - two well done utilities to help with harddisk and floppy disk backups, FileMast - a binary file editor, LabelPrinter - Disk label printer with very powerful features.

WB27: Nagel - 25 Patrick Nagel pictures of beautiful women.

WB29: Graphics and Sound - This disk has several different Mandelbrot type programs for generating stunning graphics. Includes, MandelMountains - a realistic terrain generator, Fractgen - generated recursive fractals from user input, Mandelbrot and Tmandel - two fast mandelbrot generators.

Also Mostra - the best IFF display program to date, will display ALL IFF's including Dynamic HAM, and Sound - a great IFF sound player, will play anything. Try this disk!

WB33: Circuit Board Design - several terrific routines for the electronic enthusiast, including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for insertion into schematics.

WB34: Utilities - Several well done utilities, some will require moderate knowledge of a CLI or Shell for setup, Chatter Box - this one will play any user defined sound after any event (ie. disk insert, mouse click, disk removal...), Artm - The Amiga real time monitor, gives you full control of the Amiga OS, very powerful program. Helper - help program to make learning the CLI easier, and more!

WB35: 3d Graphics - This disk contains several neat programs to use with your 3d modeling/raytracing programs 3dFonts - Full vector font set for use with 3d programs, FontMaker - make 3d fonts from any system font, Make3DShape - create 3d shapes from any image, DumptoolFF - create 3d animations preserves pallet, and

WB49abc: Animation Sampler - On this three disk sampler set (counts as two disks) are some of the best animations that

DD50: ARexx #2 - a must have set of tutorials on ARexx and several useful examples and utilities for ARexx development.



WB62:Midi Utilities - Several useful midi utilities including, programs to transfer to and from several music programs to midi, a midi sysex handler, a midi recorder with timebase,

TOOL CHEST

Buy 2 - Get 1 FREE!

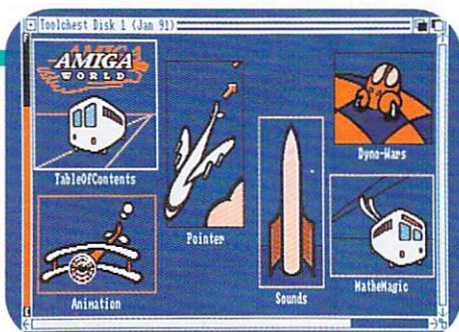
#TC14. A 3-D graphics special issue, containing vector objects, TicTacToe, a graphing program, and 3-D ray traced animation. Keep names and addresses organized with a friendly database and address book. Perform an analysis of digitized sound and display it in a graphic manner. Get B&W clip art food images suitable for desktop publishing.

#TC16. Generate complex 3-D vector objects of a wide variety of terrain, from flat plains to rocky mountains. Plot out mathematical equations. Format your text files to print on both sides of the paper. Plus six digitized sounds perfect for animations and multimedia presentations and a mouse-driven graphic adventure game with excellent digitized sounds. Also includes Tinyball, "The World's Smallest Baseball Arcade Game."

#TC21. Battle your computer to take over the planet Circe. Assign RGB values to printer and screen output. Get a powerful database manager suitable for home and small business. Create animated sprites by editing up to 100 frames at once. Execute CLI programs, batch files and ARexx scripts with the simple click of a gadget.



#TC22. Design instruments and waveforms for use in other programs. Play your Amiga keyboard like a piano. Change the width, height, location, title, colors and depths of the CLI window with a single command. See how a piston works with a Turbo Silver animation. Plus a slick checkbook manager and a file encryption and decryption tool.



#TC23. Create small windows from CLI scripts. Find the letter, file or program you misplaced on your drive. Play the strategic game of DynoWars. MathMagic lets you find the day of the week for any date in this century; provides the mean, standard deviation, skew and kurtosis for selected data; finds a polynomial to a set of XY data; and solves a set of algebraic equations.

#TC25. Save your screen to an IFF file. One or two can play "Warrior", a fun shoot-'em-up adventure game. See how fast your Amiga does solid-polygon animations. Change the colors of your screen. Examine memory at any location in the Amiga. Also includes Hi-Res IFF brushes of all 50 states and 10 Canadian Provinces.

#TC26. Generate word search puzzles. Join the war between the Allied Navy and the Empire Fleet. Search binary and/or text files for a particular word or string. Get rid of cigarettes, alcohol, pills and needles with DrugBusters. Plus, fun machine sounds, and Early American vector objects.

#TC31. Personalize and print calendars to organize your schedule. Display your total memory available. See how fast you can deliver pizzas. Perform basic formatting of text files.



ORDER FORM

Circle your selection below and enclose this form with proper payment.
Buy two items at \$12.95 each and select an additional one FREE!

TC14 TC23
TC16 TC25
TC21 TC26
TC22 TC31

Product total \$ _____
Add \$3.50 postage/handling for each order \$ _____
(Canada & Mexico \$5.00, Foreign orders \$11.50)
Canadian orders add 7% GST \$ _____
(GST reg. #126038405)
Total enclosed \$ _____

☐ Check / money order enclosed
Charge my: ☐ MasterCard ☐ Visa
☐ Amex ☐ Discover

CARD# _____ EXP. DATE _____

SIGNATURE _____

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

MAIL ORDER TO: **Tool Chest Back Issues** TCBI1091
P.O. Box 802 • 80 Elm Street • Peterborough, NH 03458

1-800-343-0728 or 1-603-924-0100

Special Offer on Amiga 1000 Computers

Amiga 1000 Computer.....	\$349.95
1300 Genlock (new).....	\$ 59.95
1010 Disk Drive.....	\$ 69.95
1680 Modem (new).....	\$ 29.95
Original Kwik Start.....	\$ 59.95

We are supporting the Power Up Program for the A500.

Minimum shipping on all orders \$3.00.

We also carry the following products for the A1000:
Insider II w/OK (1.5MB Cap).....\$189.00
Each 512K RAM for Insider II.....24.00
Kwik Start II.....79.95
Special—With the purchase of an Amiga 1000, you may buy a 1010 Disk Drive and 1680 Modem for \$59.95.

Software Hut, Inc. To order call
2534 S. Broad St. (800) 848-0079
Philadelphia, PA 19145 In PA or for info,
call (215) 462-2268
Fax (215) 339-5336

Circle 88 On Reader Service Card.

AMAZING EXPRESS

1441 E. Fletcher Ave. Tampa, FL 33612

FALL SPECIALS

ROCTEC GENLOCK	\$269.96
JX-100 SCANNER	\$599.96
EXTERNAL DRIVE	\$85.96
ECE MIDI	\$39.96
PRO-TEXTURES	\$39.96

ALL GVP PRODUCTS

CALL FOR SUPER PRICING

Order Only Line BBS Tech Support
(800) 323-6511 (813) 977-3940 (813) 977-6511

FREE SHIPPING!

Circle 97 On Reader Service Card.



for the
Amiga®
Computer



\$299.00

A Full-Featured Digitizing Tablet
Is Now Within Reach!

- 7.5" x 7.5" Active Area
 - 1000 Lines Per Inch Resolution
 - 5 Year CalComp Hardware Warranty
 - OS Release 2 Compatible
 - All Amiga® Models (uses serial port)
 - 6-Button Cursor Optional
- Includes Wiz Tablet, Pen, Cable, Power Supply
& TriMedia Driver & Control Software

TRI-MEDIA incorporated

60 E. Hintz Rd.
Wheeling, IL 60090
(708) 520-0730

Circle 87 On Reader Service Card.

VISIONSOFT

PO Box 22517 • Carmel, CA 93922

MEMORY	UNIT	2MB	4MB	8MB
1 x 8-80 SIMM	\$43.50	88	187	342
4 x 8-80 SIMM	179.00	—	179	358
256 x 4-80	5.25	85	158	331
256 x 4 ZIP	6.50	104	192	368
1 x 1-80	5.25	85	158	331
1 x 4-80 DIP	35.00	140	278	525
1 x 4-70 SC ZIP	29.50	118	235	437
1 x 4-80 SC ZIP	25.00	102	204	401
ICD AdRAM 540	89	175	255	—
ICD AdRAM 2080	115	193	270	416
IVS META 4	—	225	307	—
GVP II/8 SCSI HC	195	283	371	538
ADSCSI 2080	169	253	337	497

TRUMP PRO A500/42M429 FATTER AGNUS.....95
A2000 INT. FLOPPY.....89 A500 INT FLOPPY.....99
SUPRAMODEM 2400.....95 SUPRA A500XP/40M.....229
BIGFOOT A500 POWER.....85 AdSPEED.....205

ORDERS 800-735-2633 Visa / MC
Info & Prices: 408-626-2633 Fax 408-626-0532
Call for Current Quantity Pricing.

Circle 86 On Reader Service Card.

MEMORY FOR LESS

D RAM BLOWOUT!!

256 x 1 150n.s.....\$1.19 ea.	CPU's
256 x 1 120n.s.....1.39 ea.	68000 16 Mhz.....\$35.00
1 meg x 1 80n.s.....4.99 ea.	68010 8/10 Mhz.....19.95
1 meg x 1 100n.s.....5.25 ea.	68020 16 Mhz.....75.00
256 x 4 80n.s.....4.99 ea.	20 Mhz.....99.00
256 x 4 70n.s.....5.50 ea.	33 Mhz.....199.00
256 x 4 80n.s. zips.....5.50 ea.	68030 25 Mhz.....279.00
256 x 4 100n.s. zips.....5.50 ea.	33 Mhz.....345.00
64 x 4 100n.s.....3.00 ea.	50 Mhz.....375.00
Paula / Denise.....26.50 ea.	Math Co's
1 megx8 Simm 80ns.....39.95 ea.	68881 12 Mhz.....69.00
1 x 4 DIPS in stock.....CALL	16 Mhz.....75.00
1 x 4 Page ZIPS.....CALL	20 Mhz.....50.00
	25 Mhz.....125.00
	68882 20 Mhz Special 99.99
	68882 25 Mhz.....225.00
	33 Mhz.....275.00
	50 Mhz.....350.00
	All Crystals 10.00 ea.

SALE
Fatter Agnus \$79.95 (1 Meg)
For Amiga 3000
1 x 4 Static Zips 80ns.....25.75
256 x 4 80ns Static Zips.....6.75
SPIRIT BOARDS
IN 1000 1/1, meg — \$225.00
XRAM/500/1000 - 2 meg — \$299.00
GVP/A2000 RAM 2 meg — \$169.00 4 meg — \$263.00
MEMORY WORLD 215-244-7930
Street Rd. & Bristol Pike FAX 215-244-7932
Plaza II, Suite 134 Add \$4.00 S&H Add \$4.00 COD
Bensalem, PA 19020 VISA / MC / CHECK / COD
Attn: Amiga Dept. Other chips/speeds avail. — CALL

Circle 94 On Reader Service Card.

Authorized Amiga Service Center

2.0 Operating System and E.C.S. arriving this month.
Super Denise 8373 Chip — \$79.95

Workbench 2.0 — Call

Kickstart 2.0 — Call

1.3 ROM Chip.....\$29.00	DKB 2 Meg Chip
8520 CIA Chip.....16.50	RAM Board.....\$249.95
Fatter Agnus Chip 1MB.....85.00	Fattest Agnus Chip 2MB.....95.00
A500 Replace. Drive.....119.00	Agnus Extractor by Com.....16.95
All RAM Chips in Stock.....Call	Denise Chip.....35.00
Paula Chip.....38.00	Quantum 105S H.D.....449.00
A2000 Internal Drive.....99.00	A500 Motherboard w/s/o.....150.00
Quantum 52S H.D.....289.95	A2000 Motherboard
Epyx 500XJ Joystick.....12.00	Rev. 6.2 w/s/o.....225.00
A500 HD Power Supply.....94.00	Gary IC Chip.....17.00
A2000 Kbd from Com.....105.00	The Works Platinum
A500 Keyboard.....95.00	Bundle.....95.00
A2000 Power Supply.....189.00	A500 Case w/shield.....45.00
A2000 P.S. w/s/o.....119.00	Multistart II.....66.95
Big Foot P.S. A500.....109.00	Kick Start Board.....35.00
A500 Repl. Drive w/s/o.....94.95	

Over 600 products in stock for immediate shipping. Please call us. We probably have what you need. We do repairs on Amiga computers with 2-4 day turnaround. A500 — \$125+S/H. A2000 — \$190+S/H. Call for shipping on other items. Min. shipping on all orders \$3.00.

Software Hut, Inc. To order call
2534 S. Broad St. (800) 848-0079
Philadelphia, PA 19145 In PA or for information
call (215) 462-2268
Fax (215) 339-5336

Circle 89 On Reader Service Card.

ATTENTION: BASIC PROGRAMMERS & FOOTBALL FANS

BASICFootball is here! BASICFootball is a fully animated 11 on 11 football strategy game, written ENTIRELY in AmigaBASIC!

BASIC PROGRAMMERS: BASICFootball is not compiled! View BASICFootball's code and learn techniques that can increase memory for Basic 400%! Unlock the powerful animation and sound routines that can be used in almost any game you wish to create. BASICFootball even comes with a manual that explains in detail all code used in this fantastic software package.

FOOTBALL FANS: Stop watching TV SPORTS and play the computer game that lets YOU be the HEAD COACH on the GRIDIRON! In BASICFootball you can play against a friend or a computer coach that really challenges the skill of the football gamer.

BASICFootball.....	\$19.99
3.5" DISKS FOR SALE	
10.....	\$8.00
20.....	15.00
50.....	35.00

Disk price includes all shipping and handling charges.

TO ORDER CALL (804) 591-7225 or WRITE:
MahoneySoft
PO Box 2962
Newport News, VA 23609
OPEN 4:00 PM to 10:00 PM EST
S/H \$4.00 ALL GAME ORDERS SHIPPED WITHIN 24 HOURS 1ST CLASS!

Circle 78 On Reader Service Card.

• FREE - 6 DISKS - FREE • FULL OF AMIGA® HITS

TRY US! Get 6/3.5" disks full of our best selling software. Animation Business - Games - Education - Utilities - Finance. Or order our 50+ image collection of clip art or our special Kid's package - all FREE!

PAY ONLY \$5.00 SHIPPING/HANDLING

SATISFACTION GUARANTEED SINCE 1985
CREDIT CARDS ONLY • ORDER TODAY
SMC SOFTWARE PUBLISHERS
619 931-8111

Circle 90 On Reader Service Card.

AMAZING EXPRESS

1441 E. Fletcher Ave.
Tampa, FL 33612

COMMODORE

A-500

SYSTEMS

PRICED TO SELL

Order Only Line BBS Tech Support
(800) 323-6511 (813) 977-3940 (813) 977-6511
FREE SHIPPING!

Circle 76 On Reader Service Card.

MOVING? Subscription Problem?

Get help with your
subscription by calling our
new toll free number:

1-800-365-1364

In Colorado: 1-447-9330

between 9 a.m. and
5 p.m. EST
Monday-Friday

If possible, please have
your mailing label in front
of you as well as your
cancelled check or credit
card statement if you are
having problems with
payment.

If moving, please give both
your old address and new
address.

AmigaWorld
P.O. Box 58804
Boulder, CO 80322-8804



NEW!! ULTRA HIGH RESOLUTION 35mm COLOR SLIDES

from COLOR POSTSCRIPT • 24-BIT IFF • HAM • Standard IFF

• Over 4000-line Resolution • NO Scanlines • NO Curvature Distortion • Brilliant Color

HAMMOND PHOTOGRAPHIC SERVICES
(213) 390-3010

Call or Write for order form, price list & sample:
11280 Washington Place
Culver City, California 90230

The Amiga® Digest Video Series

Tape 1 - Mastering Workbench & CLI

*Now That You've Got That Amiga,
Learn How To Use It!*

Tape 2 - DeskTop Publishing with PageStream

Tape 3 - The Power of AmigaVision

\$29.95 Each (Plus \$2.75/Tape S & H)

Tape 4 - Advanced DTP with PageStream 2.0

MasterCard, VISA, Check, C.O.D.

Tape 5 - The Workbench 2.0 Video Guide

Call For Our Product Guide

Orders: 1-800-234-0678

Horizon Video Productions, Inc.
Inquiries: (703) 971-0001

6076-A Franconia Road
Alexandria, VA 22310

Amiga and Workbench are trademarks of Commodore-Amiga, Inc.; AmigaVision is a trademark of
Commodore Electronics Limited. PageStream is a trademark of Soft-Logic Publishing Corporation

Adult Graphics, Vol. 1

THE ULTIMATE AMIGA GRAPHICS DEMO

Public domain collection of attractive adult graphics. 1 disk:
\$10; 3 disks: \$25; 10 disks: \$39; 15 disks: \$44. Shipping and
handling is INCLUDED! State that you are over 18. Call 216-
678-5365 for free catalog or send Check or Money Order to:

Data Foundations • Dept. 100B, PO Box 9324, Akron, OH 44305



SIZZLING SOFTWARE



We offer the Best in Public Domain and Adult-Oriented Software.

Over 250 Disks in Stock, Prices as Low as \$3 per Disk.

Free Brochures. Visa, MasterCard Accepted. Our Disks are Loaded!

3-Disk Adult Sampler: Send \$10, Signed Statement of Age (21+) to:

**CLEARLIGHT SOFTWARE
PO BOX 1411, DEPT. A
MILWAUKEE, WI 53201**

The InfoMarket

AMIGAWORLD's InfoMarket is a great opportunity
for those with AMIGA products to reach over 95,000
Amiga owners. *AmigaWorld* is the only publication with
a subscription offer reaching every new Amiga owner,
national newsstand distribution by Kable News Co.,
and single copy sales in computer stores carrying the
AMIGA as well as large bookstores such as B. Dalton
and Walden Books.

To reserve your 1/12 or 1/9 page display ad call Heather
Guinard at 1-800-441-4403 or 603-924-0100. We accept
checks, money orders, MasterCard or VISA.

NATIONAL DISKETTES

SONY 3.5" DSDD .51
GENERIC 3.5" DSDD .39
(MIN. 100)

800-345-8619 OR 415-490-4163

CALL FOR BEST PRICING ON ALL DISKETTES

<p>"Q" Mouse <i>Lifetime Warranty</i> <i>\$69.95</i></p>  <p><i>The ONLY professional mouse for the Amiga!</i></p> <p>Toll Free: 1-800-527-8797</p>	<p>BIGFOOT POWER! A-500 Necessity! <i>\$129.95</i></p>  <p>Now 200 Watts! Now Available For All Hard Drives</p> <p>Micro R&D PO Box 130 Loup City, NE 68853</p>	<p><i>Universal Joystick / Mouse Switch</i> <i>\$29.95</i></p>  <p>Connect 2 devices to one port and switch between the two with a flick of the wrist.</p> <p>Visa / MC / COD Dealer/Distributors Welcome (308) 745-1246 (FAX)</p>
---	---	--

Own a Bridgeboard™?

You're not alone anymore! Subscribe to **CROSSINGS**, the newsletter devoted to Amiga/PC compatibility. Published monthly since December 1989. \$US40 U.S./Canada, \$US50 overseas air mail. (212) 369-8131 for more info.

► **New!** On-disk Bridgeboard orientation/tutorial (requires AmigaVision) \$US19.95 + \$2.00 S&H—check or money order. (NY state residents include applicable sales tax.) Please allow 4-6 weeks for delivery.

Deland Editorial Services, Ste 26E, 345 E. 93 St., New York NY 10128

ELECTRONIC SERVICES INTERNATIONAL

CSA Accelerators • Disk Drives • Joysticks • Memory Expansion
Printers • Software • Upgrade Chips • Customized Systems

COMPLETE AMIGA WHOLESALE DISTRIBUTOR

Bodega Bay • Commodore • C.S.A. • Gold Disk • G.V.P. • I.C.D.

Sales
 Technical Support Line **1-800-729-4361** Visa / MC / COD

AMIGA Files to Slides

GRAPHIC IMPRESSIONS

- * 2048 x 1366 (2000 line) RESOLUTION
- * IFF, IFF24, RGB, HAM, TOASTER, HAM-E, SCULPT, IMPLUSE, RGB8
- * 16.7 MILLION COLOR SUPPORTED
- * ALL OVERSCAN SIZES SUPPORTED
- * SLIDES AS LOW AS \$9 EACH FOR VOLUMES OVER 10
- * 48 HOUR INHOUSE TURN AROUND

For information, call: 1-715-856-5627 Or write to:
 GRAPHIC IMPRESSIONS PO Box 254 Wausaukee, WI 54177

AMIGA Programmers Wanted!

The AmigaWorld Tool Chest has created a fantastic opportunity to publish new, uncirculated Amiga programs. If you've written something special for the Amiga, and would like to earn some extra money, please contact us for our Tool Chest Author Guidelines. Perhaps you'll be the next Tool Chest Star!

AmigaWorld Tool Chest Submissions Dept.
 AmigaWorld Magazine
 80 Elm St., Peterborough, NH 03458

MORE MEMORY FOR LESS

NEW for Amiga 3000 STATIC ZIPS 1 meg x 4 — 80 n.s. (70 n.s. CALL)	\$25.75 each	32K Buffer Chip Panasonic Printer 1124, 1524, 1624, 1180, 1191 w/instructions 32K avail. for Citizen Printer \$35.00	Only \$20.00
FPU Math Co-processor 68881 — 20 MHz 68882 — 20 MHz 8087-3 for bridgeboards	SALE \$50.00 \$99.00 \$50.00	Memory Board HP Laser Printer — (Specify Model) 1 meg \$89.00, 2 meg \$139.00, 4 meg \$205.00	

MEMORY WORLD
 Street Rd. & Bristol Pike • Plaza II,
 Suite 134 • Bensalem, PA 19020
 Attn: Amiga Dept.

215-244-7930
Fax 215-244-7932
 Add \$4.00 S&H Add \$7.00 2nd Day Add \$4.00 COD
 VISA / MC / Check / COD

COMMODORE AMIGA SERVICE CENTER

AMIGA 500 (Repair) \$75.00 includes parts/labor

We service the entire Amiga product line and carry replacement parts & power supplies. Call for prices.

A&M Computer Repair • 20 Guernsey Dr., New Windsor
New York 12550 • (914) 562-7271
24 Hour Turnaround • Dealers Call For FREE Catalog
1-800-344-4102

More Value
-over 34 Disks

Animated Actions
DPaint Anims-\$28.00

CV Designs
61 Clewley Road
Medford, MA 02155
617-391-9224

Video Vision Series Software:
Background Bits 24-shades-\$28.00
WEDDING SET Plus 8 Disks-\$69.95
TITLER Set-14 Disks/Backdrops-\$90
More Valuable Volumes Coming:
Musical Backdrops, School Sports
Output Services: QMS Prints-\$14.

Video Visions
ADD \$4.00 S&H
Assistance for every
Video Need!

MASTERPIECE PROFESSIONAL FONT COLLECTION®

20 DISK SET

The Largest Collection Of Fonts And Clip Art Available In A Single Package For The AMIGA.

100 DIFFERENT FONT STYLES
 This doesn't mean 10 sizes of 11 fonts. It means 110 DIFFERENT Fonts.

LARGES SIZES • HI-RES
 Specially Designed For Video Work. 95% of the fonts are over 100 pt. tall. Easily resized smaller.

PATTERN CLIP ART
 141 hi-res DPaint II pages. There are thousands of objects and examples.

BRUSHES
 2 Disks Full Of Color Brushes

COLORFONTS
 4 Disks Full Of Colorfonts

100 PAGE MANUAL
 Full Size Font Printouts

20 DISK SET • ONLY \$199.00
 VISA / MC • COD • Company Check

Contact your local AMIGA dealer or order direct from **AROCK Computer Software**
 PO Box 731, Springfield, MO 65801
 1-800-288-2765

COLOR RIBBONS & PAPER

Colors: Black, Red, Blue, Green, Brown, Purple, Yellow

Ribbons:	Black	Color	T-Shirt
Brother M1109	4.95	5.95	7.00
Citizen GSX 140	4.00	5.00	7.50
Citizen GSX 140 4C	*	13.25	18.00
Okidata 192	5.00	7.50	—
Panasonic 1124	5.00	7.50	—
Seikoshia SP1600	4.50	6.00	7.50
Star NX1000	3.50	4.50	6.75
Star NX1000 4C	—	6.25	10.00

Minimum orders \$25.00. Minimum S&H \$4.50.
 Call for other ribbons and supplies. Price & spec. are subject to change without notice.

RAMCO COMPUTER SUPPLIES
 PO Box 475, Manteno, IL 60950 USA
 USA (800) 522-6922 or (815) 468-8081
 Canada (800) 621-5444

KASARA MICRO SYSTEMS 1-800-248-2983 • 914-735-0960

Now the only source you will need for your Commodore product requirements. We have been your **AUTHORIZED** source for more than a **DECADE** of quality service.

COMPETITIVE prices on **NEW** or **USED** CPUs & accessories, upgrades, replacement parts & assemblies

SAVE MONEY with our **EXCHANGE** programs, repair/maintenance services and stock-to-one-week delivery

REDUCE COSTS with our **MONTHLY SPECIALS**, 90 day warranty on parts/repairs & quantity discounts

Weekday Hours 9:00 AM-6:00 PM EST

The Last Word

Kudos, complaints, comments, concerns, and contributions from our readers.

GIVE CREDIT WHERE DUE

I have long awaited the time when the Amiga would finally get the recognition it deserves for being the computer for desktop video. When the Video Toaster was introduced, I thought that my wait was over, but I guess I was wrong. It greatly disturbs me that NewTek is trying to hide the fact that the Toaster runs on an Amiga 2000. I see by the letter from Justin Gunn in the August issue that I am not the only one who is unhappy about this.

I disagree with Doug Barney's note saying that if NewTek's "cover-up" resulted in more sales of Amigas, he was all for it. I hope that enough Amiga users who want to see their machine get the recognition it's due will voice their opinion, so that maybe NewTek will "uncover" the fact that the A2000 runs the Toaster, thus giving the Amiga and Commodore some credit.

*Jason Ivey
Monroe, Michigan*

DOCUMENTATION WOES

A friend and I want to get into Computer animation. Neither of us has a strong computer background, but I have at least some working knowledge of the computer, whereas my friend is an artist having no experience with a machine like the Amiga. Together, we spent what was an awful lot of money for us in a stock A2000, a hard disk and the Imagine software.

Having read your review of the software, I cannot stress enough how poor the initial tutorial booklet is. I understand an upgrade has been issued, but the upgrade with errata corrections wouldn't have been necessary if the people at Impulse had done their work properly and tested the tutorial.

Especially as a neophyte, it's disheartening to see the number of articles and reviews where the writer notes

that a product's documentation is poor, and yet seems to forgive the software writers for this. I should think that getting wide market acceptability for a product would involve making things friendly enough so that people other than programmers and highly literate users would buy it. Poor instructions will only lead users like me to abandon the product out of frustration.

*Bruce Mai
University City, Missouri*

NO FUN INTENDED

It was nice to read in your July editorial that you enjoy your correspondence with Jury Vladimirov. It was not so nice to turn to the back page and

**"Mr. Barney, take a
look in the mirror—
you're seeing the
Ugly American."**

see you ridiculing his less-than-perfect English. If you tried to write a letter to him in Russian, you'd no doubt make more than three minor spelling mistakes. And he'd probably have the good taste not to make fun of your errors, much less publish them in a mass periodical. Mr. Barney, take a look in the mirror—you're seeing the ugly American.

*David Duberman
Redwood City, California*

A 900 NUMBER, YET!

I just mailed off a red-hot letter to the president of Oxxi, prompted by my

learning that the company has now put its customer-service department on a 1-900 line! I'm writing this to *AmigaWorld* in the hope that some negative publicity might keep this odious practice from spreading to other companies.

By the way, Mr. Barney, I always read and enjoy your editorials, even when I don't agree with your stance. I find it positive that someone associated with the Amiga is not afraid to stir things up. I also appreciate *AmigaWorld's* courage in printing negative reviews.

In closing, let me pass along a comeback that a friend of mine uses when someone comes up with the usual sneer about the Amiga being a game machine: "Well, if the ability to do gorgeous graphics blazingly fast makes it a game machine, then so be it." This erases the sneer pretty quick.

*Dennis Schaefer
Los Angeles, California*

THE HUMAN SIDE

I've been reading *AmigaWorld* for almost four years now. The reviews are good, and the tutorials are helpful. All the information you jam between the covers has good reason to be there most of the time. But while there is plenty of useful stuff in *AmigaWorld*, there is a void when it comes to the human side of the machine.

There are plenty of creative, intelligent people out there using the Amiga. That's why such a open-ended machine was developed. Why can't we see a little bit of coverage on the people doing the neat stuff? I'd like to see occasional articles, not on celebrities, but on everyday individuals who use the Amiga to develop wild or unusual applications. I'd like to hear how they do it technically and how they got started on their projects. With more awareness of the possibilities, the rest of us might find some new directions, too.

*Wil Haslup
Carbondale, Illinois*

Free Product Info

Want to
Know More
About Products
Or Services
Advertised In
This Issue?

DIRECT TO YOU AT NO COST OR OBLIGATION

AmigaWorld

READER SERVICE CARD

Name _____ Phone () _____

Address _____

City _____ State _____ Zip _____

1. What kind of Amiga do you own?
- a. ☐ Amiga 500 d. ☐ Amiga 2500
b. ☐ Amiga 1000 e. ☐ Amiga 3000
c. ☐ Amiga 2000 f. ☐ Don't own an Amiga

2. Which five areas of product coverage do you find most valuable in *AmigaWorld*?

- g. ☐ Animation
h. ☐ Database management
i. ☐ Education
j. ☐ Games
k. ☐ 2-D graphics
l. ☐ 3-D graphics
m. ☐ Hardware expansion
n. ☐ Hardware peripherals
o. ☐ Home productivity and finance
p. ☐ Multimedia
q. ☐ Music
r. ☐ Science/engineering (CAD, etc.)
s. ☐ Telecommunications
t. ☐ Video
u. ☐ Word Processing

3. As of the June 1991 issue, we combined "Headliners" (News), "What's New" (New Products), and "PD Prospector" (PD/shareware) into a column called "OverScan". Do you like:

- v. ☐ New format w. ☐ Old format
x. ☐ No opinion

4. As of the July 1991 issue, we replaced the monthly "Mastering Multimedia" column with a video column, "Video Suite". Do you think this was a good idea?

- y. ☐ Yes z. ☐ No 1. ☐ No opinion

5. In order to maximize our editorial space to cover the most important things we think readers want to see, we decided to drop our monthly programming column, "Pointers". Do you think this was a good idea?

2. ☐ Yes 3. ☐ No 4. ☐ No opinion

☐ If you would like a one year subscription to *AmigaWorld* (12 issues) please check here. The cost is \$24.97. Canada and Mexico \$34.97. Foreign surface mail is \$47.97. Foreign Airmail \$82.97 (must be US funds drawn in a US bank). 4RSS1

October Issue Card
Valid Until
December 30, 1991

1	26	51	76	101	126	151	176
2	27	52	77	102	127	152	177
3	28	53	78	103	128	153	178
4	29	54	79	104	129	154	179
5	30	55	80	105	130	155	180
6	31	56	81	106	131	156	181
7	32	57	82	107	132	157	182
8	33	58	83	108	133	158	183
9	34	59	84	109	134	159	184
10	35	60	85	110	135	160	185
11	36	61	86	111	136	161	186
12	37	62	87	112	137	162	187
13	38	63	88	113	138	163	188
14	39	64	89	114	139	164	189
15	40	65	90	115	140	165	190
16	41	66	91	116	141	166	191
17	42	67	92	117	142	167	192
18	43	68	93	118	143	168	193
19	44	69	94	119	144	169	194
20	45	70	95	120	145	170	195
21	46	71	96	121	146	171	196
22	47	72	97	122	147	172	197
23	48	73	98	123	148	173	198
24	49	74	99	124	149	174	199
25	50	75	100	125	150	175	200

AmigaWorld

READER SERVICE CARD

Name _____ Phone () _____

Address _____

City _____ State _____ Zip _____

1. What kind of Amiga do you own?
- a. ☐ Amiga 500 d. ☐ Amiga 2500
b. ☐ Amiga 1000 e. ☐ Amiga 3000
c. ☐ Amiga 2000 f. ☐ Don't own an Amiga

2. Which five areas of product coverage do you find most valuable in *AmigaWorld*?

- g. ☐ Animation
h. ☐ Database management
i. ☐ Education
j. ☐ Games
k. ☐ 2-D graphics
l. ☐ 3-D graphics
m. ☐ Hardware expansion
n. ☐ Hardware peripherals
o. ☐ Home productivity and finance
p. ☐ Multimedia
q. ☐ Music
r. ☐ Science/engineering (CAD, etc.)
s. ☐ Telecommunications
t. ☐ Video
u. ☐ Word Processing

3. As of the June 1991 issue, we combined "Headliners" (News), "What's New" (New Products), and "PD Prospector" (PD/shareware) into a column called "OverScan". Do you like:

- v. ☐ New format w. ☐ Old format
x. ☐ No opinion

4. As of the July 1991 issue, we replaced the monthly "Mastering Multimedia" column with a video column, "Video Suite". Do you think this was a good idea?

- y. ☐ Yes z. ☐ No 1. ☐ No opinion

5. In order to maximize our editorial space to cover the most important things we think readers want to see, we decided to drop our monthly programming column, "Pointers". Do you think this was a good idea?

2. ☐ Yes 3. ☐ No 4. ☐ No opinion

☐ If you would like a one year subscription to *AmigaWorld* (12 issues) please check here. The cost is \$24.97. Canada and Mexico \$34.97. Foreign surface mail is \$47.97. Foreign Airmail \$82.97 (must be US funds drawn in a US bank). 4RSS1

October Issue Card
Valid Until
December 30, 1991

1	26	51	76	101	126	151	176
2	27	52	77	102	127	152	177
3	28	53	78	103	128	153	178
4	29	54	79	104	129	154	179
5	30	55	80	105	130	155	180
6	31	56	81	106	131	156	181
7	32	57	82	107	132	157	182
8	33	58	83	108	133	158	183
9	34	59	84	109	134	159	184
10	35	60	85	110	135	160	185
11	36	61	86	111	136	161	186
12	37	62	87	112	137	162	187
13	38	63	88	113	138	163	188
14	39	64	89	114	139	164	189
15	40	65	90	115	140	165	190
16	41	66	91	116	141	166	191
17	42	67	92	117	142	167	192
18	43	68	93	118	143	168	193
19	44	69	94	119	144	169	194
20	45	70	95	120	145	170	195
21	46	71	96	121	146	171	196
22	47	72	97	122	147	172	197
23	48	73	98	123	148	173	198
24	49	74	99	124	149	174	199
25	50	75	100	125	150	175	200

Here's How.

- ◆ Print your name and address where indicated.
- ◆ Tell us about yourself by answering the questions.
- ◆ Circle the numbers on the card corresponding to the reader service number on the ads for products or services that interest you.
- ◆ Tear out and mail the card.
- ◆ Please allow 6-8 weeks for delivery of your subscription.

NO OBLIGATION. Literature on products and services will be sent to you directly from advertisers, free of charge.

Free Product Info

**DIRECT TO YOU
AT NO COST OR OBLIGATION**

Please Use
First Class
Letter
Postage

AmigaWorld
P.O. Box 8751
Boulder, CO 80329-8751

Please Use
First Class
Letter
Postage

AmigaWorld
P.O. Box 8751
Boulder, CO 80329-8751

**Want to
Know More
About Products
Or Services
Advertised In
This Issue?**



Here's How.

- ◆ Print your name and address where indicated.
- ◆ Tell us about yourself by answering the questions.
- ◆ Circle the numbers on the card corresponding to the reader service number on the ads for products or services that interest you.
- ◆ Tear out and mail the card.
- ◆ Please allow 6-8 weeks for delivery of your subscription.

NO OBLIGATION. Literature on products and services will be sent to you directly from advertisers, free of charge.

**12
issues
for
~~\$47.40~~
\$24.97**



**Order
now
and
receive
a FREE
Sampler
Disk!**



**AMIGA
WORLD**
Save 47%

**FREE
SAMPLER
DISK!**

☒ **YES!** RUSH me my FREE Sampler Disk and enter a one-year subscription (12 issues) to AmigaWorld for only \$24.97. I **save 47% off the annual** single copy price.

☐ Bill me ☐ Payment enclosed

Please make checks payable to AmigaWorld. Canada \$41.97, Mexico \$34.97, Foreign Surface \$47.97, Foreign Airmail \$82.97 (U.S. funds drawn on a U.S. bank). Prepayment is required on all Foreign Surface and Foreign Airmail orders. Basic 1 year (12 issue) subscription rate is \$29.97. All prices are 1 year only. Please allow 6-8 weeks for delivery. Canadian rate includes GST. GST Reg. #126038405.

Name _____

Address _____

City _____

State _____

Zip _____

418J4



**AMIGA
WORLD**
Save 47%

**FREE
SAMPLER
DISK!**

☒ **YES!** RUSH me my FREE Sampler Disk and enter a one-year subscription (12 issues) to AmigaWorld for only \$24.97. I **save 47% off the annual** single copy price.

☐ Bill me ☐ Payment enclosed

Please make checks payable to AmigaWorld. Canada \$41.97, Mexico \$34.97, Foreign Surface \$47.97, Foreign Airmail \$82.97 (U.S. funds drawn on a U.S. bank). Prepayment is required on all Foreign Surface and Foreign Airmail orders. Basic 1 year (12 issue) subscription rate is \$29.97. All prices are 1 year only. Please allow 6-8 weeks for delivery. Canadian rate includes GST. GST Reg. #126038405.

Name _____

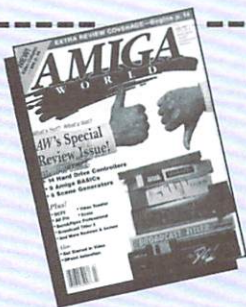
Address _____

City _____

State _____

Zip _____

418J4



**AMIGA
WORLD**
Save 47%

**FREE
SAMPLER
DISK!**

☒ **YES!** RUSH me my FREE Sampler Disk and enter a one-year subscription (12 issues) to AmigaWorld for only \$24.97. I **save 47% off the annual** single copy price.

☐ Bill me ☐ Payment enclosed

Please make checks payable to AmigaWorld. Canada \$41.97, Mexico \$34.97, Foreign Surface \$47.97, Foreign Airmail \$82.97 (U.S. funds drawn on a U.S. bank). Prepayment is required on all Foreign Surface and Foreign Airmail orders. Basic 1 year (12 issue) subscription rate is \$29.97. All prices are 1 year only. Please allow 6-8 weeks for delivery. Canadian rate includes GST. GST Reg. #126038405.

Name _____

Address _____

City _____

State _____

Zip _____

418J4

**BUSINESS REPLY MAIL**

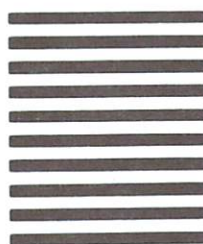
FIRST-CLASS MAIL PERMIT NO. 1247, BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

AmigaWorld
P.O. Box 50365
Boulder, CO 80321-0365



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED
STATES

**BUSINESS REPLY MAIL**

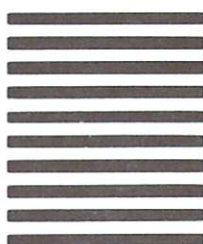
FIRST-CLASS MAIL PERMIT NO. 1247, BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

AmigaWorld
P.O. Box 50365
Boulder, CO 80321-0365



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED
STATES

**BUSINESS REPLY MAIL**

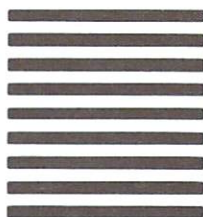
FIRST-CLASS MAIL PERMIT NO. 1247, BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

AmigaWorld
P.O. Box 50365
Boulder, CO 80321-0365



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED
STATES



12
issues
for
~~**\$47.40**~~
\$24.97



**Order
now
and
receive
a FREE
Sampler
Disk!**

The AmigaWorld

**Special
Offer!**

TECH JOURNAL

☒ **YES!** Enter my one-year (6 bi-monthly issues, plus 6 invaluable disks) subscription to The AmigaWorld Tech Journal for the special price of \$59.95, **That's a savings of \$35.75** off the single copy price. If at any time I'm not satisfied with The AmigaWorld Tech Journal, I'm entitled to receive a full refund — no questions asked.

Name _____

Address _____

City _____ State _____ Zip _____

☐ Check / Money order enclosed

Charge my: ☐ MasterCard ☐ Visa ☐ Amex ☐ Discover

Account# _____ Exp _____

Signature _____

Canada \$80.95, Mexico \$74.95, Foreign \$99.95. Payment required in U.S. funds drawn on a U.S. bank. Canadian rate includes GST. GST Reg. #126038405.

Or call 800-343-0728 ☎ 603-924-0100 for immediate service.

TJA1S



BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 73 PETERBOROUGH, NH

POSTAGE WILL BE PAID BY ADDRESSEE

AmigaWorld Tech Journal
P.O. Box 802
Peterborough, NH 03458-9971

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED
STATES



directory OPUS

The New Wave Disk Utility

So...

you don't think directory utilities are very exciting, eh? Time to look at **Directory Opus**. It's got everything you need.

Standard Dir Util Features

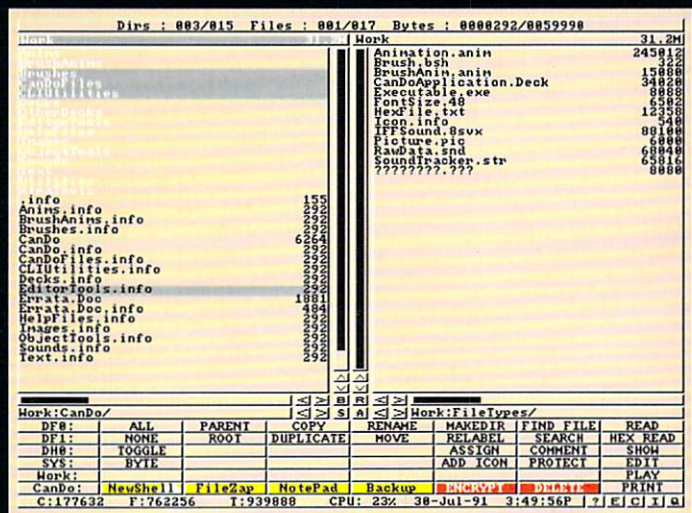
- copy, move, rename, delete, and archive files
- create new directories
- copy, format, and install disks
- read and print text files

Special Features

- Over 100 configurable buttons and menus
- Runs programs • Launches CanDo decks
- Shows pictures, brushes (and fonts and icons)
- Shows ANIMs and AnimBrushes
- Plays 8SVX sounds and SoundTracker files
- Memory resident w/hot key access/iconifiable
- Complete directory tree and history
- Online help for all Opus features
- Complete ARexx support
- Support for all 2.0 screen modes
- TOO MUCH MORE TO LIST!

Only \$59.95. To order, call now!

1-800-875-8499



Take a good look at the most useful program you'll ever own

INOVAtronicS

8499 Greenville Avenue, #209B
Dallas, Tx 75231 Phone: 214/340-4991
FAX: 214/340-8514



EVERY AMIGA USER KNOWS THE POWER OF THE VIDEO TOASTER:

4-Input Switcher • Digital Video Effects • LightWave 3D • ToasterPaint • Chroma F/X
35ns Character Generator • Still Store/Frame Grabber • Dual 24-bit Frame Buffers



NOW THE REST OF THE WORLD KNOWS:

"The hit of Comdex was neither PC nor Mac related. It was the Amiga based Video Toaster"

-*Washington Post*

"as capable as gear normally costing \$60,000."

-*Business Week*

"[the Video Toaster] Makes the Amiga computer act just like a Hollywood production studio."

-*USA Today*

"The big news [in video] is NewTek's Video Toaster, a \$1595 plug-in board that attaches to Commodore's video-friendly Amiga computer."

-*TIME*

"The Amiga and the Video Toaster create desktop video the way Apple Computer and Aldus Corp. created desktop publishing."

-*Los Angeles Times*

"Like a \$100,000 video system ... allows you to make your videos look just like network television."

-*CBS News*

"...effectively crams hundreds of thousands of dollars' worth of video production equipment and software into a \$4000 box."

-*Rolling Stone*

"The Amiga based Video Toaster is our favorite product of MacWorld Expo."

-*MacWeek*



SEE THE REVOLUTION FOR YOURSELF.

Now you can witness the "Revolution" in your own home or office. Starring NewTek's own Kiki Stockhammer, and featuring the Toaster's mind-blowing effects, titles and graphics along with animation by Todd Rundgren and 3D artist/LightWave programmer Allen Hastings. Like the Toaster itself, this videotape will knock your socks off. Call (800) 843-8934 or (913) 354-1146.

Video Toaster Card:
\$1595

NEWTek
INCORPORATED

Videotape Demo:
\$4.95