

A500
Upgrade Guide!
Part 1—p. 46

AMIGA

WORLD

February 1991
U.S.A. \$3.95
Canada \$4.50
UK £2.50
An IDG
Communications
Publication

Put It All Together

MULTIMEDIA

Amiga Style!

- ▶ 25 Tools For Multi Media Producers
- ▶ 9 Tips For Better Interactive Shows
- ▶ How To Avoid Copyright Hassles

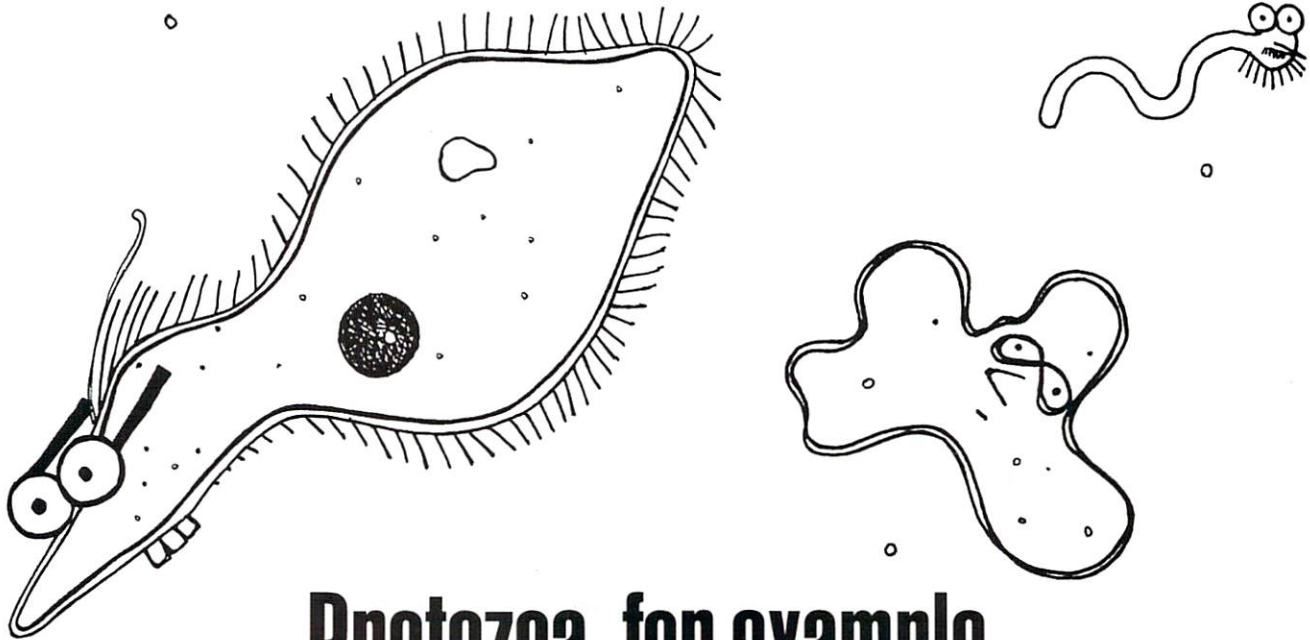
RAM Supercharge!
11 A500 Boards

Plus!

- HAM Compositing
- Video Disc Mastering
- Reviews, Games & More



We're not saying everyone should own a Digi-View Gold...



Protozoa, for example, have very little need.

Only one product has captured the imagination of Amiga users around the world: Digi-View Gold. It's the most award winning, best-selling and most used Amiga hardware product of all time. When Amiga owners want to digitize graphics they use Digi-View Gold. Period. In fact, we've probably sold more Digi-Views than any other digitizer on any PC in history.

Here's your chance to bring the world into your Amiga. Simply focus your video camera on any object or picture, and in seconds Digi-View Gold turns it into Amiga graphics that glow with vibrant color and stunning clarity. Whether you are creating graphics for desktop publishing, presentations, video, or just for fun, Digi-View Gold makes dazzling images perfectly simple.

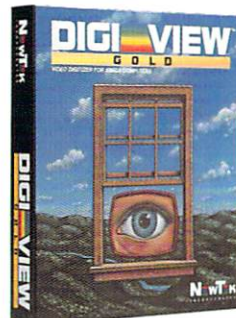
Digi-View Gold is designed specifically for the Amiga 500 and 2000, and plugs directly into the parallel port. With complete software control of color saturation, brightness, sharpness, hue, resolution, and palette, advanced image processing is as easy as adjusting the controls on your television.

Only Digi-View Gold:

- Has exclusive Dynamic HiRes mode for 4096 colors in HiRes
- Digitizes in all Amiga resolution modes from 320x200 up to 768x480 (full HiRes overscan)

- Uses 2 to 4096 colors (including halfbrite)
- Digitizes in 21 bits per pixel (2.1 million colors) for the highest quality images possible
- Has advanced dithering routines that give an apparent 100,000 colors on screen simultaneously
- Comes with an icon driven slideshow program for presentations using both IFF and Dynamic images
- Offers an unprecedented lifetime warranty and toll-free support line

If you want the best pictures possible on your Amiga, then you need the best selling video digitizer of all time: Digi-View Gold.



Only \$199.95

Digi-View Gold is available now at your local Amiga dealer. Or call 1-800-843-8934 or 1-913-354-1146

NewTek

Requires standard gender changer for use with Amiga 1000. Dynamic HiRes requires 2 megs of RAM. Digi-View Gold is a trademark of NewTek, Inc.

The Amiga Video Digitizer I N C O R P O R A T E D

Circle 119 on Reader Service card.

PROFESSIONAL PAGE™ 2.0

INCLUDES
TUTORIAL VIDEO

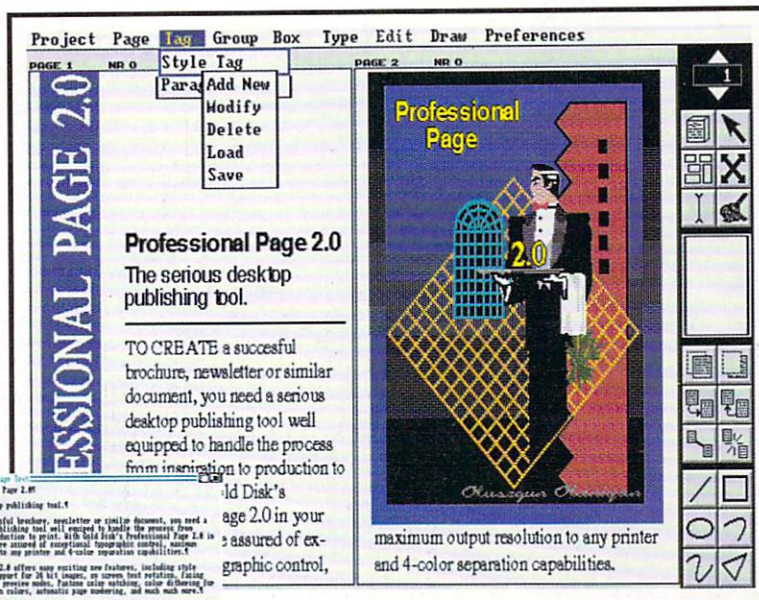
Gold Disk has a publishing program that gives you more creative control over your desktop documents: *Professional Page™ 2.0*. Designed for the serious Amiga user who is concerned with sophisticated typography, color design and separation, and production control, this powerful publishing package gives you professional results.

Quick text design changes are accomplished with *Professional Page's* style tagging. An unlimited number of style tags can be defined to specify any or all type and paragraph attributes.

Put a new angle on text, bitmaps and structured graphics with *Professional Page*. Rotate them at any angle, either numerically or with the mouse, and add pizzazz to your documents.

Customize text with greater control over letter and word spacing. And AGFA Compu-graphic fonts, allowing for smooth, jaggie-free output at any point size to any printer.

A built-in word processor provides for quick text writing and editing and includes a 90,000 word spell checker.



Preview multiple pages on screen simultaneously. Now you can review up to six document pages at a time, easily checking your graphic design and text positions for an overall look.

Automatic page numbering is easy with *Professional Page 2.0*. Insert the current page number at any point and it is automatically updated when the page number is changed.

Adding a splash of color is easy with the built-in PANTONE MATCHING SYSTEM.®* With a click you can select from up to 65,000 user-defined colors, and color dithering can display over 1,000 colors at once.

Import and print 24 bit color files, including color separations directly from *Professional Page*--without the need for extra utilities.

For producing simple flyers and brochures to full four color ads and magazines, *Professional Page* is the desktop publishing program of choice. In fact it is used by more magazines than any other package.

And to get you producing professional documents quickly, we have included a free tutorial video tape in every package.

To find out why *Professional Page 2.0* is the expert's choice, see your local Amiga dealer or call 1-800-GOLD-DSK. If you take desktop publishing seriously, we're the ones to work with.

Professional Page is the best, and the best just got better.

ADVANCING THE ART OF DESKTOP PUBLISHING

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



Ask your dealer how you can win a Sony® Discman®.

This document produced entirely with *Professional Page 2.0*

Professional Page is a registered trademark of Gold Disk Inc.
*Pantone, Inc.'s check-standard trademark for color.

INCLUDES OVER
\$575
IN VALUABLE
COUPONS

DRAGON'S LAIR II



Princess Daphne has been spirited away to a wrinkle in time by the evil wizard Mordroc who plans to force her into marriage. Only you, Dirk the Daring, can save her.

Transported by a bumbling old time machine, you begin the rescue mission. But you must hurry, for once the Casket of Doom has opened, Mordroc will place the Death Ring upon Daphne's finger in marriage and she will be lost forever in the Time Warp.

Be the first to play the all new Don Bluth animated adventure! Dragon's Lair II: Time Warp features full-screen animation and digitized sound with more scenes than any previous animated adventure.

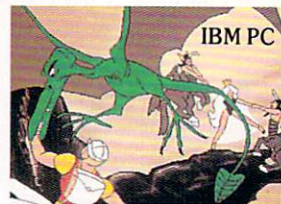
"Dragon's Lair II: Time Warp" is a trademark owned by Bluth Group, Ltd.; ©1990 Bluth Group, Ltd.; used under license from Sullivan Bluth Interactive Media, Inc.; Character Designs ©1983 Don Bluth; ©1990 all audio, visuals and concept - Sullivan Bluth Interactive Media, Inc. ALL RIGHTS RESERVED; Programming ©1990 ReadySoft Incorporated.



Amiga



Atari ST



IBM PC



Macintosh

C · O · N · T · E · N · T · S ·

FEATURES

MULTIDIMENSIONAL MULTIMEDIA

By Jamie Krutz 26
Our "Multimedia-For-All-Occasions" guide will show you the equipment and software you'll need for any kind of multimedia show—from simple product displays to full-scale video productions.

REPLACE THAT INTERFACE!

By Geoffrey Williams 33
With interactive multimedia, you can't always get away with just a standard mouse or keyboard interface. Here are nine different alternatives for your next presentation.

COPY RIGHTS AND WRONGS

By Gene Brawn 41
Sometimes you can, sometimes you can't, and sometimes it's not very clear at all! Check out our copyright guide for multimedia producers to find out what's yours, what's theirs, and what's up for grabs.

ARTICLES

THE "AMI 500"—PART 1: REVVING UP WITH RAM

By John Wolfskill 46
AW begins a 3-part series on upgrading and expanding your Amiga 500. Here on the first lap, an ace mechanic shows you how to overhaul your system memory with 11 different RAM expanders.

COLUMNS

CHIEF CONCERNS

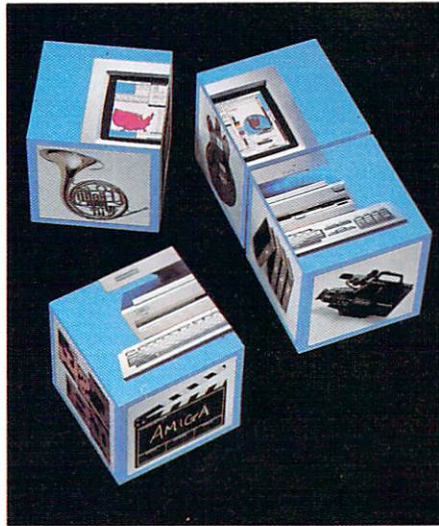
By Doug Barney 6
The editor's been locked up in his office running every kind of Amiga system imaginable going full blast. He passed this editorial out under the door, and we think he's ready to come out now.

ACCENT ON GRAPHICS

By Joel Hagen 58
Joel takes up photo-compositing techniques again this month, but this time he applies them to HAM mode—with some very striking results.

POINTERS

By Tim Grantham 60
Fax a text file via CompuServe using your favorite terminal emulator? Try this handy ARExx script to see how it's done.



We're calling our February theme "Making Multimedia." Let's face it, *everybody's* doing it now. But, remember, the Amiga did it first—which is why *AmigaWorld* has been covering multimedia for the past two years now. We think the Amiga also does it *best*, and that's why the solution to putting the multimedia puzzle pieces together on our cover (above) is—you guessed it!

MASTERING MULTIMEDIA

By Gene Brawn 66
Don't let video-disc mastering turn into a "voodoo-video" nightmare. Follow this clear, concise guide to producing your own interactive video discs.

DEPARTMENTS

REPARTEE 8
At 25 cents a pop, whaddya waiting for?

HEADLINERS 10
From Vegas to Cologne, Amigas and Amiga products are very much in the news.

WHAT'S NEW? 108
Answer: Graphics, video, animation, music, expansion boards, and a lot more!

THE PD PROSPECTOR

By Tim Walsh 114
PD/shareware picks and communications tips from our man down in the mines.

HELP KEY

. 116
If—like last month—Lou can install an 030 board in Santa's sleigh and also make the old guy's reindeer multitask, surely he can solve *your* technical dilemma.

LAST LICKS

. 120
Although some of you may miss "Ask Agnus" and "booger-on-the-screen" cartoons, we think the new look to our back page may have hit the mark.

REVIEWS

SUPERGEN 2000S

(Digital Creations) 14
A revolutionary genlock that could spell the end of "rackmount" video.

TRAX

(Passport Designs) and *MUSIC-X JR. (MicroIllusions)* 20
Scaled-down "junior" versions of two popular MIDI sequencers.

PAGESTREAM 2.0

(Soft-Logik) 24
The often-updated DTP program may finally hit the front page.

GOLD DISK OFFICE

(Gold Disk) 94
A five-module integrated business package.

TOP FORM

(Designing Minds) 100
Bare-bones custom forms creation.

BACKTALK

. 106
No Fat Lady sings in this space!

GAMES

CRIB NOTES

By Peter Olafson 76
The gamesmeister is up to his joystick handles with requests for advice.

WINGS

(Cinemaware / Electronic Arts) 76
This time it's "The Great One," not "The Big One," in a superb flight simulator.

THE KILLING GAME SHOW

(Psygnosis) 78
It's the "pits"—that's why you'll love it!

THE IMMORTAL

(Electronic Arts) 78
Dungeon adventures are back on the map.

POWER PINBALL

(KarmaSoft) 84
Design your ultimate dream machine.

TURRICAN

(Innerprise) 86
Futuristic platform arcade adventure.

WANTED

AMIGA PROFESSIONALS

Join the
Winning team
at Great Valley
Products

Great Valley Products, the world's leading Amiga developer wants you. Our aggressive expansion plans have created a number of immediate openings. We offer a stimulating environment utilizing the latest state-of-the-art development tools. Positions now available include:

Hardware Engineers

BSEE required. Proven design experience in one or more of the following areas: 68040/68030 based systems, advanced video or audio products, ASIC development using Mentor systems, high-speed modems, Amiga peripherals in general.

Software Engineers

In-depth knowledge of both systems and applications level programming using C on the Amiga. Proven experience in finishing projects from concept through to the "shrink wrap" stage would be ideal. Experience with AmigaDOS and UNIX device drivers and diagnostics would be an added advantage.

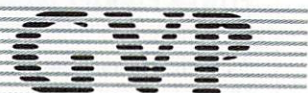
Technical Support Specialists

Amiga enthusiasts with a good understanding of both software and hardware. Requires good verbal and written communication skills, lots of patience and strong analytical ability.

Technical Writer/Manual Developer

Knowledge of Amiga Hardware and Software coupled with proven technical writing skills and ability to develop technical manuals from concept to printing is a must. Requires self-motivated individual with drive and initiative able to work under pressure and meet new product introduction deadlines. Packaging design experience would be an added advantage.

If you are interested in any of the above positions, please send us your resume as soon as possible.



GREAT VALLEY PRODUCTS INC.
600 Clark Avenue, King of Prussia, PA 19406
Tel. (215) 337-8770 • FAX (215) 337-9922

STEPHEN 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*

JOHN WOLFSKILL, *Senior Writer, Technology*

MARE-ANNE JARVELA, *Special Products Coordinator*

GENE BRAWN, DAVID T. MCCLELLAN, *Contributing Editors*

HOWARD G. HAPP, *Art Director*

LAURA JOHNSON, *Assistant Art Director*

ANN DILLON, *Designer*

ALANA KORDA, *Production Supervisor*

DEBRA A. DAVIES, *Typographer*

KENNETH BLAKEMAN, *National Advertising Sales Manager*

MICHAEL MCGOLDRICK, *Sales Representative*

BARBARA HOY, *Sales Representative*

HEATHER PAQUETTE, *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 and Operations Administrator*

MARY MCCOLE, *Publisher's Assistant*

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

PAM WILDER, *Circulation Manager*

LYNN LAGASSE, *Manufacturing Manager*

ROGER J. MURPHY, *President*

JAMES M. BARRY, *Vice President/Group Publisher*

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, *Director of Corporate 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 IDG Communications/Peterborough, Inc., 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 rates are one-year only. Second-class postage paid at Peterborough, NH, and at additional mailing offices. Phone: 603-924-0100. Entire contents copyright 1990 by IDG Communications/Peterborough, 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.

Beauty and Functionality Redefined

THE NEW **IMPACT** **SERIES II™ A500-HD+**

The Next Generation in Amiga® 500 Add-On Peripherals

IMPACT

Series II

*Turn your A500® into a
Serious and More Fun
Computing Tool Today!*

GVP's New **SERIES II**
A500-HD+ is The Ultimate in
Hard Drive, Memory and
Expandability for your Amiga 500.
Major features include:

Leading Edge

Same high-tech custom VLSI and
FAASTROM™ features as GVP's new
Series II A2000 SCSI-RAM Products.

Foresight

Unique new "Mini-Slot"™ brings out
all the A500 expansion bus signals,
allowing for exciting future expansion
options—the only intelligent
alternative to risky "Pass-Through"
functionality.

Reliability

Includes internal fan to keep you cool
and robust power supply ensuring your
A500 power supply will not be
overloaded. GVP will not compromise
on quality and reliability!

Memory Expansion

Internal RAM Expansion up to
8MB using easy-to-install SIMM
memory modules.

Sleek

Custom injection-molded styling
perfectly matches your A500 for
unequaled beauty and elegance, setting
a new standard for A500 peripherals.

State-of-the-Art

New 1"-high internal hard disk drive;
available from 40MB through 100MB.

Performance

Provides no-compromise hard disk
performance which until now has
never been seen on the A500.

Seeing is Believing

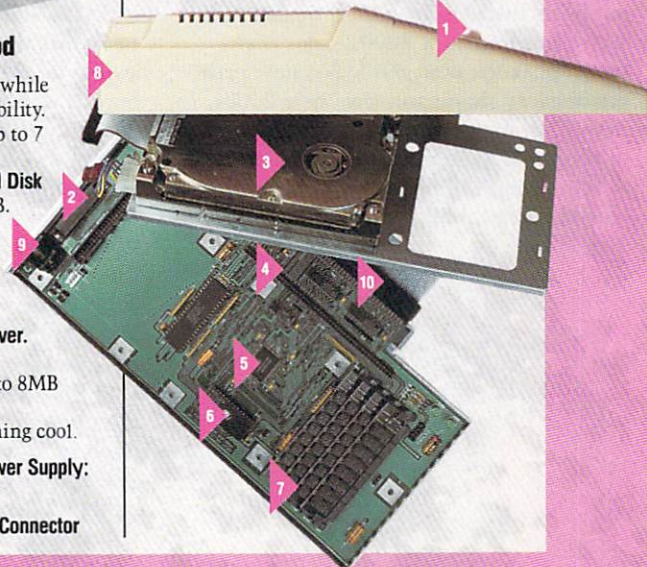
Take one for a Test "Drive" at your
nearest GVP Dealer today!

**Call for Special End-User
Trade-Up Details!**



Take a Look under the Hood

- 1 Game Switch: Enables RAM while enabling full game compatibility.
- 2 External SCSI Port: Allows up to 7 SCSI devices to be attached.
- 3 1"-High Factory-installed Hard Disk Drive: 40MB through 100MB.
- 4 "Mini-Slot": For future expansion options.
- 5 GVP's Custom VLSI Chip.
- 6 GVP's **FAASTROM** SCSI Driver.
- 7 Internal RAM Expansion: Up to 8MB
- 8 Internal Fan: Keeps you running cool.
- 9 Dedicated Universal Input Power Supply: Included.
- 10 Reinforced 86-PIN Card Edge Connector



GVP

Educational pricing program now available.

Series II, **FAASTROM** and GVP are trademarks of Great Valley Products, Inc.
Amiga and A500 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



CHIEF CONCERNS

*In between computers: the quirks, frustrations
and challenges of upgrading.*

I'M SITTING BETWEEN two Amigas, with one monitor pointed at my face, the other at my back. They are both on, issuing enough radiation to put my unborn progeny in slight peril. The machine that is producing this month's harangue is an old A2000 with no accelerator, no flickerFixer, and nothing else of real significance.

Behind, beaming its signal into my spine, is a spanking new, 25Mhz A3000, with a 100-meg hard drive and 18 megs of RAM. And if I turn to the side to talk on the phone, the old and new monitors beam their effulgence into both temples.

Friends, especially those from the PC market, sometimes ask me why I have 18 megs of RAM. I say it's because someone was nice enough to buy it for me.

In fact, someone was nice enough to buy the entire *AmigaWorld* staff \$72,000 worth of Amiga equipment, which arrived in a steady stream and was conscientiously installed by a local dealer. We've got four new 3000s, color scanners, speakers, new gen locks, new printers of every shape and size, new 2000s, new 500s, memory, floppies, cables, and, of course, a huge pile of empty boxes.

Somewhere, some sales rep in the Northeast saw a blip, and that blip was *AmigaWorld*.

So why is this editorial being written on an aging, underpowered wimp of an Amiga that could flake out at any minute? Some of it has to do with the fact that 2.0 is not quite finished. Part of it has to do with my lack of a power strip, so the speakers aren't set up. And some of it has to do with the fact that I'm lazy, and haven't yet moved over all my files.

So then you ask; why is the 3000 turned on if it isn't doing any work? Maybe it's because I'm trying to learn about the new operating system, so I toy with the applications that are already loaded. Maybe it's to get the feel of the speed, and to get used to the cursor flying off the screen with the slightest touch of the mouse. Maybe it's just to show off.

A lot of people are also slow to change. Upgrading software can be difficult enough. Upgrading a whole computer with a new operating system is even more involved. The A3000 is a superb machine, but it is not the easiest to switch to. With its slim form factor, some boards won't fit. Some programs won't run under its new operating system, forcing users to boot up 1.3. And some timing-dependent software—such as copy-protected games—won't run at all with its 68030 processor. All this slows down the inevitable move to the next generation.

We know Commodore is working on a program for software compliance, and God knows they are trying to polish off the operating system. We're going to pitch in as well. In the April issue, we are planning an article on A3000 compatibility that will allow owners and potential owners of the 3000 to figure out what will and won't work.

We don't have time to load 1,200 programs and test dozens upon dozens of boards. We've also got to eat lunch, get

out a magazine, and talk to readers on the phone. And since the operating system is still changing, the software results would be inaccurate as soon as they're published, anyway. What we will do is generally describe why some things work and other things don't. A quick call to your vendor of choice should help sort out the specifics.

These issues are also involved in our buying 500s and 2000s. We need total backward compatibility for some of our projects. By the way, they are also cheaper.

AmigaWorld is investing heavily in the Amiga market, both current and future generations. We are buying equipment, adding editorial positions, launching new products such as the Tech Journal, and beating the Amiga drum for whoever will listen. ■

Doug Barr

IMPACT A3001 UPGRADE KIT

Now Available with 50Mhz 68030 Acceleration
Create the fastest Amiga in the World with an A2000™ and our A3001 Kit.

200MB
 (<15ms)
Hard Disk
 now
 available

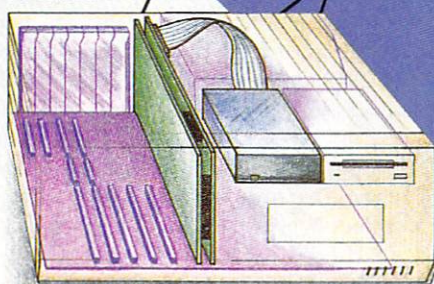
Choose the IMPACT™ A3001 Upgrade Kit from GVP to put the speed and power of leading-edge technology into your Amiga™.

Enhance your productivity and create more powerful results when you choose these key features:

- Factory installed 68030 CPU running at 28 MHz.
- Factory installed 68882 Floating Point Processor running at 28 Mhz.
- 4 or 8MB of 32-bit wide high performance 80ns NIBBLE MODE DRAM; allows full support and advantage to be taken of the 68030's BURST Mode.
- Built-in Autobooting High Performance Hard Disk Controller with data transfer rates well over 700KB/sec.
- High performance 40MB, 80MB or 200MB hard disk drive with an average read access time of less than 15ms (19ms on write) and 64KB read-ahead cache. If you already own a hard disk, this item can be optional.
- Asynchronous design allowing the 68030 to run ASYNCHRONOUS to the rest of the A2000 improving GENLOCK compatibility.
- **ZERO SLOT SOLUTION!** With the A3001 Configuration along with the bundled 40Q or 80Q Hard Disk Drive ALL A2000 EXPANSION SLOTS ARE LEFT FREE FOR FUTURE UNLIMITED EXPANSION!

**All A2000
Expansion
Slots Free!**

**A3001
Upgrade Kit
Installed**



Up to 8MB of 32-Bit Wide DRAM
 Hard Disk Drive Interface
 Optional 68030 Boot EPROMS (UNIX™, etc.)
 Autoboot EPROMS for Hard Disk
 40MB, 80MB or 200MB Hard Disk Drive
 32-Bit 68030 Bus Interface
 68030 CPU with 28, 33 or 50Mhz Oscillator
 68882 FPU running at 28, 33 or 50Mhz

NEW!
2MB
Entry-level
version now
available

When you compare, the choice becomes clear.
GVP is unbeatable for price and performance.

| COMPARE: | A2000 + GVP A3001 | CBM A2500/30 | CBM A3000™ |
|---|-------------------|--------------|------------|
| 68030 CPU | Y | Y | Y |
| Maximum CPU Clock Speed available & shipping Today. | 50Mhz | 25Mhz | 25Mhz |
| Factory installed 68882 Floating Point Processor Clock Speed. | 28-50Mhz | 25Mhz | 25Mhz |
| Hard Disk Controller on 68030 Processor Board. | Y | N | Y |
| Number of Open Amiga expansion slots with hard disk drive and 8MB Fast memory installed. | 5 | 3 | 4 |
| Allows user to start with low-cost A2000 Amiga system and grow all the way to 50Mhz 68030 performance without sacrificing anything. | Y | N | N |
| Brand name vendor with solid reputation. | Y | Y | Y |
| Fully implements 68030 Burst Mode up to 33Mhz. | Y | N | N |



GREAT VALLEY PRODUCTS INC.

New Address: 600 Clark Ave., 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

IMPACT and GVP are trademarks of Great Valley Products, Inc.
 Amiga, A2000 and A3000 are registered trademarks of Commodore-Amiga, Inc.
 UNIX is a registered trademark of AT&T, Inc.

REPARTEE

Comments, complaints, and concerns

from AmigaWorld readers.

UNDERDONE TOAST

Concerning the Video Toaster article (Oct. '90, p. 20), I approached it with interest after seeing NewTek's Toaster in action at the recent Los Angeles Video Show. However, Lou Wallace's article left me in the dark as to the Toaster's capabilities with other equipment. It would be very helpful in future articles to at least show a block diagram, with the precise machines and associated equipment used. I'm sure that I'm not the only one who needs more complete information.

Pierce Grant
Burbank, CA

TO EACH HIS OWN

I have just received my December *AmigaWorld* and am sorely disappointed by the article "MIDI Sequencers," penned by Steve Quinzi. I must say that I take exception to Mr. Quinzi's article on several points. The statement "Bars & Pipes. . . is my first choice for 'fun' projects" may imply to some that Bars & Pipes may not be suitable for serious projects. For me, the choice of a sequencer is as personal as buying a musical instrument; does it fit your musical ideas, your style of writing, as the instrument fits your hand? Does it get in the way of creativity? Mr. Quinzi's implications could well steer someone away from discovering that Bars & Pipes is an extremely

serious sequencer for those of us who have delved deeper.

I invite Mr. Quinzi to hear my music and that of my crosstown colleague, Melvin Sparks, and tell us "it ain't serious." Just because a sequencer accomplishes its objective in a "dramatically different way" does not impair its efficiency. Also, "non-destructive editing" is a very important feature that needs more thorough explanation. Mr. Quinzi further stated that Bars & Pipes "would be my last choice. . . if I were under a deadline, because. . . its open-ended design results in a kind of fragmentation that I find distracting." What the devil is that supposed to mean? Perhaps his article deadline was the distraction.

Michael Torres
Mt. Vernon, NY 10553

HARD DISC WISH LIST

When will game makers realize the error of their ways? I am referring to the fact that most games are floppy disk-based only. This was the sole reason that I did not buy the game Dragon's Lair. (Dragon's Lair would load to hard disk, but only one brand.) I was very pleased to find that the new Dragon's Lair would load to hard disk.

I have quite a few games, with some of the greatest graphics and sound effects, but I do not play them much

because of the extremely slow disk-access speed. In the future, I will no longer even consider any software product sold for the Amiga unless it can be loaded to a hard disk.

Hubert Samm
Belleville, IL

VICTORIES

I am very encouraged by the recent trend I have noticed toward extensive coverage of the Amiga in professional trade magazines that serve the video-production and broadcast communities. Some magazines have even gone so far as to include a regular column that features the Amiga and expounds the virtues of using the system (e.g., *AV Video* magazine's column, "Amiga Niches").

This trend has been quite evident since the release of Commodore's AmigaVision authoring system for multimedia presentations, and is also reflected in a growing number of higher-end hardware and software packages specifically designed to meet the demands of discriminating video professionals.

Could it be that skeptics within the industry are finally waking up and smelling the coffee? Will the Amiga finally get the kind of recognition it truly deserves? From my observations, the answer seems to be a resounding YES!

In my spare time, I am an independent producer for a local cable television station.

When the station manager and a director were discussing the possibility of adding some computers for animations and overlay graphics, I heard the manager make the typical Macintosh suggestion. Then, to my vast surprise, the station director actually responded with: "What about an Amiga? I hear it's quite a capable system."

To make a long story short, after I put a demo tape of my work together and gave it to the station manager along with my copy of the *AW* Animation video, the director stopped me in the hall one day and said, "We're ordering Amigas."

Brad E. Hobberstad
Hawthorn, CA

SERIOUS USE

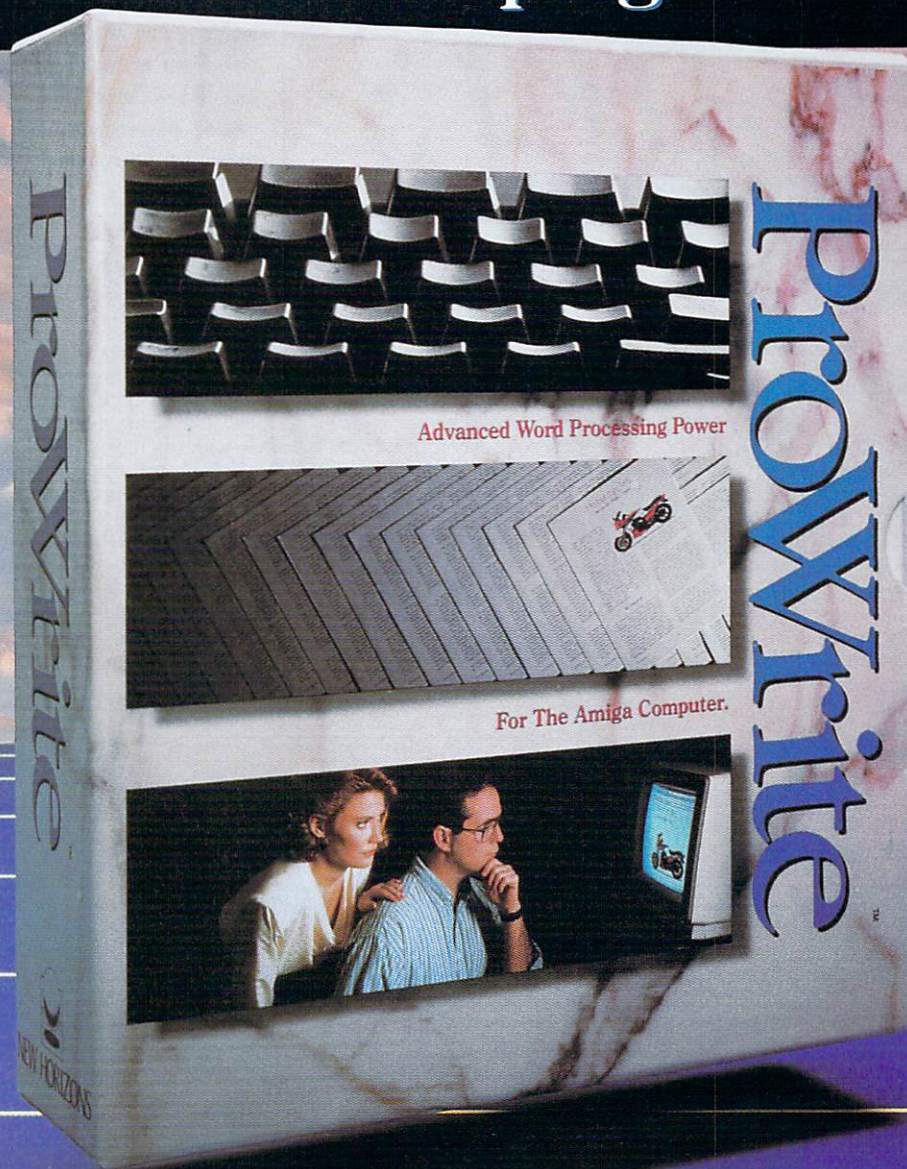
Mike Czykun (Repartee, Oct. '90) stated that "It was we, the game enthusiasts who put the Amiga on the map." Get real! The Amiga was "put on the map" by people who saw its potential as a leading graphics and sound workstation.

You can play PacMan all you want on your Amiga, but I'll stay with DPaintIII and Pro Page, thank you very much.

Shawn Silva
Victoria, British Columbia

Send your letters to: Repartee, *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458. Letters may be edited for space and clarity. ■

How Does The Competition Measure Up Against ProWrite?



They Come Up Short.

ProWrite®. Performance That Stands Out In A Crowd.

In this highly competitive world, there is always a leader. An innovator. The one that the competition looks up to. In the world of Amiga word processors, ProWrite is that leader.

ProWrite has the high performance features you need. A 100,000 word spelling checker that can check as you type. A thesaurus with over 300,000 cross references. Multiple columns with both snaking and parallel text flow. Multiple fonts and graphics. Powerful macros. Exceptional speed.

With all this and more, ProWrite stands head and shoulders above the competition. Which is

why ProWrite is the best selling Amiga word processor. And the best choice for every Amiga owner.

Because it is always better to lead than to follow.

Look To The Leader In Amiga Word Processing.

Like all of our products, ProWrite combines high performance, an intuitive environment, and easy to use commands. When it comes to powerful yet practical word processing, ProWrite is the target the competition shoots for.

So whatever your word processing needs, from A/V scripts, to novels, business reports,

storyboards, or letters to Aunt Agnus, go straight to the top. Discover the power of ProWrite from New Horizons.



First In Personal Productivity And Creativity

New Horizons Software, Inc.
206 Wild Basin Road, Suite 109
Austin, Texas 78746 (512) 328-6650

ProWrite is a registered trademark of New Horizons Software, Inc.
Amiga is a registered trademark of Commodore-Amiga, Inc.

Headliners

NEWS FROM THE AMIGA COMMUNITY

Commodore International Ltd. reports that sales were up 21% in the first quarter of fiscal '91—mainly because of strong Amiga sales and favorable exchange rates.

Import/Export Discussed at Amiga '90

COLOGNE, GERMANY—The German market, with some 600,000–800,000 installed Amigas, offers perhaps the largest concentration of Amigas in the world—and perhaps the greatest enthusiasm for the machine. In any case, over 67,000 users gathered at the Amiga '90 show in November.

In contrast to US trade shows, where well-mannered users politely ask questions and sit patiently through demos, hordes of "crackers" roamed the Amiga '90 halls, wreaking havoc with exhibitors' hard drives and sometimes con-

verging for impromptu rallies. They quickly covered the walls surrounding the Commodore booth with spray paint, ink, and stickers. While some looked upon these actions with dismay, others saw this fervor as a positive.

On the more serious side, many US and German companies seemed to be making deals to bring slick new products to the States. In fact, there was a tremendous turnout at the party *AmigaWorld* hosted for those seeking to enter the US market.

Among the show's highlights

was *Scala* (from The Digital Vision Software Design of Norway), a well-designed package for producing interactive, self running, and mouse-triggered presentations. *Scala* can load animations and produce hard copy, or it can output to a variety of monitors or TV sets. The firm has US distribution in place, and an NTSC version should be out shortly.

Another key product was *Real 3D* from Activa Software in Finland. The firm claims it to be the fastest ray tracer available and is seeking US distribution.

Frame buffers were all the rage. Looking to make a go at video, American-based GVP showed off its new, high-end, **24-bit frame buffer** with digitizing and genlocking features. Amiga Centre Scotland unveiled its **32-bit frame buffer**, while X-Pert Computer Services of Germany showed off a **24-bit transputer-based display adapter**. Recognizing that compatibility is a problem with these devices, Amiga Centre headed up the formation of a group to create related standards.

—DB

Amiga Dons Unix and Multimedia At Fall Comdex

LAS VEGAS, NEVADA—Despite much talk of a recession in the computer industry, the Fall '90 Comdex show (held November 12–16) was heavily attended by manufacturers and dealers alike. Among the hordes of vendors present was none other than Commodore Business Machines. With an impressive-looking booth full of A3000s, and with several third-party companies demonstrating professional Amiga applications, show attendees got to see the "serious" side of Commodore computers.

The star of CBM's booth was the **A3000UX**, CBM's low-cost, 10 MB, A3000 Unix workstation. Running a full implementation of Unix System V Release 4, along with X-Windows and Open Look operating in the 1024 × 800, 256-color mode of the University of Lowell graphics adapter, it was a system capable of impressing the most skeptical industry observers. Real-time video (supplied by a digitizer) running in one window of the display astonished many.

In another part of the booth, other Commodore representatives created **AmigaVision** applications on AmigaDOS 2.0-equipped A3000s.

Among the Amiga developers showing in Commodore's booth was Digital Creations, which demonstrated **DCTV**, a low-cost, 24-bit digitizer slated to ship with a 16-million-color paint program. For the higher-end crowd, RGB Computer & Video showed off **AmiLink 2.0**, a complete video-editing system that can support up to 32 video devices and control NewTek's Video Toaster via software.

In its own booth, Gold Disk demonstrated **ShowMaker**, a presentation program that seems to get better every time it is shown (we now hear of a January release estimate for the package). In another location, Supra prominently displayed its line of Amiga products. Precision Software was also on its own, showing off Superbase 4 for the PC and telling of an Amiga-version release this year.

Finally, NewTek impressed visitors with its **Video Toaster**. Among those paying careful attention to crowds at the NewTek booth was Truevision. Interestingly, one of the newer Truevision employees is a recent hire from Commodore, where he had been an Amiga product manager.

—LRW

Where the Media Is

Hoping to fulfill the promise of multimedia for the PC, Intel recently unveiled the Intel i750. Based upon Digital Video Interactive (DVI) technology, the i750 provides data compression of 160:1, allowing a CD-ROM disc to hold an hour of video. This technology is expected to be available this year in devices costing under \$1000.

Amiga third-party developers have not been sitting still, however. IVS, ICD, and GVP have demonstrated an ability to run full-motion video from hard drives. Given the drop in hard-disk prices, this certainly provides a superior solution for off-line editing.

Meanwhile, Tandy and Microsoft have teamed up to offer a "Multimedia PC"—an IBM-compatible with a CD-ROM drive. The system will run Microsoft Windows with extensions for sound, graphics, and animation. I saw a sneak preview and was unimpressed with its limited animation abilities and lack of video support. Microsoft, however, is working with developers and expects a range of applications this year. All the more reason to prime the CDTV pump, we'd say.

—DB

Moving Pictures to Italy

RICCIONE, ITALY—The fourth annual Bit.Movie show of computer graphics will be held April 25–28 in Riccione, Italy, and will again feature a real-time-animation competition. Last year's show attracted over 2500 guests, each of whom was given a ballot to vote for three animations from among the 30 finalists.

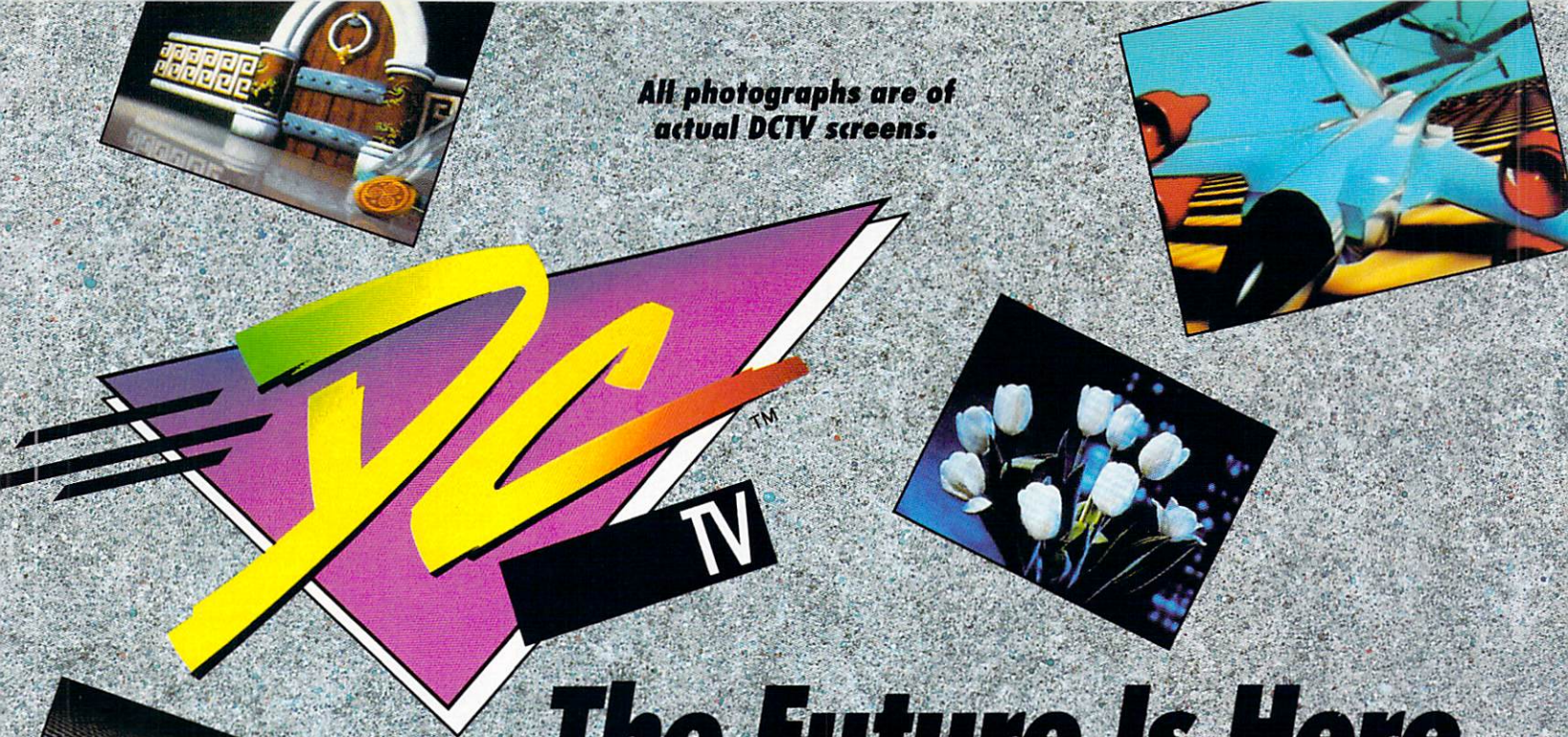
Entrants can submit up to four works, and a commission will decide on the finalists, giving preference to works that do not include public-domain objects or backgrounds. The deadline for entry is March 15. Two sets of prizes (each consisting of 1,500,000, 1,000,000, and 500,000 lire for first, second, and third place, respectively) will be awarded, as both the show attendees and a panel of judges will select three winners.

For more information contact the Adriatic Coast Amiga Users Club, c/o Carlo Mainardi, Via Bologna n.13, 47036 Riccione, Italy; Telefax 0541/601962

—BG ■

Headliners is compiled by Barbara Gefvert. Send your news bits to Headliners, AmigaWorld Editorial, 80 Elm St., Peterborough, NH 03458.

**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 29 on Reader Service card



OBITUUS

You're in the depths of your own worst nightmare . . . but this time there's no waking up.

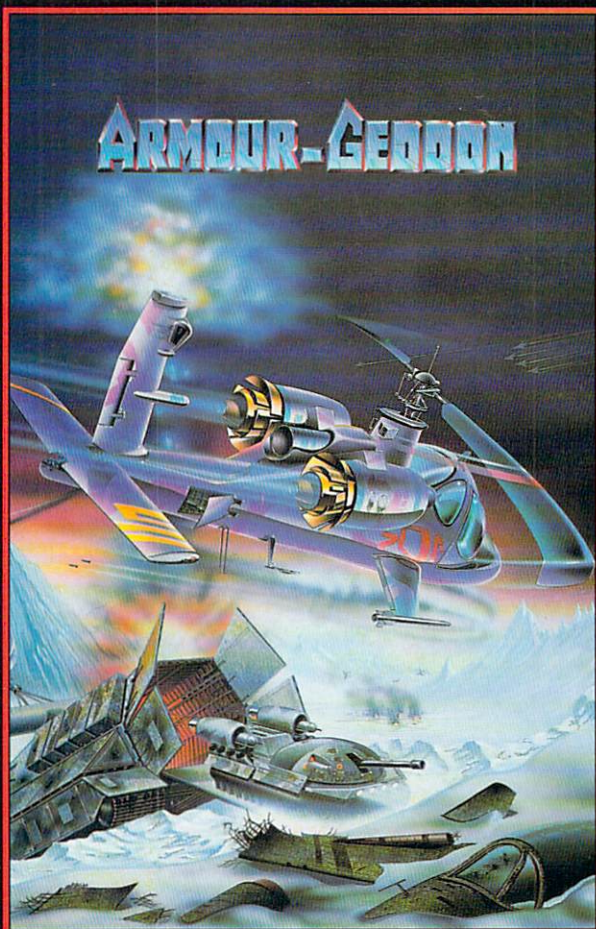
Lost and alone in a dangerous and alien world you must discover where you are, how you got there . . . and how you're going to get out!

In a frantic search of the unfamiliar land you explore aMAZEing forests, mines and underground complexes collecting objects and interacting with indigenous creatures.

Re-emerging into daylight you race along perfect parallax action scenes, dispatching enemies as you battle ever deeper into the unknown.

Impelling RPG with more than a dash of hack-'n'- slash.

Screen shots from the Amiga version.



ARMOUR-GEDDON

Post-Holocaust: A power crazed entity desires control of earth. They develop an energy beam and intend to bounce it off a custom-built satellite back to earth. All unprotected life will be wiped out.

You select and control up to six diverse hi-tech vehicles at once in a race against time to seek and destroy enemy power lines and eventually knock out their beam generator.

Build up your arsenal by collecting enemy resources to help develop and create your own new weapon systems.

Featuring a sophisticated head-to-head serial link enabling 'being-there' realism between two players.

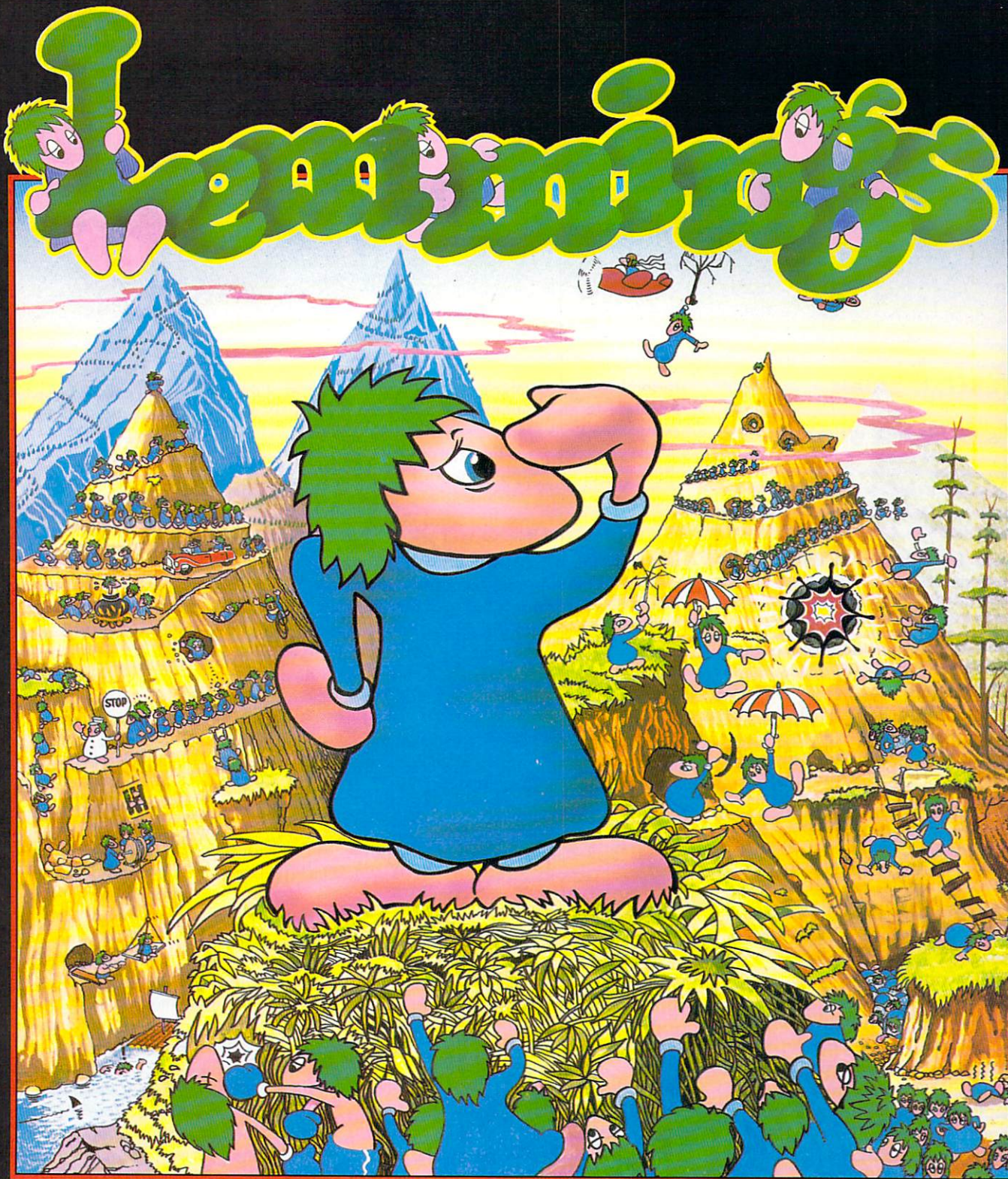
Armour-Geddon: Strategy and simulation synthesized to perfection.

Screen Shots from the Amiga version.



PSYGNOSIS
29 Saint Mary's Court,
Brookline, MA 02146
Telephone: (617) 731-3553
Fax: (617) 731-8379

Circle 123 on Reader Service card.



Save the Lemmings-
and



Commodore Amiga,
Commodore CDTV,
Atari ST
PC Compatibles

PSYGNOSIS

PSYGNOSIS
29 Saint Mary's Court,
Brookline, MA 02146
Telephone: (617) 731-3553

REVIEWS

SUPERGEN 2000s

*Changing the face of
Amiga video.*

By Joel Tessler

DIGITAL CREATIONS' SUPERGEN 2000s Amiga genlock represents a complete redesign of computer video genlocks as we know them. This design change may well alter the way manufacturers think about computer video hardware in the future.

Most computer genlocks are boxes that connect to the computer externally via the RGB port, a design approach that precludes complete integration of computers and video equipment into one system. This has had the effect of limiting most Amiga video software to little more than a collection of overlay routines with provisions for external video-in.

With its 2000s genlock, however, Digital Creations has demonstrated that it recognizes the Amiga as the video computer engine it truly is.

THE HARD SIDE

Digital Creations supplies the SuperGen 2000s hardware in three separate parts: the main video board, a video breakout box, and a dissolve-controller console.

The main video board plugs directly into the video slot of A2000-series machines and thus becomes an integral part of the system. It requires no extra RGB cables, no AC cords, and no hassle. (The 2000s does not work with the A1000, the A500, or the A3000, although Digital Creations plans to adapt it for all these models.) The back of the video board has a DB-9 connector for the dissolve controller cable and a DB-25 connector for the video breakout box. This configura-

tion leaves the Amiga's RGB port free for use with any Commodore Amiga or compatible RGB monitor.

The compact video breakout box plugs directly into the 25-pin connector on the main video board. After tightening a few screws, the box is installed securely on the rear of the Amiga. At first glance, the box looks like a maze of confusion. A closer look reveals a no-nonsense design that allows for transcoding various video formats in and out of the Amiga. The top row of switches on the top of the box are for Preview Select, Input Mode Select, NTSC Termination Select, and Y/C Termination Select.

Below these switches are eight male BNC connectors—one each labeled Preview Chroma Output, Preview NTSC/



YOUR TURN!

I am on my second Digital Creations genlock—the 2000s. I am quite happy with it and have gotten some very nice compliments on my work because of it!

*Walker L. Ayres
Sacramento, CA*

Luma (Y) Output, Fast Key Input, Key Output, NTSC Input, and NTSC Thru, and two labeled NTSC Overlay Output. There are also four S connectors: one Y/C In, two Y/C Out Overlayed, and one Y/C Thru. By using the selector switches in combination with any of these connectors, you can customize a configuration for any application, regardless of its complexity.

The external dissolve controller allows for overlaying video with Amiga graphics in a variety of ways via two sliders. In addition, a dual-position rocker switch on

top of the box lets you choose between SVHS and Composite video modes.

THE SOFT SIDE

Software installation is automatic, consisting mainly of clicking on an icon and answering a few yes-and-no queries. Only for customized configurations are there additional requirements.

Double-clicking on the SGSetup icon opens a control panel loaded with real-time video-processing buttons and gadgets—controls that, until now, were available only in hardware. Located on top of the window are the four main buttons: Dissolves, VPos/Saturation, Chroma Phase, and Horizontal Pos. Just below these are two horizontal knobs for adjusting various parameters and attributes. Most of the remaining video-processing gadgets are used in conjunction with the main buttons. These include Dissolve Enable, Auto Dissolve, Notch Filter, Internal Blanking, Auto Gain Chroma, Internal Key, Fastsync Clamp, Vertical Interval, Timing Enable, Alpha Key, Setup Adder, and RGB Termination.

The pull-down menus allow for loading, saving, setting, and updating various configurations. Digital Creations has also included some neat programs, among them utilities for setting up hot keys and controlling dissolves remotely with a joystick! The SGColorBars utility is actually an IFF graphic run from an icon that outputs 75% SMPTE color bars.

EXERCISING YOUR OPTIONS

The SGSetup Parameter menu provides scores of options. Among these are the Auto Gain Chroma feature, which can help to correct input video that has varying or incorrect amplitude levels. In addition, you can increase chroma saturation by clicking on the VPos/Satu-

ration gadget in this mode. By selecting the slider knobs and moving the mouse to the right, you can actually add color to incoming video. Auto Gain Chroma also corrects colorburst to RS-170A level (40 IRE).

The Chroma Phase button works with the Timing Enable option, allowing you to adjust the phase (tint) on incoming video or even to phase to an entire A/B roll-edit suite. If you have some video clips of the Boston Red Sox that, when played back, look more like clips of the Boston Green Sox, you can get the original colors back simply by selecting the Chroma Phase and Timing Enable buttons and tweaking the slider knobs (course and fine).

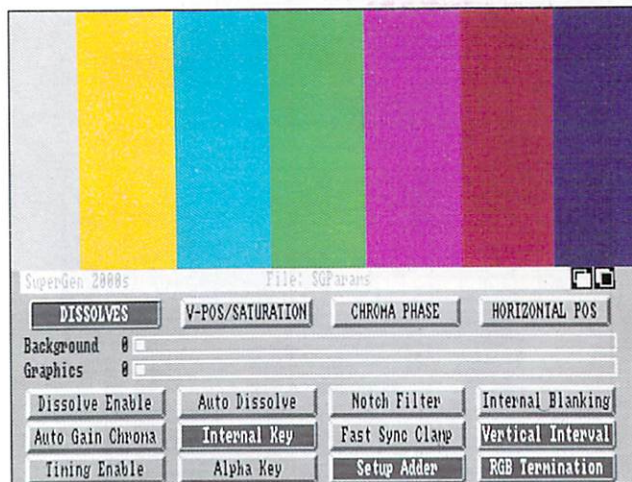
The Internal Blanking button toggles between External Video In and Amiga Video so that processing can be done on each individually. It's important to understand that the timing characteristics of the video you feed into the 2000s directly affect video output. If you want to use the 2000s's internal sync generator to improve the input video, simply choose Amiga Video. Because of this built-in sync generator, the 2000s does not require an external video for outputting Amiga graphics.

Both the Horizontal and Vertical Position buttons work in conjunction with the Timing Enable button to reposition incoming live or taped video, either horizontally or vertically. You can also use them to reposition Amiga graphics by toggling the Internal Blanking button. This feature saves you the frustration of having to leave the program and blindly try to set the screen's position in Preferences. With these features, centering graphics and live video is a breeze.

The Notch Filter option can significantly reduce the effects of chroma crawl and rainbowing artifacts inherent in



The SuperGen 2000s hardware includes the internal board and a breakout box that installs on the rear of the machine.



The 2000s software control panel, topped by 75% IRE color bars.

NTSC. Using it along with a dark drop shadow almost completely eliminates crawling and shaking font edges.

HIGH-END POSTING WITH THE 2000S

I was recently contracted to install a full-blown Amiga video workstation at a large video post-production house concerned primarily with Betacam and one-inch tape. This house required perfect RS-170A broadcast specs and wanted to sync the computer with two Betacam edit decks, a one-inch recorder, a video switcher, and a \$34,000 digital video-effects unit. To complicate matters, these people were skeptical about the Amiga. Given all the problems associated with timing to these types of systems, I thought this would be a good opportunity to test the 2000s.

After hooking up all the appropriate cables between the switcher, TBC, and 2000s, we booted the Amiga and opened the SGSetup control panel. On the program monitor, we overlaid live video with an Amiga graphic. Although the im-

ages looked super clean, the horizontal position of the Amiga graphic and the tint (phase) of the incoming video appeared to be off. Using SGColorBars, I invoked 75% IRE color bars for the video switcher and the Amiga, at which point it became clear that both sets of bars were indeed off in both position and phase. (A waveform monitor and vectorscope confirmed this.)

In just a few minutes, we were able to time the entire system without using a screwdriver, opening a box, or twisting a knob. To solve the horizontal positioning problem, I clicked on the Timing Enable button, selected the Horizontal Pos button, and lined up the two sets of bars using the slider gadgets. Then, I clicked on both the Chroma Phase and Timing Enable buttons and adjusted the phase to perfection, again using the slider knobs. While tweaking the phase, I could see the colors line up in the boxes on the vectorscope until they were dead on.

At the end of the session, it was obvious that my client was no longer skep- ▶

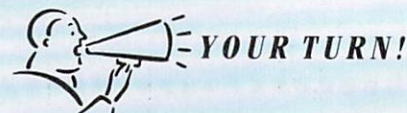
tical about the Amiga. The 2000s had done an admirable job of timing a complicated NTSC composite video system and encoding super-clean Amiga graphics.

THE S SIDE

Using the 2000s with SVHS, the defacto Pro-Sumer videotape format, is essentially the same as using it with standard composite tape, although SVHS provides

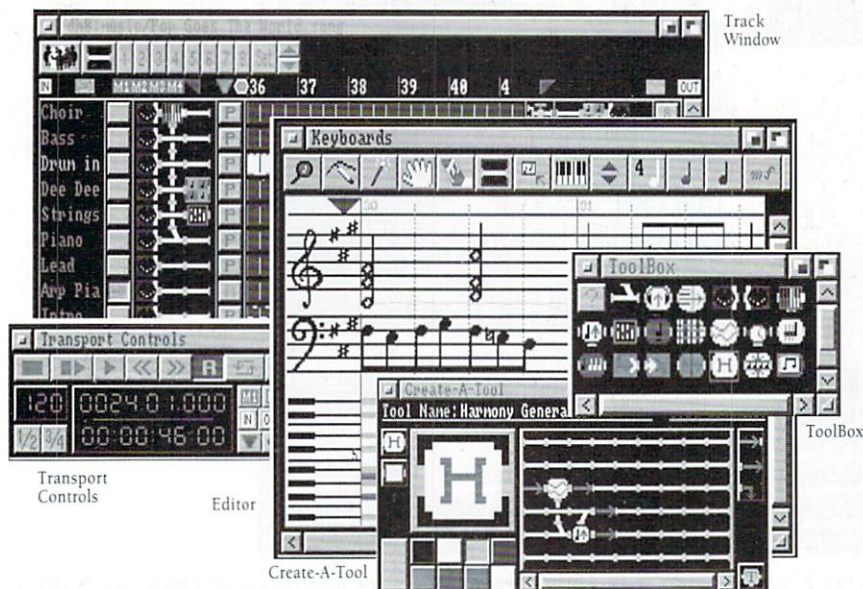
a cleaner, higher resolution signal that is immune to NTSC artifacts and thus does not require use of the Notch Filter.

SVHS editing with the 2000s is less complicated than composite editing, mainly because of the design of the SVHS-connector section of the breakout box. In fact, you can hook up an entire suite in just a few minutes. One feature that really comes in handy is the extra SVHS output, which can plug directly



The SuperGen 2000s gives you basically the same clarity as regular RGB and delivers much truer color than other genlocks I've seen. I like the ability to control fades from remote as well as from software. I only wish it would work with the Toaster. . .but of course that's impossible because the Toaster supplies its own genlock.

Greg Bahlhorn
Carmichael, CA



When Being Creative Is Your Job, You Need The Right Tools

When you're inspired to transform your creativity into melody, you need a MIDI sequencer that understands music. Bars&Pipes Professional for the Amiga computer, was designed by musicians who'd rather write music than wade through technospeak or be restricted by some programmer's idea of how to compose.

Bars&Pipes Professional incorporates all the features you'd expect in a package of the highest caliber: an unlimited number of tracks and notes, classical notation (display, editing and printing), System Exclusive recording, graphical

editing, Control Change curves, automated mixing, event list editing, tempo mapping, SMPTE sync, expandability, and much, much more.

Bars&Pipes Professional also features its unique Tools concept. Tools perform musical, technical, graphical, and editing tasks so that you can spend more time as a musician, and less as a computer operator.

*Give your ideas
a chance to sing.
Buy a copy now.*

BARS&PIPES
PROFESSIONAL
MIDI SEQUENCING FOR CREATIVE MUSICIANS



ATLANTA, GA USA
TEL: 404-377-1514
FAX: 404-377-2277

Previously
Blue Ribbon Bakery, Inc.

into an SVHS video monitor. In combination with the VCRs, I was able to use four SVHS monitors, all with proper termination.

During the edit session, I was easily able to overlay Amiga titles and graphics using the dissolve controller. Afterward, some dubs were made. The Amiga graphics had excellent color, the live-action video looked clean, and the overall signal remained quiet. The only problem we encountered was not being able to see the connector network after pushing the A2500 back into place against the wall. By placing a small mirror behind the Amiga, however, we solved this problem.

THE DOWN SIDE

Although the 2000s documentation is accurate and solid, it would benefit from more examples of how to use all the bells and whistles; the very advanced features especially need more comprehensive coverage. In addition, graphic demos would give first-time users a better understanding of what genlocking with a 2000s is all about.

On the hardware side, I would like to see the 2000s accommodate Y-688 dubbing and also fully support Beta component format and automatic termination. (Rumors are circulating that Digital Creations is already working on the first two.) Finally, incorporation of GPI triggering would make editing more convenient.

Digital Creations has given us a glimpse of a future in which engineers no longer struggle behind racks with tiny screwdrivers and flashlights. Thanks

Continued on p. 20.

PageStream® 2.1

NEW FEATURES

- PostScript Type 1, PageStream and Compugraphic outline fonts on screen!
- Print PostScript Type 1 fonts to any printer, even dot matrix!
- Use a Pantone Process Color Imaging Guide (available separately from Pantone, Inc.) to add Pantone colors with CMYK definitions.
- Import TIFF, DR2D, ProDraw and GIF graphics!
- New reference and tutorial manuals.



Actual PageStream screenshot

What are you looking for in a desktop publisher? If you need the quality that hinted PostScript fonts offer, only PageStream can deliver these on your Amiga. Plus you can use any Compugraphic or PageStream outline font. Then there's graphics. Most desktop publishers import only a few picture types. PageStream can import almost every major graphic format for the Amiga, Mac, PC or Atari, as well as text. Whether you need ProDraw clips, EPS images with TIFF headers or 16 million color IFF files — PageStream can import them. Soft-Logik does not deny this power to non-PostScript users like all other Amiga DTP. In fact 75% of PageStream owners have dot-matrix printers. Why? Because PageStream is the only program that supports all printers, including dot matrix, inkjet, laser and imagesetters. Additionally, PageStream's intuitive "no frames" interface makes creating pages easy. Why settle for less than the #1 Amiga DTP? You won't have to with PageStream.

**Version 2.1 is
available now
for your Amiga.
Ask your dealer
for PageStream
or call us at
1-800-829-8608.**

In Canada call 1-416-668-1468
Soft-Logik Canada

| Feature Comparison | Professional Page 2.0 | Saxon Publisher 1.1 | PageStream 2.1 |
|-------------------------------|-----------------------------|---------------------|--|
| PostScript Font Compatible | No | No | Yes even to dot matrix printers! |
| Compugraphic Font Compatible | Yes | No | Yes |
| Professional Draw Import/Edit | Yes/No | No/No | Yes/Yes edit ProDraw clips in PageStream! |
| Outline Fonts on Screen | Yes only Compugraphic fonts | No | Yes |
| Draw Bézier Curves | No | Yes | Yes draw Bézier curves and Bézier polygons |
| Price | \$395.00 | \$425.00 | \$299.95 |



Soft-Logik Publishing Corporation  We give you the tools to dream.

PageStream is a registered trademark of Soft-Logik Publishing Corporation. All other products are trademarks or registered trademarks of their respective companies.

Circle 211 on Reader Service card.



Supra Corporation



**Makes Your Amiga
Even Better**



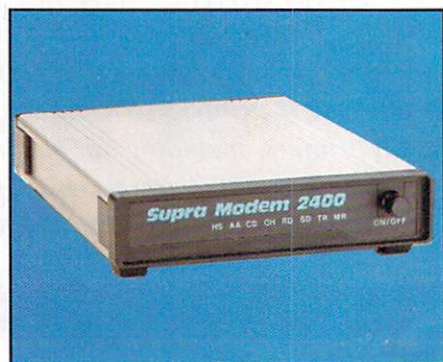
SupraDrive™ Floppy

Quiet, reliable floppy disk drive works with all Amiga® computers. 1MB unformatted capacity. Pass-through port for connecting additional drives.



SupraDrive™ Removable

Syquest™ removable cartridge drive for the A500 or 2000. Great for primary & back-up storage. Comes complete with SCSI interface, or as add-on drive.



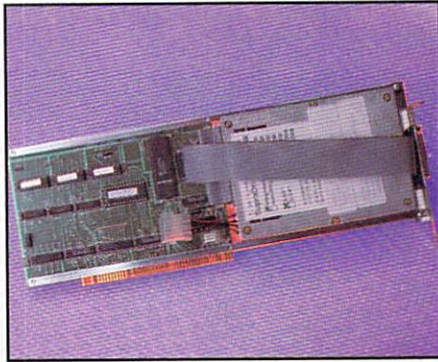
SupraModem™ 2400

100% Hayes™-compatible 300, 1200, 2400 baud modem for virtually all computers. Compatible with all popular telecommunications software.



SupraDrive™ 500XP

Micro-power hard drive, SCSI interface, & RAM for the A500. Easily expands from 1/2 to 8MB RAM. Includes Amiga bus pass-through, SCSI port, software.



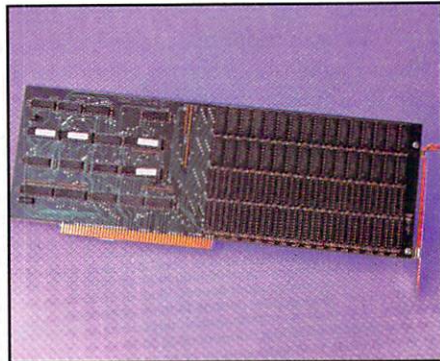
SupraDrive™ WordSync™

Easy-to-install, autobooting hard disk card for the Amiga 2000. Uses high-performance Quantum™ hard disk & includes SCSI port, utility software.



SupraRAM™ 500RX

1/2, 1, 2, 4, or 8MB of FAST RAM for the Amiga 500. Easy to expand. Zero wait states & hidden refresh. Amiga bus pass-through.



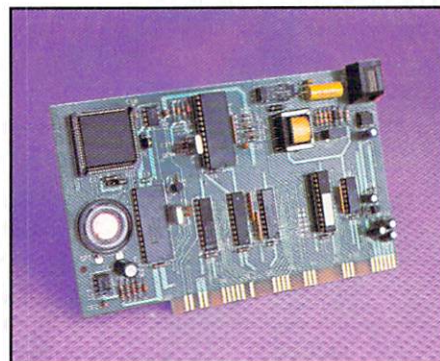
SupraRAM™ 2000

2, 4, 6, & 8MB of FAST RAM for the A2000 & 3000. Easy to expand. Zero wait states & hidden refresh. Four-layer board improves reliability.



SupraModem™ 2400 Plus

SupraModem 2400 with MNP5 & V.42bis error correction & data compression protocols. Allows transmissions up to 9600 bps.



SupraModem™ 2400zi

Internal half-card modem for the Amiga 2000 & 3000. Installs easily in any Amiga bus slot. Supports multiple modems on one computer.

Supra Corporation Worldwide Distributors

Canada

Beamscope
35 Ironside Crescent
Scarborough, Ontario M1X1G5
Tel: 416-291-0000
Fax: 416-291-5721

Finland

Westcom Systems Oy
Kirkkokatu 8, Fourth Floor
SF-48100 Kotka
Tel: 358-52-184-655
Fax: 358-52-184-007

Norway

Atlantis Distribution
Parallellen 12
8012 Bodoe
Tel: 47-816-3040
Fax: 47-816-3041

Spain

ABC Analog, S.A.
Santa Cruz de Marcenado, 31
28015 Madrid
Tel: 34-91248-8213
Fax: 34-1542-5059

Sweden

AlfaSoft AB
Magasingsgatan 9
S-216 13 Malmö
Tel: 46-40-164150
Fax: 46-40-163915

West Germany

European Software Distributors
Rodderweg 8
5040 Bruehl
Tel: 49-2223222-001
Fax: 49-2223222-003

United States

For more product information, or the name of a dealer near you, please call Supra Corporation:

1-800-727-8772

or **503-967-9075**

1133 Commercial Way
Albany, OR 97321 USA
FAX: 503-926-9370

From p. 16.

to this company, we can look forward to true desktop video instead of rackmount video.

SuperGen 2000s

Digital Creations

2865 Sunrise Blvd.

Suite 103

Rancho Cordova, CA 95742

916/344-4825

\$1995

No special requirements.

TRAX

MUSIC-X JR.

The kids are just all right.

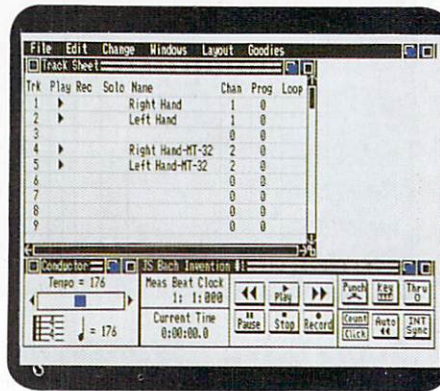
By Michael Hanish

IT HAPPENS IN the world of software as well as in the world of people and pigeons: Parents produce offspring that resemble them. Recently it happened in the Amiga music software community; Master Tracks Pro gave birth to Trax, and to Music-X was born Music-X Jr. Both "kids" are healthy, solid, and bug-free. Sadly, however, they have no personalities of their own; they are only watered-down reflections of their parents.

Because sequencer preferences are largely a matter of personal style, we'll profile both programs, looking at how well they accomplish similar tasks, including their common goal of welcoming newcomers to the world of MIDI sequencing. [For a look at the parent programs, check the reviews of Master Tracks Pro 3.0 (p. 62, Jan. '90) and Music-X (p. 18, Nov. '89).]

THE CUTEST LITTLE BABY TRAX

Trax opens onto a four-color screen containing multiple windows for the sequencer controls, track names and assignments, tempo, and track and song editing. All are clear, readable and easy to understand. The sequencer's controls emulate those of a tape recorder, and include an auto-rewind button that speedily returns you to the last place the sequencer started from. A nice addition



Trax's Track Sheet window, Conductor window, and transport controls.

to the usual counter (which reads the current song location in measures, beats and clocks) is an elapsed-time counter. Next to the transport controls is the Conductor window, with a slider for setting tempo, beat and meter. The Conductor track can handle both abrupt and gradual changes in tempo, as well as multiple meters.

The center of the work screen is usually occupied by the Track Sheet window, wherein you can keep an eye on the 64 tracks to which the program can record. The display is clear, uncluttered, and easily readable. Trax does not support the Amiga's internal sounds, so the window's options are limited to control of MIDI channels, program-change messages (to tell the synthesizer which voice to play), looping (you can make each track loop independently), and a play/record/mute selection for each track. Recording a track is a simple process: Select a track, click in the Record Enable box in the Track Sheet window, and click on the Record button in the Transport window. The MIDI data is automatically sent back out on the channel through which it came in.

ONE AT A TIME

Track editing and step entry are done in the Step window. One window is used for editing all tracks; its contents are determined by which track is at the top of the list on the Track Sheet. Unfortunately, this setup prevents you from working on several tracks simultaneously. Note events are displayed on a grid of pitch (which is represented by the piano keyboard) and time. All editing is done graphically: Select a dura-

tion, point to a time/pitch location, and click to paste the note down. You can zoom in for more precision. Although the display is clear, it is limited to note events only.

To the detriment of Trax, editing is apparently one of the main features the designers cut back on. Editing even such a simple thing as the duration of one note is a clumsy, multistep process, involving mouse clicks, menus, and requesters. Dealing with velocity or dynamics is even worse, as those values are not even displayed. Global changes are easier to accomplish: A section of notes is highlighted and changes are made by answering to a requester. Cut, copy, paste and mix features are available from the Edit menu; alterations to velocity, duration, pitch, and quantization are allowed through the Change menu. Trax supports the Clipboard, but for only one clip at a time.

The Song Editor window provides graphic means for shaping the overall form and arrangement of a piece. Each measure of each track is represented by a small box, which appears open if the measure is empty and filled if it contains data. Editing is done in much the same way as in the Step Editor: You highlight areas to be edited and perform action by making selections from the Edit or Change menus. All features function as promised, but the tasks seem to take several more steps than they should. For example, moving a measure from one location to another involves cutting the data, deleting the measure, inserting a measure, and pasting the data down.

You can filter selected MIDI events from the incoming data stream for recording, thus conserving large amounts of memory. Similarly, you can strip certain controller data from the selected portion of any track.

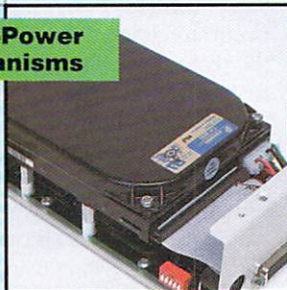
Overall, I found Trax to be a breeze for recording and playback. The screen layout is clearly readable from the distance to your MIDI keyboard, although the program does not support remote control. It is file-compatible with both Master Tracks Pro and the standard MIDI file formats. The manual is clear and to the point, and should be more than sufficient to get the MIDI novice up and running.

On the negative side are Trax's incomplete and clumsy editing features and ►

**INTRODUCING THE
EXCITING NEW**

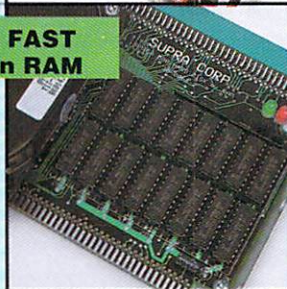
SupraDrive 500XP

Fast, Micro-Power Drive Mechanisms



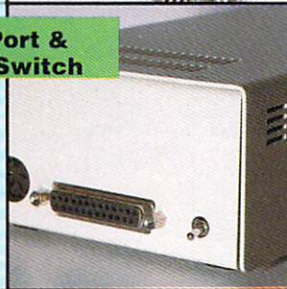
- **Micro-Power Drives**
No fans or external power required, extra rugged
- **Autobooting SCSI Interface**
A2000 performance with no DMA problems
- **Optional Dedicated External Power**

1/2 - 8MB FAST Expansion RAM



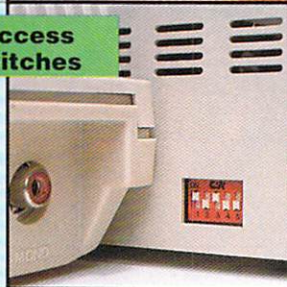
- **1/2, 1, or 2MB RAM**
On-Board with 256K x 4 DRAM
- **2, 4, or 8MB RAM**
with Add-On RAM Board using 1MB x 4 DRAM

SCSI Port & Game Switch



- **Amiga Bus Pass-Through**
- **External SCSI port**
allows up to 7 SCSI devices
- **Game Switch**
lets you turn drive off and leave RAM enabled

Easy-to-Access Option Switches



- **Autoboot ON-OFF Switch**
- **SCSI ID Selector**
- **RAM Test Mode**

THE ULTIMATE AMIGA® 500 PERIPHERAL!

With a SupraDrive 500XP™, your computing life will change forever.

You'll be able to use software that your computer simply couldn't run before, including paint, digitizing, and animation programs that need more RAM. You'll spend more time using your computer and less time waiting for it to transfer files and load programs, because the SupraDrive 500XP transfers data up to 40 times faster than floppy disk drives.

You can easily add up to 8MB RAM, additional Amiga bus peripherals (like digitizers), or SCSI peripherals (like removable media, tape backups, or add-on hard drives). And if you need help, you can count on Supra's knowledgeable, friendly technical support staff and one year warranty.

Available at your local dealer, or call:

Supra Corporation
1-800-727-8772

SupraDrive 500XP is a trademark of Supra Corporation.
Amiga is a registered trademark of Commodore-Amiga, Inc.

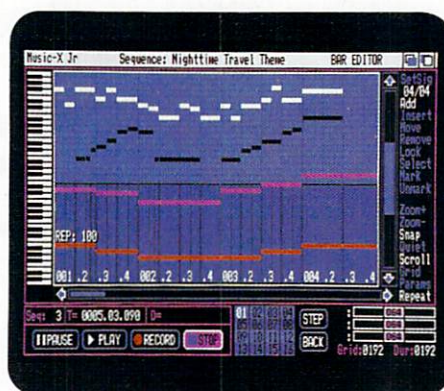
503-967-9075, 1133 Commercial Way, Albany, OR 97321, USA

methods. I think beginners will find Trax's approach to editing confusing, and intermediate users will find it incomplete. Another drawback is the program's lack of support for any form of synchronization.

A CHIP OFF THE OLD X

Music-X Jr. (Junior) offers a very different realization of the same basic tape-recorder metaphor. Windows are replaced by pages, or by separate screens for the major functions: Sequencer, Bar (sequence) Editor, Filters, Keymap Editor and Samples. Junior opens onto the Sequencer page, which is loaded with information. Transport controls, counter, locator buttons, and tempo information are housed in the upper-left quadrant of the screen. The lower half of the screen shows sequence information, including length, channel, name, and output assignment. In the upper-right corner is the track display (conceptually similar to Trax's Song window), showing which sequences are playing at any given time.

While many other sequencers use the terms "sequence" and "track" inter-



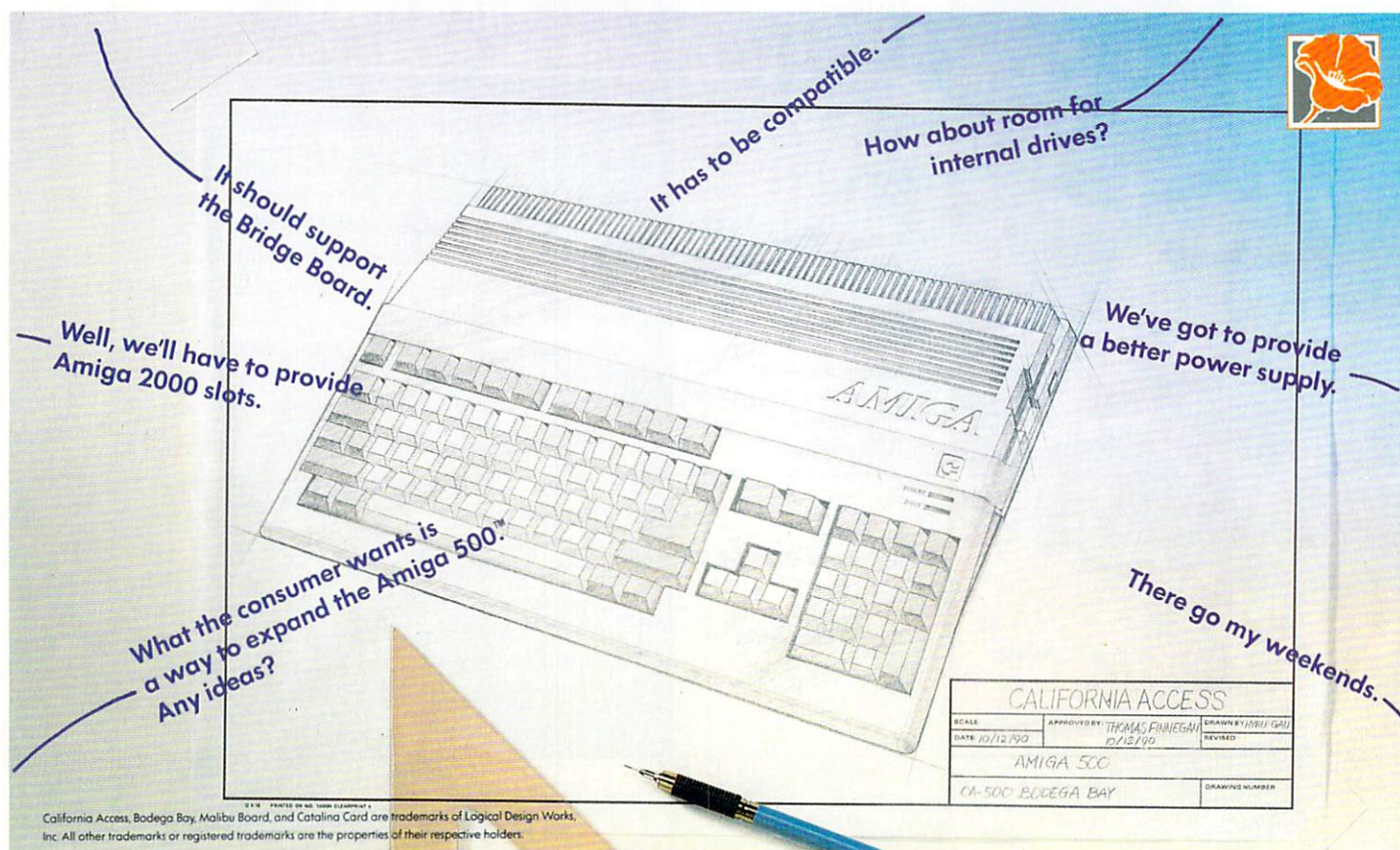
You can edit all the track data displayed in Music-X's Bar editor.

changeably, Junior makes a clear distinction. A sequence may be of any length greater than one measure, contain data for one or many instruments, and even contain events that trigger other sequences. A track, on the other hand, is used to sequence sequences, or, to quote Junior's comprehensive manual, "A track is something that plays a sequence." Once you get the hang of it, this dual-level approach makes for great flexibility

in composing and arranging.

Clicking on a sequence highlights it for editing, and selecting a button below the transport controls sends you to the Bar Editor page. Viewing this page for the first time is a bit like looking into a fireworks display. Most of the page is filled with a busy, editable graphic display of track data. Pitch, on the vertical scale, is represented by a piano keyboard; time is on the horizontal. Each individual note appears as a rectangle, the length of which depends on the note's duration. The bottom half of the display shows any or all of the parameters of the note event, such as attack and release velocity, control changes, pitch bend, and program change. Information relating to the dynamics of a note, such as velocity, is shown in columns, whose height represents its intensity.

The Display menu is used for selecting which events will be visible, so you can start by displaying only pitches, for example, to avoid visual overload. You can add or insert events using the mouse and gadgets. The procedures are consistent among all the parameters; once you



California Access, Bodega Bay, Malibu Board, and Catalina Card are trademarks of Logical Design Works, Inc. All other trademarks or registered trademarks are the properties of their respective holders.

are familiar with the way it works, editing becomes a pretty smooth process. Junior supports both step-time and real-time recording. You can replay the track solo from the Bar Editor page, or return to the sequencer page to hear it in context.

The Filters page can block certain types of incoming events from being recorded, change one type of event to another, or echo the events to the internal voices or to any channel(s) at MIDI Out. It works in conjunction with the Keymap editor, translating one type of event into another.

WHERE IS THAT SOUND COMING FROM?

Junior supports the use of Amiga samples and MIDI instruments for playback, both of which you "manage" on the Samples page. Management consists of assigning each voice to one of 16 channels, which are not to be confused with MIDI channels. You can then assign each voice to a particular sequence from the Sequencer page.

Samples in IFF and Sonix format can

be loaded, used and even edited to a limited extent. A small graphic display at the bottom of the page provides access to 16 movable points on the sample's envelope, as well as a slider to tune the sample. This feature makes Junior's power available to those without MIDI, but at a price: Samples can consume huge amounts of memory and only four can play at a time. When Junior saves a performance file (all the data, parameters and variables associated with the piece), it also saves the samples, making for a very large file and potential problems for those without high-capacity systems.

Junior can save and load files for each of the pages. It can also load and save performance files in the format it shares with Music-X as well as SMUS-format and standard MIDI files. Files of the latter type require the use of external converter programs, supplied on the Music-X disks. They work reasonably well.

Timing can be either internal or external, with support for MIDI Song Position Pointers, but not SMPTE Time Code. That is one of the few features reserved for the original Music-X. The

lengthy manual, complete with glossary and index, does a respectable job of explaining synchronization, timing, and all other program features.

Once I was able to wade through the sometimes confusing and busy graphics display and get familiar with the abbreviations used to label buttons and sliders, working with Junior was reasonably smooth. It became difficult, however, when I had to flip between the Sequencer and Bar Editor pages, as I often lost my place in the sequence. I certainly appreciated the editing features, which are more complete than those in Trax.

ON THE RIGHT TRACK?

Both Trax and Junior perform all the basic functions, but I find Trax lacking in too many editing areas. Neither program is copy-protected, and both run politely on a one-megabyte system. If your interest in MIDI music-making grows deeper, you'll be interested to know that the developers of both programs offer upgrade paths: If you purchase the "child" program, you can upgrade to the parent for a fee. ►

So it'll work with any A2000 cards, like our Malibu SCSI controller as well as the Bridge Board.

Don't forget the Catalina Ram daughterboard.

The internal 200 watt power supply runs the whole system.

We've got two 5 1/4" drive bays and a 3 1/2" hard drive mounting area.

There are 4 A2000 slots, and 3 of those are also IBM compatible.

Very impressive. What are its features?

We'll need to advertise.

| CALIFORNIA ACCESS | | |
|-------------------------|-----------------------------|-----------------------|
| SCALE: | APPROVED BY THOMAS FINNEGAN | DRAWN BY JEFFREY GALT |
| DATE: 10/15/90 | 10/15/90 | REVISED |
| A-500 EXPANSION CONSOLE | | |
| CA-500 BODEGA BAY | | DRAWING NUMBER |

California Access 130 A Knowles Dr. Los Gatos, CA 95030 Fax (408) 378-0397

Before you make any decisions on which to choose, go to a friend or a dealer who has the parent program and work with it for a while. See if it meets your present and future needs and if you find the work environment comfortable and understandable. My suggestion is to save up for one of the full-featured parent programs rather than buying one of the offspring. Even novices will quickly reach the limits of Trax and Music-X Jr.

Trax

Passport Designs

625 Miramontes St.
Half Moon Bay, CA 94019
415/726-0280
\$99.95

MIDI Interface and synthesizer required.

Music-X Jr.

MicroIllusions

PO Box 3475
Granada Hills, CA 91394
818/785-7345
\$149.95

No special requirements.

PAGESTREAM 2.0

A heavyweight contender.

By Loren Lovhaug

(with Frank Hudson)

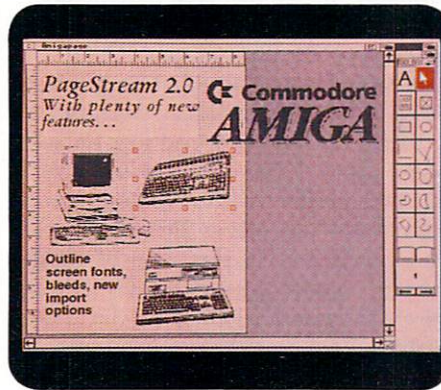
THE SOVIETS KNOW it; the Czechs know it; and Amiga desktop publishers know it: Competition breeds excellence. While better ideas finally prevailed in Eastern Europe and the Cold War melted away, the rivalry among Gold Disk (Pro Page), Saxon (Publisher), and Soft-Logik (PageStream) is beginning to heat up as each company feverishly upgrades its product. Successful results could raise Amiga desktop publishing to new heights—even approaching the state-of-the-art as defined on the Macintosh.

With PageStream 2.0's power and flexibility, Soft-Logik has leap-frogged its Amiga competition and is poised to compete with the best—on any platform. The upgrade includes all of the obligatory text and graphics manipulation tools necessary to meet this multiplatform

challenge, with emphasis on features designed to reduce time-intensive tasks.

PLAYING TAG

While both PageStream and Pro Page support master pages (document elements you use to create left- and right-hand pages) and templates (reusable structures for pages or series of pages that cannot be overwritten), PageStream



Opening view of PageStream 2.0

alone provides the equally powerful tag and style-sheet functions.

A tag is a set of formatting styles that controls not only font size, style, and attributes, but also spacing, indentation, justification, border styles, and text-box fill. While the concept may sound complicated, implementing it is not. You can construct tags via an intuitive requester simply by clicking on the options you want. From then on, your saved choices will appear in a tag menu.

For example, if you define a tag for subheads as "Times roman boldface centered," you can set the same subhead attributes for another piece of text by selecting this tag from the menu. If you change your mind and wish to make your subheads Palatino flush left, then altering the tag changes all the tagged subheads in the document. As you go through a document therefore, you can assemble entire style sheets by combining the various tags you have defined along the way.

PageStream's global search-and-replace function lets you alter font types and attributes, line spacing, indentation, and justification—*en masse*. The program's requesters allow you to access these features without memorizing arcane formatting codes.

Another PageStream highlight is the

program's flexible tools for manipulating graphics and text. With them, you can rotate (three-dimensionally in increments of 1/100 of a degree), group, ungroup, and align bitmapped graphics, structured-drawing objects, and blocks of text in any imaginable combination. Once these elements look just right, you can lock objects in their locations so you won't accidentally move them.

As with most full-featured page-layout packages, 2.0 offers tools for drawing rules and boxes on the screen page. The program's structured-drawing tools are so complete that they could be legitimately considered as an object-oriented drawing program. The program includes standard line, box, and circle tools, as well as the more exotic Bezier-curve and closed-polygon tools. The capability to specify the beginning and ending angles of arcs to 1/100 of a degree is particularly impressive.

PageStream is capable of using graphics created in other programs, as it can recognize a number of different graphics-file formats—even some from other platforms. As shipped, PageStream 2.0 supports any kind of IFF bitmapped graphics, as well as several nonstandard bitmapped-graphics formats created in programs running on Macintosh, Atari, and MS-DOS machines. In the future, as new formats are developed, Soft-Logik plans to add modular import filters, or "drivers," that will enable PageStream to recognize the new formats and to use graphics created in programs that support them.

In addition, the program supports structured graphics via both the Aegis Draw format and the popular cross-system standard EPS (Encapsulated PostScript). (You must, of course, have a PostScript printer in order to use EPS graphics.)

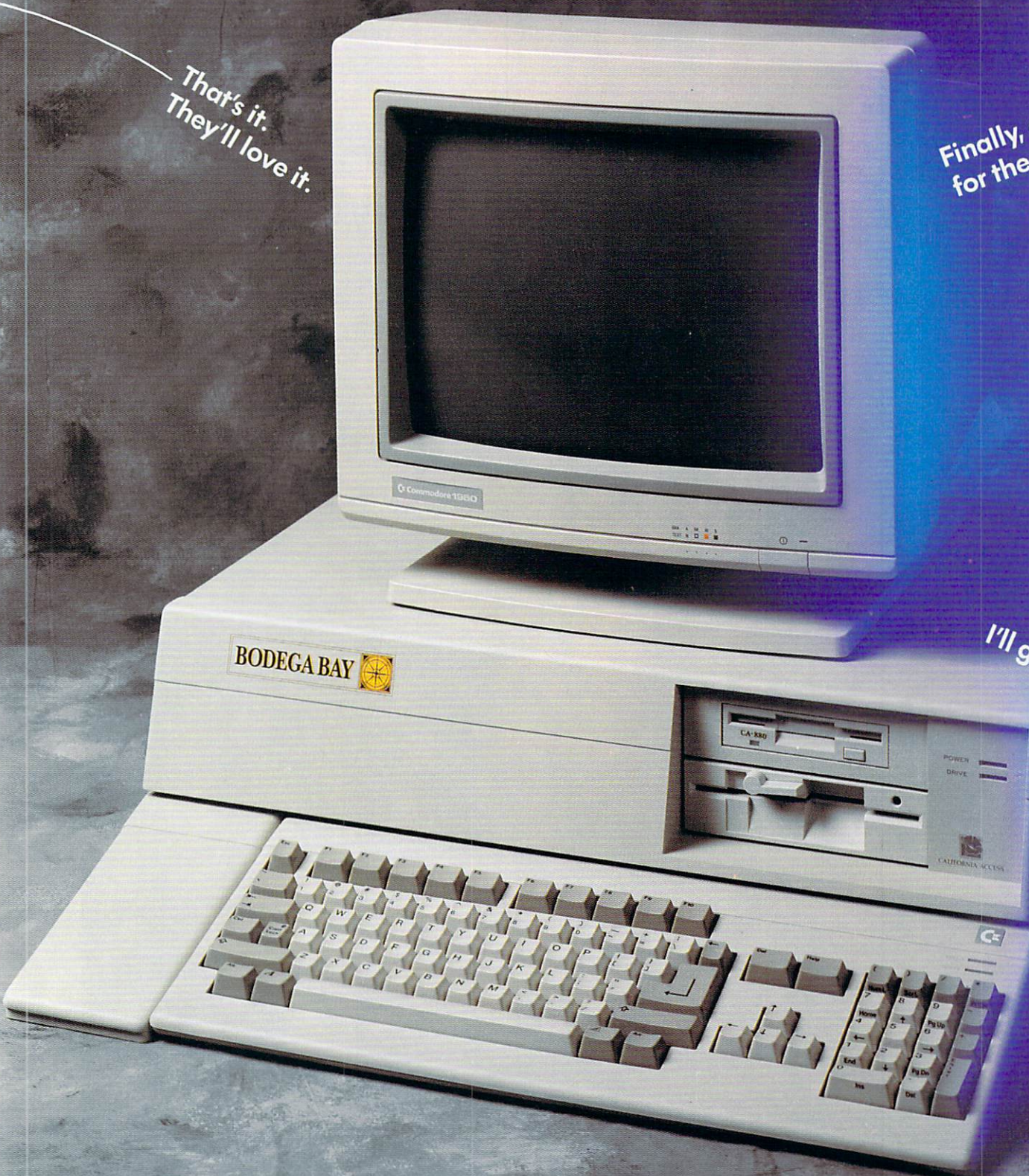
While PageStream supports excellence!, ProWrite, and WordPerfect text formats, it strangely offers no import options for Pen Pal (Softwood Files) and Scribble! (Micro-Systems Software). The only nonAmiga word-processing formats the program supports are Atari-ST-compatible. I strongly urge Soft-Logik to add import filters for such nonAmiga programs as WordPerfect 5.1, Microsoft Word, and MacWrite, for it is quite common for Amiga desktop publishers to re-

Continued on p. 92.

BODEGA BAY™

That's it.
They'll love it.

Finally, a place
for the monitor.



I'll get my bonus
for sure.

BODEGA BAY

The Malibu Board™ SCSI Controller and Catalina™ Ram expansion daughterboard.

- A mounted hard disk and up to 8MB in a single A2000 slot
- Comprehensive installation software
- Ram in 2, 4, and 8MB combinations on the Catalina Card
- Malibu Board
- Catalina Card

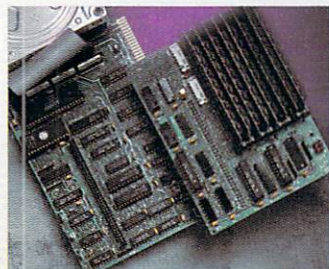
The Bodega Bay™ modular expansion console.

- 4 Amiga 2000 slots
- 3 PC XT/AT slots (overlap with Amiga slots)
- 3 drive bays
- A 200W power supply with fan
- Full A2000 compatibility*

*Video and co-processor upgrade options coming soon. Contact your local dealer for more details or call (408) 378-0340



Your Access To
The Future





MULTIDIMENSIONAL

Multimedia

Whatever your presentation, from a simple product display to a full-scale video production with music, animation, and interactive user input, we'll show you the equipment and programs you need.

By Jamie Krutz

FULL-BLOWN MULTIMEDIA presentations often start small, but like Topsy, sometimes they just keep growing:

John comes in with a picture of the company's prototype of a new product. "Can you use that new Amiga of yours to show me what this would look like in red," he asks. "Or maybe green."

"No problem," you say, ready to test your hard drive and three megabytes of memory with some real work. But where do you start?

The easiest way to get the picture into your computer is to use a video camera and digitizer. For digitizing speed, I recommend **Framegrabber** (\$799.95, Progressive Peripherals & Software), which works from a color video camera and handles over-

scan in all but hi-res mode. Or you can employ **Digi-View** (\$199.95, NewTek), which uses a more time-consuming process with a black-and-white video camera and three color filters to create your image. Digi-View, however, can create overscan images in all resolutions, as well as create 21-bit files (for over two million colors).

To its credit, Framegrabber can capture stills of moving images (digitize in real time), whereas Digi-View can handle only stationary objects and images. While this makes no difference for the project at hand, real-time digitizing could come in handy for more elaborate productions in which you need to grab an image from taped or live video.

After you digitize your picture, load the result into a paint program that supports HAM (Hold and Modify mode), such as **Photon Paint 2.0** (\$149.95, ▶

MicroIllusions), **Deluxe PhotoLab** (\$149.94, Electronic Arts), or **Digi-Paint 3** (\$99.95, NewTek) and change the color. If you are comfortable with the software, the entire project should take only an hour or two. (Consult "Digital Reprise," p. 39, Oct. '88, for some valuable digitizing tips.)

John loves the colorized products, and raises his expectations. "I'd like to show these color choices in my presentation to the marketing department," John says. "Can you put the pictures together into a slide show?"

With the bulk of your work (making the screens) done, this step is a breeze. The simplest program for

the job is **Elan Performer 2.0** (\$59, Elan Design). It lets you assign each picture to a different key on your Amiga keyboard and switch among them. If your meeting room is equipped with a video monitor or projector, John can connect the Amiga via an encoder (a device that translates the computer's RGB output into a composite-video signal) or a genlock (which translates and also syncs the computer's signal to incoming video) and show your work directly from the computer by pressing the proper keys.

If he is more comfortable with a traditional slide show, you have three options. You can send your disk of IFF files to a slide-making service and have it transfer the images to film for you. (See "Projecting Your Best Image," p. 75, Dec. '89, for a list of services and advice on slide shows.) While relatively inexpensive, service charges will add up over several projects. Photographing directly from the screen is a cheaper, but more hit-and-miss process. For best results, use a slightly long lens to minimize screen curvature and bracket your shots. An easier solution is to invest in a **Polaroid Palette** film recorder (\$1495) and **Imprint** software (\$495, American Liquid Light) or a high-resolution film recorder and pull the screens straight from memory onto film.

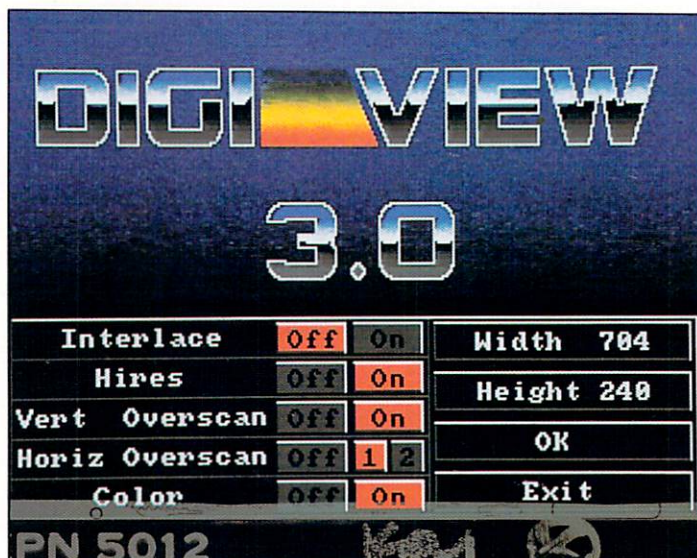
PUMP UP THE PRODUCT

Never satisfied, John returns after the meeting with another challenge: "Can you bring the picture in the computer to life? I want to show the product working to convince the financial guys that it will fit the market needs, but the engineers tell me the prototype won't be ready in time."

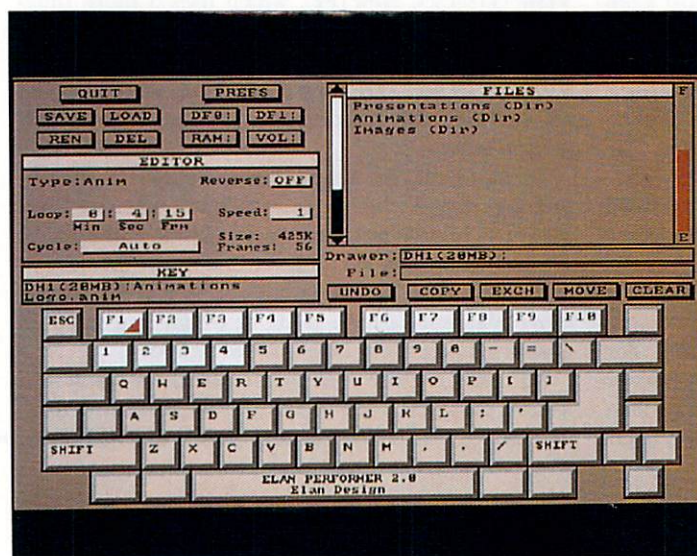
Not only can you show the product working, you can also let John and his finance pals use it. You probably already have a digitized picture (preferably not in HAM mode) of the product's front panel from your colorizing episode. Use an authoring system, such as **CanDo** (\$149.95, INOVAtronics), **Amiga-Vision** (\$149, Commodore), or **DeluxeVideo III** (\$149.95, Electronic Arts), to combine it with other elements into a simulation of the product.

With the front panel as a background screen, use your authoring system to specify which buttons you wish to trigger brush animations of displays (CanDo, DVideo), panel lights, and meters, and which to calculate numbers (CanDo, AmigaVision), display text, trigger digitized sounds, and otherwise simulate what the real product does. To create brushes and brush animations for the simulation, **DeluxePaint III** (\$149.95, Electronic Arts) is indispensable. To sample appropriate sounds, (key clicks, music, sound effects) you need a sound sampler, such as **Perfect Sound** (\$99.95, SunRize Industries). **AudioMaster III** (\$99.95, Oxxi) is a good editor for tweeking your samples. (For a comparison of samplers, see "Sizzling Sounds," p. 48, Oct. '89.)

You don't have to be a programming genius or



Here, in DigiView's set-up screen, you can determine the type of image you are going to create.



You can easily assemble a snappy presentation by using Elan Performer version 2.0

sound engineer to pull this off, although programming experience will help you understand CanDo's scripting language, and a knowledge of digital recording and sound processing will help you get the best results from your sampler. (Consult "Now Hear This!" p. 20, Mar. '90, for sound-digitizing techniques.) AmigaVision's icon-and-requester method makes scripting even easier. If you prefer a time-based approach to production over scripting, DeluxeVideo will be more your speed. Expect to spend from one day to over a month on the project, depending on the product's level of complexity and your familiarity with the authoring software.

John was impressed and, more importantly, so was the finance department. Now, they want him to put together a video of the product and his presentation. John, of course, turns to you to make him look good.

Depending on his budget, you can take three routes. The low-cost approach is simply to record some of your simulation from the Amiga to a videotape. A mid-range solution is to use your Amiga to produce a more elaborate edited production. If the money's there, you can outfit an editing studio and create a top-notch video.

PENNY PINCHER

If you need only one copy, you can record directly to VHS tape, or whatever format your company uses for video playback. Because you are sending the production live from the computer to the recorder, you won't have to do any editing.

For additional equipment, all you need is a video deck, a genlock or encoder, and a microphone. Connect the genlock to the Amiga, the genlock's video output to the video input of your video deck, and the microphone into the video recorder's microphone jack. If the video deck lacks a mic input, you will need to connect the mic to an audio mixer and hook the mixer's line outputs to the recorder's audio inputs.

To give the video a polished look, use DeluxePaint to create some opening title screens, a closing screen, and a black screen to add to John's original presentation. Now, start the tape recording and call up the opening screens, along with any music you may have created and digitized. While the tape is rolling, have John work with the simulation and describe what he's doing. When he's done, call up a closing screen for five seconds or so; then bring up the black screen and let the tape run a few minutes so John's presentation is not rudely cut off by video noise. You should be able to wrap up this video in a day.

CALL FOR REINFORCEMENTS

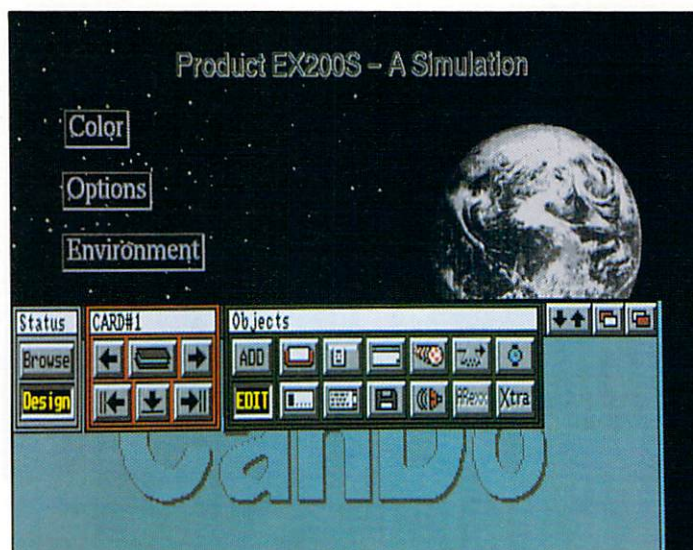
If you would like to include shots of John at work or the product's intended application and setting, you

need to do some video editing. If you don't have any video experience, I highly recommend working with a professional video-production company. A full-service company can provide writing, producing, on-camera talent, directing, shooting, lighting, music, graphics, and editing. Choose what you can do, and work with professionals to do the rest.

If you feel confident of your skills but are going to do only a few productions, you will get more bang for your buck by renting time in a professional editing suite than by purchasing less capable equipment. Look for a studio with an Amiga so you can easily incorporate graphics and titling created on your office Amiga into the final production. If you plan to do a lot of videos, however, you'd be better off investing in some cameras, editing decks, and edit controllers of your own. For industrial production, $\frac{3}{4}$ sp, Hi-8, SVHS, or $\frac{3}{4}$ -inch formats are adequate. (For specific model suggestions, see "The Studio Builder's Reference Guide," p. 30, Oct. '90.) You will need to add a genlock to your current setup, as well. For best results with SVHS or Hi-8, use a genlock that separates the luminance and chrominance signals. (For a comparison of genlocks, see "Who's In Sync," p. 54, Special Issue '90.)

For this and more involved projects, you should plan your video's script, prop and personnel requirements thoroughly before setting to work shooting or creating graphics. The extra time you spend in pre-production will pay off later in dramatic ways. You can write your scripts and lay out storyboards in a graphics word processor (I use **ProWrite 3.0** from New Horizons, \$175, because of its parallel column mode), track the budget in a spreadsheet, and keep tabs on your crew with a database.

If you are using video, graphics, or music from ►



CanDo is one program you can use to create an interactive simulation of the working product.

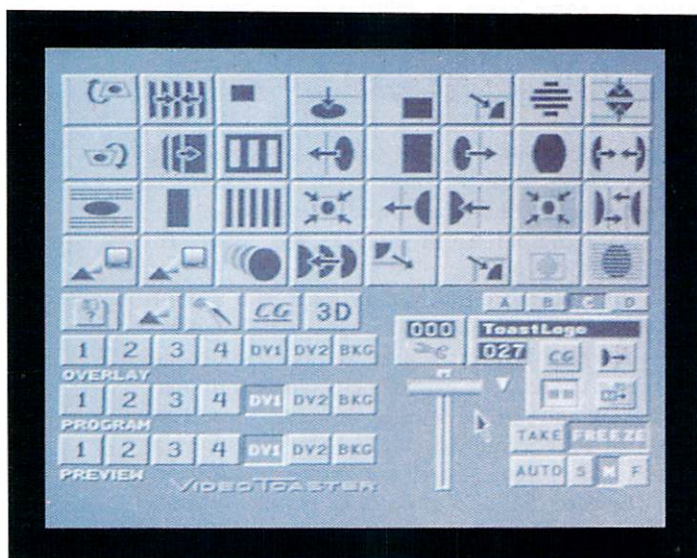
outside sources, know what you are getting and who owns the rights. (For guidance as to copyrights, see "Copy Rights and Wrongs," p. 41.) The safest bet is to create your own or license production music from a studio. If you write music, you will find **Music-X** (\$299.95, MicroIllusions) and **Bars and Pipes** (\$250, Blue Ribbon Soundworks) to be unique and powerful Amiga MIDI sequencers. Bars and Pipes' real-time ARexx support and optional **Multimedia Toolkit** (\$59.95), set it apart for multimedia use. Both programs will also synchronize with SMPTE time code. (See "MIDI and SMPTE Compatibility," p. 76, Jan. '91 for more information.)

For the animation and still-graphics side, you al-

ready have the basic tools, although a character-generator program would come in handy. Once again, use Performer, DeluxeVideo III, or AmigaVision to pull together all the elements.

Now it's time to assemble all the pieces onto video tape in the proper order. In addition to your decks and controllers, the **Video Toaster** (\$1595, NewTek) is a valuable tool. You can use it to mix among four external video sources, its two 24-bit (16-million-color) frame buffers, and the background-color generator. The external sources must be genlocked to a common source of video sync, however, and all tape machines must have time-base correctors. Unfortunately, the Toaster does not have separate luminance and chrominance processing for SVHS and Hi-8.

On the software side, the Toaster includes a moderately featured character generator with good-looking output, an impressive 3-D rendering environment with 24-bit output (but no direct support for real-time playback of animations), an adequate 24-bit paint program, real-time colorizing effects, instant 24-bit frame grabbing from video, and some spiffy digital transition effects. Take note, however, that the Toaster works only with Amiga 2000s and 2500s, and to use all of its features, I highly recommend a 68030 accelerator card, at least seven megabytes of RAM, and a large hard drive. (See "Amiga Video: Done to a 'T,'" p. 21, Oct. '90, for a thorough description.) Once you have edited the video, you can make dubs from the master tape to the format your company uses for playback.



Through the Video Toaster's main control screen, you can add special effects to your videotape.



The Amiga plays a key role in RGB Computer & Video's editing suite.

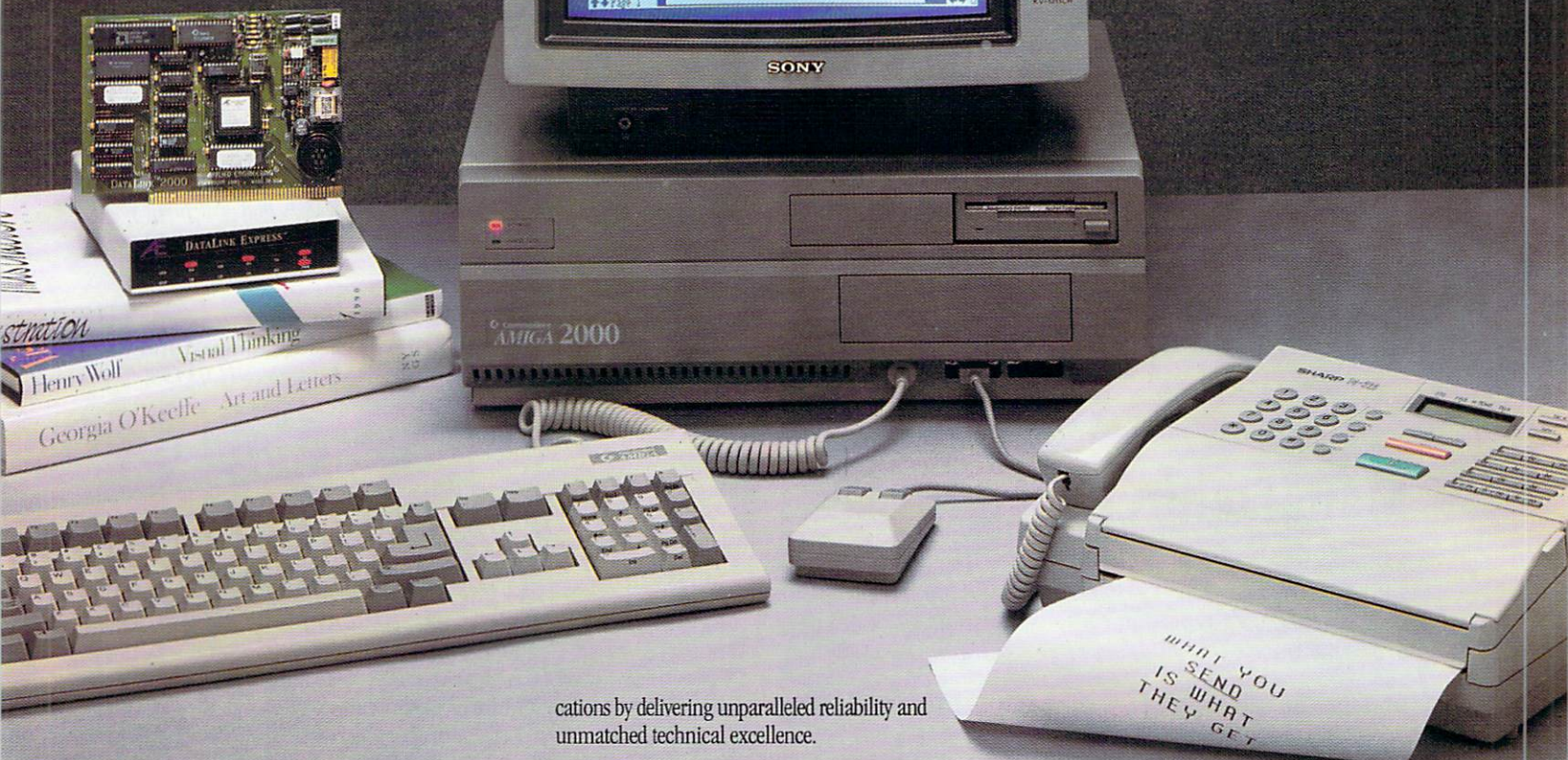
PRACTICALLY PRO

If your video needs that extra sizzle, shoot it in a higher-quality format like BetaCam or M2, and edit to one-inch or D2 tape. Sizzle costs a lot, however, so expect to spend a month or more working and several thousand dollars per finished minute. You can still use Amiga graphics and animations, and in a frame-accurate editing suite, you can take 24-bit animations rendered to a frame buffer and record them one frame at a time to videotape with MicroIllusions' **Photon Video Transport Controller** (\$299.95) for smooth, high-quality results.

To save money in the edit suite (typically \$100 to \$500 per hour in these tape formats), thoroughly document your camera tapes' scenes and time code, and do an "off-line" edit using a less expensive format. MicroIllusions' **TCRG 102** time-code reader/generator (\$799.95) lets you stripe tapes with time code and log SMPTE time-code numbers directly into your word processor or database, and it works with any genlock to create window dubs (superimpose the SMPTE numbers on your screen) for your rough cut.

You can then make the time-consuming decisions about shot placement and timing before you spend the big bucks at the studio. You can create a standard time-code list of all the shots in your program with ►

Check the fax. You'll choose a DataLink™



Combine the raw power of your Amiga with the utility of a modem and the indispensable convenience of a fax machine - and you've got a DataLink Send-Fax™ modem from Applied Engineering.

Send faxes directly from your Amiga's screen* without ever printing a "hard copy" of the information. The exclusive AE Send-Fax™ software installs itself as a printer option in "Preferences". Faxes can then be sent as simply as printing. Or even easier with our programmable "Hot Key". Go back to what you were doing, while AE Send-Fax operates in the background, or watch progress in an unobtrusive window. You'll automatically receive a report when the fax is completed.

Compile your own fax-number phonebook for instantaneous dialing. Preview your faxes — even program AE Send-Fax to send faxes to entire distribution lists. And you can fax to lengthy distribution lists late at night, when rates are lowest. The next day a report confirms your faxes were received.

Best of all, AE Send-Fax comes with the finest modems you can buy — the DataLink series. 2400 bps modems that redefine the art of telecommuni-

cations by delivering unparalleled reliability and unmatched technical excellence.

The result? Standard features like complete communications software included free, full Hayes AT compatibility, asynchronous data format, auto answer, non-volatile memory, automatic tone and pulse dialing, remote access, built-in diagnostics, FCC certified designs, free tech support, five year warranties and more. And upgradeability to MNP-5 with 4800 bps throughput speeds and error-free data transfer.

DataLink 2000™ (top) is an internal 2400 bps modem for A2000/3000 series machines. It can be configured with the MNP-5/Send-Fax package or either option individually. **DataLink Express™** (bottom) works externally with ALL personal computers and features another AE exclusive, our "Line Engaged" indicator to show a shared phone line is in use. The MNP-5 data compression and error correction option must be present on DataLink Express in order to include AE Send-Fax.

Order today! To order or for more information, see your dealer or call (214) 241-6060 today, 9 am to 11 pm, 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add 8 1/4% sales tax. Add \$10 outside U.S.A.

| | |
|---|--------------|
| DataLink 2000 | \$159 |
| w/MNP-5 | \$189 |
| AE Send-Fax™ option | \$39 |
| DataLink Express | \$249 |
| w/MNP-5 | \$299 |
| w/MNP-5 and AE Send-Fax | \$349 |
| AE Send-Fax (field upgrade requires MNP-5) | \$79 |

*REQUIRES KICKSTART VERSION 1.3 OR LATER

AE
Applied Engineering®
The enhancement experts.

A Division of AE Research Corporation

(214) 241-6060

P.O. Box 5100
Carrollton, TX 75001

©1991 AE Research, Inc. All rights reserved. Brand and product names are registered trademarks of their respective holders. Prices shown are U.S. dollars and are subject to change without notice.

Made
in the
USA

MicroIllusions' **Edit Decision List Processor** (\$499.95) from a rough cut done on any cuts-only editing system, and take the list to a high-end facility for quick and efficient final editing. With RGB Computer & Video's **AmiLink** (\$1995) edit-controller software and hardware, you can create a VHS off-line system, a one-inch, on-line system, or anything in between.

The West Coast is thrilled and John has the go ahead to train the sales staff. "Can you whip up some kind of interactive video?" he asks. "I'd like a sales training program that emphasizes closing skills."

A little tired of John getting all the glory while you do the work, you still say, "No problem."

Although you can buy prerecorded video discs for interactive use, this situation calls for original production. After researching the sales process, you can produce video vignettes of common sales situations and shoot alternative endings that show the likely outcome of different sales techniques. Transfer your footage to a video disc (see "Mastering Multimedia," p. 66 in this issue, for details).

Using an AmigaVision-supported video-disc player

such as the **Pioneer LDV-2200** (\$895), create an AmigaVision user interface for your interactive training program. Show the beginning of a sales situation, let the trainee choose from a list of different closing techniques, and instruct AmigaVision to pull up the proper vignette from disc.

AmigaVision can also play animations, bring up IFF graphics with built-in transitions, trigger IFF samples, and play MIDI instruments. If you do not have the budget for the video disc, you can create vignettes using text, still images, and animations, and set up the same kinds of choices for the trainee. Once all your research and video work is done, you should be able to pull the project together in under a week.

The program is a success, and John gets a big raise. You get a well-deserved vacation, during which you can read up on sophisticated animation programs, 3-D modeling programs, and 24-bit graphics boards that will jump your presentations to an even more impressive level of complexity and quality. ■

Jamie Krutz is a freelance writer, editor, composer, and multimedia producer. Write to him c/o AmigaWorld Editorial Dept., 80 Elm St., Peterborough, NH 03458.

Manufacturers' Addresses

American Liquid Light
2301 W. 205th St.
Torrance, CA 90501
213/618-0274

Blue Ribbon Soundworks
1248 Clairmont Rd., Suite 3D
Atlanta, GA 30030
404/377-1514

Commodore Business Machines
1200 Wilson Dr.
West Chester, PA 19380
215/431-9100

Elan Design
PO Box 31725
San Francisco, CA 94131
415/621-8673

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

INOVAtronic
8499 Greenville Ave., Suite 209B
Dallas, TX 75231
214/340-4992

MicroIllusions
PO Box 3475
Granada Hills, CA 91394
818/785-7345

New Horizons Software
PO Box 43167
Austin, TX 78745
512/328-6650

NewTek
215 SE 8th St.
Topeka, KS 66603
913/354-1146
800/843-8934

Oxxi Inc.
1339 E. 28th St.
Long Beach, CA 90806
213/427-1227

Pioneer Electronics
PO Box 1760
Long Beach, CA 90810
800/421-1404

Polaroid Corporation
575 Technology Square
Cambridge, MA 02139
800/225-1618

Progressive Peripherals & Software
464 Kalamath St.
Denver, CO 80204
303/825-4144

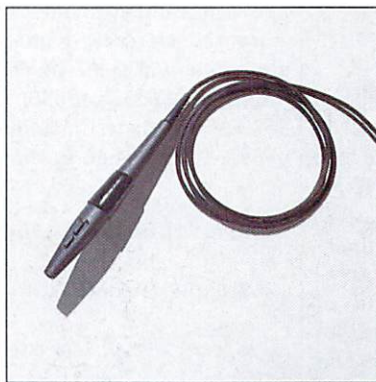
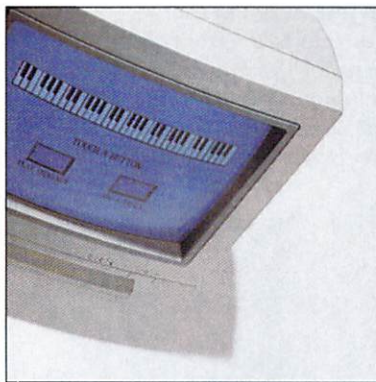
RGB Computer & Video
3944 Florida Blvd., Suite 4
Palm Beach Gardens, FL 33410
407/622-0138

SunRize Industries
2959 S. Winchester Blvd., Suite 204
Campbell, CA 95008
408/374-4962



Replace That Interface!

When it comes to interactive multimedia, it may be better to set a trap for your mouse and give your keyboard a kick in the keester—as this survey of alternative interfaces will demonstrate.

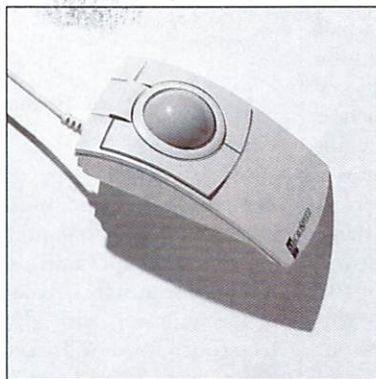


ALTHOUGH MOUSE AND keyboard have become almost second nature to most Amiga users, other ways to interact with the computer often prove more effective in multimedia situations. There are many occasions where being "cord-bound" by mouse or keyboard seriously hinders the flow of interactive presentations. Greater freedom of movement, longer distances, more precise control, more intuitive approaches for inexperienced users, potential damage or vandalism—these are just some of the reasons for creators of multimedia presentations to explore alternative user interfaces.

MICE WITHOUT TAILS

An infrared mouse works much like a television remote control, freeing the user from being cord-bound. Practical Solutions' **Cordless Mouse** (\$129.95) sports a small infrared receiver, plugged into your mouse port, at which you then aim the mouse to operate. The three-button mouse sends both mouse movements and button clicks. While the mouse movements have a very different feel that takes a little getting used to, they do not seem sluggish or inaccurate.

Although this cordless mouse allows you to move ►



By Geoffrey Williams

only about five feet away from the receiver, you can achieve long-range operation by obtaining a repeater that broadcasts an infrared signal to a remote location. DAK Industries' **Infrared Receiver/RF Transmitter** (\$50) turns the infrared signal into a broadcast signal that lets you place the mouse up to 125 feet away from the computer. Moreover, unlike an infrared signal, you do not have to place the transmitter in line of sight with the receiver—you can even set it up in another room.

We use the infrared mouse in shows where the presenter holds it in his or her hand and uses it just like a slideshow remote control. One button advances the show, the other button goes to the previous slide or event. A cordless mouse clearly allows for much greater convenience and maneuverability. (While we're at it, maybe someone should make a wireless, handheld keyboard substitute for the Amiga—they already exist for the Mac and IBM.)

Conventional mice are nice, but, while they seem pretty intuitive to regular computer users by now, it



"A cordless mouse clearly allows for much greater convenience and maneuverability."

Practical Solutions' Cordless Mouse

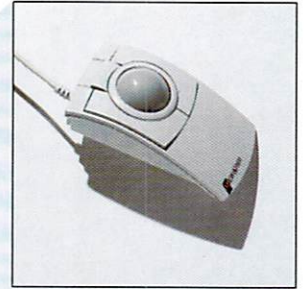
is amazing how many people trying them for the first time have difficulty getting the knack. Moreover, a mouse and its mousepad area take up valuable space, and if used in a kiosk situation, the mouse is vulnerable to damage and vandalism. When your multimedia presentation warrants a different kind of interface, consider a trackball, which is like an upside-down mouse with the ball on top. For the trackball to operate, only the ball needs to move, not the whole assembly.

MicroSpeed's **AmTrac Trackball** (\$99) has a ball that sits in the middle of the box with large buttons surrounding it on three sides. Easy to use and very intuitive, the trackball measures only 4×7.5 inches, and you can mount it permanently, as it does not have to move physically (a decided advantage in a stationary presentation environment). The large buttons can be labeled to explain what they do, and there is plenty of room to put a label on the box instructing users to "roll the ball to move the pointer on the screen." In addition, the Amtrac seems pretty durable, which is important because anything left out for unattended public use is going to take a lot of punishment.

Kraft Systems, makers of trackballs for the IBM PC, has recently produced an Amiga model called **Tripletrack**, which combines both mouse operations and trackball/joystick-type operations. In addition to the standard model (\$99.95), the company offers a

"The trackball . . . does not have to move physically (a decided advantage in a stationary presentation environment)."

MicroSpeed's AmTrac Trackball



unique "Footpedal" version (\$119.95), in which a floor pedal replaces the left mouse button in mouse mode. Pedal presses substitute for finger presses in dragging operations.

LOOK...AND DO TOUCH

The ultimate interface for a kiosk is the touch screen, which lets users touch the images on the screen—in effect, substituting their fingers for the mouse. Touching the screen acts as a mouse click at that position. For most interactive multimedia presentations, this is the easiest and most intuitive user interface. The transparent touch screen is attached directly to the front of the monitor screen. Touch screens for the Amiga include **AccuTouch** (\$630, Elographics), **MicroTouch** (\$795–895, MicroTouch Systems), and **Future Touch** (\$895–1495, Amigo Business Computers).

"The ultimate interface for a Kiosk is the touch screen, which lets users touch the images on the screen."

A1950 Monitor with Touch Screen



Elographics' 13" **AccuTouch** has a 3000×3000 pixel resolution and uses resistive technology. The advantage here is that unlike capacitive touch screens, you can activate resistive screens with a gloved hand or a nonmetal stylus. **AccuTouch** attaches to the front of the monitor with double-stick velcro. To use **AccuTouch**, you will need the Commodore driver that is supplied with **AmigaVision**.

MicroTouch makes units for a variety of monitors, ►

GVP Announces a Technological Breakthrough...

SERIES IITM THE NEXT GENERATION

in SCSI and RAM Controllers for the A2000[®]

IMPACT

Series II

GVP's New SERIES II A2000 SCSI and RAM Expansion Controllers provide the ultimate hard disk and RAM expansion solution for the A2000. Choose from two new models:

The Series II A2000 SCSI "Hard-Disk + RAM-Card"

- State-of-the-Art integration packs a high performance SCSI controller, 8MB FAST RAM Expansion and a 3.5" hard disk drive INTO A SINGLE A2000 EXPANSION SLOT!! Saves BOTH a valuable expansion slot and a peripheral bay!
- Incredible SCSI hard disk performance achieved through GVP's innovative new custom chip design, which 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 from ZERO through 8MB. Supports 6MB FAST RAM configuration for BridgeBoard users.
- NEW **FAAASTROM[™]** SCSI Driver offers optimum performance and includes such features as:
 - ✓ Supports virtually any SCSI device including, CD-ROMs, Tape Drives, IOMEGA Bernoulli drives, etc.
 - ✓ Fully implements SCSI Disconnect/Reconnect protocol, allowing overlapping SCSI commands to be executed.

- ✓ Fully implements Commodore's Rigid Disk Block (RDB) standard as well as the new DIRECT SCSI interface standard.
- ✓ Removable media drive support. Automatically senses cartridge changes and informs AmigaDOS, ensuring safe and reliable use of removable media SCSI drives.
- ✓ Allows Direct AUTOBOOT from Fast File System Partition.
- New INTUITION COMPATIBLE SCSI installation and "tuning" utility included. Major features include:
 - ✓ ICON and gadget based INTUITION interface.
 - ✓ Bad Block Remapping of hard drives.
 - ✓ Auto or manual hard drive partitioning and AmigaDOS formatting.
 - ✓ Read and modify existing RDB parameters on hard disk.
 - ✓ Simplest and Easiest SCSI installation in the industry.
- Low parts count (through VLSI Integration) EQUALS: lower power, higher reliability, longer life and ultimate PRICE/PERFORMANCE! See TRADE-UP offer.

The Series II A2000 SCSI "Hard-Disk-Card"

- Same as above but without the 8MB FAST RAM capability.
- Specially designed for those users who don't need memory expansion but still need maximum hard disk performance at a budget price.
- UNBEATABLE VALUE. See \$99 trade-up offer!

GVP's New **FAAASTROM** SCSI driver and installation software is also available as an upgrade kit for GVP's original IMPACT SCSI controllers, for ONLY \$49.95. Offers major performance increase over previous GVP AUTOBOOT EPROMs.

New Series II 48MB Removable media hard disk drive. GVP now also offers the NEXT GENERATION removable media hard disk drive which offers increased capacity (48MB formatted) and major technological advances in cartridge air flow filtering design and robustness. Call for details.



SCSI TIMES

The ULTIMATE Trade-Up Offer???

GVP today introduced its new Series II product line and announced a bold new trade-up program, which is certain to further bolster GVP's dominant market share in the Amiga hard drive market.

Details of GVP's new TRADE-UP program are as follows:

- For \$109 plus \$6 for shipping (USA only), end-users can trade-up to the new GVP Series II SCSI "Hard-Disk-Card" (without drive) by simply sending in their present SCSI controller (from ANY manufacturer) together with a money order or certified check, payable directly to GVP.
- All trade-in controllers must be sent to GVP FREIGHT PREPAID.
- Owners of any GVP or Commodore SCSI controllers, are eligible for an additional \$10 rebate, if they trade-in a FULLY FUNCTIONAL and working controller. These owners need to submit a certified check/money order for \$105 only.
- For an additional \$39, existing controllers can be traded-up to the new Series II "Hard-Disk + RAM-Card," which includes the 8MB FAST RAM expansion capability, populated with ZERO RAM.

Hard-Disk+RAM-Card

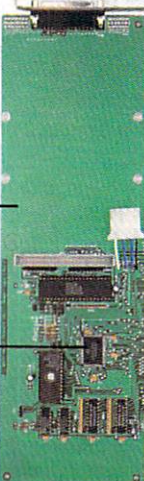
Hard-Disk-Card



Space
(no components)
for direct
mounting of
3.5" Hard Disk
Drive

GVP
Custom
VLSI Chip

Up to
8MB of
FAST RAM
Expansion



"Let's Standardize"

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

Educational pricing program now available.

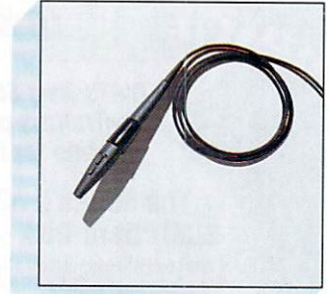
Series II, FAAASTROM and GVP are trademarks of Great Valley Products, Inc. Amiga and A2000 are registered trademarks of Commodore-Amiga, Inc.

including the Commodore 1950, with prices ranging from \$795 to \$895. Its capacitive touch screens have a resolution of 1024×1024 , and, like the AccuTouch, they have single-pixel precision. These units employ the same technology used in interactive displays at retail stores for the California Lottery, so they are very durable. They fit directly over your monitor picture tube (although you will have to open up the monitor to properly place the glass touch-screen panel); all you need do is install the supplied Amiga device driver and plug in the cable.

MicroTouch also manufactures a device called the **UnMouse** (\$235), a touch screen built into a flat 3- \times 5-inch clear tablet. Instead of attaching to the front of the monitor, it lies flat on a table, making it possible to put a template underneath it to show users which parts of the tablet to press to create different actions. Touching the tablet allows you to move the pointer around, while pressing your finger down acts as a mouse click. This allows you to control a show without interfering with the on-screen action; for example, a presenter could easily run a show

substitutes for the mouse, there are also entirely software-driven methods to move the mouse. Several public-domain programs allow you to record both mouse movements and keystrokes and to play them back in exact sequence. **Journal**, **MachIII**, and

"Light pens offer a low-budget solution for Kiosks where you want the user to interact with the screen."



Inkwell's Amiga Light Pen

"Your body image appears as a single-color solid shape on the Vidi Mice set-up screen."

simply by touching icons or text on a template placed underneath the panel.

Amigo Business Computers offers Future Touch touch screens as part of an all-in-one package with a monitor. A 13-inch Commodore monitor with touch screen goes for \$1195, while a 19-inch, open-frame monitor and touch screen sells for \$1495. The company also offers—under certain conditions—a Future Touch kit to modify your existing monitor for \$895.

A light pen allows a user to interact with the screen in somewhat the same way as does a touch screen, but the costs are a lot less. By bringing the light pen up to the screen and clicking the button on the side of the pen, you can simulate a mouse click on that part of the screen. Light pens offer a low-budget solution for kiosks where you want the users to interact directly with the screen. They do, however, represent one more piece of equipment subject to damage or vandalism.

Just a little larger than a ballpoint pen, Inkwell System's **Amiga Light Pen** (\$129.95) plugs into your computer but leaves your mouse port free so that you can use your mouse and the light pen at the same time. It also has a second button for menu choices.

Although we have so far discussed only mechanical

ScriptIt (all available on Fred Fish disks) provide some pretty sophisticated interaction capabilities. **MachIII** even has an ARExx port so that ARExx-compatible multimedia programs can send it messages to control any aspect of the computer or other multitasking software. It is possible via ARExx to send a message to **MachIII** from your multimedia program that could, say, bring a **DeluxePaint III** screen to the front, then call **Journal** to play back the drawing of a picture, and finally return control to the multimedia program. This is an easy way to add extra capabilities to your multimedia software.

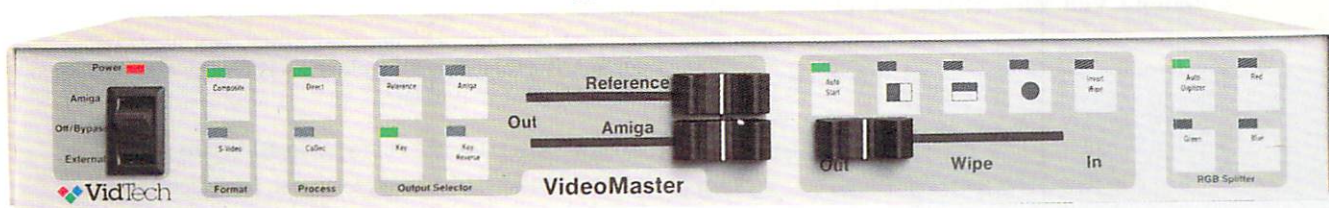
AND HOW ABOUT THE USER AS USER INTERFACE?

Still another way to interact with your computer is through your own voice, with devices such as Impulse's voice-recognition system, **VoRecOne** (\$159.95). Although it currently has limited applications—you have to teach the program to recognize the words you want it to learn, and it is possible that it may confuse words that sound similar—**VoRecOne** is capable of getting the job done, responding instantly to the commands you taught it. You can assign individual keys or a series of keystrokes to any word you want, and you can even move the mouse and trigger mouse clicks with your voice. It does a very good job with sound effects, where confusion is much less likely than with words. You can even use it to synchronize images from a second computer based on specific sound effects. This is a very inexpensive way to synchronize two computers in a multimedia show.

Another, even more offbeat interface possibility is a variation on one of the more exciting products from the early days of the Amiga: **The Mandala** from **Very Vivid**. Using **A-Squared Distributions' Live!** digitizer (\$450 for the A2000 version) and a video camera, it tracked your body movements and responded when your body crossed over certain hit areas on the screen. That technology has been unavailable since **Very** ▶

VideoMaster

The Integrated Desktop Video System For Amiga Computers



VideoMaster integrates in a single system all the functions necessary to transform the Amiga computer into a fully featured multimedia workstation without using the video slot. VideoMaster performs the following functions:

- ◆ Genlocks the Amiga graphics to incoming composite (PAL or NTSC) or S-Video source (S-VHS, Hi8 or ED-BETA).
- ◆ The genlocked video production is available in composite and S-Video formats as well as RGB for optimum graphics.
- ◆ A built-in RGB splitter provides for direct connection to a digitizer including a compatible interface to Digi-View Gold 4.0.
- ◆ A special effects generator produces horizontal, vertical, circle and inverted wipes—automatically timed or manually controlled.



Two Models

NTSC (RS-170A) and S-Video
PAL and S-Video 625

The S-Video, Y/C signal is processed independently in, through and out.

"Glitch Free" Switches

Cut to any Amiga/Reference video combination in the next frame of your recording with no flicker or artifacts.

Dissolve Control Bars

Dissolve to any Amiga/Reference Video combination. Also dissolve to black.

Wipe Switches and Control Bar

Vertical, horizontal and circle wipes timed by VideoMaster or controlled manually. Inverted or combined multiple wipes for special and unusual effects.

Digitize External Images

Connect your Digi-View Gold 4.0 digitizer, set RGB splitter to Auto and VideoMaster will synchronize the digitizer to R, G and B signals. Under manual control, select RGB sequence and interface to most commercially available digitizers—no B & W camera with color-wheel required.

**The S-VIDEO GENLOCK
for all Amigas
A-500/A-1000/A-2000/A-2500/A-3000**

RGB Processor

VideoMaster generates RGB video and graphics for direct connection to an RGB monitor or projector. The standard Amiga monitor can display reference video and Amiga graphics optimally in RGB mode.

Transcoding

Create composite productions from S-Video reference source. Create S-Video productions from composite reference video. VideoMaster output is continuously available in all three formats. (Composite, S-Video, and RGB).

Record with No Reference Video In

No problem! VideoMaster generates internal sync to allow the Amiga artist to record his animation in either composite or S-Video.

Amiga RGB Session

No recabling! Set VideoMaster to Off/Bypass and develop RGB graphics for your next production.

Key Out

Compatible with the video mixer in your studio ensemble.

Leave your Amiga Video Slot Open

For use with other video add-on cards that add sizzle to your productions.

External Power Supply

Required for A-500. Optional for all other Amigas.

Dealer Demonstration Program

Video dealers should contact VidTech for details.

Warranty and Support

VideoMaster comes with a full year warranty and 800 number for customer service and support.

Call or write us today:

VidTech International, Inc.

2822 NW 79th Avenue
Miami, Florida 33122

800-727-2261 or 305-477-2228

Fax 305-591-1651

Price: \$1295

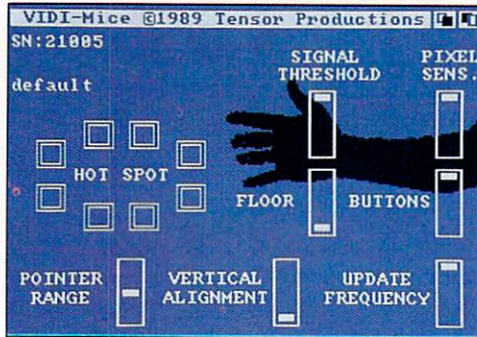
Dealer inquiries invited.

U.S. Distribution by
Micro-Pace, Inc., Champaign, Ill.



Vivid pulled The Mandala from the general market, but, thanks to Joe Shen of Tensor Productions, it is possible to develop similar—and even more advanced—techniques of this kind.

Tensor's **Vidi Mice** (\$85) also uses the Live! digitizer.



With Vidi Mice, you can use video representations of body images (like the hand at the left) that, when they touch certain areas of the screen, produce the same results as mouse clicks.

tizer and a video camera, but it works interactively with any software. You can establish areas on the screen that, when your video image touches them, produce the same results as pressing a specific key on the keyboard or clicking the mouse. With Vidi Mice, you are allowed more than 80 different virtual buttons on the screen. You can also have your video image touch the mouse pointer and have it follow your body or your hand.

At a major multimedia conference, we used it with TV*Show 2 (\$99.95, Zuma Group) to trigger the left (forward) and right (reverse) mouse buttons. The presenter could go forward or backward in the show merely by gesturing to the right or to the left. We also set several function keys to trigger specific images simply by having the presenter reach up and to the left or right. You can even trigger key combinations for hotkeys (such as Right Amiga-M). You can use Vidi Mice to control with your video image any operation you can perform with the mouse or keyboard.

Your body image appears as a single-color solid shape on the Vidi Mice set-up screen so that you can easily see where to set up the buttons. You can invert your image or flip it horizontally or vertically. Your image is normally invisible when you go into a program to control it, but you can export your image to any bitplane of any screen you choose. If you want your live image to appear on, say, a DeluxePaint screen, you can do it very easily. You can even paint with your image. This is really exciting stuff!

Assuming that you have a genlock and that your body image is set at color 0, you can even make your body image transparent and genlock your real image through it, thus creating a sort of pseudo chromakey. Although you are somewhat limited by the quality of the Live! digitizer output, this still can produce a very striking effect.

You also have absolute mouse-pointer control, 16 mouse-button positions, and 16 ARExx ports for very

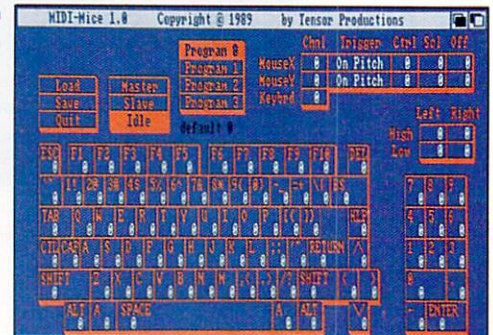
sophisticated interaction. Believe me, you experience a tremendous feeling of power in being able to make a gesture and bring up any image, animation, or sound effect. With Vidi Mice, you could start a multimedia show simply by the action of the presenter walking on stage. Having performed as a magician for many years, this is as close as I've ever come to the feeling of real magic.

MUSIC, VIRTUAL REALITY, AND BEYOND...

MIDI (Musical Instrument Digital Interface) offers another option in the array of interface possibilities. Most of the presentation programs I have worked with do not offer full MIDI synchronization. **Midi Mice** (\$85), also from Tensor Productions, does offer some interesting solutions to that problem. It listens for specific MIDI events to trigger keys or mouse movements.

Instead of basing your multimedia presentation on time, you can have it controlled by specific notes in the music played live from your MIDI keyboard. If you have two Amigas, you can use one to produce MIDI note information (done with DeluxeVideo III and AmigaVision), which can then be sent out to

Midi Mice (main screen) pictured at right) lets you control multimedia presentations with music. Specific notes, played live from your MIDI keyboard, trigger keys or mouse movements.



another Amiga set up with Midi Mice and whatever software you want to control. This is an easy way to have one Amiga control another, which is an important consideration if you wish to create multi-image shows that project more than one image at a time on a wide screen.

With Midi Mice, you can base pointer movement on pitch value, velocity value, pitch-wheel parameters, or control-change parameters. You can, for example, set a specific channel number to trigger keyboard events using MIDI pitch values on that channel. Remember, too, that you have ARExx ports available, which opens up still further possibilities with MIDI.

Moving closer to the cutting edge, even more exciting user-interface activity centers around virtual reality (VR), which is the rage at a number of computer labs across the country. Mattel Toys brought VR to the home front with its Power Glove for the Nintendo system, which allows the user to wear a ►

THE EXTERNAL WORLD OF AMIGA



ROCTEC ELECTRONICS INC.

170 Knowles Drive, Suite 202

Los Gatos, CA 95030

U. S. A.

Tel: 408 379 1713

Fax: 408 379 1897

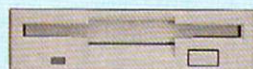
For more information or the nearest dealer, please call us now.

RocGen



- Dissolve Control
- Auto Video Pass-Through
- External/ Internal Power Selection
- RS-170A Composite Output
- Compact & Sturdy Metal Casing

Drives Series



3.5" 880 KB
Compact Floppy

- Daisy Chain Function
- ON/OFF Switch
- No Clicking



5.25" 360/880 KB
Switchable Floppy

- 40/80 Track Switchable
- Compatible with PC-1



3.5" 880 KB
Ultra-Slim Floppy

- 0.75" Super Slim Mechanism
- Low Power
- Extremely Quiet

Roc Knight

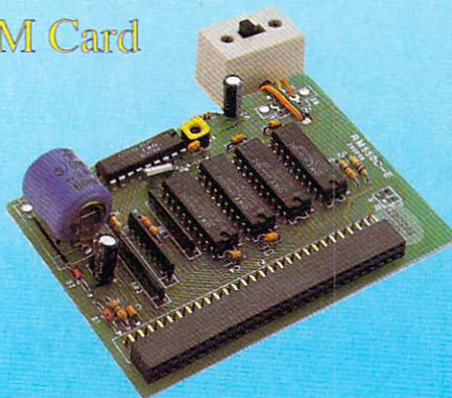


- Track Zero Write-Inhibit
- Track Location Display
- Disk Write Protect Function
- Virus Prevention

Mouse



RAM Card



- 512KB RAM for A500 Computer
- Real Time Clock & Calendar
- External ON/OFF Switch

**1.8 MB RAM
Expansion Available**

glove that tracks finger and hand movements and then uses them to control games. Tensor's **Digi Mice** (\$50) is a combination of interface and software that allows you to use the Power Glove with the Amiga. Its range of capabilities is limited—it acts like a joystick rather than a mouse—but if you want to experiment with software that is joystick-compatible, this may be exactly what you need.

In talking with one of the designers of the Power Glove, however, I was told that a simple, inexpensive modification could greatly increase the resolution and accuracy of the Power Glove. Tensor may be able to offer this modification in the future so that more accurate Power Glove control is available for the Amiga. Stayed tuned.

Tensor does seem to be at the forefront of alternative interfaces, and the company has announced another interesting prospect in **CyberScape** (scheduled to retail at \$245), which has many of the neat features present in *The Mandala*, along with quite a number of new features of its own. It is reported to be an entirely video-triggered multimedia package. Besides support for images, brushes, and animations, it should also output MIDI, IFF sounds, and synthesized speech. It is slated to support AREXX messages and to send output through both the serial and parallel ports.

For purposes of interactivity, it promises collision detection, motion control, object hold and release, and object hierarchies. It is even supposed to support scorekeeping and interactive games. If you have lusted to play Nickelodeon's *Eat A Bug* game at home, you may soon be able to do so. There is a lot of possibility here, and **CyberScape** could represent a kind of interactive nirvana for clever multimedia producers. Imagine what something like this might mean if used in conjunction with NewTek's Video Toaster. We're talking about real-time quality digitizing that could also trigger events and allow users to interact with objects on the screen, while all the time the Toaster is producing broadcast-quality video. NewTek, take note!

As we have seen, there are a great many alternatives to the old mouse and keyboard interfaces. What the future holds is hard to foresee—ultrasonics, large-scale panels, and, perhaps in California, even the triggering of events based on earthquake magnitude? For now, we have plenty to play with and keep us busy for quite a while. ■

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.

Manufacturers' Addresses

A-Squared Distributions

6114 La Salle Ave.
Oakland, CA 94611
415/339-0339

Amigo Business Computers

192 Laurel Road
East Northport, NY 11731
516/757-7334

DAK Industries

8200 Remmet Ave.
Canoga Park, CA 91304
800/888-7808

Elographics

105 Randolph Road
Oak Ridge, TN 37830
615/482-4100

Fred Fish

Catalog Disk Update
1835 E. Belmont Dr.
Tempe, AZ 85284

Impulse

6870 Shingle Creek Pkwy. #112
Minneapolis, MN 55435
612/566-1822

Inkwell Systems

1050 R- Pioneer Way
El Cajon, CA 92020
619/440-7666

Kraft Systems

450 W. California Ave.
Vista, CA 92083
619/724-7146

MicroSpeed

44000 Old Warm Springs Blvd.
Fremont, CA 94538
415/490-1403

MicroTouch Systems

55 Jonspin Road
Wilmington, MA 01887
508/694-9900

NewTek

215 S.E. 8th St.
Topeka, KS 66603
913/354-1146
800/843-8934

Practical Solutions

1135 N. Jones Blvd.
Tucson, AZ 85716
602/322-6100

Tensor Productions

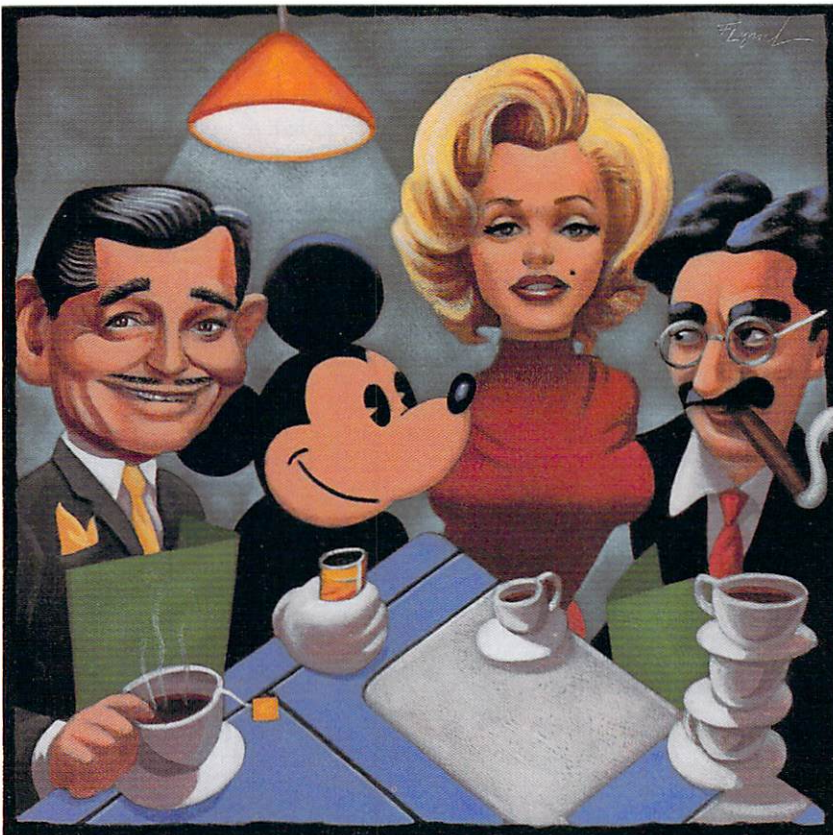
280 Mathilda Drive #9
Goleta, CA 93117
805/685-6245

Zuma Group

6733 Black Canyon Hwy.
Phoenix, AZ 85015
602/246-4238

Copy Rights And Wrongs

*In selecting images for multimedia production,
make sure you don't infringe on others'
copyrights. By the same token, you need to
guard your own creations from unauthorized
copying.*



IF YOU ARE a multimedia producer, the chances are that you frequently need to incorporate in your projects a variety of pre-existing sounds, photographs, music, animation, video, and text from a wide range of media sources. These may well form the core of your multimedia experiences, but tagging along in the shadows may be a host of copyright problems. Not only are you responsible for protecting your own creations, but you must ensure that you are legally entitled to use whatever you borrow from others.

THE BASICS

The old saw that "ideas are a dime a dozen" is certainly applicable to copyright law. According to the current rules, while ideas cannot be copyrighted, their tangible expression can. In other words, the *idea* to videotape your uncle Jim's wedding isn't eligible for copyright, but a videotape of the ceremony is. Written stories, recorded songs, a sculpture, or even a simple sketch all qualify for protection, regardless of their level of sophistication—a child's drawing is as eligible for copyright as is the cover of *Time* magazine.

Moreover, a work is automatically copyrighted at the lowest level the moment it is created. This is called protection and right "by creation," but the protection ►

By Gene Brawn

against infringement at this level is actually slight. To gain the fullest protection, the author or artist should also register the work with the US Copyright Office.

USING OTHERS' COPYRIGHTED WORKS

If you are a multimedia artist, it's all too easy to use an image without first checking its copyright status. If you are employed by a TV news organization, a newspaper, or a magazine, the "fair-use" provisions (see below) of the copyright act may cover you. If, on the other hand, the copyrighted work is used commercially (even if not necessarily for profit), then its use without permission is probably an infringement of an existing copyright. Infringement can occur in many situations, including internal use such as company newsletters and video programs, "educational" multimedia productions, and even trade show demonstrations.

If the copyright holder discovers and objects to your unauthorized use of his or her property, you may receive a notice to discontinue its use (although not mandatory, this is common), often followed by a lawsuit. If the suit succeeds, you can be barred from using the property in your production, fined as much as \$100,000, and required to pay the plaintiff's legal fees and share any income derived from its use.

Obtaining rights to use a copyrighted work need not be complicated. A simple letter, signed by both parties, that outlines your project, explains how you plan to use the property, and states the fees to be paid (if any), is usually enough for the legal eagles. Dealing with Joint or Collective copyright holders (see discussion below) is a little more tricky. Owners of such material may not have all the rights they think they do. So you should indemnify yourself with a clause in the written agreement that relieves you of responsibility in case the owners have infringed on someone else's copyright.

Using works that you know to be in the public domain is one way to maintain your sanity in the copyright jungle. Because copyrights cover finite periods, all protected properties are eventually free for the public to use (see the sidebar "How Long Is a Copyright?" for time periods under current law). You are free to use anything in the public domain without restriction. Clip-art books are a good source of copyright-free images, and used book stores are a treasure trove of public-domain images, as old picture books and magazines abound with freely usable art. Although not free, stock photo houses are a good source of more contemporary scenes; for a fee, you can secure permission for a one-time use of thousands of photographs, illustrations, and even films.

IS IT INFRINGEMENT OR FAIR USE?

The only significant constraint on the rights of a copyright holder is the fair-use clause of the copyright act. The intent of the rule is to balance the creator's need to preserve his or her interests in the work and the public's reasonable right to use it. The fair use rule allows some unauthorized use without fear of infringement, including critical reviews, commentary, news, teaching, scholarship, and research. Anything else may constitute infringement and entail legal problems.

The advent of electronic digital media and the tools to manipulate them has created havoc in the graphic-arts community. It has suddenly become easy to digitize an image, stretch it, bend it, and warp it until it is all but unrecognizable. Using small clips of existing artwork is commonplace, but is it legal? Did you borrow more than you're entitled to without permission? How much do you have to change something before it becomes yours? These questions have not yet been settled for multimedia, much less for the digital graphic arts. Until they are, you will have ►

How Long Is a Copyright?

COPYRIGHT LAW WAS stable for many decades following its inception. The last ten years or so, however, have seen rapid changes in the rules, prompted by corresponding changes in technology. The last major revamping of the law occurred in the Copyright Act of 1976. The new law, taking effect on January 1, 1978, redefined the terms of new and old copyrights. Currently, the copyright periods are:

- For an individual author: the author's life, plus 50 years;
- For joint authorship: 50 years after the death of the last surviving author;
- For works-for-hire or anonymous works: 75 years from publication or 100 years from the date of creation, whichever is shorter;
- For works copyrighted before January 1, 1978, the period of protection was 28 years, with renewal for another 28 years. The 1976 Act, however, provided for a longer renewal period, with the result that any work registered—and with registration properly renewed—prior to January 1, 1978, is copyrighted for a maximum of 75 years. This means that, as of January 1 of this year, anything copyrighted before January 1, 1916, is now in the public domain.
- Anything created before 1978, and not properly copyrighted, *may* be in the public domain.
- Anything created by the US government is in the public domain. □

—GB

SYNC IT

MUSIC PRODUCTION TOOLS FOR CREATIVE MINDS

KCS and Level II version 3.5 is the only music sequencing package giving you real-time graphic editing plus standard musical notation and MIDI mixing. Coupled with the Phantom SMPTE-MIDI interface, you have an unprecedented audio and video production toolbox.

If you're creative, you deserve KCS!

DR. T'S PRODUCTS

Sequencers

LEVEL II 3.5

KCS 3.5

TIGER Cub

MRS

Editors/Librarians

CASIO VZ-1 VZ-RIDER

CZ RIDER

DX HEAVEN

EMU Proteus

ESQ'apade ESQ-1 SQ-80

4-OP DELUXE (Yamaha)

KAWAI K-1

KAWAI K-5

KORG M-1

LEXICON PCM-70

OBERHEIM MATRIX 6/1000

ROLAND D-110

ROLAND D-50

ROLAND MT-32

X-OR (UNIVERSAL EDITOR)

Composition/Scoring

COPYIST APPRENTICE

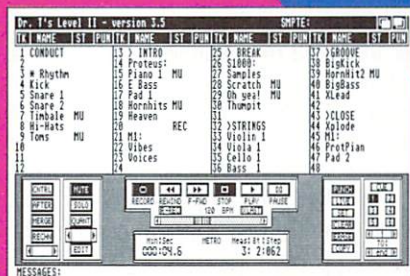
COPYIST DTP

"M"

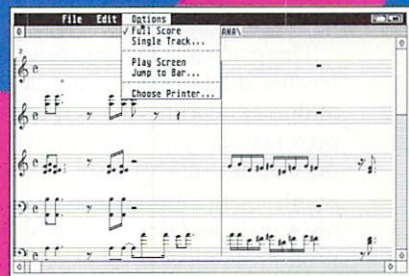
Hardware

PHANTOM MIDI-SMPTE INTERFACE

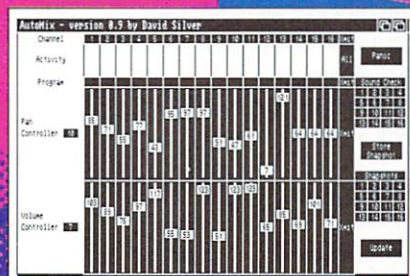
MODEL-A MIDI INTERFACE



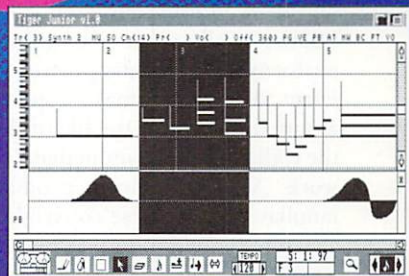
KCS Play/Record



Score Transcription



MIDI Mixing



Graphic Editing



Phantom MIDI-SMPTE Interface



Dr. T's
MUSIC SOFTWARE

100 Crescent Road, Needham, MA 02194
(617) 455-1454 FAX (617) 455-1460

Circle 35 on Reader Service card.

to depend on professional help to guide you through the maze of opinion, rules, and laws.

PROTECTING YOUR OWN CREATION

Copyright protection, of course, works both ways. While multimedia artists more often may find themselves in a quandary about infringing upon the copyrights of others, they should also pay attention to protecting the rights to their own creations.

Although the Copyright Act of 1976 automatically protects any work created after January 1, 1978 (the date it went into effect), there are many benefits to formal registration that do not otherwise obtain. For example, it is only through registration that the copyright owner secures the right to file a lawsuit for infringement. Registration also establishes the date your work was created, makes it a matter of public record, and is also essential if you plan to sell or license your property. Although the registration process is simple enough to do yourself, consult an attorney before selling rights to your work.

The following is the procedure for registering the copyright of your creation. Place in the same envelope the appropriate application form (original only, not a photocopy), properly completed, along with a \$10 check or money order stapled to the form and a deposit copy or copies of the work, and mail to The Register of Copyrights, Copyright Office, Library of Congress, Washington, DC 20559. Write the Information and Publications Section of the Copyright Office at the same address for instructions and application forms.

There are several categories of forms, grouped by creative medium. The most important document for multimedia producers is Form PA, formerly the sole province of composers, filmmakers, audio/video producers, and playwrights. Form TX is used for any nondramatic literary works—whether published or not—such as books, pamphlets, poetry, computer programs, advertising copy, and so on, except that magazines, newspapers, journals, or any publications of a serial nature are registered with Form SE. The fine artist, graphic designer, sculptor, and other practitioner of the visual arts will need Form VA, while performing musicians protect their recordings with Form SR. You can make application for registration at any time during the life of the original copyright, the right that exists immediately upon creation of the work. As a multimedia producer, you need to be familiar with all these copyright categories.

While the ubiquitous copyright notice printed on a work is no longer mandatory under the Act of 1976, you should nevertheless consider including it on all your works. It serves to identify you as the creator and to remind potential infringers that the work is protected by law. The notice is, however, mandatory on works created before January 1, 1978, and any such properties without it run the risk of entering the public domain. The accepted form for the copy-

right notice includes three elements: the © symbol, the word "Copyright," or the abbreviation "Copr."; the date of publication; and the name of the copyright owner. For example: © 1990 Gene Brawn.

Do not make the mistake of assuming that your registered copyright is in effect worldwide. International rights are determined by treaty and are subject to the signatory country's rules and regulations. Be aware that although a country is party to a treaty, that does not mean it must accept all the treaty's provisions. Be sure to check the target country's laws to determine your rights.

COPYRIGHT CLASSIFICATIONS

The copyright application requires that you disclose whether or not the content of your property is original with you or whether its source is another, possibly copyrighted, work. You also must indicate if the property is the result of a collaboration. If you are the sole creator of your work and it is all original material, you will enjoy clear sailing through the regulatory jungle.

It is true, however, that the typical multimedia project is growing so large that its creation is often beyond the capabilities of a single artist. If no agreements are made beforehand, a multimedia property with multiple contributors is known as a Joint Creation, with each creator owning 100 percent of the work. Beware! Any such joint owner can grant *non-exclusive* rights to reproduce the joint property to anyone, at any time, without obtaining the consent of the other creator(s). The only favorable thing I can say about this provision is that the partner must share the proceeds from such a sale with the co-creators. On the other hand, the sale of *exclusive* rights must be agreed upon by all parties to the copyright.

I advise you to avoid the Joint Creation type of copyright at all costs; it is nothing but a legal can of worms. Where there are several authors, joint ownership is automatic unless agreed otherwise. By all means, take the option and "agree otherwise." Instead, use work-for-hire contracts (more on this below) or other written agreements to establish your position as the "sole creator" of the property.

If your creation is something like an anthology, composed of previously copyrighted works, the property is a Collective Work for purposes of copyright. This category does not relieve you of the necessity to secure permission to use whatever you incorporate into the work. In fact, those portions of the presentation used illegally will be excluded from the copyright (and you may be sued), although, interestingly enough, any portions of the work that *you* create are still covered by the registration.

Yet another classification is the Derivative Work. This is an original property, based on or containing parts of another copyrighted work, but different enough in form and expression to warrant a separate copyright. Both the author of the original work and

the adapter share the copyright. Be sure to obtain sufficient rights from the original copyright holder to allow you to fully exploit your new creation.

WORK FOR HIRE

Of concern to the producer as well as the independent contractor is the nebulous and contentious subject of work for hire. The problem centers on the question of who owns a copyright for a creative work, the employee/creator or the employer? The nod goes to the employer in those cases when the creator is a full-time employee and the property is created within the scope of his or her employment.

The status of the free-lancer's rights is cloudier. The current law, although more definitive than before 1978, is still fuzzy on the exact dividing line between an employee and an independent contractor. The courts have defined some guidelines in trying to resolve this question. Among them are: the location where the work was performed; the source of the

creator's tools; the tax and benefit status of the free-lancer; the method of payment; the extent of the free-lancer's autonomy in choosing working hours and in engaging extra help; and the skill required to complete the job. Rather than getting caught up in a legal maze, be sure to get these questions settled in writing before work on the job begins.

This article has covered, of course, only the essentials of what you may need to know to protect yourself from suit and your work from infringement. The source books in the accompanying list provide a wealth of further detail, so by all means consult them. But now, at least, you have a frame of reference out of which you can ask some intelligent questions. ■

Gene Brawn is an interactive multimedia producer and contributing editor to AmigaWorld. Write to him c/o AmigaWorld Editorial Dept., 80 Elm St., Peterborough, NH 03458.

Resource Materials

The Desktop Publisher's Legal Handbook
by Daniel Sitarz
Nova Publishing Company
Carbondale, Illinois, 1989

Legal Guide for the Visual Artist
by Tad Crawford
Allworth Press
New York, New York, 1989

Make It Legal
by Lee Wilson
Allworth Press
New York, New York, 1990

*The Multimedia Producer's
Legal Survival Guide*
by Stephen Ian MacIntosh
The Multimedia Computing Corporation
Santa Clara, California, 1990

The Writer's Legal Companion
by Brad Bunnin and Peter Beren
Addison-Wesley Publishing Company
Reading, Massachusetts, 1988

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 “Ami 500”

A THREE-PART GUIDE TO UPGRADING YOUR A500

Part 1: Revving Up With RAM

To make it around this grueling course, you'll need sound strategies for expansion. At our first pit stop here in Part 1, let's pull in for a RAM supercharge.

By John Wolfskill

When the checkered flag goes down and you're running with all you've got, and you find that your current RAM supply limits your software options, it's time to upgrade. Thanks to the abundant stock of RAM boards available for the A500, you have many avenues to explore before you part with your hard-earned cash. You can attach RAM to the A500's external system bus, install it inside the system case, or fit it into the A501 expansion slot on the underside of the case.

Depending on the upgrade path you choose and the expansion devices you have already added to your system, you may need to replace your A500's tiny 35-watt power supply with a more powerful model. An A500 equipped with just 512K of RAM and one external disk drive draws about 2 amps of electrical current from the maximum 4.3 amps (at +5 volts) the stock supply can safely deliver. To avoid problems, the total current load of all further expansion devices must be less than 2.3 amps.

If a 512K card is your only add-on device, there is no need to replace your power supply. Greater-capacity upgrades are another matter. If your new board does not have its own power supply, you can use this rule of thumb to determine if you will need to spring for a new power supply before you begin: 1MB RAM = roughly .75 amps. (Some kinds of chips draw less power than others. If you want to obtain more information on types of chips, and on memory in general, see "Memory to the Max," p. 85, Dec. '89. Also refer to the sidebar "Are You Going Fast?" later in this article for a discussion of the different RAM types.)

If you're planning to install your new RAM board yourself, you should know that there are two revisions of the A500's motherboard (5 and 6A) that may require different expansion hardware. To avoid disappointment, make sure you specify your motherboard version when you order the card. (You'll find the revision number stamped on the bottom right corner of your motherboard.) Also, remember that when you open your A500's case, you render null and void Commodore's system warranty. ►

CATCHING UP

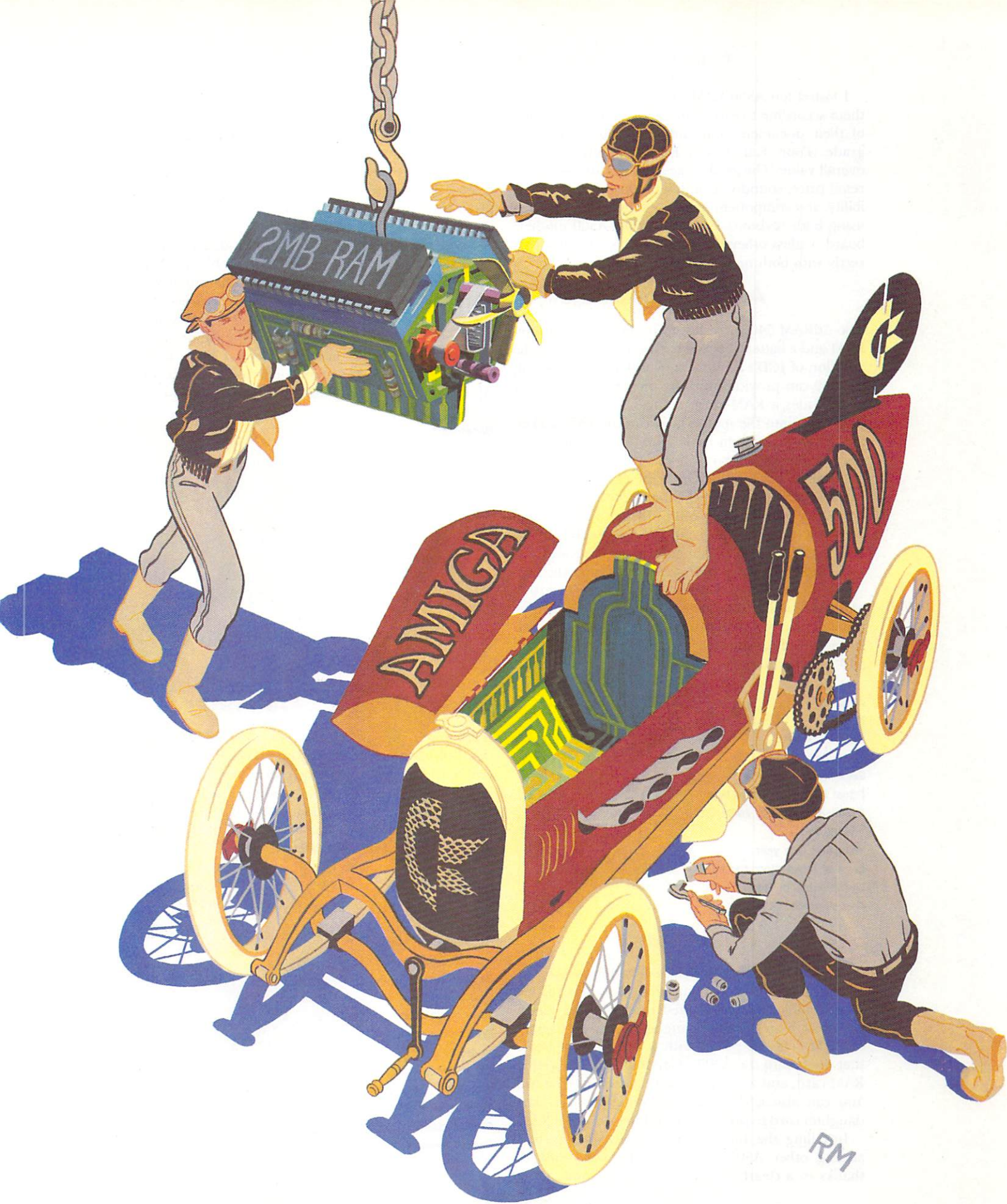
ALTHOUGH IT HAS always had the same software capabilities as the A2000, the A500's architecture makes it inherently more difficult to expand. For this reason, fewer types of hardware expansion devices have been available for the A500 than for the A2000. As a result, the Amiga's potential has often been just out of reach for A500 owners. For example, although the A500 can run CAD software, previous lack of a flicker-reduction device (such as MicroWay's flicker-Fixer for the A2000) has made working with CAD undesirable on the 500. Lately, however, third-party developers have discovered ways around many of the A500's design limitations.

You can now do almost anything with an Amiga 500 that you can with a 2000. You can attach super high-capacity storage devices. You can show interlaced displays without flicker. You can run MS-DOS software. You can add an accelerator to speed up applications, and you can expand memory to the full 9MB that the A500's (and A2000's) architecture can address. Finally, with the addition of an expansion box containing Zorro-2 and IBM-compatible slots, you can add cards that were designed to work only with the A2000 and, theoretically at least, match all the capabilities of the 2000, save for those options that require the video slot.

In this three-part series, we will explore the ways in which you can add on to your A500. We'll determine which are the most convenient methods for expansion and which leave you the best options for possible future additions. We'll also expose any limitations hidden in promised end-all solutions. In the final installment of the series, we'll assemble the "ultimate" A500 hot rod—a fully-expanded machine with our recommended components for high-power use.

We've limited Part 1 of the series to memory-only expansion devices. Although many manufacturers now supply RAM sockets in their A500 hard-drive models, we will save discussion of those units for Part 2 of the series, in which we'll focus on hard-disk systems. Finally, in Part 3, we'll evaluate accelerators that speed up operations, card cages that accommodate A2000-style cards, and some miscellaneous peripherals that provide specific enhancements. □

—Barbara Gefvert



I tested ten A500 RAM expansion devices, rating them according to ease of installation and the quality of their documentation and assigning each one a grade (Poor, Fair, Good, Excellent, Superior) for overall value. The grade takes into consideration the retail price, soundness of design, hardware compatibility, and component quality. I tested all the boards using both revisions 5 and 6A of the A500 motherboard. Unless otherwise stated, all boards work correctly with both motherboard revisions.

AdRAM 540

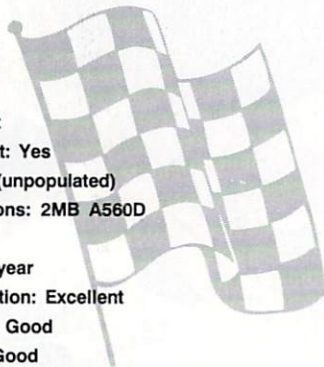
The AdRAM 540 provides up to 4MB of expansion RAM and a battery-backed hardware clock. With the addition of ICD's A560D piggyback daughterboard, the 540 can provide up to six megabytes. The basic kit includes a RAM card, a small secondary board that plugs into the motherboard's Gary chip socket, and a ten-pin ribbon cable. For the most part, the documentation is clear.

Installation is simple: Open the case, relocate the A500's Gary chip to a socket on the secondary card, and then connect the cards with the ribbon cable. Your A500 can recognize most of the new RAM, and IDC provides a program to add to your startup-sequence file that lets your system recognize the rest.

The AdRAM 540 is well-designed, easy to install and works as it should. Even if you're not thrilled by the slim 90-day warranty on the chips (the board itself is warranted for one year) you will find the AdRAM 540 a good choice for a serious RAM upgrade.

AdRAM 540
ICD

Capacity: 4MB
Type: A501 slot
Super Agnus kit: Yes
Price: \$159.95 (unpopulated)
Expansion options: 2MB A560D (\$259.95)
Warranty: One year
Ease of Installation: Excellent
Documentation: Good
Overall value: Good



Baseboard

Baseboard is another device designed for those who need a muscle-beach RAM upgrade. Like the AdRAM 540, it adds a battery-backed clock and, in combination with an optional daughter card, up to 6MB of RAM. The kit comes with a small circuit board that plugs into the A500's Gary chip socket, a 4MB RAM card, and a 20-pin cable that connects the two. You can also add Expansion Systems' Overboard daughter card to provide an additional 2MB of RAM.

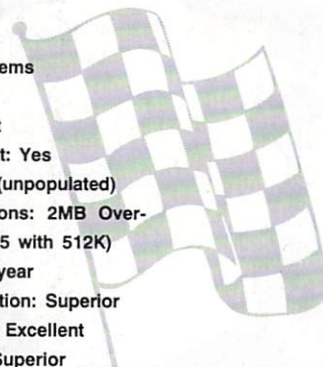
Installing the Baseboard is more complex than adding other A501 cards, but no more difficult, thanks to a clearly written, detailed manual. Open

your A500's case, remove the Gary chip and replace it with the circuit board, insert the RAM card into the underside A501 connector, and then attach the 20-pin cable between the cards. Depending on which Agnus chip your A500 uses, you will also need to reset a few jumper plugs on both cards and add a program to your startup-sequence that configures the boards once your A500 boots.

The Baseboard RAM card is a high-quality, four-layer card that should help eliminate problems when you attempt to mix RAM chips with different access speeds (or chips from different manufacturers) on the same card. Although the clock battery is not rechargeable, you can replace it without soldering.

If you want more than the essential 512K RAM upgrade for your A501 slot, or if you need Super Agnus support, the Baseboard system is the way to go.

Baseboard
Expansion Systems
Capacity: 4MB
Type: A501 slot
Super Agnus kit: Yes
Price: \$159.95 (unpopulated)
Expansion options: 2MB Overboard (\$139.95 with 512K)
Warranty: One year
Ease of Installation: Superior
Documentation: Excellent
Overall value: Superior



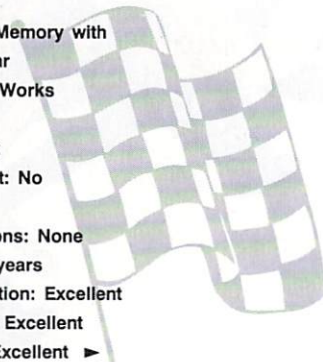
Half-Megabyte Memory With Clock-Calendar

A spitting image of Commodore's A501 RAM card, this full-size board comes with 512K RAM on 16 (256K × 1 bit) chips and a clock, all housed in a sturdy metal case. The clock is powered by a 3-cell, 3.6-volt NiCad battery. Both the board and its components are constructed of high-quality materials that should provide years of dependable operation.

Documentation consists of a small booklet with good instructions, and the two-year parts-and-labor warranty is a plus. Looks like a solid value.

Half-Megabyte Memory with
Clock-Calendar

Skyles Electric Works
Capacity: 512K
Type: A501 slot
Super Agnus kit: No
Price: \$79.95
Expansion options: None
Warranty: Two years
Ease of Installation: Excellent
Documentation: Excellent
Overall value: Excellent ►



3 THREE NEW PRODUCTS FROM ICD

Flicker Free Video™

With *Flicker Free Video* (FFV) and a standard VGA or multi-frequency monitor, any Amiga® 500, 1000, or 2000 computer can produce a high quality display, free of interlace flicker and visible scan lines. Installation requires no soldering or advanced technical knowledge and frees the video slot in Amiga 2000 computers for other uses. *FFV* is compatible with all software, works in low and high resolutions interlaced or not, and has no genlock conflicts. *FFV* uses a multi-layer circuit board and surface-mounted components, packing a lot of power into a very small space. Both PAL and NTSC are automatically recognized and fully supported. Full overscan is supported, not just a limited overscan. Three megabits of random access memory are used to ensure compatibility with overscan screens as large as the Amiga can produce.

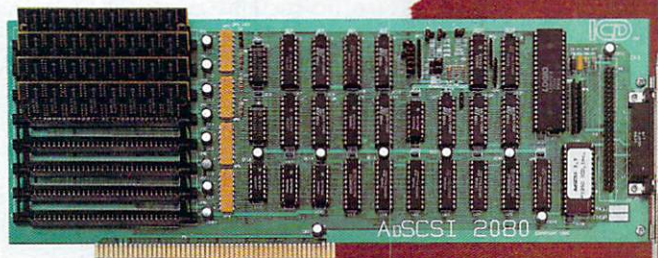
AdSpeed™

ICD expands its line of innovative enhancement products for the Amiga with the introduction of *AdSpeed*, a full featured 14.3 MHz 68000 accelerator for *all* 68000-based Amiga computers. *AdSpeed* differs from other accelerators by using an intelligent 16K static RAM cache to allow zero wait state execution of many operations at twice the regular speed. *All* programs will show improvement. *AdSpeed* will make your Amiga run faster than any 68000 or 68020 accelerator without on-board RAM. *AdSpeed* works with all 68000 based Amiga computers, including the 500, 1000, and 2000. Installation is simple and requires no soldering. *AdSpeed* has a software selectable true 7.16 MHz 68000 mode for 100% compatibility — your computer will run as if the stock CPU was installed. 32K of high speed static RAM is used for 16K of data/instruction cache and 16K of cache tag memory. A full read and write-through cache provides maximum speed.



AdSCSI™ 2080

The fastest, most versatile SCSI host adapter (hard drive interface) available for the Amiga 2000 now comes in a new configuration. *AdSCSI 2080* is not DMA, but its clean design and advanced caching driver provide greater throughput than any available DMA interface. All the features you want are included at no additional charge: autoboot from Fast File System partitions, Commodore® SCSI Direct and Rigid Disk Block conformance for no mountlist editing and compatibility with third party SCSI devices, and the most advanced removable media support available, including automatic DiskChange and no partitioning restrictions. *AdSCSI 2080* also includes sockets for adding two, four, six, or eight megabytes of RAM using 1 megabyte SIMMs. If expansion slots are in high demand, then this card could be your answer.



1220 Rock Street
Rockford, IL 61101
(815) 968-2228 Information
(800) 373-7700 Orders only
(815) 968-6888 FAX

Flicker Free Video, *AdSpeed*, and *AdSCSI 2080* join ICD's existing and growing line of power peripherals and enhancements for Amiga computers. Our experience and expertise allow us to give you the products and support you deserve. From beginning to end, every possible aspect of product development and production is handled in-house. We design all the hardware, lay out all the circuit boards, and write all the software. We assemble and test our products in our own facility, providing us with an unmatched level of control over the finished product. It is never out of our hands. These are more examples of the advantages you get from ICD. The best product. At the best price. With the best support. No compromises.

Flicker Free Video, FFV, AdSpeed and AdSCSI are trademarks of ICD, Inc. Commodore is a registered trademark of Commodore Electronics Limited. Amiga is a registered trademark of Commodore-Amiga, Inc.

Circle 234 on Reader Service card.

M501-s

The M501-s provides 512K RAM expansion and a battery-backed clock. The small 4.3 × 3.5-inch board is similar to Commodore's A501 memory board, but the M501-s also provides a miniature slide switch that lets you disable the board for the benefit of ill-behaved games and other programs that balk at the sight of RAM expansion. The 3-volt Lithium clock battery has a life expectancy of three or more years.

I found the installation instructions accurate and clearly written. Despite its low price, this board uses quality components throughout. A bargain for those who need a quick 512K RAM upgrade, the M501-s is available only through Amiga dealers.

M501-s

Microbotics

Capacity: 512K

Type: A501 slot

Super Agnus kit: No

Price: \$80.95

Expansion options: None

Warranty: One year

Ease of installation: Excellent

Documentation: Good

Overall value: Good



Micromegs

Micromegs wins the prize for the most compact RAM expansion card. The tiny 2 × 3.25-inch board provides 512K of RAM—using only four CMOS (4 bit × 256K) chips—and a clock, whose 3-volt Lithium battery is soldered in place. A toggle switch allows you to disable the card without removing it from the system.

Terse instructions cover the do's and don'ts of installation, but do not fully explain the card's features. Consider this inexpensive, low-power board if you have already installed enough extras to place a strain on your A500's power supply.

Micromegs

MAST

Capacity: 512K

Type: A501 slot

Super Agnus kit: No

Price: \$69

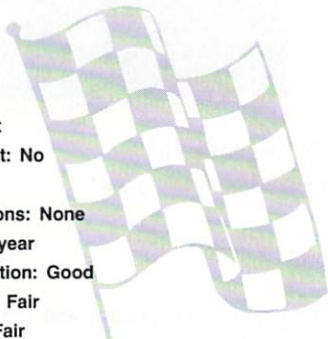
Expansion options: None

Warranty: One year

Ease of installation: Good

Documentation: Fair

Overall value: Fair



Minimegs

If you want to add 2MB of true fast RAM to your system, you won't find a simpler solution than Minimegs. MAST provides a pure and simple solution for those who don't mind giving up their CPU slot for memory expansion; the unit provides no pass-through bus extension. The module comes with up to 2MB of SIP (Single Inline Package) RAM chips soldered onto a metal-encased board. Simply remove the board from its wrappings, plug it into the CPU expansion slot, and turn on your A500. Considering the task at hand, the documentation is adequate.

Minimegs

MAST

Capacity: 2MB

Type: CPU slot

Super Agnus kit: No

Price: \$269 (sold fully populated only)

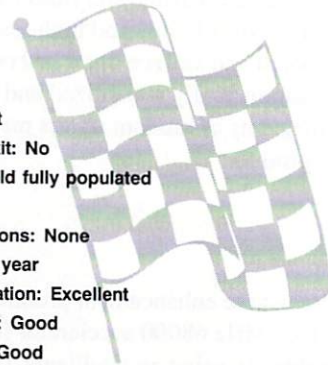
Expansion options: None

Warranty: One year

Ease of installation: Excellent

Documentation: Good

Overall value: Good



RamWorks 500

RamWorks 500 comes with 16 (256K × 1 bit) RAM chips that provide 512K of RAM and a 3.6-volt NiCad battery-driven clock. The RamWorks 500 uses all high-quality components and comes with a well-written, illustrated manual that provides clear, step-by-step instructions. The company offers a whopping five-year warranty. My pick of the 512K A501 litter.

RamWorks 500

Applied Engineering

Capacity: 512K

Type: A501 slot

Super Agnus kit: No

Price: \$79

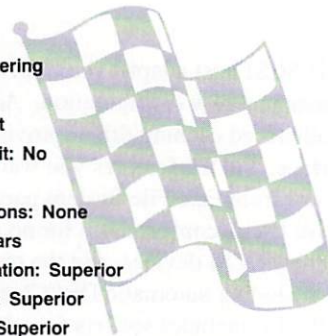
Expansion options: None

Warranty: 5 years

Ease of installation: Superior

Documentation: Superior

Overall value: Superior



RC-500

The RC-500, a two-layer board, uses four (256K × 4 bit) RAM chips to supply 512K of RAM. A small toggle switch allows you to disable the board if necessary. ►

It's that time again.....

dataTAXTM

Tax Preparation and Planning Tool

Form

1040 U.S. Individual Income Tax Return

Department of the Treasury—Internal Revenue Service

For the year Jan.—Dec. 31, 19 , or other tax year beginning , 19 , ending

Your first name and initial Last name

(If a P.O. box, see page 7 of Instructions.) address, see page 7.)

- * Scrollable on screen lookalike forms and schedules
- * Line by Line Data Entry Prompts
- * On Screen IRS Instructions
- * Prints Government Approved Lookalike Tax Forms on Plain Printer Paper.
- * Prints Scanned images of Form 1040
- * Automatically Calculates Deductions and Refunds
- * Itemizes and creates overflow forms
- * Override any cell to test "what-if" tax strategies
- * Add Notes to expand information cells
- * Pop up Calculator with cut & paste
- * Load and save multiple tax returns
- * Work with 2 tax returns at the same time

V5.0 includes

- * Form 1040 and 1040a, Schedules A, B, C, D, D1, E, F, R, SE, 2106, 2441, 3903, 8606, 4562, 8615, 4868
* Plus **ELECTRONIC Filing support built in!**
No Extra modules to buy or learn.

Why Wait? Get your refund in 2 to 3 weeks!

Department of the Treasury - Internal Revenue Service

1040 U.S. Individual Income Tax Return 1989

Label
Use IRS label
Otherwise
please print
on type.

LABELED HERE

Your first name and initial, last name
Mr. A Taxpayer
Spouse's first name and initial, last name
Present home address
City, state, P.O. box and ZIP code

Your Social
Security Number
Spouse's Social
Security Number

Presidential
Election Campaign

Do you want \$1 to go to this fund?
Does your spouse want \$1 there?

☐ Yes ☐ No
☐ Yes ☐ No

Filing
Status

1 ☒ Single
2 ☐ Married filing joint return
3 ☐ Married filing separate Spouse
4 ☐ Head of household Child's Name
enter an 'X' if Yes

| Form 1040 Schedule A - Itemized Deductions | | Schedule A - Itemized Deductions | |
|--|--|----------------------------------|------|
| Medical and Dental Expenses | 1a Prescription medicines and drugs (including doctors' fees) | 1a | 0 |
| | b Other | | |
| | 2 Add lines 1a and 1b | 1b | 0.00 |
| | 3 Enter 7.5% of 1948 line 32 | 3 | 0.00 |
| | 4 Total medical and dental | 4 | 0.00 |
| Taxes You Paid | 5 State & local income taxes | 5 | 0.00 |
| | 6 Real estate taxes | 6 | |
| | 7 Other taxes | 7 | |
| | 8 Add lines 5 to 7 Total taxes | 8 | 0.00 |
| Interest You Paid | 9a Deductible home mortgage interest paid to financial institution | 9a | |
| | b Deductible home mortgage interest paid to individual | | |
| | 10 Deductible points | 10 | |
| | 11 Deductible investment interest | 11 | |
| | 12a Personal interest | 12a | |
| | b Enter 28% of line 12a | 12b | 0.00 |
| | 13 Total interest | 13 | 0.00 |
| Gifts To Charity | Calculator | | |
| | 14 | 14 | |
| | 15 | 15 | |
| Casual | 16 | 16 | |
| Moving | 17 | 17 | 0.00 |
| | 18 | 18 | |
| Job | 19 | 19 | 0.00 |
| | 20 Unreimbursed employee expenses (job) | 20 | |

Only \$75 Annual Updates \$29

(plus \$5 for shipping and handling)

See your Amiga dealer or **call 1-800-387-1942**

Datamax Research corp 269 Portage Road, Box 1147 Lewiston NY 14092 (416) 250-7424

Tax Break users - we have changed our name to dataTAX. Call 416-250-7424 or write to order your update.

Canadian Version also available \$59 (cdn) Updates \$29. Includes T1, Schedules 1-7, T1C, RRRP, T4, T5, Business Income, Child Care, Rental, MinTax, CapGains and more! All provinces and territories plus Quebec provincial forms. Add 4\$ shipping and handling and 7% GST. dataTAX is also available for PC and compatible computers. dataTAX is a trademark of Datamax Research

Clock power is provided by a rechargeable 3-volt battery. Documentation consists of a small, ten-page booklet that contains everything you need to know about the board.

RC-500

Konyo International

Capacity: 512K

Type: A501 slot

Super Agnus kit: No

Price: \$89

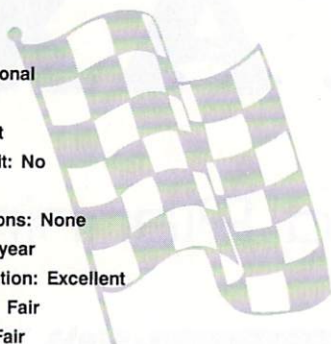
Expansion options: None

Warranty: One year

Ease of installation: Excellent

Documentation: Fair

Overall value: Fair



SIN500-2

The SIN500-2 RAM card replaces the 68000 CPU with an internal RAM card that can add 2MB of memory to your system without tying up your CPU or A501 slots. The handsome, seven-inch-square board comes with its own 68000 CPU and 16 sockets in which you can mount up to 2MB of true fast (256K × 4 bit) RAM. The sheaf of instructions provides a good step-by-step tutorial you will need to follow in order to install and test the card—although installation is relatively simple. Open the case, remove the existing CPU chip, insert the board, install a pair

of nylon standoffs to hold the card in place, and then reassemble the A500.

If you are concerned about the SIN500-2 overloading your A500's power supply, the company has thoughtfully provided a way to attach an optional DC power supply that can power the board directly.

Spirit Technology also provides a program to check your new RAM chips for flaws. I can attest that the program works as advertised, and that the company does not test each board before shipping it. When I ran the test program, it pointed to a pair of bad RAM chips. Upon investigation, I found both problems were caused by pins not properly inserted in their socket holes. Nevertheless, the SIN500-2 is a well-designed board that deserves your attention. If you prefer an internal RAM upgrade, this board offers possibilities.

SIN500-2

Spirit Technology

Capacity: 2MB

Type: Internal

Super Agnus kit: No

Price: \$199 (unpopulated)

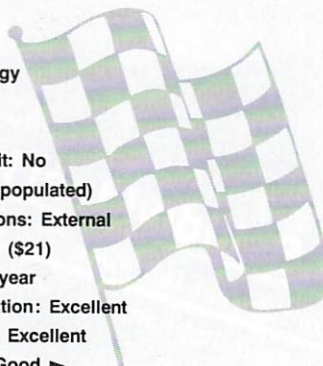
Expansion options: External power supply (\$21)

Warranty: One year

Ease of installation: Excellent

Documentation: Excellent

Overall value: Good ►



Are You Going Fast?

WHEN READING ABOUT memory-expansion devices, you've probably encountered the terms "fast," "slow-fast," and "slow" or "chip" RAM. Confusing? Yes. But if you care about system performance, it helps to know the difference before you invest in a new RAM card.

Both the Amiga's 68000 CPU and the custom animation chip (Agnus) can generate RAM addresses, which they use to access the memory in your system. The CPU can access all RAM in the computer, while the Agnus chip can access only a designated portion (512K or 1MB) of the total RAM available. Fast RAM is memory that can operate at the same speed as the CPU. You can install this type of memory only in designated areas of the CPU's address space that have been set aside for the CPU's exclusive use. Slow RAM and so-called slow-fast RAM can be accessed by both the Agnus chip and the CPU.

Because it would be a disaster if both chips were allowed to access the same RAM address simultaneously, there are times when performance-robbing "wait states" must be inserted in the timing cycle to keep the two chips from setting a collision course. Regardless of what some manufacturers claim, RAM chips installed in the underside A501 slot provide only slow-fast RAM for the system. The CPU cannot access it as high-speed fast RAM. If you want a true fast-RAM upgrade, you need to purchase a card that attaches to the A500's CPU expansion connector, or an internal card that plugs directly into the CPU socket.

REMEMBERING AGNUS

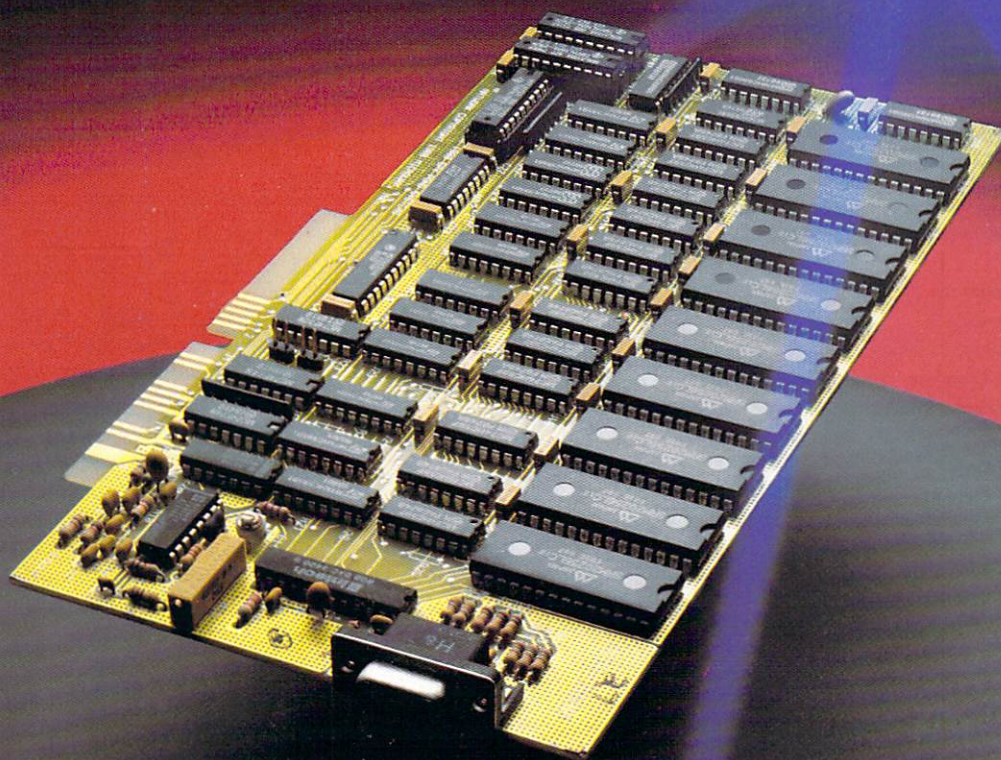
Some RAM board manufacturers provide a kit that allows users of late-model A500s who have installed a Super Agnus chip to perform an advanced installation

procedure that assigns a portion of the new memory as chip RAM. This upgrade boosts the A500's chip RAM up to its maximum capacity of one megabyte, and, in the process of doing so, allows you to perform at top capacity with graphics-intensive applications.

You know your A500 has a Super Agnus chip if the part number stamped on its ceramic case is 8372 or 8372A. If the number stamped on the chip is 8370 or 8371, you have a standard Agnus chip and need to buy and insert a Super Agnus chip before you can proceed with the advanced installation, which is no walk in the park. It involves minor soldering skills and requires cutting a trace path on your A500's motherboard. If you have never tackled a job like this, have your local Amiga dealer perform the upgrade for you. □

—JW

AGA 2000 **The flickerFixer™**



AMIGA 3000 QUALITY IS ALREADY ON YOUR DESK WITH FLICKERFIXER

flickerFixer is the original advanced graphics adaptor that eliminates your Amiga 2000/2500's interlace flicker and visible scan lines. With processor upgrade kits, such as the GVP 3001, you can have the best performance and graphics available on a desktop. **flickerFixer** provides superior quality color graphics and text for such demanding applications as CAD/CAM, Desktop Presentation, Graphic Design, Animation, 3D Modeling, and Multimedia Video.

Compatibility: **flickerFixer** is plug compatible with the new Commodore 1950 Multiscan or any of the popular VGA or Multiscanning Monitors. It is also compatible with the Enhanced Chip Set and the new AmigaDOS 2.0.

New Options: Genlock Compatibility — allows simultaneous use with popular genlocks; **Denise Extender** — Our DEB 2000 board allows you to install **flickerFixer** without using your video slot.

Accolades include: **Best of 1988 Award**, Commodore Magazine; **#1 Reader's Choice Award**, AMIGAWORLD. **flickerFixer** is made in the USA and is FCC Class B approved.

flickerFixer fits into the Amiga video slot or the Microway Denise Extender, is fully compatible with all software, and does not modify the standard Amiga video signals. For more information, call Microway Sales at (508) 746-7341 or your Amiga Dealer.

Microway . . . Respected throughout the industry for high quality engineering, service and technical support.

Microway

World Leader in Amiga Graphic Enhancements

P.O. Box 79, Kingston, MA 02364 USA (508) 746-7341 USA FAX (508) 746-4678
32 High St., Kingston-Upon-Thames, U.K., 081-541-5466

flickerFixer and Microway are trademarks of Microway, Inc. Amiga is a registered trademark of Commodore.

SupraRam 500

The SupraRam 500 board provides 512K RAM (4 bit \times 256K) expansion and a battery-backed clock on a compact five-chip circuit board. A 3-volt battery provides up to three years of clock power. This high-quality board comes with a single sheet of clearly written instructions.

SupraRam 500

Supra Corp.

Capacity: 512K

Type: A501 slot

Super Agnus kit: No

Price: \$99.95

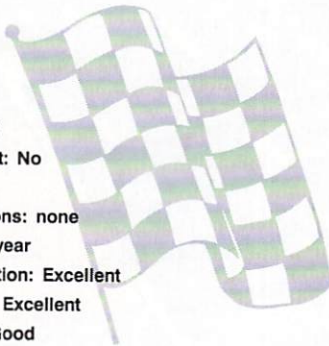
Expansion options: none

Warranty: One year

Ease of installation: Excellent

Documentation: Excellent

Overall value: Good



Switchable 512K RAM Expansion Board

This full-size A501-slot card comes with 512K RAM on 16 (256K \times 1 bit) chips in two models, one with and one without a battery-powered clock. The two-layer circuit board provides a toggle switch that allows you to disable the card.

Documentation consists of a single sheet of paper with installation instructions on one side and a schematic diagram of the board on the other. Although

the card is reasonably priced, its overall value is offset by the slim 90-day warranty period.

Switchable 512K RAM Expansion Board

Rio/Datel

Capacity: 512K

Type: A501 slot

Super Agnus kit: No

Price: \$49.99 (\$69.99 with clock)

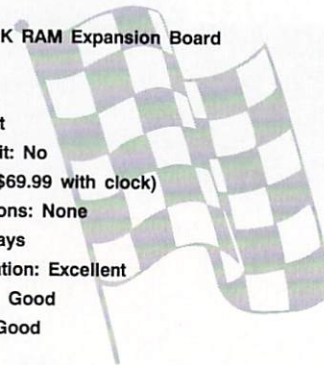
Expansion options: None

Warranty: 90 days

Ease of installation: Excellent

Documentation: Good

Overall value: Good



Consider your future expansion plans carefully before you buy a memory device for your A500. Keep in mind that when you add memory to your A501 slot, you give up the ability to use other cards (such as Pulsar's Power PC Board) that require the A501 connector. Also, when you add an external RAM board without a pass-through connector for the bus (such as Minimegs), you may give up much more, such as adding a hard drive or a box to hold A2000-style cards (unless they have pass-through bus ports).

If you don't already own a hard disk but plan to buy one shortly, you may want to put off a RAM-only purchase and consider adding both upgrades in one box. Join us next month for our second lap around the Ami 500 course, when we will look at various hard-drive options—both with and without memory. ■

Manufacturers' Addresses:

Applied Engineering

3210 Beltline Rd.

Dallas, TX 75234

214/241-6060

Expansion Systems

44862 Osgood Rd.

Fremont, CA 94539

415/656-2890

ICD

1220 Rock St.

Rockford, IL 61101

815/968-2228

800/373-7700

Konyo International

1073 North Batavia

Suite B

Orange, CA 92667

714/633-1026

800/356-5178

MAST

1395 Greg St.

Sparks, NV 89431

702/359-0444

Microbotics

1251 American Pkwy.

Richardson, TX 75081

214/437-5330

RIO/Datel

3430 E. Tropicana Ave.

Unit # 65

Las Vegas, NV 89821

702/454-7700

Skyles Electric Works

231-E South Whisman Rd.

Mountain View, CA 94041

415/965-1735

800/227-9998

Spirit Technology

220 West 2950 South

Salt Lake City, UT 84115

801/485-4233

800/433-7572

Supra Corp.

1133 Commercial Way

Albany, OR 97321

503/967-9075

800/727-8772

A NEW WORLD OF POWER

COMPLETE
HARDWARE/SOFTWARE
SYSTEM FOR ONLY

\$69.99

THE TOTAL
DISK
BACKUP
SOLUTION!!

... "It's fast, easy
to use and very,
very efficient."
AMIGA FORMAT

THE **SYNCR0 EXPRESS II**

NOW YOU CAN BACK-UP ANY DISK IN AROUND 50 SECONDS!!

- YES IT'S TRUE!! SYNCR0 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 Drive Control Program couldn't be simpler!! Select Number of Tracks, and that's it!! Don't be mislead by outrageous claims for "Nibbler" programs. This system can guarantee success by using the very Hardware/Software techniques that made the original!!

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 duplicators.

POWER BY DESIGN

- Syncro Express is designed in Europe where "Digital Image Copying" is the present sensation. This device, with it's custom chip, goes even further by offering a complete system for under \$70!!
- Manufactured in our European facility using the latest Surface Mount Techniques - Syncro Express is warranted for 6 months against manufacturing defects.

THE LATEST CUSTOM LSI CHIP TECHNOLOGY

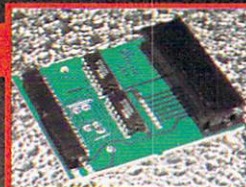
Syncro Express comes fitted with it's own on-board Custom LSI Chip giving it the power to transfer an MFM image of the original disk directly to your blank disk - quickly, simply & without user knowledge. So it doesn't matter what kind of data is there or whether the disk is "protected" - Syncro Express will make an identical "Clone" of your original without fuss. Available for A500/1000/2000/3000 please state which computer when ordering. One external drive is required (except Special A2000 Internal Version - see below).



SPECIAL A2000 VERSION NOW AVAILABLE!

A special version of Syncro Express hardware for the A2000 Amiga with two internal disk drives is available. Fits internally so you don't need the external drive that the Standard version requires. Very easy to fit.

SPECIAL A2000 INTERNAL VERSION ONLY \$89.00



HOW TO GET YOUR SYNCR0 EXPRESS II
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 SYNCR0 EXPRESS II 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 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)



LATEST EUROPEAN RELEASES

Coast to Coast Technologies brings the latest UK and European titles direct from their European distribution facility.



We can deliver brand new titles within days of their European release . . . if it's available in Europe, we have it!

MAJOR NEW RELEASES

Robocop 2 Ocean \$39.99



| | | |
|---------------------|-------|---------|
| Billy the Kid | Ocean | \$39.99 |
| Battle Command | Ocean | \$39.99 |
| Pang | Ocean | \$39.99 |
| Midnight Resistance | Ocean | \$39.99 |
| Puzznic | Ocean | \$39.99 |
| Night Breed | Ocean | \$39.99 |
| Epic | Ocean | \$39.99 |
| F29 Retaliator | Ocean | \$39.99 |
| N.A.R.C. | Ocean | \$39.99 |



Total Recall Ocean \$39.99

| | | |
|----------------------|------------|---------|
| Speedball 2 | Imageworks | \$39.99 |
| Cadaver | Imageworks | \$39.99 |
| Back to the Future 2 | Imageworks | \$39.99 |

| | | |
|-------------------|--------------|---------|
| UMS 2 | Rainbird | \$44.99 |
| Rick Dangerous 2 | Rainbird | \$39.99 |
| E Swat | US Gold | \$39.99 |
| Line of Fire | US Gold | \$39.99 |
| Operation Harrier | US Gold | \$39.99 |
| U.N. Squadron | US Gold | \$39.99 |
| Atomic Robokid | Activision | \$39.99 |
| Dragon Breed | Activision | \$39.99 |
| Spindizzy 2 | Activision | \$39.99 |
| Z Out | Rainbow Arts | \$34.99 |
| Turrican | Rainbow Arts | \$39.99 |
| Tournament Golf | Elite | \$39.99 |

Strider 2 US Gold \$39.99



| | | |
|----------------------|-----------|---------|
| Gremlins 2 | Elite | \$39.99 |
| Wonderland | Virgin | \$44.99 |
| Golden Axe | Virgin | \$39.99 |
| Judge Dredd | Virgin | \$34.99 |
| The Spy Who Loved Me | Domark | \$39.99 |
| Badlands | Domark | \$34.99 |
| Saint Dragon | Storm | \$39.99 |
| James Pond | Millenium | \$39.99 |
| Betrayal | Rainbird | \$44.99 |

The Hunt for Red October Grandslam \$39.99



| | | |
|--------------------|-------------|---------|
| Paradroid 90 | Hewson | \$39.99 |
| Amazing Spiderman | Empire | \$39.99 |
| Simulcra | Firebird | \$39.99 |
| Monty Python | Virgin | \$39.99 |
| Operation Stealth | US Gold | \$39.99 |
| Mean Streets | US Gold | \$44.99 |
| Time Machine | Vivid Image | \$39.99 |
| Team Yankee | Empire | \$44.99 |
| Gold of the Aztecs | US Gold | \$39.99 |
| Power Monger | E.A. | \$39.99 |
| Voodoo Nightmare | Palace | \$39.99 |
| Torvak the Warrior | Core | \$39.99 |
| Deathtrap | Anco | \$39.99 |



Chase HQ 2 Ocean \$39.99

AMAZING BUDGET TITLES TOO!
FROM ONLY \$9.99

THE ABOVE TITLES ARE ONLY REPRESENTATIVE OF THE MANY U.K./EUROPEAN SOFTWARE RELEASES.
NEW TITLES ARE RELEASED DAILY - CALL 407-767-0779 FOR LATEST RELEASE LIST

**U.K.
MAGAZINES**
Subscribe and save
Call 407-767-0779



| | |
|--------------------------|-----|
| Ace | \$5 |
| Amiga Action | \$5 |
| Amiga Computing | \$8 |
| Amiga Format (with disk) | \$8 |
| Amiga User International | \$8 |
| Raze | \$5 |
| The One | \$5 |

HOW TO GET YOUR ORDER FAST...
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 PURCHASE 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 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 SHIPPING AND HANDLING TO YOUR TOTAL
ORDER (\$10.00 CANADA/MEXICO)
WE SHIP ALL GOODS 2nd DAY AIR UPS

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 40 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 INQUISITIVE!

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





24

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

By Joel Hagen

HAM Compositing

Photo-compositing in HAM mode can help artists
increase their mastery of computer painting.

AS WE SAW in the November '90 installment of "Accent," photo compositing opens up a whole world of interesting and often playful possibilities. While that column focused on photo-compositing methods in DeluxePaint III (Electronic Arts), this month I will explore HAM photo-compositing techniques using Digi-Paint 3 and Digi-View (both NewTek), and PIXmate (Progressive Peripherals). Deluxe PhotoLab (Electronic Arts) also possesses excellent HAM compositing tools, as does Photon Paint 2.0 (MicroIllusions).

These techniques apply to digitized material as well as computer paintings. If you are not a skilled computer artist, you may find compositing to be of particular interest. I will emphasize methods that modify the digitized material in painterly ways. The end result is intended to be more an artistic image than an illusion of reality, as was the case in November.

CHOOSING THE RIGHT STUFF

I decided on a space theme for the image that would become the illustration accompanying this column. Beginning with a NASA photo of an Atlas lift-off and another of a Mercury astronaut, I digitized both black-and-white images with Digi-View—setting Sharpness down to its lowest point and turning Dither off. This softened the images, but, more importantly, it broke the detail up into solid value areas. This kind of simplification of detail is one of the stylistic strategies I frequently employ in the computer medium. I saved the Atlas picture in 16 colors to preserve all the transitions in the flame and smoke.

The astronaut was to be the focus of the finished piece. I wanted him to stand out from the rest of the image with strong contrast in his shadow areas. My

first step was to select 32-color mode from Digi-View's Control panel and redisplay the image. Because it had been a red scan, the image now became a 16-color red picture. Switching to the Palette controls, I reduced the colors to eight, forcing a further simplification of the image.

I find it most effective to do this reduction at the digitizing stage because calculations are based on original 24-bit data. Once you save the image, that depth of image information is no longer available. It is still possible to reduce the number of colors afterwards with PIXmate, DeluxePaint, or other programs, but the delineated value areas will differ from those Digi-View can calculate before the 24-bit data is lost. This can prove important with such details as eyes. I redisplayed and then saved the eight-color astronaut image.

I ran both images through PIXmate to color and further process them before compositing and touch-up. Loading the astronaut, I performed a Sort Colors operation from the menu and then brought up the Palette controls. I made the high-end reds yellow-orange for a highlight effect. Wishing to simplify the detail even more, I selected an AVG averaging operation from the Image Process controls. This preserved the palette but reduced detail to make the image bolder. I saved this image and loaded the Atlas picture. Using Palette, I gave it a fiery range of colors, with pure saturated yellow at the high end, and orange-red at the low end. Knowing that the astronaut was on the right side of his image area, I went

to the Display controls to perform a horizontal flip of the Atlas image to position the rocket and gantry on the left side of the screen. Saving this image, I quit PIXmate.

In Digi-Paint, I loaded the Atlas image first, electing to load its palette as well. Hitting the j key to bring up the spare screen, I loaded the astronaut there, keeping the Atlas base palette. Both images loaded cleanly with few HAM artifacts, even though I had forced them to share the same base palette for the sake of clean compositing operations. I was now ready to begin experimenting with different effects.

The first and most obvious choice was to try a simple merging of the two screens. (You will find Merge under the Swap submenu of the Picture menu.) Merge operates with the entire spare screen and follows the mode and transparency settings for its effect. With Normal mode and no transparency, the swap screen simply replaces the current screen. I tried 50% transparency and merged the screens. The effect was cluttered. The concentration of detail on the left side of the astronaut image became confusing when merged with the gantry detail.

BACK TO THE DRAWING BOARD

I experimented with other modes, still at 50% transparency. Colorize mode produced interesting results: The hot yellows of the Atlas image colored the shadow areas of the astronaut while preserving detail. There was no focal point, however, and again the image was too cluttered. On the other hand, the And mode worked quite well: Wonderful abstract shapes emerged on the left of a strong composition. I saved this image as reference for a future acrylic painting.



The finished HAM image above is the result of manipulating and then combining the two original black-and-white images—the Mercury astronaut (foreground right) and the Atlas lift-off (background left)—and then further processing the composite image.

For this column, however, I continued to experiment with the original concept for the illustration. I wanted to preserve the image of the Atlas lift-off in the final composite. I selected Digi-Paint's Filled Freehand tool and a single-pixel brush. Working on the astronaut image, I kept the Atlas on the swap screen. I set the Hotspot transparency slider all the way up and the Edge slider at the halfway point. I then selected Rub-Through mode from the menu. (Rub-Through places part of the swap screen on the current image according to the tool, mode, and settings you have chosen.)

I carefully drew around the front of the helmet and pressure suit, across the bottom of the screen, up the left side, and back across the top. When the shape filled in, the Atlas had replaced the cluttered detail on the left, and the overall result looked pretty good to me. I drew quick shapes around a few areas I wanted to emphasize a bit more, bringing them more solidly into the composition. I then selected Darken mode and knocked the right side of the image back into shadow. In Colorize mode, I selected bright yellow and 50% transparency, and drew highlights on the helmet to pick up some yellow light.

Loading the image back into PIXmate,

I did a final average process on the HAM image—both to get rid of the artifacts and fringing that had crept in and to soften the look. As images always print darker than they appear on screen, I then loaded it into Digi-View's or Transfer 24's 4096+ mode and raised the brightness five notches before sending it to the editors.

Experiment with some of these methods as a starting point for your own illustrations. You can obtain wonderful results from any two random images you load for compositing. Remember also when using compositing techniques that after you have completed your "finished" picture, you can always load a new swap screen to continue your compositing efforts into still further realms of image exploration. ■

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.

Fax It with ARexx!

By Tim Grantham

BECAUSE AREXX SCRIPTS can talk to several programs at once, they can act as software coordinators, enabling programs to work together to perform an automated task. An illustration of ARexx's communication process is the example below, called fax.rexx.

Fax.rexx uses Handshake V2.20, Eric Haberfeller's fine shareware VT100/220 terminal emulator, and CompuServe's fax capabilities. Besides Handshake's ARexx support, fax.rexx takes advantage of Handshake's invisible mode: When invoked with the -n switch, Handshake loads and runs, but does not open a screen. In this mode, it can sit quietly in the background, acting as a serial communications server for any program that speaks ARexx.

ARexx and compatible application programs communicate through messages. When an ARexx program wishes to invoke a command or call a function in a supporting program, it must explicitly state the program with which it wants to talk. The line

address 'HANDSHAKE1'

for example, causes the ARexx interpreter to send all subsequent messages to the first running instance of the program Handshake. A message selecting a Handshake (or any program-specific) command does not require a reply message, but a message calling a Handshake function does need a reply.

When an ARexx program calls a Handshake function, the ARexx interpreter sends a message containing the function requested to the Handshake program, plus any additional data required by Handshake to execute the function. In fax.rexx, for example, the line

HS_STRING('+++ATZ'cr)

causes the ARexx interpreter to send a message instructing Handshake to transmit the string +++ATZ and a carriage return out of the serial port, exactly as though you had typed it from the keyboard. The line

r=HS_GETSTR('OK')

instructs Handshake to monitor the stream of characters coming over the modem for the string OK.

The previously issued command

HS_TIMEOUT 40

tells Handshake to look for the string for no more than 40 seconds. While Handshake is doing this, the ARexx interpreter suspends execution of the ARexx program. Without the time-out, the ARexx program might be suspended forever!

If Handshake finds the string before the allotted time expires, it returns a message that contains the matched string to the ARexx interpreter, which then assigns the string to the variable r and restarts the ARexx program.

If Handshake does not find the string before time runs out, it stops looking and sends a message back to the ARexx interpreter containing the string HSERR TIMEOUT. The ARexx interpreter also assigns that string to the variable r and restarts the ARexx program. It's up to the programmer to see whether the string was found.

The following lines provide an example of how an ARexx program mediates this dialog between the ARexx interpreter and Handshake:

```
cr='0d'x
HS_STRING('+++ATZ'cr)
r=HS_GETSTR('OK')
if r='OK' then
  HS_DIAL('CIS (2400)')
else do
  say "Couldn't reset modem. Quitting."
  exit 20
end
```

The first line assigns the carriage-return character to the variable cr, so you can include the character in a string. The second line tells Handshake to send the string +++ATZ, plus the carriage return. This causes Hayes command-compatible modems to reset. The second line tells Handshake to look for the string OK, which is issued by the modem upon completion of a reset. The next two lines instruct Handshake to dial the number for CompuServe, but only if it has

ORE WARS

Interplanetary ore excavation fleet commanders are a different breed. They've mastered military strategy. They're expert battle tacticians. But most of all they're cut-throat intergalactic capitalists looking for a quick buck.

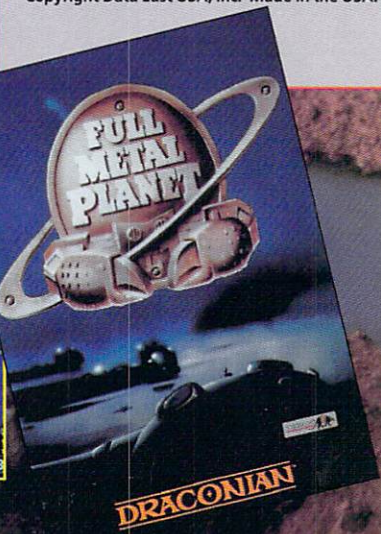
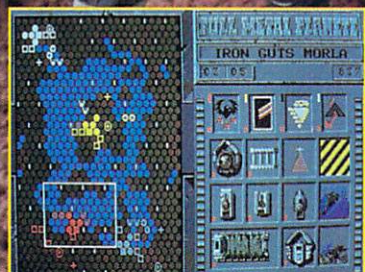
And no place offers bigger rewards than *FULL METAL PLANET*. Rich with precious ore and teeming with danger. At your disposal is a state-of-the-art excavating armada: Attack boats, barges, tanks, transporter crabs, and the unique "Weather Hen."

But you can bet your equally well equipped competitors will try to turn your mighty fleet into scrap metal the first chance they get.

- Intense strategy and military-simulation
- 1 to 4 players – human or computer
- Easy-to-use icon interface
- Ripping graphics and digitized sound
- Complete game-scenario control

DRACONIAN™

©1990 Infogrames. United States and Canadian Copyright Data East USA, Inc. Made in the USA.



Now available at your local software retailer for the Amiga and IBM PC and compatibles. Or contact Data East USA, Inc., 1850 Little Orchard St., San Jose, CA 95125. (408) 286-7074

Circle 233 on Reader Service card.

received the string OK before the timeout. Otherwise, the ARExx program assumes the modem couldn't reset properly, and it therefore exits.

In addition, fax.rexx uses the following Handshake functions and commands, provided specifically for ARExx programs:

Functions:

- HS_DIAL dials a number from the Handshake telephone list.
- HS_TRANSMIT starts transmission of a file.

Commands:

- HS_PROTOCOL sets the file-transfer type.
- HS_HANGUP tells the modem to hang up.
- HS_QUIT shuts down Handshake.

Other terminal emulators that support ARExx (e.g., Online!, ATalk III, and VLT) provide similar commands. You should be able to adapt fax.rexx to work with your own program quite easily.

To run fax.rexx, you must have started the ARExx resident program, Rexxmast, beforehand. Then, at the CLI, enter the following command:

rx fax.rexx filename phone_number subject : name

where filename is the name of the file containing the text of the message, and phone_number is the number of the destination fax machine. (Note: CompuServe requires the area code.) Subject : name consists of the message's subject heading and the addressee's name. You cannot use spaces in the filename or telephone number. While the subject and name argument can contain multiple words and spaces, the two elements must be separated by a colon.

For example, if fax.rexx resides in the REXX: logical device, the invocation could be:

rx fax myfax.txt 609-555-5555 Project estimate : Ms. Paula Manning, Director

If you forget the format, simply enter rx fax, and fax.rexx will prompt you for the required information. This method, however, prevents you from launching the program as a separate process via AmigaDOS's Run command. If Handshake is not already running, fax.rexx loads and runs it in invisible mode. If Handshake is running, fax.rexx leaves it running when fax.rexx exits.

Fax.rexx uses the communications settings contained in file s:handshake.parms to communicate with CompuServe (baud rate, number of stop bits, telephone number, and so forth). If you wish to use other settings, then these must be loaded from a parameters file specified when you first run Handshake, either from within fax.rexx or from the CLI.

If you would like to watch fax.rexx in action, run Handshake in its standard visible mode before running fax.rexx. After starting fax.rexx, switch to the Handshake screen to view the interaction among ARExx, Handshake, and CompuServe.

You can use fax.rexx as a framework to begin writing your own scripts. For starters, you could try improving this program so that it could accept fax filenames with spaces in them, or so it could let you know the cost of your fax.

Tim Grantham was formerly Editor of Transactor and is now a freelance writer. Write to him c/o AmigaWorld Editorial Dept., 80 Elm St., Peterborough, NH 03458.

Listing 1. This fax.rexx program automates faxing a text file via CompuServe and Handshake v. 2.0.

```
/* fax.rexx - faxes a text file via CompuServe, using
 * Handshake v2.20
 *
 * rx fax.rexx filename phone_number subject : name
 *
 * Be sure to insert your own CIS ID number and
 * password into the source code before you run this
 * program, and alter the argument to the HS_DIAL
 * function to the label you use for the CompuServe
 * telephone number.
 *
 * October 26, 1990, Copyright (c) 1990 Tim Grantham
 * Thanks, Bill Hawes! Thanks, Eric Haberfellner!
 */

ctrlc = '03'x
ctrlr = '0f'x
cr = '0d'x
running = 1

/* get the arguments from the command line */
parse arg filename telephone sub_name

if filename = "" then do
  say "Enter name of file to fax..."
  parse pull filename
end

if telephone = "" then do
  say "Enter phone number, with area code(s)..."
  parse pull telephone
end

if sub_name = "" then do
  say "Enter subject : name. As in..."
  say "Project estimate: Ms. Lois Lane, Director"
  parse pull sub_name
end

/* check to see if the fax text file exists */
if ~open(fax_text, filename, 'R') then do
  say "Couldn't access fax text file."
  exit 40
end

/* extract the subject and name */
length = index(sub_name,":")
subject = left(sub_name,length-1)
name = substr(sub_name,length+1)
name = strip(name,"B")

/* check if Handshake is running. If not, run it. */
address command
```




A NEW WIZARDRY

Ten years ago, Wizardry set the standards in FRP. Now, after two million copies have been sold and 25 international awards have been won, Bane of the Cosmic Forge raises and redefines those standards. This new Wizardry, the truest simulation ever of Fantasy Role Playing, will push your computer, your mind and your sense of adventure to their very limits.

True FRP Simulation!

Like a true game master, Bane of the Cosmic Forge rolls the dice, consults its charts and applies the rules. From the 400 items of armor and weaponry researched for authenticity – right down to their weights – to the realistic combat structure – incorporating Primary and Secondary attack – everything, absolutely everything, is calculated.

Full-Color, Animated Graphics!

You'll see swords swinging before your eyes; creatures of all shapes and forms will move before you; spells coming from your magician will swirl through the air. You'll walk under gargoyle-laden arches and watch candles flicker in their sconces.

Your PC's internal speaker will play all of these digitized sounds without any add-on hardware . . . swords swinging, monsters venting their anger and spells letting fly.

Uncompromising Variety!

- 11 Races
- 14 Professions with Ranks
- Dozens of Weaponry, Physical and Academia skills
- Multiple Fighting and Parry Modes
- Ranged, Primary and Secondary Weapons
- Six spellbooks, 462 spell combinations
- Multiple Armor Classes

Artificial Intelligence!

Find the ancient and cryptic dwellers who can aid you in your quest. Talk to them as you would your friends – in sentences. Only through the power of the latest in programming technology could the full dimensions of conversation this real be possible.

| | | | |
|------------------|------------------------|-----------------------------------|----------|
| THIEF 19 1 | F-HOBBIT THIEF 7 | RANK EXP MKS 28947 56 | HIMAYMAN |
| STR 6 | HP 32/32 | ARMORCLASS 10 <+0> | |
| INT 10 | | | |
| WIS 6 | | | |
| VIT 10 | STM 96% | | |
| DEX 13 | CMD 0% | | |
| SPD 11 | | | |
| PER 15 | GP 1638 | | |
| KAR 16 | CC 57/94 | | |
| | | CUTLASS 15 | |
| | | DARK | |
| | | LEATHER CUIRASS | |
| | | SUEDE PANTS | |
| | | BUSKINS | |
| | | STAVE/MISSLES | |
| | | COPPER KEY 3 | |

YOU GAINED 5 HIT POINTS!

Actual Screens from MS-DOS Version



Now Available for: MS-DOS, Amiga & Macintosh



P.O. Box 245, Ogdensburg, New York 13669
(315) 393-6633

To order: Visit a Dealer or call 1 (800) 447-1230

P O I N T E R S

```

do forever
  r = show(ports,'HANDSHAKE1')
  if r = 1 then break
  running = 0
  'handshake -n -p s:handshake.parms'
end

/* begin talking to Handshake */

address 'HANDSHAKE1'

HS_STRING('+++ATZ'cr)

r = HS_GETSTR('OK')

if r = 'OK' then
  HS_DIAL('CIS (2400)')
else do
  say "Couldn't reset modem. Quitting..."
  if running = 0 then HS_QUIT
  exit 20
end

HS_TIMEOUT 40

HS_STRING(ctrllc)

r = HS_GETSTR('ID:')

if r = 'ID:' then
  HS_STRING('12345,6789\my_password'cr)
else quit1("Couldn't connect to CIS properly.",)

r = HS_GETSTR('CompuServe')

if r = 'CompuServe' then
  HS_STRING(ctrllc'g mail'cr)
else quit1("Connected to CIS but couldn't log on.")

r = HS_GETSTR('Mail!')

if r = 'Mail!' then
  HS_STRING('upload'cr)
else quit2("Logged on but couldn't get to CIS Mail.")

r = HS_GETSTR('Protocol:')

if r = 'Protocol:' then
  HS_STRING('xmodem'cr)
else quit3("Couldn't initiate upload in CIS Mail.")

r = HS_GETSTR('Type:')

if r = 'Type:' then
  HS_STRING('ascii'cr)
else quit3("Began upload; couldn't pick protocol.")

r = HS_GETSTR('completed.')

if r = 'completed.' then do
  HS_PROTOCOL 'xmodem/crc'
  HS_TRANSMIT(filename)
end
else quit3("Picked protocol; file type pick failed.")

HS_STRING('send'cr)

/* If Handshake could recover from the upload quickly
* enough, the following ARexx code would be used
* instead of the line immediately preceding.
*
* r = HS_GETSTR('SEND!')
*
* if r = 'SEND!' then
*   HS_STRING('send'cr)
* else do
*   say "Fax text upload bombed out."
*   HS_STRING(ctrllc'bye'cr)
*   HS_HANGUP
*   if running = 0 then HS_QUIT
*   exit 20
* end
*/

r = HS_GETSTR('ID:')

if r = 'ID:' then
  HS_STRING('>fax 'telephone||cr)
else quit3("Uploaded fax text but couldn't Send it.")

r = HS_GETSTR('Subject:')

if r = 'Subject:' then
  HS_STRING(subject||cr)
else quit3("Uploaded fax text; couldn't address it.")

r = HS_GETSTR('Attention:')

if r = 'Attention:' then
  HS_STRING(name||cr)
else quit3("Send started; couldn't specify subject.")

r = HS_GETSTR('(Y or N)!!')

if r = '(Y or N)!!' then
  HS_STRING('y'cr)
else quit3("Send started; Attention: line failed.")

r = HS_GETSTR('Mail!')

if r = 'Mail!' then do
  HS_STRING('bye'cr)
  HS_HANGUP
  say "Fax transmitted!"
  if running = 0 then HS_QUIT
  exit 0
end
else quit2("Maybe success; no final 'Mail!' prompt.")

quit1:
  parse arg x
  say x
  HS_HANGUP
  if running = 0 then HS_QUIT
  exit 20
end

quit2:
  parse arg x
  say x
  HS_STRING('bye'cr)
  HS_HANGUP
  if running = 0 then HS_QUIT
  exit 20
end

quit3:
  parse arg x
  say x
  HS_STRING(ctrllc'bye'cr)
  HS_HANGUP
  if running = 0 then HS_QUIT
  exit 20
end

```


CHARTER OFFER

A source of technical information for the serious Amiga professional.

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 and advice 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 of a technical advisory board comprised 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. All at special Charter savings. Call 1-800-343-0728 or complete and return the savings form below—today!

To order, use this handy savings form.



Charter Savings Form

☒ **Yes!** Enter my one-year (6 issues, plus 6 invaluable disks) Charter Subscription to *The AmigaWorld Tech Journal* for just \$59.95. That's a special savings of \$29.75 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 _____

TJ291

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

For faster service, call toll-free
1-800-343-0728.



Video Disc Mastering

By Gene Brawn

THE FIRST TIME I considered producing a video disc, I thought the project would be a cinch. After all, isn't a video disc just a flat, round videotape? Wrong. Although the final production is assembled on videotape and then transferred to disc, the content and process are very different from the typical linear video production. As proof of this, try viewing an interactive disc from beginning to end: Scenes jump from subject to subject, scores of still frames whiz by unrecognizably, and strange sounds emerge from your speakers.

Obviously, an interactive video disc is more than your average TV show. Still a black art to many would-be producers, "voodoo video" is a complex medium that incorporates both hi-tech video and computer control. The following guidelines should demystify the process and give you a pretty clear idea of some of its complications.

VIDEO DISC FORMATS

Two formats dominate the video-disc marketplace. At 60 minutes per disc side, the popular CLV (Constant Linear Velocity) format is the consumer's choice

for simple, linear fare such as theatrical films and how-to shows. The CAV (Constant Angular Velocity) format, giving you 30 minutes per side, is reserved for interactive video productions.

CAV machines (and discs) come in four flavors, or "levels." In Level I, the simplest, the user navigates the video disc by entering choices from a handheld remote control. This format is limited by the simple set of controls included with consumer players. The typical Level II disc is designed for a more advanced industrial player with built-in computer control. It comes complete with a digital script embedded on the disc, and it is commonly singled out for simple educational and training tasks. Level III units rely on external computers to provide their instructions. Your Amiga is very good at generating menus, buttons, text blocks, and sounds. With it and the Level III player, you can make room on your video disc for more important subjects.

Still in its formative stages, Level IV includes all of the features of Level III, plus digital data encoded on the video disc that's accessible to an external computer. This eliminates the floppy or hard disk required by Level III hardware, and is ideal for point-of-sale systems.

PRODUCTION BASICS

Producing an interactive video disc is

normally a five-step process. First, you create the individual pieces (modules), using live and still video/photography, text, and audio. Next, write the interactive script or program that controls the presentation. Third, test the program and your interface. Fourth, assemble and record the master videotape that the manufacturer will use to create the "mother" video disc. Finally, prepare a document for the mastering facility that describes the final form of your disc. Keyed to time code, your script should indicate the first and last video frames, chapters, and still frames.

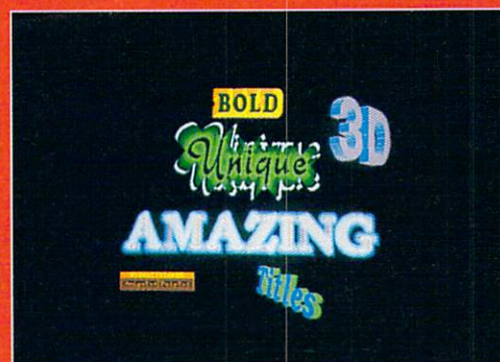
Regardless of the interactive level of your production, your master videotape must contain a few standardized elements. A few of the most common are listed below, but none of these are chiseled in stone; always check with your mastering facility before you finalize your plans. (For extensive discussions of requirements and terminology definitions, call 3M, Pioneer, ►



A New Dimension for Titling

Using **VideoTitr** 3D's simple to understand 3D text handles, titles can be spun, stretched, rotated, tilted, put into perspective, and much more. Add to this the 3D extrusion capabilities, huge number of special effects, and ability to use any standard Amiga font, and you have the ultimate information presentation system.

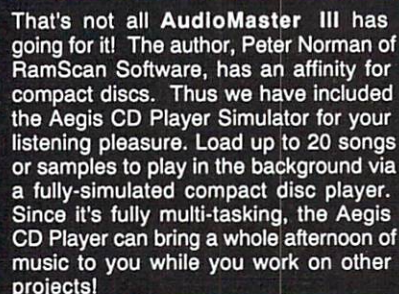
But **VideoTitler 3D** doesn't just create still images. Bring your text to life with the incredible animation capabilities of **VideoTitler 3D**.



Create spectacular special effects for text using **VideoTitler 3D's** powerful effect editor, or use one of the built-in effects such as star, neon, glow, embossed, and balloon. **VideoTitler 3D** can also mirror, skew, resize, and distort fonts from a variety of sources, control shadows and 3D effects, even use IFF picture files as backdrops and fills.

Painting With Sound

Special effect tools allow you to visually alter the waveform in a true interactive editing environment. Add echo to your sound, backmasking, low pass filtering, flanging, alter pitch and playback speed and much more! Effects such as echo, digital delay, and flange can all be accomplished in real time as well!



WE FOCUS ON TECHNOLOGY
P O BOX 90309, LONG BEACH, CA 90809-0309 USA
Telephone: (213) 427-1227 FAX: (213) 427-0971

or Technidisc for their manuals. They are extremely helpful.)

- Pay particular attention to your intended delivery system. Confirm with the mastering facility that what they produce will play correctly on your system. (Despite what you may think, video discs are not standardized in all their particulars.)

- Use broadcast-standard, one-inch, type C video recorders (Hi-band is recommended).

- Almost all video masters begin with two minutes of color bars and a 1000 KHz audio tone. This is followed by 40 seconds of video black with no audio, then the start of the interactive program material. Finally, the last active video is followed by 40 additional seconds of video black without audio.

- Always record in nondrop-frame mode. If your video comes from a third-

party source over which you have no control, don't worry. Most manufacturers can fix the tape for a conversion fee. (See the accompanying chart for more details.)

- Be sure that you maintain consistent field-dominance in your editing. Every video frame is made up of two fields, and editors choose which to use for a cut. Always pick one field and stick with it throughout the entire tape. To ensure consistency, re-edit any third-party video to conform to your standard.

- Submit a written description of your interactive opus, consisting of the start and end of the active video segments on your disc, keyed to SMPTE time code. Also use the time code to indicate the positions of any still frames or chapter stops on the disc. Many manufacturers often require a written description of the first video frame on your disc. This en-

sures that you both synchronize your watches and agree where the important stuff starts.

LEARN FROM OUR MISTAKES

The following tidbits, in no particular order, are courtesy of The School of Hard Knocks. (Thanks to fellow graduates Scott Roy Smith of Media Learning Systems and Robert Edgar of Commodore for swapping tales of woe with me.)

- Because you probably don't have a one-inch video studio in your bedroom, you will have to rent time from a production house to create your master videotape. Keep this time to a minimum, or it will quickly become the most expensive part of your production. For example, don't waste time and money putting menus, buttons, and other changing elements on the video disc. Your Amiga can easily generate and overlay these, and ►

Comparison of disc-production costs.

| Manufacturer | Mastering Fees | | | | Check Disc | Replication Fees | | Formats | Special Services/Notes |
|--|--------------------------|--------|--------|--------|------------|---|--|----------------------------|--|
| | 10 Day | 5 Day | 3 Day | 1 Day | | Quantity | Price per disc | | |
| 3M Optical Recording 1425 Parkway Dr. Menomonie, WI 54751 715/235-5567 | \$1800, 8 day max. | \$2600 | \$3100 | \$4000 | \$750 | 1-49 50-399 400-699 700-999 1000+ | \$18 \$14 \$12 \$10 \$8.50 | 3/4", 1", D2 | Restripping \$100; same-day turnaround \$6000; 1 free remastering with check disc; storage service; Alpha Disc \$450; 5-day turnaround (extra copies \$250); 1-day turnaround \$950. |
| Disc Manufacturing, Inc. 1120 Cosby Way Anaheim, CA 92806 714/630-6700 | \$1800 | \$2300 | \$2550 | — | \$750 | All amounts | \$12 | 3/4", 1", D2, OMDR disc | Restripping free; digital audio capability; glass LaserMaster disc \$900; 6-day turnaround (additional copies \$600); \$1900 same-day turnaround. |
| Phillips/DuPont Optical Co. 1409 Foulk Rd Suite 200 Wilmington, DE 19803 800/433-DISC | \$1800 | — | \$2900 | — | \$900 | 1-100 101-500 501-1000 1000+ | \$17 \$14 \$12 \$10 | 3/4", 1", D2, OMDR disc | Video services priced by hour; SECAM and PAL mastering capability. |
| Pioneer Communications of America, Inc. Laser Optical Products Div. 600 E. Crescent Ave. Upper Saddle River, NJ 07458 201/327-6400 | \$1900 | \$2600 | \$2800 | \$3800 | \$400 | 1-499 500-999 1000+ | \$9.50 \$8.50 \$8.00 | 1", D2 | Variety of video production services; digital and multiaudio capability; re-order service. |
| Technidisc, Inc. 2250 Meljer Dr. Troy, MI 48084 800/321-9610 (main) 213/459-5537 (LA) 716/223-0900 (NY) | \$1800 | \$2500 | \$3000 | \$4000 | \$300 | 1-99 100-499 500-999 1000+ | \$15 \$13 \$10 \$8.50 | 1", D2 | Restripping \$100; 3/4" bumped to 1" \$200; Superdisc DRAW disc, \$750 for 3-5 day turnaround, \$1500 for same-day turnaround; storage; custom label and jacket service. |

PULSAR

THE RISING STAR IN SOFTWARE

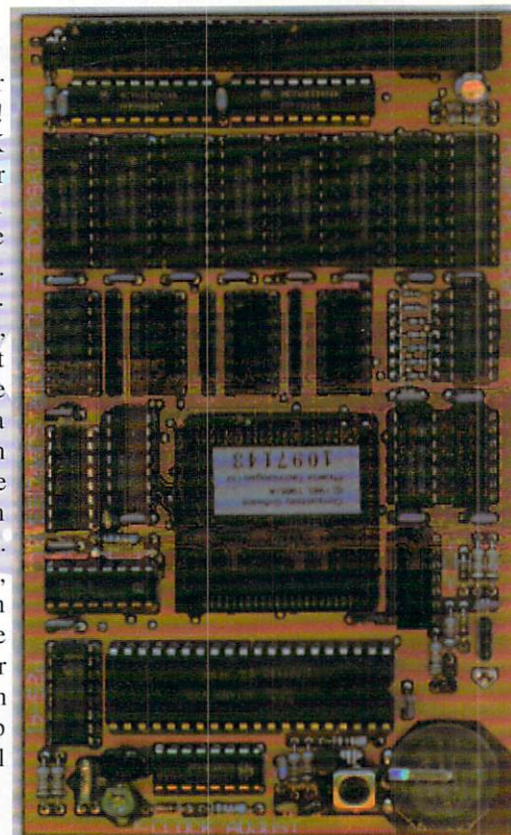
• DEALERS & DISTRIBUTORS PLEASE CALL TO JOIN OUR GROWING NETWORK •

The PULSAR POWER PC BOARD...

Imagine the speed of an 8 MHZ Turbo XT with a NEC V30 Chip, inside your Amiga 500. We are fastest and most compatible board, Landmark tests at 6.2 MHZ! Don't settle for an imitation. Never worry about ram, The board is packed with 704K and also has an additional 192K EMS to speed you on your way with all your applications. To help you along we have included the complete Microsoft Dos 4.01 with manuals, M/S Dos Shell, GW Basic and DOS HELP (Value \$199). In PC mode we use Phoenix Bios to insure the highest level of compatibility with your software. You can also use your serial port, parallel port, joystick port and mouse in PC mode. As if that is not enough.... Hercules/CGA 14 colors and Monochrome graphics support, with your choice of colors and shades. Does it have a clock? Of course! Plus, support for your internal 3.5" drive and external drives! That's right, any Amiga external drive 5.25" or 3.5" will work in PC mode! We also include a Spreadsheet, Database and a Word Processor. In Amiga mode the Power PC Board has a clock, 512K ram expansion, and also gives you additional 512K ram drive. When in Amiga mode the PC side is totally transparent, and in no way effects it's operation. To aid you in moving your files between PC and Amiga we have included Cross Dos (\$39 value). Installation of the POWER PC BOARD is simple. No screwdriver, no soldering iron, and no technical knowledge is necessary. Just turn over your A500, open the expansion door, slide the POWER PC BOARD into the connector, and close the door. You are now the owner of an A500/PC-TURBO XT. Installing this board does not void your warranty. No extra power supply required, thanks to the most modern engineering in CMOS and ASIC technology. We also have on screen indicators for: Num Lock, Cap Lock and Scroll Lock keys. Just look at the bottom of the screen and you can tell which key is active.

Now Includes a full Accounting Package!
A/R, A/P, G/L, + More

NOW WITH HARD DRIVE SUPPORT!
COMING SOON: EGA & VGA SUPPORT!



AMIGA 500 is now PC Compatible!

PIXEL 3D

This revolutionary auto-tracing package will convert complex, color or B&W bit-maps into Sculpt 4D, VideoScape 3D, Turbo Silver, and DXF (autocad) structured-object formats. Totally automatic. **WE DO NOT INCLUDE AN EDITOR BECAUSE ONE IS NOT NEEDED.** Ideal for Video production houses and those who do extensive work in rendering and 3D modelling/animations. Fast and slick conversions with extrusion options and controls for superior results. Object-Oriented Logos from IFF pictures are now easy using Pixel 3D. Supports super-bit-maps and overscan. What Pixel 3D does in a few minutes used to be accomplished in days using manual methods of drawing and/or building objects. 1 One Meg Ram Required

AUTO-TRACE COLOR BIT-MAPS

MSRP U.S.A. \$525.00
Canada \$699.95



MSRP U.S.A. \$89.95
Canada \$109.95

All Pulsar Products are supported by our Offices World-Wide

PULSAR International
410 Maple Avenue
Westbury, New York
11590 U.S.A.

Tel: (516) 997-6707
Fax: (516) 334-3091

PULSAR Computers Canada
P.O. Box 579, Station Z
Toronto, Ontario
M5N 2Z6 Canada

Tel: (416) 488-2381
Fax: (416) 489-1620

PULSAR Computer Vertriebs GmbH
Erlanger Str 8-10
5 Köln 91 Germany

Tel: (0221) 87 33 59
Fax: (0221) 87 41 89

PULSAR Belgium/France
K.V. Overmeirelaan, 20
2100 Antwerp
Belgium

Tel: (33) 26 01 44
Fax: (33) 26 01 94

PULSAR Iberica
Santa Isabell 4
18200 Maracena
(Granada) SPAIN

Tel: (058) 40 40 12

THE RISING STAR IN SOFTWARE

ASK FOR A DEMO OF OUR PRODUCTS WHICH ARE AVAILABLE AT FINE AMIGA DEALERS EVERYWHERE.

Circle 259 on Reader Service card.

making the inevitable changes later will be easier and cheaper.

- Map your discs intelligently: put recurring elements, such as menu backgrounds, in the center of the disc; then you need to traverse only half of the disc to find your track. Also consider how fast the player can move the head to the next segment. In many cases this determines where you locate the video track on the disc. How you map a disc is instrumental in its success. If it is too slow, the user may lose interest.

- Although some discs enjoy the luxury of numeric IDs recorded on the disc, many others do not. This has caused no end of confusion, because there is often no ready way to determine which side of a double-sided disc is in the player. One common solution is to put a uniquely numbered chapter stop on each side of the disc for the program or script to read and identify.

- Put pictures on inside tracks. The outside of the disc may warp, causing noise in pictures, picture loss, and other undesirable events. On the other hand, there is more band width on the outside

tracks, producing a slightly better picture. The choice is yours.

- As mentioned above, many mastering facilities require, in addition to the disc layout, a description of the first video frame on the disc. If you really want to be safe, put a unique picture as the first frame...and be sure you can describe it in twenty-five words or less.

- If you have access to D2 (digital video) technology, most facilities can now master directly from your digital tape for the highest possible quality. John Kohan-Matlick's Video-It D2 facility in Los Angeles offers production services for video-disc producers. Call him for details at 213/280-0505.

PRESSING TIME

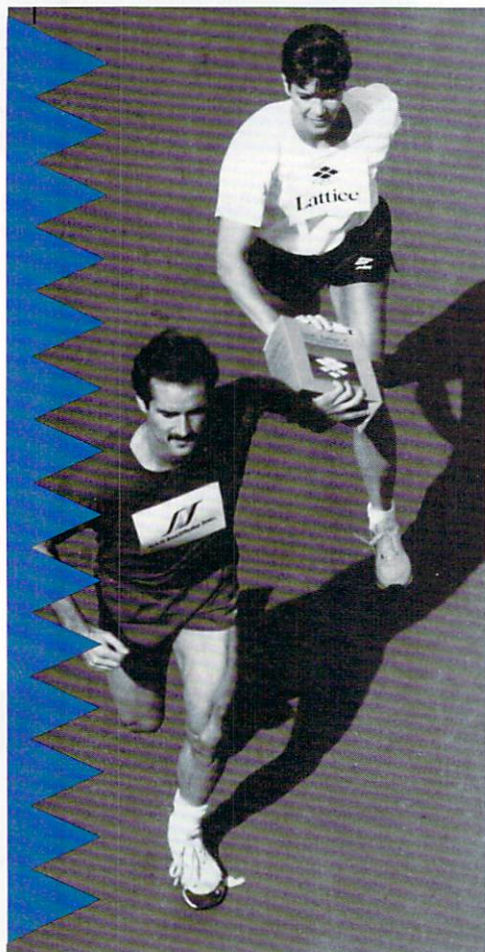
The actual manufacturing cycle consists of sending the master videotape to the disc-production facility, which masters and then returns an optional check disc to you. Be sure to use this option; it will save extra costs later. After approval, the disc is duplicated to your desired quantity. Turn-around times average ten days for production discs and three for check

discs. Of course, all the facilities will do rush jobs on mastering and check discs for a premium.

For a quick, low-budget solution, the Optical Disc Corporation and its affiliated RLV Recording Centers can produce one-shot, DRAW (Direct Read After Write) discs in two to three days at \$250 (plastic) and \$550 (glass) per copy from most popular formats. As these DRAW discs are stamped in a self-contained machine rather than pressed from a master in a factory, ODC can keep costs down. For more information on the affiliate nearest you, contact ODC at 12150 Mora Dr., Santa Fe Springs, CA 90670, 800/350-3500.

The accompanying chart lets you compare costs for a traditionally mastered, single-sided, CAV Level III disc. Call the manufacturers directly for prices on double-sided discs, other levels or sizes, and specialized services. ■

Gene Brawn is an interactive multimedia producer with several video discs to his credit. Write to him c/o AmigaWorld Editorial Dept., 80 Elm St., Peterborough, NH 03458.



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.

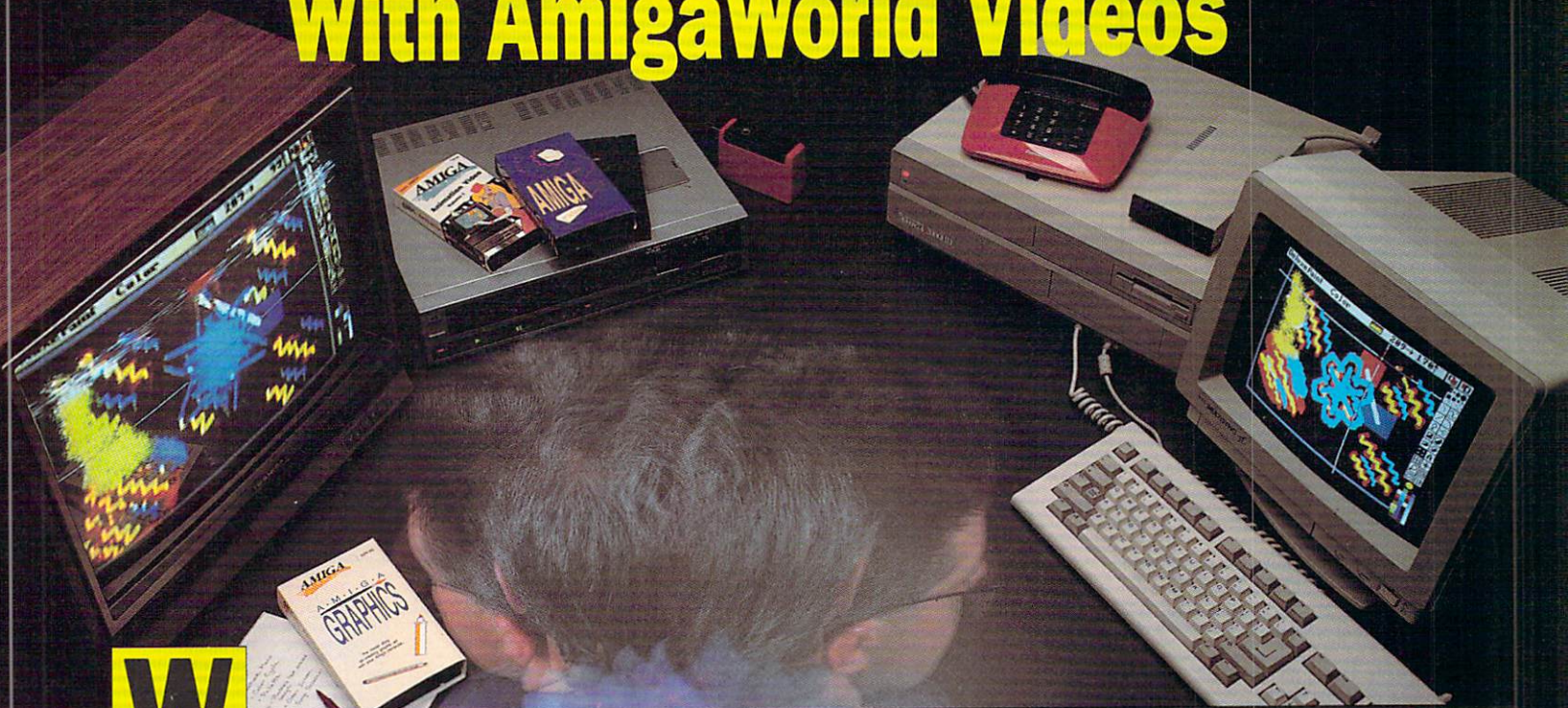
SAS and SAS/C are registered trademarks of SAS Institute Inc., Cary, NC, USA.

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



SAS Institute Inc.
SAS Campus Drive
Cary, NC 27513

Novice To Expert In No Lapsed Time... With AmigaWorld Videos



W

hy try to figure it out all by yourself? With AmigaWorld Videos, it's like having a professional computer consultant at your side, 24 hours per day! AmigaWorld Videos cut your learning time dramatically...and you get hints, tips and advice that only the experts know. Watch each video, follow the step-by-step techniques, and hone your skills entirely at your own pace. Then, you can refer to them for brush ups and refreshers. Build your own video library and watch your accomplishments soar! Order your copies today.

NEW! AMIGA MUSIC

From a simple tune to a full concert—the Amiga can help you do it all. This extraordinary video shows you what you need to get started and how to play music with existing software. You'll learn the best ways to sample sounds and manipulate sampled sound to produce dazzling special effects. And if you want to learn more about using a MIDI, this is the video that can help. It explores the uses of MIDI and gives you valuable ideas from some of the best Amiga musicians in the country.

AMIGA GRAPHICS, Volume I

You'll be amazed at how fast you'll be producing excellent art. This hour-long video adventure explores the full capabilities of Amiga art. It delves into computer painting...discusses the pros and cons of the most popular paint programs...tells you when HAM is a good idea...shows you how interlace works...and describes smearing, washing and tinting. Plus you get three extensive sessions on fonts, clip art and even digitizing!

DESKTOP VIDEO

Business presentations, instructional videos and even home movies—this exciting video shows how you can use video with your Amiga. You'll gain valuable insights into evaluating

Genlocks, using your camera with professional results, developing effective production operations, creating terrific special effects, adding animation and more. It's a video you won't want to miss!

GETTING STARTED WITH YOUR AMIGA

There's no easier way to master the basics...and some of the more sophisticated operations as well. In a lively and easy-to-follow format, this video starts with assembling your system, feeling comfortable about working with screens, icons, and windows, and becoming a wiz at Workbench. It then addresses some of the more advanced topics of working with CLI, maximizing the use of your utilities and using a modem to expand your horizons.

ANIMATION VIDEO

When the editors of AmigaWorld canvassed the Amiga community looking for the best in Amiga animation, the response was overwhelming! Replies poured in from Amiga master artists as well as super-talented readers. The result—a mind-blowing video featuring dozens of real-world animations demonstrating what's being done and what you can do. Order your copy today...it's already becoming a collector's item!

For immediate ordering service call TOLL FREE 1-800-343-0728 or send in the coupon below.

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

- ☐ NEW! AMIGA MUSIC....\$29.95 *
- ☐ AMIGA GRAPHICS, Volume I....\$29.95
- ☐ DESKTOP VIDEO....\$29.95
- ☐ GETTING STARTED WITH YOUR AMIGA....\$29.95
- ☐ ANIMATION VIDEO....\$19.95

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

Amount Total \$

☐ Check/Money Order ☐ Mastercard ☐ VISA ☐ AmEx ☐ Discover

Make checks payable to AmigaWorld Magazine or fill in your account information at right.

AmigaWorld Video Library P.O. Box 802, 80 Elm Street, Peterborough, NH 03458 ☎ 1-603-924-9471 ☎ 1-800-343-0728

* available in September

Account# _____ Exp.date _____
Signature _____
Name _____
Address _____
City _____ State _____ Zip _____

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. IDG/Peterborough, publisher of AmigaWorld, is the licensed North American distributor of AmigaWorld Videos.

© 1989 by Razza Video USA. All Rights Reserved. Amiga is a registered trademark of Commodore Business Machines, Inc.

VID291



U.S. ORDERS ONLY: **800-872-8882** CUSTOMER SERVICE OR **213-214-0000**
 CANADA: 1-800-548-2512 ORDER STATUS
 4453 Redondo Beach Blvd., Lawndale, CA 90260 - Mon-Sat 8-6 PST - FAX: 213-214-0932

UPGRADE BEYOND A3000 PERFORMANCE! with GVPs A3001 Accelerators



28 Mhz\$1428
 33 Mhz\$1628
 50 Mhz\$2468

All the above boards are in 68030/68882/4Mb configuration.
 For a 40Mb Quantum HD add \$389 -
 for an 80Mb Quantum add \$699

THE ICD ADVANTAGE

A new lightning fast SCSI host adapter for the Amiga 2000/2500 computers.



only
\$139.00

NEW FROM ICD
 "Flicker Free Video"
 Hardware flicker eliminator for all Amigas\$329

HP PRINTERS

DESKJET 500\$569.00
 LASERJET III ...\$1699.00
 LASERJET IIP\$999.00
 PAINTJET\$949.00
 PAINTJET XL ...\$1899.00



CA-880



\$99.00

- Most reliable drive for the Amiga
- Slimline, attractive design
- Drive Pass-thru
- Low power consumption

GVP SERIES II A500



CALL FOR
OTHER
SIZES

40MB \$599

HARDWARE

NEW HARDWARE
 MAXI-SKETCH TABLETCALL
 NEXUS HC0 0.4MB\$259.00
 PRORES\$339.00

ACCELERATORS
 MEGA MIDGET RACER 25MHz\$699.00
 MEGA MIDGET RAM 0.8MB\$119.00

AUDIO HARDWARE
 A10 STEREO SPEAKERS\$3.95
 AMAS MIDI SAMP/A1000\$124.00
 AMAS MIDI SAMPLER\$124.00
 AMPLIFIED SPEAKERS\$4.95
 CMI MIDI 1 (EXT)\$6.95
 ECE MIDI 1000\$4.95
 ECE MIDI PLUS\$4.95
 MIDI GOLD 500\$4.95
 MIDI GOLD INSIDER\$4.95
 PERFECT SOUND 500/200\$70.95
 SPIRIT MIDI-STAR\$139.00

FLOPPY DRIVES

AE 880K DISK DRIVE\$109.00
 AE HIGH DENSITY DRIVE\$199.00
 CA-880 FLOPPY DRIVE\$9.95
 FUJITSU MAC DRV\$149.00
 A2000 REPLACEMENT DRIVE\$95.00
 UNIDRIVE\$109.00
 UNIDRIVE ENHANCED\$149.00

HARD DRIVES AND CONTROLLERS

ADVANTAGE 2000 SCSI\$139.00
 CSI 6100 AUTOBOOT CRD\$79.95
 GVP XT-150 TAPE DRIVE\$639.00
 GVP XC CASENO DRIVE\$179.00
 HARD DRIVE CASE\$149.00
 QUANTUM 40AT DRIVE\$399.00
 QUANTUM 80AT DRIVE\$599.00
 QUANTUM 80MB HARD DRV\$449.00
 QUANTUM 105MB HRD DRV\$599.00
 QUANTUM 170MB SCSI HD\$999.00

SONY DATA CART/WT 150\$24.95
 SUPRA DRIVE 30MB 1000\$699.00
 SUPRA DRIVE 20XP 2MB\$638.00
 SUPRA DRIVE 40MB 1000\$729.00
 SUPRA DRIVE 40XP 2MB\$749.00
 SUPRA DRIVE 105XP 2MB\$1019.00
 SUPRA DRIVE 500XP 20MB\$549.00
 SUPRA DRIVE 500XP 40MB\$658.00
 SUPRA DRIVE 500XP 105Q\$999.00
 SUPRA DRIVE A1000 SCSI\$165.00
 TRUMP CARD SCSI A500\$219.00
 TRUMPCARD A500 PROF\$279.00
 TRUMPCARD A2000 PROF\$209.00

MEMORY EXPANSION

ADRAM 520\$7.95
 ADRAM 540 0.4 MEG INT\$119.00
 ADRAM 5600 2 MEG A540\$239.00
 EXP-8000+ A500 2 MEG\$429.00
 MINIMEGS A500 2MB\$319.00
 MINIMEGS A1000 2MB\$299.00
 STARBOARD 2 A1000 0K\$199.00
 STARBOARD 2 UPPER DECK\$99.95
 SUPRAM 500 1/2 MEG\$1.95
 SUPRAM 2000 2MB RAM\$199.00
 SUPRAM 2000 4MB RAM\$279.00
 SUPRAM 2000 6MB RAM\$349.00
 SUPRAM 2000 8MB RAM\$429.00
 TRUMPCARD META 0.4\$159.00

OTHER MISC.

A-MAX II MAC EMULATOR\$149.00
 A-MAX II PACKAGE\$499.00
 AMINET 500 ETHERNET\$499.00
 CMI MULTIPORT BOARD\$195.00
 INTERACT A500\$224.00
 MAC EPROMS 128K\$149.00

MODEMS

BAUD BANDIT MODEM\$105.00
 BAUD BANDIT MODEM LS\$169.00
 GALAXY APOLLO 9600 MODEM\$449.00
 GALAXY PIONEER MODEM\$249.00
 SUPRA 2400 BAUD MODEM\$99.95
 SUPRA 2400 INT. MODEM\$119.00

MONITORS

NEC MULTISYNC 3D\$699.00
 NEC MULTISYNC IIA\$550.00
 SEIKO 1440 MULTISYNC\$599.00
 SONY 1304 MULTISYNC\$749.00

PRINTERS

CITIZEN GSX140 24 PIN\$349.00
 CITIZEN GSX200 9 PIN\$195.00
 LASERJET III PRINTER\$1795.00
 STAR NX-2410 PRINTER\$339.00
 STAR NX1000 II PRINTER\$169.00
 STAR NX1020 RAINBOW\$219.00

VIDEO HARDWARE

AMIGA VIDEO TERMINAL\$114.95
 AMIGEN GENLOCK\$7.95
 COLOR SPLITTER\$119.00
 DENISE EXTENDER BUS\$74.95
 DIGI VIEW GOLD V4.0\$129.00
 DIGIVIEW GOLD 4.0 PAL\$134.00
 EASYL 500 TABLET\$329.00
 EASYL 1000 TABLET\$359.00
 EASYL 2000 TABLET\$399.00
 FLICK. FIX TO GENLOCK\$7.95
 FLICKER FIXER\$299.00
 FLICKER FIXER PAL\$299.00
 FRAMEGRABBER\$699.00
 FRAMEGRABBER PAL VERS\$699.00
 FRAMEGRABBER 256 GRAY\$629.00

HARD DRIVE SPECIALS!



GVP HARD DRIVES

NEW PRODUCTS

RICOH 50MB REMOVABLE\$829.00
 FAASTROMS UPGRADE\$39.00

A500

FOR NEW SERIES II A500 HARD DRIVES SEE
SEPARATE BOX

A2000

ALL GVP HARD DRIVES ARE THE NEW BLAZING
FAST SERIES II WITH 8 MB FAST RAM
CAPABILITY

GVP SERIES II /0\$159.00
 ALL HARD CARD ARE QUANTUM 12MS RELIABLE
DRIVES
 GVP SERIES II /52Q\$595.00
 GVP SERIES II /80Q\$739.00
 GVP SERIES II /100Q\$789.00

GVP SERIES II /170Q\$1049.00
 GVP SERIES II /210Q\$1149.00
 SYQUEST CARTRIDGE\$90.00
 GVP WT-150 TAPE DRIVE\$639.00
 GVP XC CASENO DRIVE\$179.00

SUPRA

A500

SUPRA 500XP 20MB 512K\$528.00
 SUPRA 500XP 40MB 512K\$628.00
 SUPRA 500XP 20MB 2MB\$558.00
 SUPRA 500XP 40MB 2MB\$658.00

A2000

SUPRA WORDSYNC 40Q\$428.00
 SUPRA WORDSYNC 80Q\$588.00
 SUPRA WORDSYNC 105Q\$648.00

IVS

TRUMPCARD A2000 PROF.\$209.00
 TRUMP CARD SCSI A500\$219.00
 TRUMPCARD A500 PROF.\$279.00

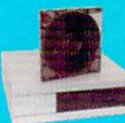
BARE DRIVES

(USE WITH ANY CONTROLLER)

QUANTUM 40MB HARD DRV\$324.00
 QUANTUM 52MB SLIMLINE\$389.00
 QUANTUM 80MB HARD DRV\$498.00
 QUANTUM 105MB HRD DRV\$539.00
 QUANTUM 170MB SCSI HD\$839.00
 QUANTUM 210MB HARD DRV\$979.00

SyQuest 44MB Removable external hard drive complete with cartridge.

Without controller...\$699
 For A500\$899
 For A2000 or A3000\$738
 w/Advantage\$738



An
Incredible
Value!

FREE SEND-FAX!!!

AE High Density Drive\$199.00



1.52MB!

Operates as an 880K drive or 1.52 Meg drive
and has an electronic eject button.

500 Heavy Duty Power Supply\$89.95

Buy a Datalink
Modem with MNP-5
and get Send-FAX
capability FREE

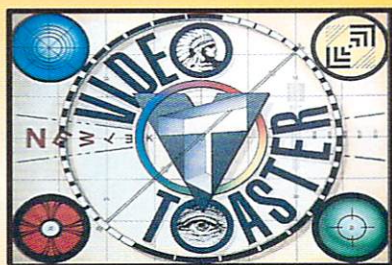
- External\$219.00
- Internal\$175.00

CREATIVE HARDWARE SPECIALS

VIDEO TOASTER!!!

Includes:

- Genlock
- Color Effects
- Frame Grabber
- Dual Frame Buffer
- Digital Video Effects
- Character Generator
- 24 bit Paint Program
- 24 bit 3D Rendering and Animation
- Plus much more...



All for only **\$1495⁰⁰**

| | |
|-------------------------|---------|
| FRAMEGRABBER 256G PAL | 659.00 |
| HAND SCANNER TOUCH UP | 359.00 |
| LENS 16MM NO IRIS | 18.95 |
| LENS 16MM W/IRIS | 53.95 |
| LIVE! 500 | 309.00 |
| LIVE! 1000 | 249.00 |
| LIVE! 2000 | 349.00 |
| MINIGEN GENLOCK | 189.00 |
| MINIGEN PAL GENLOCK | 239.00 |
| PANASONIC WV1410 | 189.00 |
| PANASONIC WV1500X | 319.00 |
| SHARP JX150 SCANNER | 739.00 |
| SHARP JX450 SCANNER | CALL |
| SPIRIT INTERLOCK IOL1 | 550.00 |
| SUPERGEN 2000S | 1350.00 |
| SUPERGEN GENLOCK | 649.00 |
| TCRG 102 | 719.00 |
| VIDI AMIGA FRAMEGRABBER | 149.00 |
| VIDI CHROME COLOR MOD | 29.95 |
| VIDEOTECH SCANLOCK | 789.00 |
| VIDEOTECH SCANLOCK PAL | 1149.00 |
| VIP VIDEO INTERFACE | 97.95 |
| X-SPECS 3D | 94.95 |

| | |
|------------------------|--------|
| POWERPLAYERS JOYSTICK | 14.95 |
| QUICKJOY III SUPRCHRG | 12.95 |
| QUICKJOY JET FIGHTER | 17.95 |
| QUICKJOY JUNIOR | 9.95 |
| QUICKJOY V SUPERBOARD | 22.95 |
| QUICKSHOT 2 JOYSTICK | 12.95 |
| QUICKSHOT II PLUS | 12.95 |
| SKETCH MASTER 12X18 | 619.00 |
| SKETCH MASTER 12X12 | 399.00 |
| SLIK STIK JOYSTICK | 7.95 |
| SPEED KING JOYSTICK | 13.95 |
| STAR CURSOR JOYSTICK | 35.95 |
| TAC-2 JOYSTICK | 10.95 |
| TRACKBALL MOUSE STYLE | 39.95 |
| TRACKBALL, AMTRAC | 84.95 |
| TRACKBALL, JOYSTICK | 99.95 |
| ULTIMATE SUPERSTICK | 38.95 |
| 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 |

| | |
|--------------------------|-------|
| SONY DISK 10 PACK | 12.95 |
| SONY DISK DSHD 5 PACK | 9.95 |
| SONY DISK DSHD 10 PK | 19.95 |
| WOODEN DISK BOXES 4 DRWR | 65.00 |
| WOODEN DISKBOX 2 DRWR | 45.00 |
| WOODEN DISKBOX 3 DRWR | 55.00 |

DUST COVERS

| | |
|-----------------------|-------|
| COVER UPS A500 CPU | 5.95 |
| COVER UPS A1084 MON | 6.95 |
| COVER UPS A1950 MON | 6.95 |
| 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 A1950 | 10.95 |
| PAINTJET DUST COVER | 15.95 |
| SAFESKIN / A500 | 17.95 |
| SAFESKIN / A1000 | 17.95 |
| SAFESKIN / A2000 | 17.95 |
| SAFESKIN / A3000 | 19.95 |

POWER DEVICES

| | |
|-----------------------|--------|
| AE POWER SUPPLY A300 | 99.95 |
| BIGFOOT 150 POWER SUP | 77.95 |
| POWER SUPPLY HD150 | 129.95 |
| POWER SUPPLY, IVS | 89.95 |
| POWER SUPPLY, SUNTRON | 89.95 |

PRINTER ACCESSORIES

| | |
|-----------------------|-------|
| CITIZEN GSK140 COLOR | 49.95 |
| CITIZEN RIBBON BLACK | 5.95 |
| DATA SWITCH 4 WAY | 22.95 |
| DATA SWITCH 2 WAY | 13.95 |
| DESKJET BLK CARTRIDGE | 16.95 |
| DESKJET EPSON FX EMUL | 59.95 |
| DESKJET INK BLACK | 11.95 |
| DESKJET INK BLUE | 11.95 |
| DESKJET INK BROWN | 11.95 |

| | |
|--------------------------|--------|
| DESKJET INK BURGUNDY | 11.95 |
| DESKJET INK CLEANING | 3.95 |
| DESKJET INK FULL COLOR | 28.95 |
| DESKJET INK GOLD | 11.95 |
| DESKJET INK RED | 11.95 |
| DESKJET INK YELLOW | 11.95 |
| MONITOR STAND A500 | 27.95 |
| OKIMATE BLACK RIBBON | 4.99 |
| OKIMATE COLOR RIBBON | 5.99 |
| PAINTJET BLK CARTRIDGE | 25.95 |
| PAINTJET COLOR CARTRIDGE | 29.95 |
| PAINTJET CUT PAPER | 17.95 |
| PAINTJET PAPER CATCH | 22.95 |
| PAINTJET PRINTER STAND | 64.95 |
| PAINTJET TRANS FILM | 54.95 |
| PAINTJET XL CART CYAN | 24.95 |
| PAINTJET XL CART MAGN | 24.95 |
| PAINTJET XL CART YELO | 24.95 |
| PAINTJET 2-FOLD PAPER | 17.95 |
| PRINTER BUFFER 256K | 129.00 |
| PRINTER STAND | 20.95 |
| PRINTER STAND 132 COL | 49.95 |
| PRINTERFACE | 79.95 |
| STAR NX-1000 RIBBON | 3.95 |
| STAR NX-2400 RIBBON | 7.49 |
| STAR NX2410 RIBBON | 7.49 |
| STAR RAINBOW RIBBON | 8.95 |

MISC. ACCESSORIES

| | |
|------------------------|-------|
| A1000 KEYBOARD ADAPTER | 15.95 |
| AUTO DROID | 50.95 |
| COMPUTER SERVICE KIT | 18.95 |
| COPY CAMERA STAND | 59.95 |
| DIGI DROID | 67.95 |
| FLICKER MASTER | 12.95 |
| SURGE MASTER | 18.95 |
| TRUMPCCARD MOUNT BRACK | 23.95 |

INPUT DEVICES

| | |
|------------------------|--------|
| APRODRAW 12X12 W/CUR. | 549.00 |
| BOING OPTICAL MOUSE | 91.95 |
| BOSS JOYSTICK | 14.95 |
| COROLESS MOUSE, THE | 92.00 |
| ERGO STICK | 17.95 |
| FREEDOM CONNECTION | 25.95 |
| GRAVIS CLEAR JOYSTICK | 35.95 |
| GRAVIS MOUSESTICK | 64.95 |
| GRAVIS SWITCH JOYSTICK | 32.49 |
| LIGHT GUN, PHASAR | 32.49 |
| MOUSE MASTER | 29.95 |
| MOUSE MATS | 6.95 |
| NAVIGATOR JOYSTICK | 17.95 |
| PERFECT SOUND ADAPTOR | 10.95 |

ACCESSORIES

We carry a huge selection of custom Amiga cables. Call for prices!

DISKETTES/DISK ACCESSORIES

| | |
|-----------------------|-------|
| BANX DISKETTE BOX | 14.95 |
| CLEANING KIT LARGE | 12.95 |
| CLEANING KIT SMALL | 5.95 |
| DISKETTES, 50 PACK | 44.00 |
| SONY COLOR DISKETTES | 13.95 |
| SONY DISK 5.25" 10 PK | 7.95 |
| SONY DISK 5.25" DSHD | 11.95 |

SEIKO CM-1440 THE BEST MULTISYNC MONITOR



- 14" SuperFine Pitch Trinitron
- Resolution up to 1024 x 768
- .25mm dot pitch
- Anti glare silica coating
- Works on all Amigas
- Includes a FREE cable for the A3000

\$599⁰⁰

NEWTEK

| | |
|---------------------|--------|
| DIGI VIEW GOLD V4.0 | 124.00 |
| DIGI PAINT 3 | 58.00 |
| PANASONIC WV1410 | 189.00 |
| PANASONIC WV1500X | 319.00 |
| COPY/CAMERA STAND | 59.95 |

| | |
|---|--------|
| SUPER BUNDLE/DIGIVIEW | 399.00 |
| DIGIVIEW GOLD 4.0, WV1410 CAMERA, COPY STAND, LENS, CABLE | |



2/8 MB Board

ONLY \$189⁰⁰



MEMORY (RAM) CARDS:

| | |
|-----------------------|--------|
| SUPRAMEM 2000 2MB RAM | 189.00 |
| SUPRAMEM 2000 4MB RAM | 279.00 |
| SUPRAMEM 2000 6MB RAM | 349.00 |
| SUPRAMEM 2000 8MB RAM | 429.00 |

| | |
|----------------------|-------|
| SUPRAMEM 500 1/2 MEG | 61.95 |
|----------------------|-------|

MODEMS:

| | |
|-----------------------|--------|
| SUPRA 2400 BAUD MODEM | 99.95 |
| SUPRA 2400 INT. MODEM | 119.00 |
| MODEM CABLE ADD | 5.00 |

DIGITAL CREATIONS



- PAINT, DIGITIZE AND DISPLAY FULL NTSC VIDEO ON ANY 1MEG AMIGA!
- DISPLAY AND CAPTURE FULL COLOR 24-BIT IMAGES.
- WORKS WITH ALL POPULAR 3D PROGRAMS.
- ANIMATE IN FULL NTSC COLOR.

\$399⁰⁰

ReadySoft

AMAX II \$149⁰⁰

AMAX II PACKAGE \$459⁰⁰



MAXI-SKETCH

- 1000 Dpi resolution
- Emulates a variety of other drawing tablets
- Auto configuring interface

\$478⁰⁰

Bodega Bay

- Works with any A2000 card
- Internal 200 watt power supply
- 4 A2000 slots, and 3 of those are also IBM compatible
- Works with any A2000 card
- Two 5.25" drive bays and a 3.5" hard drive mounting area

Call for Prices



FIRECRACKER 24



NEW!

- High-resolution
- 16.7 million colors
- 24-bit graphics display card
- Works on the Amiga 2000, 2500 and 3000
- 1 Meg Version **\$1029⁰⁰**
- 2 Meg Version **\$1379⁰⁰**

ATONCE

The Ultimate PC/AT Emulator for your Amiga

- Ultra-compact design
- Easy 10 minute installation - NO SOLDERING
- FULL 640KB OF DOS MEMORY ON 1MB Amigas
- Works with all autoconfigure autobooting Commodore compatible hard drive systems
- Emulates CGA, Hercules and other video cards
- Can be used with a A2000 with a special adapter



\$309⁰⁰

THE GAME PRESERVE

WINGS

By Peter Olafson

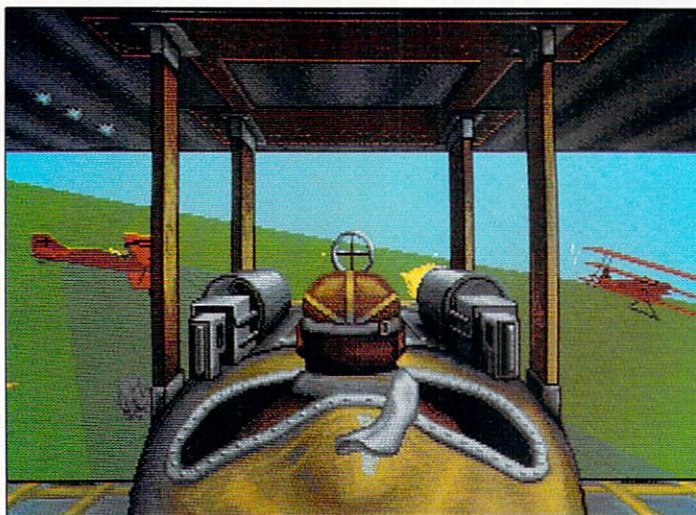
Cinemaware's best game yet, *Wings* casts you as a World War I fighter pilot. The centerpiece of this quasi-role-playing adventure is a three-dimensional environment, seen from just behind the pilot, in which dogfights and balloon-busting missions are played out. You cruise, dive, and stall above the low hills and plains of the French countryside looking for red silhouettes on the horizon.

The cinematic perspective lives on in scene cuts. Sometimes that means a rear shot—a mini-game in which you have to shake a German ace off your tail. If you collide with another plane in mid-air, the view shifts to an exterior shot of the two of you going down, then switches back to the cockpit to give you a chance to pull out.

I could go on and on about damage, changing light conditions, and anti-aircraft fire. This part of *Wings* is essentially a versatile, action-filled flight simulator, with none of the burdensome learning curve of other simulators. Flying by joystick and pure instinct is hard to resist, especially with 240 missions.

Lots of amenities attend *Wings*. It installs on and plays from hard disk. The sound effects are solid, the music is somber, and the writing (in the form of a squadron log) is alternately thoughtful and gung-ho corny.

The arcade sequences for



Fire or be fired upon.

bombing (from an overhead perspective) and strafing (from the perspective of a spotter plane above and to the far left and rear of your plane) are professional and polished. They could easily stand alone as arcade games in their own right. *Wings* might have been even better, however, had these sequences been incorporated into the 3-D mode. While perfectly pleasant in themselves, they're far removed from the feel and mind-set of the dogfighting—you can't be killed in them, for instance—and I sometimes felt as though I were playing three different games.

Wings is also missing the true computer role-playing that would give it more replay value. While you set four critical stats for your pilot, which improve and decline accord-

ing to mission performance, the game is utterly linear. Regardless of how well you do, you're assigned the same missions in the same order, with no discernible branches in the story. The only variation comes when you do well (winning promotions and medals) or foul up (a dishonorable discharge or a free pine box).

Be aware, too, that the saved-game feature isn't much of a parachute. If you die on a mission, your saved character is erased, and you'll need to regularly back up the pilot.dat file on Reel 2. It's worth it to do so, I promise. *Wings'* strong points make it an essential purchase. (\$49.95, Cinemaware, distributed by Electronic Arts, 1820 Gateway Dr., San Mateo, CA 92109, 415/571-7171. One megabyte and joystick required.) ►

Crib Notes

By Peter Olafson

SO MANY QUESTIONS, and so little space...

- Some folks are stuck in the Mem Santi Temple maze in *Keef the Thief* (Electronic Arts, \$49.95), and I can see why. This is not a conventional labyrinth; the passages descend and climb, so when you think you're back where you started, you're actually immediately above it or below it. Add the teleports and secret and one-way doors, and you have a proper mess. Map it first without entering the doors.

- Pascal Pilon of Charlemagne, Quebec, is having a time getting past the purple tentacle guarding the laboratory in *Maniac Mansion* (Lucasfilm, \$44.95). The solution could vary a bit depending on the way you've played the game. If the Meteor Police have appeared, check out the dungeon floor for a useful item. (First there's the matter of the dungeon door combination. You'll need to wait until Dr. Fred gets in a playful mood, and then check the results.) Another item that might be useful is the contract—provided it has been edited correctly.

- Questions have been coming in, slowly but consistently, about how to deal with the elf girl by the stream in *Journey* (Infocom, \$29.95). You should know a few Elvish words by now, and a couple of them happen to be the right ones. Use your connections; you have a friend whose name she might recognize. (After she cures Minar, however, don't immediately follow her off to elf-land. Praxix has found something interesting.)

- Jeremy Brown of Carmichael, CA, wonders if there's more to the insides of the giant robot Mog on planet Phleebut in *Space Quest III* (Sierra ►

AFTER PLAYING THEME PARK, YOU'LL PROBABLY NEED TO TIE ONE ON.



Most computer games are designed to spark your imagination. Theme Park Mystery™ is designed to totally fry it!

The insanity begins when your uncle mysteriously loses his mind and you inherit his Magic Canyon Theme Park. From the moment you step through the gates of your estate in search of clues to solve the maddening mystery, you'll experience a twisted journey that will take you beyond your wildest dreams.

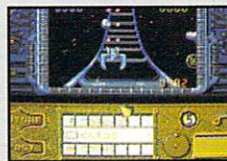
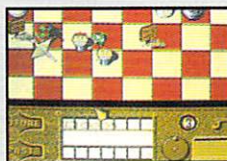
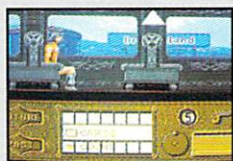
Four strange worlds make up the park. But unlike your average lands of amusement, where friendly characters make kids laugh with glee, the gremlins in Magic Canyon's Dragonland, Dreamland, Futureland and Yesterdayland will make you laugh all the way to the asylum.

To enter each warped world you'll board the Monorail of Fear and travel into dimensions that will enlighten you, terrorize you, confound you and challenge you.

In Dragonland, you'll be transformed into a barbaric warrior who must destroy a barrage of sinister evils, such as psycho birds, mad apes and a crazed Jack in the Box. In Dreamland, you'll doze off into a world of surreal creatures engaged in a nightmarish chess game where you're the pawn.



When Futureland comes to pass, you'll find yourself strapped in the Rollercreeper, a spine tingling, ghoulish infested ride more frightening than any rollercoaster ever built.



And on your return trip to Yesterdayland, you'll encounter the keeper of your destiny—Zoltan, who will dispense valuable clues, essential tickets and life saving magic.

Throughout the mystery, you'll also be tested by games of chance, like Bagatelle and the Grabber. Each of these ancient gambling devices will force you to execute supreme strategy. Of course, if you fail to locate secret keys, spare parts for rides and

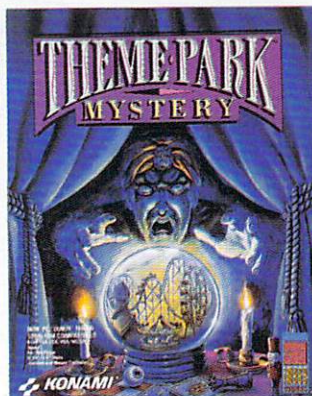
supernatural potions which are hidden throughout the park, all the luck in the world won't save you.

So add Theme Park Mystery to your agenda of must visit hot spots. But be prepared for a long stay. Because it's a game that will drive you to the brink. And from there, there's no return.

Theme Park Mystery is available for MS DOS and Amiga.* Its highly detailed and complex graphics support CGA, EGA, MCGA/VGA and Tandy 16 color.

Enter the Theme Park Mystery Game!

Inside every box look for a scratch card that could make you an instant winner, reimbursing you for the price of the Theme Park Mystery game. This can be used to partially pay your psychiatrist!



No purchase necessary. See package for details. All winning game cards must be received by January 15, 1992. Valid in USA and Canada (except Quebec). Void where prohibited.

Theme Park Mystery™ and ImageWorks™ are trademarks of Mirrorsoft Ltd. Konami® is a registered trademark of Konami Industry Co. Ltd. Amiga® is a registered trademark of Commodore-Amiga, Inc.

© 1990 Mirrorsoft Ltd. © 1990 Konami Inc. All Rights Reserved



THE KILLING GAME SHOW

By Graham Kinsey

In the Killing Game Show (KGS), you are a criminal that's forced to entertain a TV audience by trying to climb out of eight Pits of Death (each containing two parts).

The pits are filled with HALFs (Hostile Artificial Life Forms) and all sorts of nasty traps and puzzles. If you try to pace yourself through the obstacles, you'll not last long, because each pit also contains an ever-rising amount of DOLL (Deadly to Organic Life Liquid) that forces you to think and act fast! You can collect numerous tools and weapons along the way to use against the HALFs. Each weapon and some of the tools have a plentiful supply of ammo/charges, but you can use and carry only one of each at a time.

In KGS, you get five lives plus the use of an innovative Replay feature. Each time you die, the next life starts with a replay of everything you did in the last attempt, and you may take control at any point along the replay. This makes it much easier to complete the more difficult pits.

The game's presentation continues the Psygnosis tradition. The main soundtrack is



If the HALFs don't get you, the DOLL will.

outstanding, featuring many human voice samples (including one from a former president). During the game, you may choose to hear either sound effects or a soundtrack, but not both. The opening animation sequences are nicely done, but you can bypass them, if you wish, by pressing the joystick button. In addition, Psygnosis is finally starting to support various Amiga configurations. KGS runs fine on accelerated Amigas, and it even supports a second drive.

The only major complaint I have is that it lacks a password system that would allow you to

skip previously completed pits. While you can press the appropriate function key to skip finished pits during game play, your progress is not saved when you quit the game. No thanks to the manual, I also discovered that pressing the Help key shows you a rough preview of a pit's layout.

You will appreciate every bit of assistance. The Killing Game Show is a well-done arcade/platform game that challenges even jaded game jocks. (\$44.99, Psygnosis, 29 Saint Mary's Court, Brookline, MA 02146, 617/731-3553. Joystick required.)

On-Line, \$59.95). The ropes on the second level aren't for climbing, Jeremy. They're one of at least three ways to knock off the assassin who's tracking you. Because you already did that elsewhere, Mog is just for color; move on to the burger joint. (Or you may want to restore and experiment with the other deaths.)

• You can wipe out Electronic Arts' corporate headquarters in *F/A-18 Interceptor* (Electronic Arts, \$19.95). ("Another IBM port? Here's a Side-winder in your office window, Trip Hawkins!") It's the northern of the twin buildings west of the San Mateo Bridge.

• A rare question on *The Bard's Tale I* (Electronic Arts, \$19.95): Shawn Taggart of El Toro, CA, asks the meaning of the magic mouth in Kylearan's Tower that requests "the one of cold, foretold twofold." Oh, all right. It's "stone golem." Remember, Shawn: Map every square in every dungeon, and write down everything you hear. In addition, you'll need to have explored Skara Brae to answer the riddle coming up.

• Everybody seems to want to know what to do after they've liberated the remote control and magnetic card from the drunk monk in *Future Wars* (Interplay, \$49.95). Well, the options are pretty limited, and one spot in the monastery begs for further exploration. Have you ever seen a computer-game wine cellar that *didn't* have a secret door?

Tom Smith II of Poland, OH, can't even get his foot in the front door before monks in the lobby are all over him. Well, Tom, I suspect you're getting ahead of yourself. Notice how the monks all look and behave the same way, and become enraged at anyone who doesn't. Someone trying to sneak in might want to imitate them in order to be inconspicuous. You've taken a good first step by visiting the castle. The lord's at the mall or something, so talk to the guard and show off the pendant you've found. Also, explore the area behind the castle. Looks like a monk's robe up in that tree, doesn't it? That should get you started.

Continued on p. 84.

THE IMMORTAL

By Peter Olafson

It's hard to know where to begin a review of the exquisite dungeon adventure, *The Immortal*. I could start with the graphics: three dimensions in exacting detail, right down to the rivets in the doors and the taut muscles in a goblin's shoulders. The maze under

the ruined city of Erinoch has a vivid and lively existence, and your Amiga seems like a window overlooking it.

Where would the graphics be, however, without the animation? Never have I seen computer-game torches and candles flicker with such real-

ism, spells explode in such soft fireworks, or characters go down with pain so etched on their faces. All this is complemented by some of the most beautiful music ever heard in a computer game.

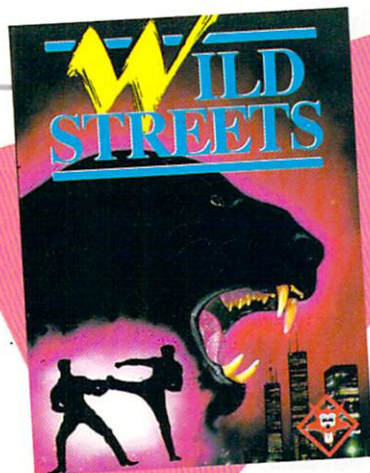
Then again, maybe the

Continued on p. 84.

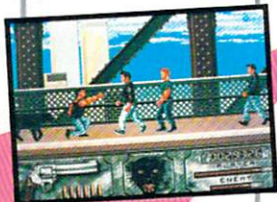
Slick up your joystick it's hot!

ACTION!

Fight in the city slums...



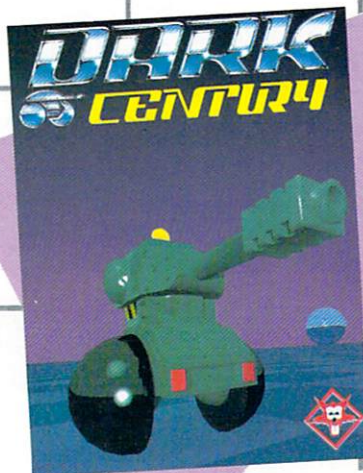
A supercop and a black panther team together in a high risk mission. "A top cia agent has been kidnapped, find him! You know that action and fighting is inevitable". You'll have to visit the city slums to find him and protect you both from mobsters, punks and riff raffs.



AMIGA
ATARI ST
PC
CBM 64



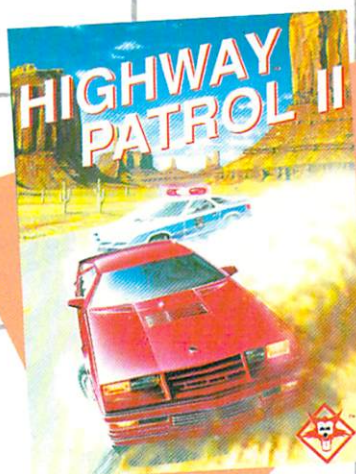
Arrest the captives!



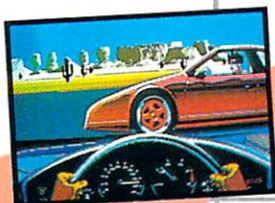
AMIGA
ATARI ST
PC



Ready to drive and shoot!



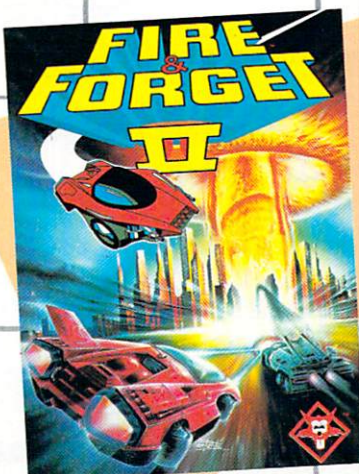
Parked on the side of an interstate in the arizona, you are waiting for your mission in your car. Suddenly comes an APB from your radio: "alert to all units, a fugitive killer has escaped. Use caution." Drive fast to intercept him! Watch out for flat tires and empty fuel tanks. You may leave the road and drive through the desert, use your compass and your map or you will loose your way...Good luck to prove your nickname "the Ranger!"



AMIGA
ATARI ST
PC



Discover the first arcade game designed in ray-tracing technology (synthesized pictures). You control the greatest high-tech tanks in the world. You are on a prison planet trying to arrest some escaped convicts. Program and lead your team of tanks. Ray traced 3D universe, multitasking, one or two players.



AMIGA
ATARI ST
PC
CBM 64



You are the pilot of THUNDER MASTER II, the ultimate fighting vehicle able to convert itself into a genuine airborne attacker, equipped with ionic phasers and missile launcher. You are engaged in the hot pursuit of terrorists. Go into combat and be confronted by enemies as different in their appearance as in their combat techniques. Pick up weapons, ammunitions and fuel. Destroy the leading vehicle, before the ultimate explosion!

20432 CORISCO STREET,
CHATSORTH CA 91311.
818/709-3693

THE ACTION CONCEPT

© Titus 1990, Titus Software Corporation. All rights reserved. Wild Streets, Dark Century, Fire & Forget II, Titus and the Titus logo are registered trademarks of Titus Software Corporation. Highway Patrol II is a registered trademark of Titus Software Corporation under license from Microdis. All other trademarks acknowledged. Titus reserves the rights to make modifications in the products at any time and without notice.

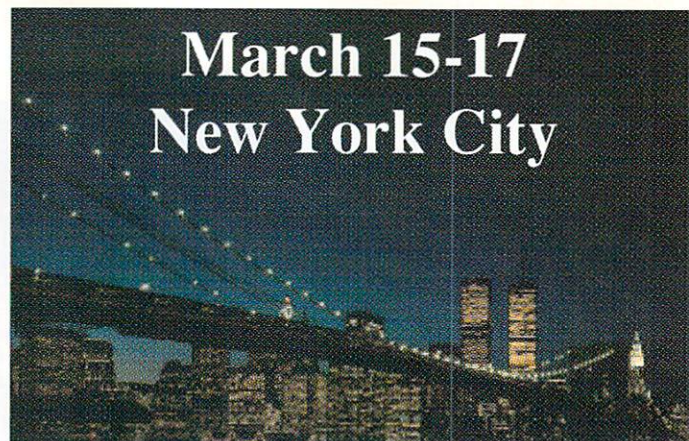
Circle 17 on Reader Service card.

AMIGA WORLD EXPO

Formerly AmiEXPO

VIDEO

March 15-17
New York City



AmigaWorld Expo brings you the Amiga, the world's first

computer! At AmigaWorld Expo you'll find:

- ★ State of the Art Graphics, Animation, 3D and Business Software ★ Hardware to Expand your Amiga to its Limits ★
- ★ Magazines, Value-Added Resellers, and Tutorial Videos to Assist You ★ Bargains on the Hottest Amiga Software and Hardware ★
- ★ Amiga Classes, Seminars and Keynote Speakers Giving You Access To the Most Complete Amiga Information Available ★

EXHIBIT HOURS

Friday, March 15
1:00 PM to 6:00 PM

Saturday, March 16
10:00 AM to 6:00 PM

Sunday, March 17
10:00 AM to 5:00 PM

VIPS

AmigaWorld Expo gives you access to Amiga leaders, will speak on a major topic of importance and interest.

each and everyone. Each meeting day, a celebrated Amiga leader

Friday, 5:00 PM
STEPHEN ROBBINS
Publisher
AmigaWorld Magazine

Saturday, 9:00 PM
TIM JENISON
President
NewTek, Inc.

Sunday, 12:00 Noon
KAILISH AMBWANI
President
Gold Disk, Inc.

FREE

AmigaWorld Expo Seminars and Panels are all included and the latest that Amiga developers and users have to offer.

with your admission to the Exhibits. Each day, experience the best

| | | | | |
|----------|---------------|---------------------------|-------------|--------------------------------|
| FRIDAY | 1:00 - 2:30 | AMIGA VIDEO OVERVIEW | 3:30 - 5:00 | AMIGA CONNECTIVITY PANEL |
| SATURDAY | 11:00 - 12:30 | AMIGA MULTIMEDIA PANEL | 1:30 - 3:00 | INSIDE WORKBENCH 2.0 SEMINAR |
| | 4:00 - 5:30 | AMIGA TO VIDEO SEMINAR | | |
| SUNDAY | 1:30 - 3:00 | AMIGA MUSIC/VIDEO SEMINAR | 3:30 - 5:00 | NEXT GENERATION AMIGA GRAPHICS |

AmigaWorld Expo will also announce the Winners of the 3rd Annual Art and Video Contest in our on-going Amiga Artists Theatre. To enter - and have a chance at prizes from NewTek, Inc., Gold Disk, Digital Creations, Supra Corporation, ASDG, Impulse, The Zuma Group, Dakota Corporation, Active Circuits, Inc., AmigaWorld Magazine, and More! - call us at 1-800-32-AMIGA for the Official Rules and Regulations.

ART CONTEST DEADLINE IS MARCH 1ST.

SAVE

When you Pre-Register to AmigaWorld Expo, you can

both money and time. 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 AmigaWorld Expo. **PRE-REGISTRATION DEADLINE IS MARCH 1, 1991.**

ONE DAY - \$15

TWO DAYS - \$20.00

THREE DAYS - \$25.00

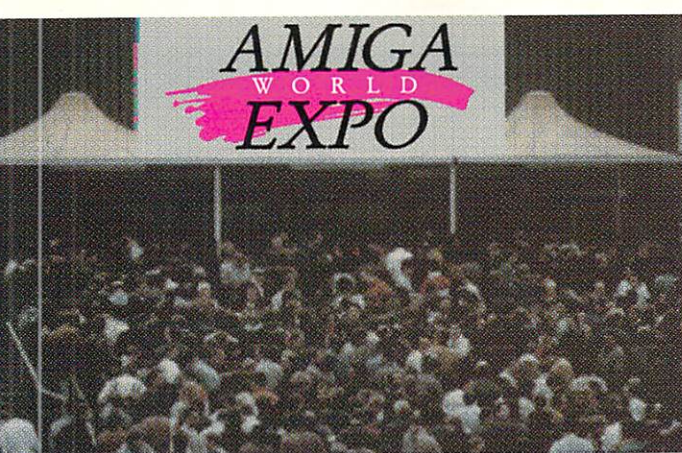
These prices already reflect the \$5 discount. Prices are \$5 more at the door. No refunds or cancellations after the pre-registration deadline. Your registration to AmigaWorld Expo includes admission to the Exhibition, Keynote Sessions, Amiga Seminars, and the AmigaWorld Expo Artists Theatre. Other events may be available for free or a small admission charge.

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.

AmigaWorld Expo 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 72 on Reader Service card.

AMIGA WORLD EXPO



Where the World Comes To See The Amiga!

New York Hilton and Towers at Rockefeller Center



Push your Amiga to its limits. With classes for both those the creative edge.

AmigaWorld Expo 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 50 students.

BASIC AMIGA CONCEPTS 10-1, Fri. and Sun.; 2-5, Sat.
 • Introduction to All Amiga Models • All Peripheral Expansion
 • Full Workbench Coverage • Beginning CLI

UNDERSTANDING THE CLI 2-5, Fri. and Sun.; 10-1, Sat.
 • Unleash your Amiga's Power • Most Essential CLI Commands
 • Exploring Public Domain • The World of Telecommunications



To efficiently get the most out of your Amiga, you need an 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.

THE AMIGA IN VIDEO Instructor: Oran J. Sands III
VIDEO I 10-1, Friday and Saturday
 • Basic Video and 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 GRAPHICS Instructor: Bradley Schenck
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 ANIMATION STATION Instructor: Steve Segal.
ANIMATION I 10-1, Saturday and Sunday
 • 2D Character Animation • Digitized Animation
 • Storyboarding • Character Design • Recording Your Work
ANIMATION II 2-5, Saturday and Sunday
 • 3D Animation • Character Modelling • Frame Requirements
 • Texture & Bump Mapping • Solid Modeling • Ray Tracing

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 •

PRESENTATION TECHNIQUES Instructor: Curt Kass
PRESENTATION I 10-1, Friday
 • Professional Art and Design Applications
 • Presenting for Education • Presentable Hardcopy
PRESENTATION II 2-5, Friday
 • Finished Artwork Production • Pre-press Approval Proofs
 • Package Design Mock-ups • Product Design and Presentation

AMIGA MULTIMEDIA Instructor: Steve Gillmor
MULTIMEDIA I 10-1, Sunday
 • Multimedia Defined • Hardware Options and Requirements
 • AmigaVision • Foundation • CanDo • Hypermedia
MULTIMEDIA II 2-5, Sunday
 • Commercial Applications • ARexx Connectivity
 • Multimedia Design • CDTV and CD-Rom Development



AmigaWorld Expo is pleased to offer all attendees these

hotel and travel arrangements.

HOTEL ACCOMODATIONS: The New York Hilton & Towers is the show site and headquarters hotel and is located at 1335 Avenue of the Americas between 53rd and 54th Streets. Rooms are available for a special Amiga World Expo discount rate: \$155 Single or Double. To make a reservation, call the Hilton directly at 212-586-7000. **HOTEL DEADLINE IS FEBRUARY 20, 1990.**

AIRLINES: American Airlines, the official carrier for AmigaWorld Expo is pleased to offer a 5% discount off any fare to New York City. To qualify, just call American at (800) 433-1790 and give them this ID number, Star File # 07Z14K.

AmigaWorld Expo • 465 Columbus Avenue, Suite 285 • Valhalla, NY 10595

AMIGA 500



Series II A500-HD+ from GVP

Make your Amiga 500 produce dazzling performance with any of the exciting new A500 expansion products. You can add memory, storage, processing speed, or all three. Installation isn't always easy but we're ready to help you, just call our toll-free TechLine. And since we pre-test your purchase, when you get it, it works.

The **Series II A500-HD+** from GVP is an excellent choice. With it you can add as much as 8 megs of RAM and up to a 100MB hard drive to your A500. Its game switch lets you play your favorites with RAM enabled. The external SCSI port makes room for up to 7 SCSI devices. And its unique design prepares your A500 for future options. Our warranty is 2 years. **Price with a 50MB drive \$679.**

And California Access offers **Bodega Bay**, a snazzy new set-up that makes your Amiga 500 look and act like an Amiga 2000. Call for pricing.

SupraDrive 500XP with 40MB harddrive and 2 megs -- \$745
SupraRAM 500RX -- call for pricing

GVP

ACCELERATOR BOARDS!

A3001 - 68030-882/28MHz+4MB **\$1549**
A3001 with 40MB Quantum **\$1899**
A3001 with 80MB Quantum **\$2149**

A3033 - 68030-882/33MHz+4MB **\$1699**

A3050 - 68030-882/50MHz+4MB **\$3199**

A2000 SERIES II SCSI + RAM

Series II with 100MB Quantum **\$CALL**

A500 SERIES II HARD DRIVE SYSTEMS + RAM

\$CALL

We carry a **COMPLETE** line of GVP products! Please call for other products and prices.

VIDEO



Video Toaster from NewTek

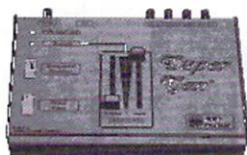
Tired of knowing more about Amiga video than the people you buy it from? It's not a comforting feeling. The technology is expanding so rapidly it's hard to keep up. So we've brought in some video experts. They can help you make the right selections and since all we sell has been pretested, your purchase arrives ready to run.

NewTek's **Video Toaster** is the most exciting video development ever. Digital video effects, character generation, color processing, dual frame buffering, and production switching are just part of all that it can do. But it takes some savvy to piece the products you'll need together. We have compatible TBC's and other products along with the knowledge to make it work. **Price \$1,449.**

The **Firecracker** frame buffer from Impulse is hot. It produces 16 million colors and lets you paint with all of them in real time. **Price \$1379.**

Frame Buffer from Mimetics with Capture and Imeg \$749
DigiView 4.0 from NewTek \$139

GENLOCKS



SuperGen

Exciting video creations begin with a solid genlock. But the market is changing so fast, it's not an easy choice. The issues of signal quality, tape format, and even the basic genlock options needed are tough to resolve. A dead end choice can be costly. We help you solve the mystery and offer a toll-free TechLine to help you get it running.

And the **SuperGen** from Digital Creations is often the perfect solution. It touts broadcast quality RS-170A composite output, two independent dissolve controls, dual video outputs, and is software controllable. It has key output and a selectable 3.58Mhz Notch Filter. We test it before we send it and offer a 180-day warranty. **Price \$669.**

The **SuperGen 2000s** is one of the best you can buy. It achieves the highest quality results and if your production needs warrant it, call for details. Briwall warranty is 180 days. **Price \$1,549.**

SOFTWARE

Productivity

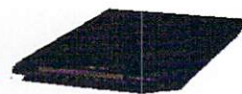
Even choosing the software you need is difficult these days. Memory requirements, operating system compatibility, and version changes can confuse your purchase decision. We help you sort out the issues, and we help you get your purchase installed and working when your order arrives. Just call our toll-free tech line if you have any problems. As always, if it's not quite right, send it back.

Imagine development package \$224
SAS C V5.1 (formerly from Lattice) \$205
DeluxePaint III \$99
ProWrite 3.1 \$114

Entertainment and Education

There's a time to work and a time to play and the Amiga is still the best game machine out there. We do carry the hottest entertainment and educational titles so call.

MODEMS



Courier HST

Awesome modem speed is suddenly a wise choice. With the size of files going up and the price-performance ratio coming down, slow modems just don't make sense. Raw speed is important but don't forget about effective throughput. And what about data compression? If you have any questions, we'll be glad to help. And when you've made your choice, we'll pre-test it and include the cables you need to make it work.

The **Courier HST** is a real screamer with effective baud rates of up to 38,400! And it's intelligent too. It makes automatic data-rate adjustments even as phone line conditions change so that you get the file intact the first time. It offers MNP Service Class 5 data compression increasing effective throughput up to 80%. It has a superset of the "AT" commands, auto-dial and auto-answer, 2 phone jacks for voice/data, and 12 front-panel LED indicators. Briwall warranty is 2 years. **Price \$635.**

Baud Bandit 2400 with MNP levels 2-5 and V.42bis \$139
SupraModem 2400 Plus with MNP levels 2-5 and V.42bis \$199

SCANNERS

Sharp JX100 and ScanLab 100



Desktop publishing is an art form. And getting the right picture placed perfectly into your publication is an exacting talent. Make it easier by getting the scanner that makes sense for you. And you can count on us to help you get it up and running.

The **Sharp JX100** color scanner with **ScanLab 100** from ASDG is an outstanding combination. With it you can process up to 18-bit images in sizes as large as 1280 by 800 pixels. And sizing your pictures perfectly is easy using the variable image reduction control. Six dithering techniques are included and with its special A-RES mode you can display 4,096 colors in HI-RES! All IFF formats are supported. **Price \$799.**

The **Migraph Hand Scanner** offers up to 400 dots per inch and includes excellent touch-up software. **Price \$360.**

PRINTERS



Diconix from Kodak

You want your good ideas to look good too so you need a printer that shows them off. But print resolution, available printer drivers, and the software you're using all affect which one is best for you. Tell us your needs and we'll be happy to help.

Like the new **Diconix Color 4** inkjet printer from Kodak. It produces beautiful results! And it uses plain paper to do it. Using the black, magenta, cyan, and yellow four-color approach with a resolution of up to 192 by 192 dots per inch the results are stunning. It handles cut-sheet or tractor-feed, prints on transparencies, uses non-smearing ink, and is surprisingly quiet. It's HP PaintJet compatible. From Briwall the warranty is 2 years. **Price \$1149.**

Citizen GSX-140 24-pin with optional Colorkit \$419
Citizen GSX-200 9-pin with optional Colorkit \$275

Supra Corporation

Amiga 2000 Hard Drive Packages

These packages come complete with controller and hard drive, are formatted and ready to use.

Supra Wordsync w/40MB Quantum HD **\$475**
Supra Wordsync w/100MB Quantum HD **\$827**

Amiga 1000 and 500 SupraDrive Packages

These packages come complete with controller, case, power supply, are formatted and ready to use.

A1000 A500
44MB/Syquest Supra Drive Pkg **\$1029 \$969**
105MB/Quantum Supra Drive Pkg **\$989 \$929**

Amiga 500XP Hard Drive Packages+RAM

20MB with 512K **\$575** with 2MB **\$665**
40MB with 512K **\$699** with 2MB **\$745**

SupraModems

SupraModem 2400 **\$111**

HARD DRIVES



Quantum ProDrive 105 meg

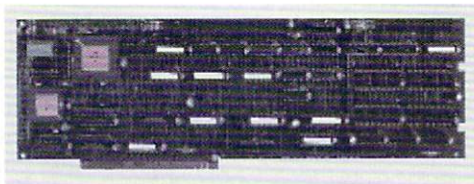
Floppies are a pain and you've had enough. You need the freedom and safety of a spacious hard drive. Say goodbye to disk swapping with the perfect choice from Briwall. We offer the best hard drives available with the controllers that make sense for your system and we include all the cables and mounting hardware you need. Your selection will arrive to you ready to run because we partition and format it to your specifications.

Quantum's 105 meg ProDrive is the centerpiece of their fourth generation, 3 1/2-inch drives. It's quick, quiet, and tough enough to travel. It sports the proprietary DisCache buffer management system for faster access times and the patented AIRLOCK automatic shipping lock. It has a 50,000 hour MTBF rating and it carries a full 2-year warranty. Price \$599

Quantum's 52 meg ProDrive is the most popular from their line of fourth generation, 3 1/2-inch drives. It's got all that you see above, including the warranty, in a 52 meg package. Price \$380.

Syquest 44MB Removable \$519
Seagate 3.5-inch, 84MB \$415

ACCELERATORS



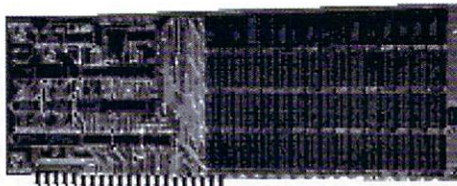
GVP 3033

Blistering speed is a 68030 running at 33 Mhz. But to you, it's more than just speed, it's satisfaction because when you hit return or double-click, results happen, right now. We want you to experience this satisfaction. So we ask which applications you will be using and on what system because it makes a difference. And when you receive the board, it's ready to plug in because we've fully tested and configured it.

How about the GVP 3033 with its 68030 nestled next to a powerful 68882 floating point processor both running at 33 Mhz? Now that's satisfying. Add 4 or 8 megs of 32 bit wide, high performance 80ns nibble mode DRAM and you're really flying. And this board lets you take full advantage of the 68030's BURST mode. It's a zero slot solution and from Briwall it carries a 2-year warranty. Price including 4MB of RAM -- \$1,699.

The GVP 3001 is hot too. It touts a speedy 28 Mhz 68030 and carries an 80MB Quantum AT drive to boot. From Briwall the warranty is 2 years. Price with drive and 4 megs -- \$2,149.

MEMORY



SupraRAM 2000

You've realized that 1 meg just doesn't cut it anymore. But do you know the issues involved in adding memory? With a purchase from Briwall, you don't have to worry because the chips of your choice are installed for you. Not only that, but your board is then tested on your Amiga model to assure that each chip is in perfect working order.

Take a look at the four-layer 2 meg board from Supra. It has zero wait states with hidden refresh and is expandable from 2 megs to 4, 6, or 8. And with 8 megs your applications have plenty of room to move! It comes with a full 180-Day warranty when you purchase it from Briwall. Price with 2 megs is just \$244. With 4 megs, \$359. And with 8 megs, \$567.

Or check out the 8-Up! from Microbotics, a zero-wait state, autoconfiguring, "fastRAM" memory board. It's available fully tested with 2, 4, or 8 megs for just \$250, \$365, or \$569 respectively and from Briwall it has a 240-day warranty.

Applied Engineering RamWorks 2000 with 8MB \$559
GVP RAM 2000 with 4MB \$375

Circle 132 on Reader Service card.

BRIWALL

SOLID PRODUCTS AND SOLID SUPPORT

Why buy from Briwall?

1. *Technical expertise to help you make the right decision.*
Buying the right product isn't easy. The broad selection makes it tough enough but newer versions, compatibility problems, and functionality issues make it even tougher. Now you have one more place to go for good advice.

2. *Pretested products to help ensure that your purchase works.*
Your purchase of any of the products in this ad, or any product included in this program, will be pre-tested on the Amiga model you're using to eliminate the frustration of receiving defective products. When you get it, it works.

3. *Technical expertise to help get your purchase up and running.*
Hardware peripherals are not always easy to get running. So we won't abandon you after the sale. We offer a free technical installation service for all hardware items. If you need us, call us and we'll walk you through the set-up.

4. *Warranties and guarantee.*
Buying mail order can be intimidating but we make it easy and safe. We guarantee that if your purchase doesn't run on your system, we'll exchange it or give you your money back. And we double the manufacturer's warranty period up to two full years on the products mentioned. We also offer an extended warranty so call for details.

Our personal services help you pick the right product and get it running on your system quickly.

1. **Toll-free TechLine.** We offer a free technical installation service. We include the number with your purchase.
2. **Pretest Program.** We set-up and pretest your hardware purchases so that when you get it, it works.
3. **Briwall Warranty.** You're covered for twice as long because we double the manufacturer's warranty up to two years on the products mentioned. Call for our extended warranty.
4. **PLUS,** we offer loaner hard drives, we **do not** hold personal checks, we ship your order in packaging that keeps it safe, and we offer a formatting and partitioning service for hard drives.

1-800-638-5757

Outside USA: (215) 683-5433 Tech Support (215) 683-5699
Customer Service (215) 683-5433 FAX (215) 683-8567

- ☐ Any Visa and MasterCard accepted with NO surcharge
- ☐ Your credit card is not charged until your order is shipped

SHIPPING

- ☐ All orders received before 3PM will normally be shipped within 2 business days
- ☐ Software shipping charges are \$4.50 per order via UPS ground to anywhere in continental USA
- ☐ Hardware shipping charges are \$4.50 handling plus actual shipping and insurance charges
- ☐ All UPS shipments are sent signature required
- ☐ 2nd Day Delivery via Federal Express® is available for \$12, Next Day Delivery only \$15. (any order up to 20 pounds.)



BRIWALL

P.O. Box 129/58 Noble Street
Kutztown, PA 19530

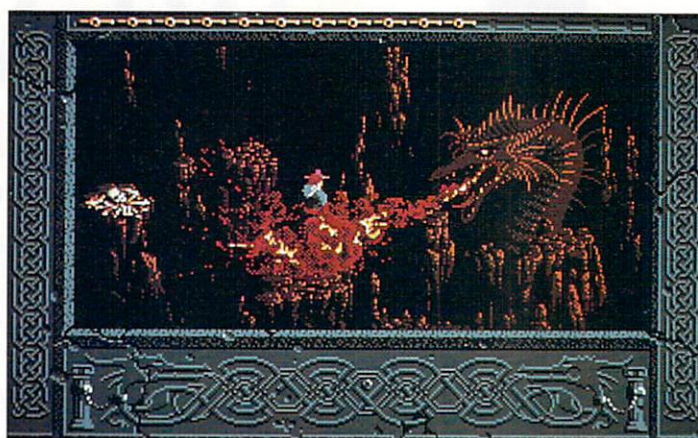
Order lines are open 24 hours

Store hours: Monday - Friday 9AM-6PM, Saturday 9AM-12Noon

From p. 78.

game play deserves top billing. You use your joystick to direct a bearded fellow with a staff through eight levels of interlocking puzzles and brawls in his search for his wizard mentor. Combat can take some getting used to—in this 3-D world, your character may be facing you as he fights—but you'll often find creative ways to use your inventory. The bank-camera perspective and smooth, multi-directional scrolling will put you in mind of *The Faery Tale Adventure*. Unlike that classic game, however, this is not a real role-playing game; character enhancement seems to be mostly a happy accident.

The game is actually fairly small as dungeon games go—only 50+ rooms. Don't be fooled, though; it's hard. You will die regularly. Mercifully, the manual doubles as hint



Decipher puzzles and mazes to save the wizard.

book, with a walk-through of Level 1 and tips on six of the other seven.

The Immortal has a few infirmities. It takes ages to load its two disks. The music, while lovely, almost drowns out the sound effects. (At least you can turn it off.) Also, there's no retreat once combat is under way—not too realistic, guys—

and every fight is to the death.

Although the old kill-the-dragon-save-the-wizard theme was growing fungus two years ago, *The Immortal* is so vibrant it makes the genre feel new. Go out and get this one now. (\$49.95, *Electronic Arts*, 1820 Gateway Dr., San Mateo, CA 92109, 415/571-7171. One megabyte and joystick required.)

From p. 78.

Future Wars is proving a short game for Steve Preston of Richlandtown, PA, who can't get past the map in the office at the start. Steve has the right idea about using the little flag on the map, but he may want to look closely at the map first, and remember that objects are often tiny.

• Some people report trouble getting into the final castle (the desert pyramid) in *Drakkhen* (Draconian, \$59.95) even though they've done everything correctly up to that point. It's really a simple problem. Just try coming from a different direction.

A different class of *Drakkhen* questions comes from people who've left the pyramid and are wondering what to do with their lives. You're just about done. Be sure you've read all four passages in castles of the four elements. (If you don't know what I mean, then you're not ready. Even if you do know, you may have missed one. It's well hidden.)

David Norton of Redding, CA, may be ready for the final plunge. He's been instructed to meet a dragon lord in a "blind alley," but he's uncertain where to go. Don't bother looking in the castles, Dave. Do you recall seeing anything that looked remotely like an alley (or path)?

A couple of other *Drakkhen* items...For David McLeod of New York: The ring that leads you to the Princess of Air's castle isn't a "takeable" item. If you've been offered it, you already have it, and it will work without being invoked. Have you noticed the arrows on the ground that mark the roads leading away from the castles? See anything similar?

Eric Bezanson of Prior Lake, MN, is a bit off track. You can't enter the Princess of Earth's castle; it's just a static graphic. The castle you want is directly east of the Prince's. Make a detour north or south around the firestones and get back on the road again.

• I'd hoped to tackle a backlog of *Dungeon Master* (FTL, \$39.95) mail this time, but I have room for only the promised solution to a common problem down on Level 5. Last time we

Continued on p. 88.

POWER PINBALL

By Graham Kinsey

Pinball addicts rejoice; *Power Pinball* is here. With it, you can play several ready-made pinball machines, modify them, or build your own from scratch.

To create your own, design the walls in the wireframe editing mode, add bumpers from the parts screen, and edit the shapes of existing bumpers. With the parts assembled, you add graphics to your machine from a paint program. You can change not only the background image, but also the wall, bumper, scoreboard, and title-area images. For sounds, you can assign digitized effects to each bumper, special events, and such standard occurrences as the ball falling between the flippers to the out hole.

Pinball machines aren't

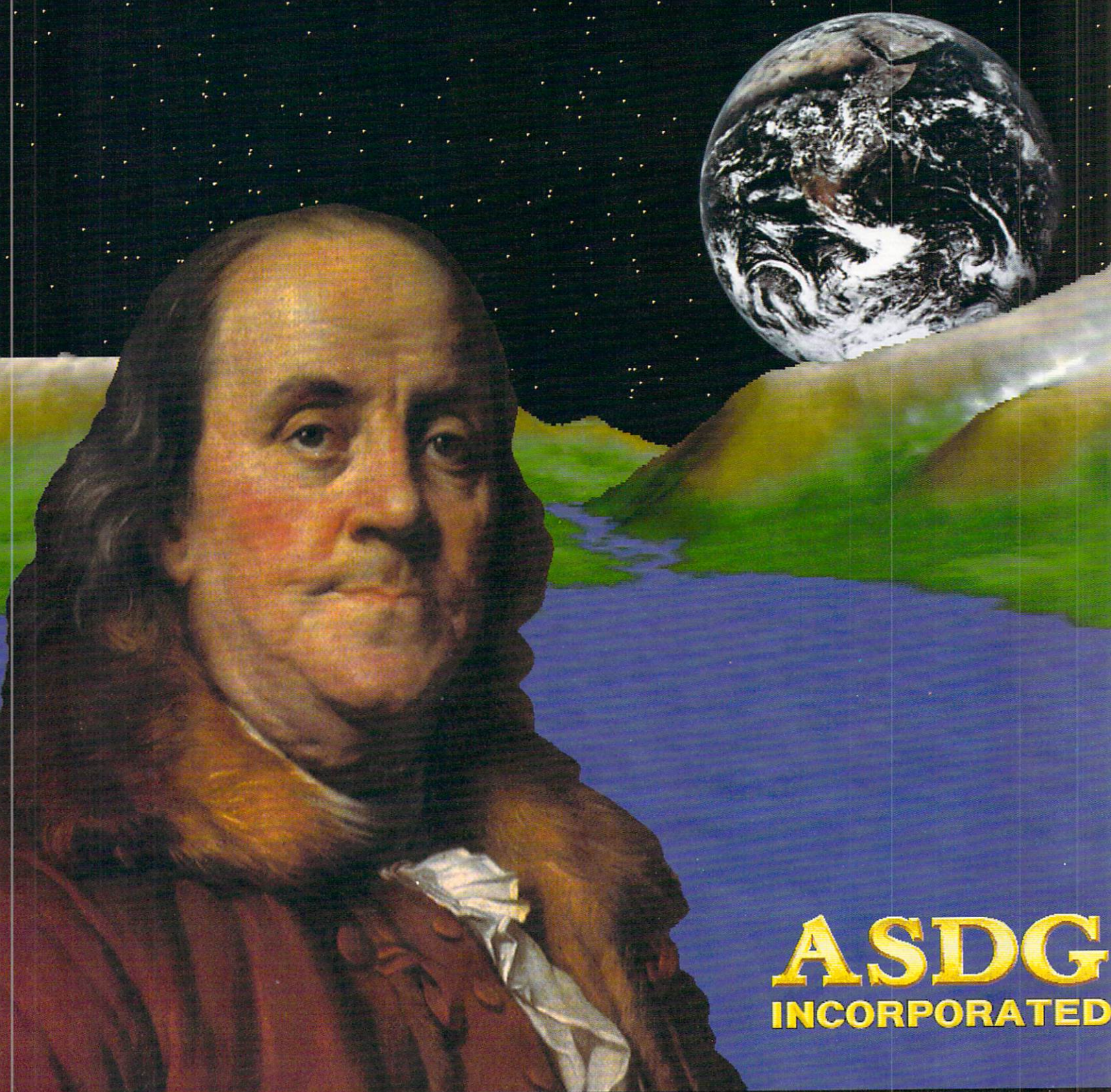


Build your own pinball heaven.

much fun unless they're complex. *Power Pinball* lets you implement drop targets, spinners, rollovers, holes (which

capture the ball and shoot it back in a different direction), and one-way gates. You then assign each bumper to an ►

IMAGE PROCESSING'S COMMON GROUND



ASDG
INCORPORATED

ART DEPARTMENT
PROFESSIONAL

[6 0 8] 2 7 3 - 6 5 8 5

Circle 98 on Reader Service card.



Great Prices! Superb Service!

For information or price listing:

414-548-8125

Pursuable BBS:

414-548-8140

Spotlight on Software

| | |
|-------------------------------------|--------|
| A10 Tank Killer | 28.99 |
| AMOS (Game Creator) | 59.99 |
| AmigaVision | 89.00 |
| Animation Studio | 99.00 |
| Apprentice | 19.99 |
| Armour-Geddon | 26.99 |
| AudioMaster III | 60.00 |
| Awesome | 39.00 |
| Barney Bear Goes to Space | 22.00 |
| Bars & Pipes | 165.00 |
| Bars & Pipes Multi-Media Kit | 37.99 |
| Bars & Pipes Music Box A or B | 37.99 |
| Blitz BASIC | 106.00 |
| Broadcast Titrer | 229.00 |
| Buck Rogers | 35.99 |
| Byte 'N Back | 41.98 |
| Carthage | 26.99 |
| Chaos Strikes Back | 24.99 |
| CheckMate | 32.99 |
| Classic Board Games | 19.99 |
| Cross DOS 4.0 | 24.99 |
| Curse of the Azure Bonds | 35.99 |
| Deluxe Paint III | 105.00 |
| DigiPaint 3 | 61.99 |

ICD, Inc.

| | |
|--------------------------|--------|
| AdIDE | Call |
| AdRAM 2080 OK | 135.00 |
| AdRAM 540 OK | 115.00 |
| AdRAM 540 2 Megs | 215.00 |
| AdSpeed | 249.00 |
| Flicker Free Video | 319.00 |

| | |
|---|--------|
| DigiView Gold | 130.00 |
| DinoWars | 24.99 |
| Disk Labeler (Make custom labels) | 24.99 |
| Distant Suns | 42.99 |
| Dragon Lord | 35.00 |
| Dragon Wars | 31.99 |
| Duck Tales | 26.99 |
| Electric Thesaurus | 31.99 |
| Evira | 35.99 |
| Excellence! | 125.00 |
| F-19 Stealth Fighter | 38.00 |
| Falcon | 33.89 |
| Falcon Mission Disk #2: Firefight | 18.50 |
| Gold Disk Type Fonts (Each) | 36.99 |
| Harpoon | 43.99 |
| Heart of the Dragon | 31.10 |
| Immortal | 35.00 |
| Indianapolis 500 | 34.99 |
| Imagine | 195.00 |
| Jack Nicklaus Unlimited Golf | 34.99 |
| Kara Fonts: ANIM 3 | 33.89 |
| Killing Game Show | 28.50 |
| Lattice C SAS/C | 199.00 |
| Lemmings | 31.99 |
| Macro Paint (Lake Forest Logic) | 79.00 |
| Maverick | 25.99 |
| McGee and Katy's Farm | 24.99 |
| Monday Night Football | 35.99 |
| Music X Junior | 89.99 |
| Obitus (w/ T-Shirt) | 36.00 |
| PageStream 2.0 | 167.00 |
| PageStream Forms: Business | 24.99 |
| P.H.A.S.A.R. 4.0 | 60.00 |
| Pictionary | 25.00 |
| Pixel 3D | 52.99 |
| Power Pinball | 23.99 |
| Prince of Persia | 25.00 |
| Pro Vector | 175.00 |
| Pro Write 3.0 | 95.99 |
| QuarterBack | 43.00 |
| QuarterBack Tools | 53.00 |
| Shadow of the Beast I | 24.00 |
| Shadow of the Beast II | 35.99 |
| Sim City Planning Commission | 11.99 |

Progressive Peripherals

| | |
|-------------------------------|--------|
| Modem, Baud Bandit MNP | 125.00 |
| W/ Baud Bandit Software | 155.00 |
| FrameGrabber | 535.00 |
| W/ 2.0 Software | 585.00 |
| QicTape | 495.00 |
| Double Talk | 375.00 |

Spotlight on Hardware

| | |
|--|--------|
| Accelerator, Sapphire 68020 | 299.00 |
| Accelerator, GVP 68030 Board | 789.00 |
| ATonce | 279.00 |
| AutoLink (Auto Digitizing Cable) | 44.00 |
| Bodega Bay | 325.00 |
| Color Splitter | 106.00 |
| Diskettes, Sony Bulk 100 Pack | 65.00 |
| Poppy Drive, Internal 2000 | 90.00 |
| Poppy Drive, AE High Density | 195.00 |
| Poppy Drive, AE 880K | 95.00 |
| Poppy Drive, Master 3A | 95.00 |
| Harddrive, 40Q | 345.00 |
| Harddrive, 105Q | 595.00 |
| Harddrive, Series II 500 40 MB | 599.00 |
| Harddrive, Series II 500 100 MB | 975.00 |
| Making Music on the Amiga Book | 26.00 |
| MegaChip 2000 Board | 235.00 |
| Memory Board, BaseBoard OK | 115.00 |
| Memory Board, 68030 4-Meg | 799.00 |
| Memory Board, GVP 8/2 | 205.00 |
| MIDI Interface, ECE | 52.00 |
| Modem, DataLink 2000 MNP | 165.00 |
| Modem, DataLink Express MNP | 189.00 |
| Send FAX Option | 35.00 |
| Mouse, Konyo Golden Image | 45.00 |
| Mouse, Konyo Optical | 69.00 |

Supra Corporation

| | |
|---------------------------------------|--------|
| Poppy Drive, SupraDrive | 99.00 |
| Hardcard, 40Q W/ Word/Sync | 439.00 |
| Hardcard, 105Q w/ Word/Sync | 689.00 |
| Harddrive, Supra 500XP 105/2 | 929.00 |
| Harddrive, Supra 500XP 40/2 | 689.00 |
| Memory, SupraRAM 2000 2 Megs | 209.00 |
| Memory, SupraRAM 2000 4 Megs | 289.00 |
| Modem, Supra 2400 With Cable | 109.00 |
| Modem, Supra 2400 MNP | 149.00 |
| Module (2Meg) for 500 Harddrive | 229.00 |
| SCSI Controller, Word/Sync | 119.00 |

| | |
|---------------------------------------|---------|
| Perfect Sound 3.0 | 69.00 |
| Phantom SMPTE Interface | 179.00 |
| Power Supply 500 AE Heavy Duty | 86.00 |
| Printer, TI PostScript PS 35 | 1899.00 |
| Printer, TI PostScript PS 17 | 1749.00 |
| Printer, HP PaintJet | 999.00 |
| Removable Harddrive, Ricoh | 799.00 |
| SCSI Controller, Series II 2000 | 219.00 |
| Super Agnus Chip | 95.00 |
| Trackball, AmTRAC | 69.99 |
| Video Master, VIDTek | 1075.00 |
| Video Toaster | 1495.00 |

Have a safe and happy 1991!
Judy, Laurie, Dale, Shannon,
Dennis, Mary

Orders Only Please:

800-544-6599

Visa/MC/CODs

Make Safe Harbor YOUR Computer Port

W255 N499 Grandview ■ #204 ■ Waukesha, WI 53188 ■ 9 AM to 5 PM Mon.-Sat.

G A M E P R E S E R V E

event (up to a total of 99). Once the bumper is activated, you can instruct the program to add points to the main score or the bonus score, add to the bonus multiplier, award an extra ball or free game, send the ball directly to the out hole, or even randomly trigger one of several designated rewards.

The Options screen allows you to set other variables, such as the machine's play speed and gravity, the color of the flippers, the number of balls per game, and Tommy Mode (which allows you to emulate Tommy the Pinball Wizard by turning off the display so you can't see the machine). Those who long for a true-to-life feel in a computer pinball game will love the Shake option. Don't "push" the machine too hard to the left or right; Power Pinball has a Tilt mode, too!

Version 1.02 of Power Pin-

ball is fairly stable, but not perfect (especially with accelerated Amigas). You can sometimes freeze the machine by using the Shaking feature and hitting the flippers at the same time, so be careful. Power Pinball's biggest problem is what it doesn't do. The game's logic portion is rather crude, making it hard to add complexity when programming your own machines. Nor does Power Pinball support some basic options such as multiple-ball play and more than two flippers in a machine.

The developer is committed to improving the game, however, and is already working on version 2.0. Until its release, you'll have plenty of fun with Power Pinball... just don't shake the machine too much. (\$39.95, KarmaSoft, PO Box 1034, Golden, CO 80402, 303/277-1241. 1 MB of RAM recommended.)

TURRICAN

By Peter Olafson

A vast, futuristic arcade adventure, Turrican has almost everything fans of the genre could want, and a few things they might not even expect. You pilot a silver-armored sprite-killer through five worlds (each with two or three large sub-levels) in search of the three-headed Morgul, whom the docs identify as the source of all mankind's nightmares.

Turrican is the Pentagon of platform games; the levels, delightfully, seem to go on forever, and they're not as omnidirectional as in some games. There are little side trips to make into bat-filled caves, up stairways to the sky, dead ends that turn out not to be dead ends and dead ends that do. There are hidden extra lives

and boxes—invisible until shot—that hold huge supplies of potent weapons. I can't wait to go back and see what I missed. Said levels are rendered in an array of hard, handsome colors, but with subtlety. (As you descend into the many canyons, the sky grows progressively darker.) By the end of your war with World One, you'll be having trouble finding your way out.

Along the way, you're menaced by everything from stumpy robots and bazooka-wielding fat boys to lightning bolts and mashing metallic fists. All are desperate to rub up against you and run down your poor little supply of life. On your side are the usual variety of weapons—with some clever methods for extending ▶

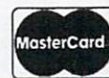
Sideline Software

Your #1 European Amiga Budget Dealer!

840 N.W. 57th Court, Ft. Lauderdale, Florida 33309 ☎ INFO? (305) 491-0398 FAX (305) 772-0334



New Titles Daily • New Budget Titles Weekly



NEW! NEW! NEW! NEW! NEW!

| | | | |
|--------------------|---------|-----------------------|---------|
| A.T.F. 2 | \$35.00 | Pang | \$36.00 |
| Badlands | \$37.00 | Robocop 2 | \$35.00 |
| Battle Command | \$36.00 | Simulcra | \$35.00 |
| Cadaver | \$37.00 | Strider II | \$35.00 |
| Captive | \$35.00 | Super Off-Road Racing | \$35.00 |
| Chase HQ | \$35.00 | Supremacy | \$40.00 |
| Globulous | \$35.00 | Team Yankee | \$40.00 |
| Golden Axe | \$35.00 | Tournament Golf | \$35.00 |
| Lotus Turbo Esprit | \$35.00 | U.M.S. 2 | \$35.00 |

DISCOUNT TITLES

| | | | |
|-----------------------|---------|------------------------|---------|
| After the War | \$ 9.95 | Action 5 in 1 | \$13.95 |
| Archipelagos | \$ 9.95 | Barbarian 2 | \$13.95 |
| Battle Valley | \$ 9.95 | Bloodmoney | \$13.95 |
| Blasteroids | \$ 9.95 | Colorado | \$13.95 |
| Captain Blood | \$ 9.95 | Crackdown | \$13.95 |
| Conflict In Mid East | \$ 9.95 | Deluxe Paint | \$13.95 |
| Cybernoid 2 | \$ 9.95 | Dynasty Wars | \$13.95 |
| Dig Dug | \$ 9.95 | Gauntlett 2 | \$13.95 |
| Dragon Spirit | \$ 9.95 | Pacland | \$13.95 |
| Fast Lane | \$ 9.95 | Return to Atlantis | \$13.95 |
| Fright Night | \$ 9.95 | Seven Gates of Jambala | \$13.95 |
| Fusion | \$ 9.95 | Solitaire Royale | \$13.95 |
| Galaxy Forc | \$ 9.95 | Sonic Boom | \$13.95 |
| Goldrunner 2 | \$ 9.95 | Space Harrier 2 | \$13.95 |
| Italy 90 Soccer | \$ 9.95 | Strip Poker Deluxe | \$13.95 |
| Jug | \$ 9.95 | Thunderbirds | \$13.95 |
| Leatherneck | \$ 9.95 | Typhoon Thompson | \$13.95 |
| Nebulous | \$ 9.95 | Vindicators | \$13.95 |
| Operation Neptune | \$ 9.95 | Waterloo | \$13.95 |
| Powerboat Racing | \$ 9.95 | Willow | \$13.95 |
| Pro Tennis | \$ 9.95 | Hoyle's Book of Games | \$16.95 |
| Pursuit To Earth | \$ 9.95 | Shadow of the Beast | \$16.95 |
| Rodeo Games | \$ 9.95 | Stunt Car Racer | \$16.95 |
| Rollercoaster Rumbler | \$ 9.95 | Frontline | \$18.95 |
| Skrull | \$ 9.95 | Resolution 101 | \$18.95 |
| Slipstream | \$ 9.95 | Thunderstrike | \$18.95 |
| Steigar | \$ 9.95 | Time Machine | \$18.95 |
| Sufflepuck Cafe | \$ 9.95 | TV Sports Football | \$18.95 |
| Summer Olympiad | \$ 9.95 | | |
| Turbo Cup | \$ 9.95 | | |

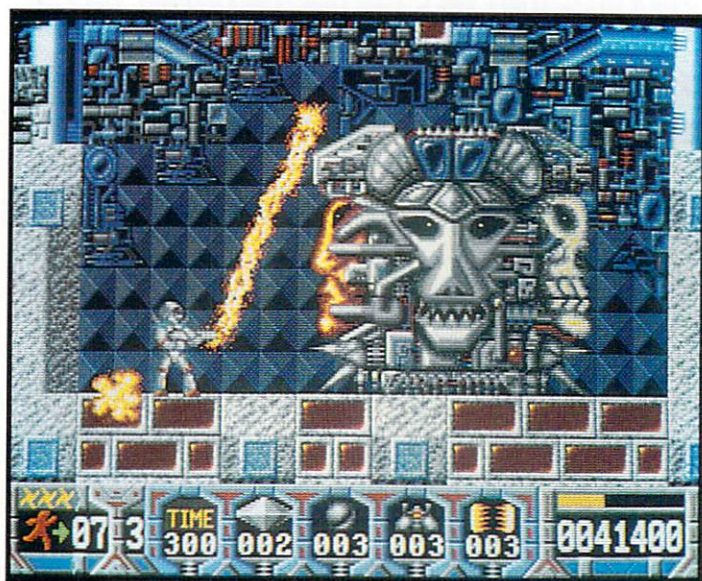
This ad composed using PageStream DTP at 300 d.p.i.

MORE DEALS!

| | |
|------------------------|---------|
| Anarchy | \$14.95 |
| Bard's Tale II | \$14.95 |
| Blockout | \$14.95 |
| Carrie Command | \$14.95 |
| Chambers/ShaoLin | \$14.95 |
| Chronoquest II | \$14.95 |
| Cloud Kingdom | \$14.95 |
| Cycles | \$14.95 |
| Defenders of the Earth | \$14.95 |
| Dyter 07 | \$14.95 |
| F-18 Interceptor | \$14.95 |
| Fast Break | \$14.95 |
| Ferrari Formula 1 | \$14.95 |
| Final Countdown | \$14.95 |
| Fourth and Inches | \$14.95 |
| Grand Prix Circuit | \$14.95 |
| Hammerfist | \$14.95 |
| Harmony | \$14.95 |
| Heat Wave | \$14.95 |
| Hotrod | \$14.95 |
| Hound of the Shadows | \$14.95 |
| Infestation | \$14.95 |
| Keef the Thief | \$14.95 |
| Kid Gloves | \$14.95 |
| Millenium 2.2 | \$14.95 |
| Ninja Spirits | \$14.95 |
| Operation Spruance | \$14.95 |
| P-47 | \$14.95 |
| Rick Dangerous | \$14.95 |
| Silent Service | \$14.95 |
| Silkworm | \$14.95 |
| Star Glider 2 | \$14.95 |
| Swords of Twilight | \$14.95 |
| Super Wonder Boy | \$14.95 |
| Test Driver | \$14.95 |
| Third Courier | \$14.95 |
| Time of Lore | \$14.95 |
| Triad Vol. 2 | \$14.95 |
| Weird Dreams | \$14.95 |
| Xenon II | \$14.95 |
| Zany Golf | \$14.95 |
| Corporation | \$23.95 |
| Dungeon Master | \$23.95 |
| Torvak the Warrior | \$23.95 |

ORDERS **1-800-888-9273** ONLY

Circle 238 on Reader Service card.



As the enemy gets bigger, your aim better get better.

their range—and the ability to turn into a gyroscope, which looked more like a buzzsaw blade to me. If you have a two-button joystick, you'll find it is supported as well.

On the down side, the Continue option is a real dog for a game this big. In arcade terms, a "continue" is the ability to resume play where you left off in your last game. In

Turrican, it seems to mean you restart from scratch—which you could have done anyway. Perhaps you have to complete a full world first. If so, that's tough. This one's not that easy.

Nevertheless, pick this one up pronto. Turrican is one of the year's essential arcade games. (\$39.95, *Innerprise*, 128 Cockeysville Rd., Hunt Valley, MD 21030, 301/785-2266. No special requirements.)

From p. 84.

dealt with the three puzzle rooms off the main corridor at the start of the level. The trouble begins two doors later in the little maze on the hall's right branch. You'll quickly find a switch at the top of the maze that opens a secret room at the bottom, but how to keep it open? Find the other secret room, with two switches of its own. It's in the lower left-hand corner.

If you need help with a game, you can reach me by mail at 12 W. 104th St., Apt. 3E, New York, NY 10025 (send a SASE if you want a personal reply) and by E-mail on GEnie as P.OLAFSON and on P/Link as Peteroo.

COMPANIES MENTIONED:

Draconian, distributed by Data East, 1850 Little Orchard St., San Jose, CA 95125, 408/286-7074.

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

FTL Games, 6160 Lusk Blvd., C-206, San Diego, CA 92121, 619/453-5711.

Infocom, 3885 Bohannon Dr., Menlo Park, CA 94025, 415/329-0800.

Lucasfilm, distributed by Electronic Arts.

Sierra On-Line, PO Box 485, Coarsegold, CA 93614, 209/683-4468, 800/326-6654. ■

Templicity™

Home And Small Business Templates

If you hate setting up spreadsheets and making up formulas, Templicity™ will save you time. Instantly calculate and analyze mortgage rates, evaluate a car loan, estimate the maximum affordable price for property, design a savings program for a child's education, etc. This package of 104 prefabricated spreadsheet templates covers everything from bookkeeping and budgets to inventory and real estate. Interactive tax templates included for 1991 (calendar year 1990) are 1040, A, B, C, D, E, F, SE, 244, AND 4562. Available in separate versions for Analyze!, MaxiPlan, Superplan, and VIP. \$39.95



"Templicity is an excellent value and I highly recommend it." *Amiga World*, October 1990
 "...a wealth of tutorial material..." *ST Informer*, Sept. 1988
 "Templicity gives you ... a lot for your money." *MACWORLD*, August 1990

Blank Disks



These are the same double-sided double-density JVC™ high quality disks that we use for our products. We buy disks in large quantities and pass the savings on to you. 50 3 1/2" disks--\$39.95



To order by mail, send check or money order to:
 (CA res. add 6 1/4 %)

The Sterling Connection
 Box 4850
 Berkeley, CA 94704



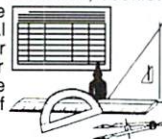
To order by phone, call
415-655-2355.
 (8 am to 5 pm PST)

Any 2 of above--\$69.95
 Any 3 of above--\$99.95
 All four--\$119.95
 We pay shipping!
 (Continental USA)



Qwikforms™ for PageStream™

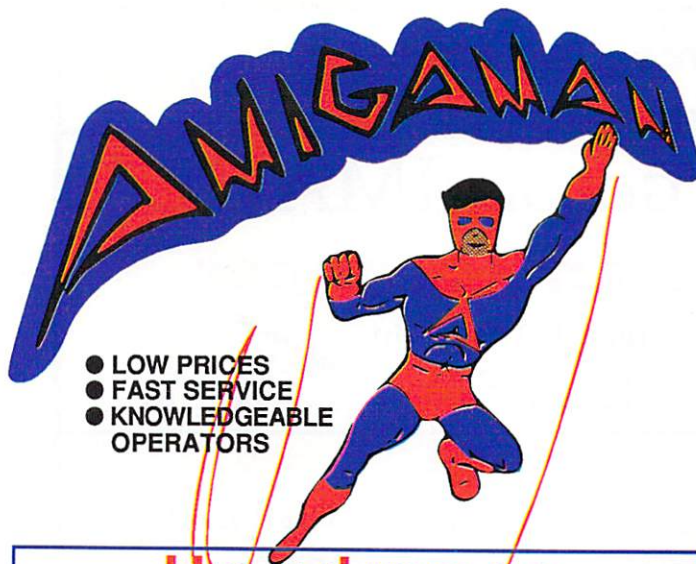
The key to quick and easy, professional-looking forms and documents is Qwikforms™. It's the only package of forms with over 100 different, adjustable layouts. Just choose the one you want, insert your name, logo, or text, and print. Save hours of time. Business forms include invoices, inventory control, order forms, purchase orders, budgets, real estate forms, job estimates, applications, organizers, ledgers, charts, etc. Page layouts include newsletters, letterheads, business cards, brochures, booklets, envelopes, press release, resumes, etc. Legal forms include wills, deeds, claims, bill of sale, power of attorney, etc. Personal forms include announcements, cards, architectural symbols for home planning, mail lists, invitations, etc. Use them "as is" or customize them to match your specific requirements. There are also guides and many other unique and unusual uses of PageStream. (Avail. 2/15/90) \$39.95



ClassicWare™

A complete package of the 100 best shareware programs for word processing, spreadsheet, database, games, utilities, music, communications, etc. 13 disks! Save dozens of hours downloading. Also included are spelling checkers, accounting programs, mail list organizers, sequencers, ram disks, and much more. These programs are shareware or public domain and a contribution to the individual author is often requested and rewarded with additional support and upgrades. \$39.95





- LOW PRICES
- FAST SERVICE
- KNOWLEDGEABLE OPERATORS

Hardware

| Memory-A500 | Memory-A2000 | Video |
|--|---|--|
| Applied Engineering Ram Works 500 \$69 Golden Image RC500 512K RAM exp. \$49 SupraRam 500(512K w/clock) \$62 500RX(512K to 8MB) Call BaseBoard 0K RAM \$112 1MB \$166 2MB \$216 ICD ADRAM 0K RAM \$115 1MB \$169 2MB \$219 | Applied Engineering Ramworks 2000 0K \$112 Ramworks 2000 512K \$137 Ramworks 2000 1mb \$159 Ramworks 2000 2mb \$209 Golden Image RC2000 2MB RAM exp. \$199 SupraRam SupraRam2000 2mb \$209 SupraRam2000 4mb \$309 SupraRam2000 8mb \$509 | Magni w/ controller \$1599 MiniGen \$209 ProGen \$349 SuperGen \$649 SuperGen 2000S Call Video Toaster Call |
| Harddrives-A500 | Harddrives-A2000 | Digitizers & Scanners |
| GVP A500-HD8 +0/40 \$659 A500-HD8 +0/52Q \$779 A500-HD8 +0/100Q Call Supra 20MB-A500XP \$549 40MB-A500XP \$699 105MB-A500XP \$969 | GVP HC8+0/0 Series II \$219 HC8+0/40Q Series II \$599 HC8+0/80ST Series II \$679 HC8+0/100Q Series II \$939 50MB Floppy HD ext. \$929 WT150 Tape ext. \$699 Supra Wordsync controller \$119 40MB-A2000(Qtm) \$489 80MB-A2000(Qtm) \$719 105MB-A2000(Qtm) \$789 | AutoDroid \$46 Color Splitter \$112 Copy Stand \$62 DigiDroid \$67 Frame Grabber \$649 Hand Scanner w/Touchup \$299 JX100 Scanner w/Software \$749 JX300 Scanner w/Software \$2999 Pan.1410 Cam.w/lens \$199 DCTV \$429 |
| Floppy Drives | Accelerators | Input Devices |
| Applied Engineering 880k external \$99 1.52MB external \$199 Golden Image Master 3A-1 Floppy Drive \$82 Master 3A-1D Floppy Drive \$129 Supradrive 880K Ext. 3.5 floppy \$99 Chinon A2000 Internal drive \$89 | GVP A2000 Accelerators A3001-4MB/0 \$1599 A3001-4MB/40Q \$1999 A3001-4MB/80Q \$2299 A3033-4MB/0 \$1899 A3033-4MB/40Q \$2299 A3033-4MB/80Q \$2449 A3030-4MB/80Q \$3299 A500 Accelerator Mega Midget Racer 25Mhz \$699 | Boling Optical Mouse \$94 Cordless Mouse \$89 OptoMech. Mouse \$37 Optical Mouse \$59 Mouse Master Switch \$29 BatHandle Joystick \$25 Boss Joystick \$15 Silk Stk Joystick \$7 Tac 50 Joystick \$17 Amrac Trackball \$71 Kraft Trackball \$59 |
| AMIGA 500 EXPANSION SET | Flicker Free Video | Drawing Tablets |
| 512K RAM Exp. w/Clock & 880K External Drive lowest price \$129 | Bundle - for A2000/2500 VGA Monitor with Video Display Enhancer Card Price Breakthrough \$649 | Dakota Sketchmstr 12x12 \$399 Dakota Sketchmstr 12x18 \$629 Summa Graphics II Tablet \$499 |
| Monitor Stand | Modems | Hardware (misc) |
| A CBI exclusive Designed for the A500 of tough clear Lexan Only \$29 | Supra Supramodem 2400 external \$109 Supramodem 2400w/mnp \$159 Supramodem 2400zi \$115 Supramodem 2400zi plus Call Applied Engineering DataLink Express ext. \$169 DataLink Exp. MNP-5 \$199 DataLink Exp. SendFax \$229 DataLink 2000 int. \$139 | AMAX II \$149 AT-Once \$299 Bulk 3.5 disks(100) \$69 Flicker Fixer \$399 Flicker Fixer's DEB 2000 \$99 Network controller / A500 \$686 A2000 \$623 HD A500 Powersupply \$86 |
| Audio | Books | Video Tapes |
| ECE Midi \$49 Midi Gold 500 \$56 Midi Gold Insider \$65 Phantom SMPTE MIDI Call Digitizers A.M.A.S. \$133 Audiomaster 3 \$62 Perfect Sound 500 3.1 \$69 | Amiga for Beginners \$13 Amiga System Prog. Guide \$26 Advanced System Prog Guide \$26 Amiga Dos Quick Ref. Guide \$6 Amiga Dos Inside & Out \$15 Amiga Basic Inside & Out \$19 Machine Language \$15 Graphics Inside & Out \$26 Amiga C for Beginners \$15 Amiga C for Advanced \$26 3DGraphic Prog. in BASIC \$15 Desktop Video Guide \$15 Best of Amiga Tricks & Tips \$23 Making Music on the Amiga \$26 Amiga Printers Inside & Out \$26 Amiga Drives Inside & Out \$23 | Getting Started With Amiga \$24 Video Grphic Technique \$34 Color Cycling Anim \$34 Digitizing for Effect \$34 Guide to Amiga HrdDrv \$42 Ultimate Amiga Guide to Video Production I \$34 Ultimate Amiga Guide to Video Production II \$34 The World of Turbo Silver \$24 Pro Techniques w/DPaint III \$24 |

All the latest titles in stock
Call for those not listed

All the latest titles in stock
Call for those not listed

All the latest titles in stock
Call for those not listed

All the latest titles in stock
Call for those not listed

All the latest titles in stock
Call for those not listed

All the latest titles in stock
Call for those not listed

Orders Only (800) 262-0533

Canada: (412) 962-0533

9AM to 8PM EST M-F, Sat 10AM to 5PM

Software

| Art & Graphics | Entertainment(cont.) | Productivity |
|---|--|--|
| 3D Professional \$295 Art Department \$56 Deluxe Paint III \$94 Digi-Paint 3 \$62 Digi-View Gold 4.0 \$129 Disney Anim. Studio \$99 Special HomeBuilder's CAD \$125 Imagine \$196 NEW IntroCad Plus \$94 Professional Draw 2.0 \$125 Spectracolor \$199 NEW Sculpt-Animate 4D \$399 Sculpt-Animate 4D Jr. \$99 Turbo Silver 3.0 \$69 NEW LOW PRICE Vista \$62 | Dragon Lord \$34 Dragon Strike \$35 Dragon Wars \$31 Dragon's Lair 2 \$43 Drakkhen \$37 Duck Tales \$25 Dungeon Master 2 \$37 Elvira: Mistress of the Dark \$37 F-29 Retaliator \$34 Faces: Tris 3 \$25 Falcon \$31 Falcon Mission 2: Op. Fire \$19 Flight of the Intruder \$37 Full Metal Planet \$31 Globulus \$19 Gunboat \$31 Harpoon \$37 NEW Immortal \$34 Indy 500 \$34 NEW Killing Game Show \$37 King's Quest 4 \$37 Legend of Faerghail \$25 Loom \$43 M1 Tank Platoon \$37 Matrix Marauders \$25 Midwinter \$25 Monday Night Football \$31 NEW Monopoly \$25 Night Breed \$28 Night Hunter \$28 Nobunaga's Ambition \$37 Nuclear War \$34 Ore Wars \$37 Obitrus \$25 Persian Gulf Inferno \$28 Pirates \$28 Pool of Radiance \$34 Populous \$34 PowerMonger \$34 NEW Power Pinball \$25 Prince of Persia \$25 Search for the King \$37 Second Front \$35 Secret of Monkey Island \$37 Shadow of the Beast 2 \$31 Sim City \$31 Sim City Terrain Editor \$12 Sorcerer \$37 Spirit of Excalibur \$31 Spiderman \$25 Spot \$25 Star Control \$31 Storm Across Europe \$43 Super Off Road \$31 Sword of Aragon \$34 Teenage Mutant Ninja Turtles \$22 Tetris \$22 Their Finest Hour \$43 Treasure Trap \$25 Turrican \$25 Ultima V \$37 Vetta \$31 Viking Child \$25 Wings \$35 Wizard Wars \$28 Wrath of the Demon \$31 | Advantage \$119 B-Graph \$122 Excellence 2.0 \$125 Kindwords 2.0 \$62 Page Stream 2.0 \$185 NEW Pen Pal \$86 Prof. Page 2.0 \$249 NEW PPage Outline fonts \$125 Prowrite 3.0 \$89 Saxon Publisher \$225 Service Industry Acct. \$245 SuperBase Personal \$50 SuperBase Pro \$199 Top Form 2 \$56 WordPerfect \$156 |
| Education | J. Nicklaus Unltd. Golf | Utility |
| Barney Bear Goes to Farm \$22 Barney Bear Goes to School \$22 Barney Bear Goes to Space \$22 Carmen Sandiego Europe \$31 Carmen Sandiego Time \$31 Carmen Sandiego USA \$31 Carmen Sandiego World \$31 Distant Suns \$44 Katie's Farm \$25 Math Blaster Plus \$31 McGee \$25 Talking Animator \$41 Talking Coloring Book \$19 | NEW Killing Game Show \$37 King's Quest 4 \$37 Legend of Faerghail \$25 Loom \$43 M1 Tank Platoon \$37 Matrix Marauders \$25 Midwinter \$25 Monday Night Football \$31 NEW Monopoly \$25 Night Breed \$28 Night Hunter \$28 Nobunaga's Ambition \$37 Nuclear War \$34 Ore Wars \$37 Obitrus \$25 Persian Gulf Inferno \$28 Pirates \$28 Pool of Radiance \$34 Populous \$34 PowerMonger \$34 NEW Power Pinball \$25 Prince of Persia \$25 Search for the King \$37 Second Front \$35 Secret of Monkey Island \$37 Shadow of the Beast 2 \$31 Sim City \$31 Sim City Terrain Editor \$12 Sorcerer \$37 Spirit of Excalibur \$31 Spiderman \$25 Spot \$25 Star Control \$31 Storm Across Europe \$43 Super Off Road \$31 Sword of Aragon \$34 Teenage Mutant Ninja Turtles \$22 Tetris \$22 Their Finest Hour \$43 Treasure Trap \$25 Turrican \$25 Ultima V \$37 Vetta \$31 Viking Child \$25 Wings \$35 Wizard Wars \$28 Wrath of the Demon \$31 | Climate \$25 Dr. Ami \$31 Dunlap Utilities \$49 Project D \$31 Quarterback \$44 Quarterback Tools \$55 |
| Video | Video | Video |
| AmigaVision \$69 SPECIAL after mfg. rebate \$239 Broadcast Filter 2 \$239 Deluxe Video III \$99 Director \$44 Photon Video EDLP \$312 Pro Fills \$19 Pro Video Gold \$149 Pro Video Post \$209 Showmaker \$247 TV Graphics \$31 TV Show V2 \$62 TV Text Pro \$99 Title Page \$124 Video Tools \$187 | AmigaVision \$69 SPECIAL after mfg. rebate \$239 Broadcast Filter 2 \$239 Deluxe Video III \$99 Director \$44 Photon Video EDLP \$312 Pro Fills \$19 Pro Video Gold \$149 Pro Video Post \$209 Showmaker \$247 TV Graphics \$31 TV Show V2 \$62 TV Text Pro \$99 Title Page \$124 Video Tools \$187 | AmigaVision \$69 SPECIAL after mfg. rebate \$239 Broadcast Filter 2 \$239 Deluxe Video III \$99 Director \$44 Photon Video EDLP \$312 Pro Fills \$19 Pro Video Gold \$149 Pro Video Post \$209 Showmaker \$247 TV Graphics \$31 TV Show V2 \$62 TV Text Pro \$99 Title Page \$124 Video Tools \$187 |
| Music | Music | Music |
| Bars and Pipes \$171 Delx Music Const. Set \$72 Dr. T's Copyist Pro \$172 Dr. T's K.C.S. Level II \$219 Dr. T's Tiger Cub SPECIAL \$56 | Bars and Pipes \$171 Delx Music Const. Set \$72 Dr. T's Copyist Pro \$172 Dr. T's K.C.S. Level II \$219 Dr. T's Tiger Cub SPECIAL \$56 | Bars and Pipes \$171 Delx Music Const. Set \$72 Dr. T's Copyist Pro \$172 Dr. T's K.C.S. Level II \$219 Dr. T's Tiger Cub SPECIAL \$56 |

Bodega Bay
Amiga 500 Expansion cabinet
New Call

Complete Automatic
Digi-View System
\$449
Includes:
Digi-View
4.0
Plus:
Copy
Stash!
Panasonic
1410 camera
w/lens, Autodroid, video
switch, and all cables.

Shipping and Handling Fees allow up to 2 days to process orders
UPS ground-5% up to \$100 ordered (minimum \$3.00), 4% \$100-\$500, 3% \$500-\$2000, 2% over \$2000.
UPS BLUE add \$5, UPS RED add \$10, Add \$15.00 for Overnight Priority. No surcharge for Visa, Mastercard. COD charge \$3.30
(established customers only), 15% restocking fee for all returns unless exchanged for same item. Any returns must be marked with
RA# issued by our Customer Service Dept. Shipping & handling is not refundable and is the responsibility of the purchaser.

Computer Basics Inc.

No One Knows Amiga Better
Authorized Commodore Dealer Since 1980

1490 N. Hermitage Rd., Hermitage, PA 16148 Customer Service (412) 962-0533
9 - 8 M - F (West Coast customers call up to 5PM PST), 10- 5 Sat
Walk-ins welcome, worth the drive from Pittsburgh, Erie, or Cleveland.
1-800-262-0533 Orders only
24 Hour Fax line (412) 962-0279



FLICKER FREE VIDEO

Use a standard VGA or multi-sync monitor & get FF Video on AMIGA 500/1000/2000

\$329

AD SPEED Accelerator for All AMIGA Computers

- 14.3 & 7.16 MHz
- 100% Compatibility
- No-solder installation
- 32K Static RAM Caching

\$235

AdRAM

| | |
|------------------------------------|-------|
| 2080 0K/8MB Board | \$129 |
| 505 0K Board for A500 | \$29 |
| 505 w/512K Board for A500 | \$59 |
| 540 0K/4MB Board for A500 | \$109 |
| 560DW w/2MB Daughter for 540 | \$199 |

AdSCSI 2000 & AdSCSI 2080

Hard Drive Packages - available below

GOLDENIMAGE®

Hand Scanner

w/Migraph Touch-Up

\$265



MASTER 3A-1

3 1/2" Floppy Disk Drive

The Original!

\$85

ADD
POWER
TO YOUR
AMIGA

MASTER 3A-1D

w/LED Tracking Display

\$125

RC500

512K Exp. RAM

\$49

GOLDENIMAGE® Mice

Opto-Mech

\$39

Fully Optical

\$59

SupraDrive 500 XP

| | |
|-----------------------------|-------|
| 500 XP 20 Meg w/512K | \$529 |
| 500 XP 20 Meg w/2 Meg | \$559 |
| 500 XP 40 Meg w/512K | \$629 |
| 500 XP 40 Meg w/2 Meg | \$659 |
| 105 XPS w/512K | \$849 |
| 105 XPS w/2 Meg | \$899 |

SupraRam 2000

| | |
|------------|-------|
| 0 K | \$105 |
| 2 MB | \$185 |
| 4 MB | \$275 |
| 6 MB | \$345 |
| 8 MB | \$425 |

SupraModem 2400

AMIGA 500/2000
MODEM CABLE INCLUDED!

\$105

VIDEO PACKAGE

- PANASONIC 1410 CAMERA
- COPYSTAND W/ LIGHTS
- DIGIVIEW GOLD 4.0

PRICE INCLUDES:

16MM LENS W/
VARIABLE IRIS

\$379

NEW
YEAR
PRICE

LOWEST
PRICES
EVER!

PRICED RIGHT FOR THE NEW YEAR!

AMIGA 500/2000 HARD DRIVE PACKAGES

INCREDIBLE
SAVINGS!

| DRIVES | DRIVE ALONE | TRUMPCARD 2000 | TRUMPCARD PRO 2000 | SUPRA WORD-SYNC 2000 | AdSCSI 2000 | AdSCSI 2080 w/ 0K/8MB Exp. | TRUMPCARD 500 | TRUMPCARD PRO 500 |
|-------------------------|-------------|----------------|--------------------|----------------------|-------------|----------------------------|---------------|-------------------|
| ST 138N-1 30MB/28 MS | \$245 | \$359 | \$429 | \$349 | \$369 | \$419 | \$429 | \$479 |
| ST 157N-1 49MB/28MS | \$265 | \$379 | \$449 | \$369 | \$389 | \$449 | \$449 | \$499 |
| ST 177N 60MB/20MS | \$339 | \$449 | \$519 | \$439 | \$459 | \$509 | \$519 | \$569 |
| ST 277N-1 60MB/28MS | \$289 | \$409 | \$479 | \$399 | \$419 | \$469 | --- | ---- |
| ST 296N 60MB/28MS | \$319 | \$439 | \$509 | \$429 | \$449 | \$509 | --- | ---- |
| ST 1096N 60MB/20MS | \$349 | \$469 | \$539 | \$459 | \$479 | \$529 | \$539 | \$609 |
| Quantum 40MB | \$299 | \$419 | \$489 | \$409 | \$429 | \$479 | \$489 | \$549 |
| Quantum 80MB | \$489 | \$589 | \$679 | \$579 | \$599 | \$649 | \$679 | \$729 |
| Quantum 105MB | \$499 | \$619 | \$689 | \$609 | \$629 | \$679 | \$689 | \$749 |
| Quantum 170MB | \$809 | \$919 | \$989 | \$909 | \$929 | \$979 | \$989 | \$1039 |
| Quantum 210MB | \$939 | \$1049 | \$1099 | \$1039 | \$1089 | \$1109 | \$1099 | \$1149 |

800-558-0003 *ComputAbility* 800-558-0003

Since 1982
Consumer Electronics

AMW 2-91

AE APPLIED ENGINEERING™

2400 External Modem

w/MNP 5 & Send-Fax
For Amiga 500/2000/3000

\$219

DATA LINK 2000

With all the features of the 2400 Baud
External Modem w/MNP 5 & Send-Fax
AND... plugs into your expansion port!

\$179 Amiga
2000/3000

AE HIGH DENSITY

3.5" DRIVE

\$189

RAM WORKS 2000

OK \$109
2 Meg \$205
RAM WORKS 500

\$65

SupraRam™

500 RX Exp. to 8MB

\$135

PRINTERS

Panasonic

1124 - GREAT PRICE!\$279
1180\$155
1624\$329
4420 NEW\$779
4450i NEW\$1219
4455 NEW\$2029

star

NX 1001 Multifont NEW\$145
NX 1020 Rainbow NEW\$185
NX 1500 NEW\$289
NX 2420 Rainbow-HOT1\$319
XB 2410\$409
XB 2415\$529
Color Kit XB 2410/15\$42

CITIZEN™

200GX\$169
GSX 140\$289
Color Kit\$49

LOW COST LASERS

OKI Laser 400\$659
PANASONIC 4420\$779
TOSHIBA Laser 6\$789

AMIGA EXTRAS • AMIGA EXTRAS • AMIGA EXTRAS

Air Drive Int 3.5"-3000\$89
AMAXX II\$137.95
Amtrac Trackball\$69
Color Splitter\$109
Cordless Mouse\$99
DC TV\$395
ECE MIDI Interface\$48
Flicker Fixer\$285
Flicker Master\$13

Frame Grabber - Color\$529
Golden Image RAM 500\$49
Golem 3.5" Int Drive\$75
Golem Internal Track Disp\$39
Golem Tower\$299
Gravis Adv. Joystick\$31
Gravis Mouse Stick\$65
Hvy Duty Power Sup100W.\$85
LIVE! A2000\$289

VIDEO TOASTER AVAILABLE NOW!

Mega Mid Racer 25Mg\$669
MIDI Gold A500\$59
MIDI Gold Insider A2000\$65
Migrah Hand Scanner\$319

Perfect Sound\$69
Phantom Smp Interface\$179
Printer Face\$79
Safeskin 2000/500\$17
Sapphire Accelerator Card\$309
Sharp JX 100 Ctr Scan\$749
Supercard\$75
Time Master 500\$45
Video MasterCALL

VIP Video Interface\$89
Xspecs 3D\$85

GENLOCKS

Ami Gen/Mini Gen\$94/189
Magni A3000 w/remoteCALL
Super Gen\$599
Super Gen 2000SCALL
Video MasterCALL
Vidtech Scanlock\$719

| | | | | | | |
|---------------------------------------|---------------------------------------|------------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|------------------------------------|
| 3D Professional299.95 | Carmen San Diego/Each30.95 | Dragon's Lair II43.95 | Jack Nicklaus Golf30.95 | Night Force28.95 | Risk24.95 | Thunderstrike30.95 |
| 688 Attack Sub31.95 | Chamber/Sci-Fi Mut Pritess30.95 | Dragon Lord31.95 | Course #3 199015.95 | Night Hunter23.95 | Robocop23.95 | Tiger89.95 |
| A10 Tank Killer30.95 | Champions of Kyrin31.95 | Dragon Strike31.95 | Jack Nicklaus Unlimited38.95 | Night Shift25.95 | Rocket Ranger/3 Stages31.95 | Tiger Cub59.95 |
| A-Talk 364.95 | Chaos, Dungeon Mast 224.95 | Dragon Wars30.95 | Jones In the Fast Lane24.94 | Nitro28.95 | Rolfem86.95 | Time Machine34.95 |
| *Advantage, The 1.1*114.95 | Check Mate34.95 | Drakhen36.95 | Karfonis ea.44.95 | Nothing's Ambition36.95 | Romance of 3 Kingdoms42.95 | Title Page112.95 |
| Air Strike USA25.95 | Chessmaster 210031.95 | Dungeon Master24.95 | Katie's Farm24.95 | Nuclear War30.95 | Sands of Fire31.95 | Transwire41.95 |
| Airbourne Ranger28.95 | Chuck Yeager AFT 2.025.95 | East vs West Berlin24.95 | Keys To Maramonte30.95 | Obitus36.95 | Saxon Publisher244.95 | Treasure Trap24.95 |
| All Dogs Go To Heaven30.95 | Classico Board Games19.95 | Elan Performer 2.067.95 | Key Control Seq. 3.0159.95 | Off Road30.95 | Scene Generator29.95 | Trif By Fire36.95 |
| Altered Beast31.95 | Clue24.95 | Electric Thesaurus28.95 | Killing Game Show28.95 | On Line Platinum41.95 | Scrabble24.95 | Tunnels of Armageddon25.95 |
| Altered Destiny36.95 | Codemaster: Iceman36.95 | Empire31.95 | King's Quest 1, 2, or 330.95 | Operation Combat30.95 | Scribble Platinum57.95 | Turbo Out Run31.95 |
| AMOS67.95 | Colony's Bequest36.95 | Empire31.95 | King's Quest 436.95 | Operation Fire Fighter19.95 | Search for the King36.95 | Turbo Silver 3.0 1 Meg73.95 |
| Amazing Spiderman24.95 | Comic Setter41.95 | Escape/Robot Monster109.95 | King's Quest 536.95 | Over Run37.95 | Second Front31.95 | Turkmen24.95 |
| Anarchy24.95 | Comic Art Diska ea.20.95 | Excellence V2.0109.95 | Klax25.95 | Page Renderer 3.094.95 | Sex Vixens-Outer Space22.95 | TV Text64.95 |
| Animation Studio - Disney109.95 | Conquest of Camelot36.95 | F-19 Stealth Fighter36.95 | Knight Force28.95 | Page Setter 274.95 | Sextimates30.95 | TV Text Professional99.95 |
| Animoforts 330.95 | Copycat Apprentice79.95 | F-29 Retaliator31.95 | Land, Air, Sea Compl36.95 | Page Stream V2.0184.95 | Shadow of the Beast30.95 | Ultima 436.95 |
| Arachnophobia28.95 | Crackdown31.95 | Falcon31.95 | Lattice C194.95 | Business Forms24.95 | Shadow of the Beast II36.95 | Ultima 536.95 |
| Arcade Action Mindscape31.95 | Cribbage King/Gin King25.95 | Fal Tracks34.95 | Legend of Faerghall23.95 | Postscript Font Disks24.95 | Shark Attack24.95 | Ultra Design219.95 |
| Arcade Smash Hits - EA31.95 | Cross D08 2.024.95 | Federation31.95 | Leisure Suit Larry24.95 | Dot Matrix Fonts24.95 | Showmaker214.95 | Ultracard Plus57.95 |
| Arxex28.95 | Crossword Construct Set24.95 | Fire and Forget II28.95 | Leisure Suit Larry 2 or 336.95 | PC Globe 4.036.95 | Sin City30.95 | Unreal31.95 |
| ASDG Art Department57.95 | Curse/Azure Bonds25.95 | Flight of the Intruder28.95 | Life and Death31.95 | Pen Pal84.95 | Terran Editor14.95 | Untouchables25.95 |
| Audio Master 364.95 | Cyber Ball25.95 | Flight Simulator II30.95 | Loom37.95 | Phaser 4.054.95 | Sorcerer36.95 | Vets30.95 |
| Awesome36.95 | Cyber Medix25.95 | Flood25.95 | Loopy31.95 | Phantom Paint 2.087.95 | Space Ace34.95 | Vide Effects 3-D113.95 |
| Actra C Developer V5.0177.95 | Cycles30.95 | Full Metal Planet30.95 | Lost Planet31.95 | Pick N Pile25.95 | Space Quest 1 or 230.95 | Video Title V1.592.95 |
| Actra C Pro V5.0119.95 | Damocles28.95 | Future Classics30.95 | M-1 Tank Platoon36.95 | Pictionary24.95 | Space Quest 336.95 | Video Tools182.95 |
| BAD29.95 | Dark Century28.95 | Future Wars30.95 | M2 Amiga Debugger147.95 | Pirates I28.95 | SpectratorCALL | Videoscape 3D V2.0184.95 |
| BAT31.95 | Das Boot Submarine31.95 | Genesis Wars30.95 | Macro Paint78.95 | Planet of Lust24.95 | Spiral of Escalibur30.95 | Viking Child23.95 |
| Back To the Future II31.95 | Day of the Viper30.95 | Genesis Kahn36.95 | Magix Fly25.95 | Police Quest I30.95 | Spirit of Escalibur30.95 | Vista64.95 |
| Bandit Kings/Ancient China36.95 | Days of Thunder31.95 | Genesis 3.567.95 | Magix Johnson 1 or 5F31.95 | Police Quest II30.95 | Spot24.95 | Vista Professional86.95 |
| Base of the Cosmo Forge36.95 | DC TVCALL | Globulus23.95 | Manhunter Ny or Meg30.95 | Pools of Radiance31.95 | Star Control30.95 | Viva122.95 |
| Bar Games28.95 | Deluxe Music Const61.95 | Gold Disk Office168.95 | Math Blaster Plus30.95 | Populus31.95 | Star Fields36.95 | Voice Recognition109.95 |
| Bars & Pipes169.95 | Deluxe Paint III94.95 | Golden Axe31.95 | Matrix Marauders24.95 | Power Windows 2.554.95 | Star Flight31.95 | War Game Const Set25.95 |
| Barney Bear each21.95 | Deluxe Photo Lab94.95 | Grand Prix Circuit27.95 | Maverick24.95 | Powermonger31.95 | Sterling Service BBS84.95 | War of the Lance25.95 |
| Barney Bear Meets Santa21.95 | Deluxe Print II51.95 | Grenada 232.95 | Mavis Beacon Typing31.95 | Prince of Persia24.95 | Storm Across Europe37.95 | Warhead31.95 |
| Batman the Movie28.95 | Deluxe Productions128.95 | Gunboat30.95 | Maxipian 3147.95 | Print Master Plus24.95 | Stunt Track Racer24.95 | Waterloo37.95 |
| Battle Chess28.95 | Dix Vid 3 + D.Pitab/Imoy.94.95 | Gunship34.95 | McGee24.95 | Pro Tennis Tour25.95 | Strike Aces30.95 | Wayne Gretzky Hockey30.95 |
| Battle Command31.95 | Designasaurus30.95 | Harley Davidson31.95 | Mean Streets30.95 | Pro Video Gold139.95 | Strip Poker 224.95 | Weird Dreams24.95 |
| Battle Hawks 194220.95 | Dick Tracy30.95 | Harmony28.95 | Mega Fortress37.95 | Front Packs59.95 | Super Off Road Racing30.95 | Wild Streets25.95 |
| Battle Squadron24.95 | Digidroid59.95 | Harpoon37.95 | Mega Paint174.95 | Pro Video Post189.95 | Superbase Personal46.95 | William Tell25.95 |
| Battletech19.95 | Digimath 354.95 | Hartset 2 or 320.95 | Microcos Black Jack30.95 | Pro Write 3.091.95 | Superbase Personal 287.95 | Wind Walker25.95 |
| Baud Bandit30.95 | Digipoint 3.028.95 | Heart of China36.95 | Microleague Football24.95 | Professional Draw112.95 | Superbase Pro 3.0189.95 | Wings of Fury24.95 |
| Billy the Kid25.95 | Digipoint gold118.95 | Heat Wave28.95 | Microleague Wrestling24.95 | Structured Clip Art36.95 | Superlike Simulator31.95 | Wings of Fury24.95 |
| Black Gold24.95 | Digipoint 2.075.95 | Holy Quest36.95 | Mid Winter24.95 | Templates36.95 | Superman87.95 | Wolf Pak28.95 |
| Black Tiger28.95 | Director 2.024.95 | Holy War36.95 | Mid Recording Studio39.95 | Project D- Backup V1.230.95 | T.V. Show V2.064.95 | Wonderland30.95 |
| Blades of Steel28.95 | Toolkit24.95 | Hunt for Red October194.95 | Might and Magic II37.95 | Project D- Backup V1.230.95 | T.V. Sports Basketball31.95 | Works, Platinum112.95 |
| Blood Relations31.95 | Disk Labeler28.95 | Imagize30.95 | Monday Night Football30.95 | Project D- Backup V1.230.95 | T.V. Sports Football31.95 | World Atlas35.95 |
| Blue Angels30.95 | Disk Master28.95 | Imperial25.95 | Monopoly24.95 | Puff's Saga25.95 | Tennis Cup24.95 | World Class Leaderboard28.95 |
| Blue Max31.95 | Disk Mechanic54.95 | Indiana 50031.95 | Monopoly Python32.95 | Puff's Saga25.95 | Tennis Cup24.95 | Wrath of the Demon30.95 |
| Brain Blaster25.95 | Distant Sun41.95 | Invincible174.95 | Movie Setter41.95 | Puzzle Story Book25.95 | Terris20.95 | Wishful28.95 |
| Bridge 6.06.95 | Dr. T's M.28.95 | Isidho34.95 | Music Mouse49.95 | Puzzle22.95 | Terrain Envoy28.95 | X Copy v2.934.95 |
| Broadcast Title 2.0224.95 | Dr. T's Mid Rec Studio28.95 | It Came from the Desert31.95 | Music X169.95 | Quarter Back Tools52.95 | Test Drive II30.95 | X Copy Professional47.95 |
| Buck Rogers31.95 | Dos 2 Dos30.95 | | Nations at War37.95 | Raw Copy34.95 | Test Drive ea.15.95 | Xenomorph31.95 |
| Budokan25.95 | Double Dragon II24.95 | | Neomancer28.95 | Red Baron36.95 | Test Drive IIICALL | Xiphos24.95 |
| Byte N' Back39.95 | Double Dribble19.95 | | New York Warriors 1 Meg30.95 | Red Storm Rising34.95 | Their First Hour37.95 | Yasugi's Adv. Train 2.025.95 |
| Can Do84.95 | Doug's Math Aquarium48.95 | | Night Breed25.95 | Resolution 10131.95 | Third Courier30.95 | Zestropo44.95 |
| Can Pack 124.95 | Dragon Force31.95 | | | Rise of the Dragon36.95 | Thexdr21.95 | |
| Cardinal of the Kremlin30.95 | Dragon's Lair33.95 | | | | | |

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. School 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 and Visa orders please include card #, expiration date and signature. We reserve the right to change prices without notice. Shipping & handling are non-refundable. We ship the latest version available to us, updates must be handled by user directly with the manufacturer. Not responsible for typographical errors. WATCH OUT, SCHMOOZY FAIRLANE!

From p. 24.

ceive data from contributors using other computers.

FONTS FOR SCALE

Previous versions of PageStream utilized Soft-Logik's own scalable-font scheme, which created very nice printed output, but produced on-screen representations that were often crude and inaccurate, detracting seriously from PageStream's otherwise excellent WYSIWYG operating environment. Some of the program's critics further complained that these fonts were unprofessional in appearance and did not render well in the smaller point sizes.

With version 2.0 of PageStream, Soft-Logik has alleviated the on-screen problem by rendering text in the smaller point sizes directly from font outlines used for printed output, where the adjusted screen height convention helps compensate for the coarseness of smaller point sizes in the cruder screen bitmap system. The outline-rendering approach is slow, however, as it requires a great deal of computational time.

As a compromise, Soft-Logik combined the older scalable system with the outline approach in order to shorten rendering time. High-quality, on-screen rendering is most important when you zoom in on text to position objects or fine-tune your layout. While the combination of methods is a valid compromise, there are times when I would like my fonts drawn on-screen in the highest possible quality—regardless of the speed penalty. Conversely, there are other times when I would sacrifice on-screen quality for speed.

Perhaps Soft-Logik could provide a solution to this conflict by adding an adjustable, outline/nonoutline, on-screen height threshold, similar to the way the program lets you determine on-screen greening (the substituting of facsimile text—often merely a gray bar or line—for actual text when you are working below a certain point size).

To address font-scaling shortcomings, Soft-Logik licensed AFGA, Compugraphic's highly-regarded font-scaling system (also available with Professional Page), for use alongside the company's own. In addition, Soft-Logik added support for Adobe Type 1 PostScript fonts, regardless of whether you own a PostScript ►

PageStream vs. Other DTP Programs (All Platforms)

| PROGRAM | Page Maker 3.01 | Page Maker 4 | Quark- XPress 3 | Page Stream 2.0 | Pro Page 1.3 |
|--------------------------|-----------------------|--------------------|-----------------------|-----------------------|--------------------|
| PLATFORM | Mac/PC | Mac/PC | Mac | Amiga | Amiga |
| LAYOUT | | | | | |
| Group Objects | | | • | • | • |
| Align Objects | | | • | • | • |
| Multipage Spreads | • | • | • | | |
| L/R Master Pages | | | • | • | • |
| Rotate Graphics | | | .001° | 1° | |
| Rotate Text | | 90° only | 1° | 1° | |
| Flow Around Graphics | • | • | • | • | • |
| Lock Graphic to Text | | • | • | • | • |
| Lock Graphic to Position | | • | • | • | • |
| Step and Repeat | | • | • | • | |
| TYPOGRAPHY | | | | | |
| Point Sizes | 4-127 | 4-650 | 2-720 | .5-1310 | 4-127 |
| Point Increments | .5 | .1 | .001 | .001 | 1 |
| Kern Increments | | .01 em | .001 em | .001 em | * |
| Shift Baseline | | | • | • | • |
| Edit Kern | | | • | • | |
| Expand/Condense Type | | • | • | • | |
| INTERFACE | | | | | |
| Open Multiple Files | | | • | • | |
| Pasteboard | • | • | • | • | • |
| Manually Place Coord's | | | • | • | • |
| View 50% | • | • | • | • | • |
| View 200% | • | • | • | • | • |
| Zoom View | | | • | • | • |
| View Facing Pages | • | • | • | • | |
| DOCUMENT EDITING | | | | | |
| Chapter Incl. to Book | | • | | | |
| Table of Contents | | • | | | |
| Indexing | | • | | | |
| Spell Checking | | • | • | • | |
| Search/Replace | | • | • | • | • |
| S/R Font Attributes | | • | • | • | • |
| Text Mode Edit | | • | | | ** |
| Maximum Pages | 128 | 999 | 999 | 999 | 1000 |
| Widow/Orphan Control | | • | • | | |
| IMPORT CAPABILITIES | | | | | |
| WordPerfect | • | • | • | • | • |
| Microsoft Word | • | • | • | | |
| ProWrite | | | | • | |
| EPS | • | • | • | • | • |
| TIFF | • | • | • | • | |
| MacPaint | • | • | • | • | |
| IFF/ILBM | | | | • | • |

• = Feature or function is available within the program.

NOTES

* Tracking however to .01 em.

** Available in concert with Transcript.

True digital photography for your Amiga computer



CDI-IV introductory price only \$1,895.

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.

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

To order call 213 618-0274

Circle 32 on Reader Service card.



Make Amigos With Other Amigas.

The largest group of Amiga® users in the world shares its problems and solutions online every day in CompuServe's Amiga Forums. And you can join them.

Whether you're an Amiga novice or a professional user in broadcasting, film special effects, animation, or music production, you'll find support from thousands of Amiga users and nearly every third-party Amiga software and hardware vendor.

Looking for a solid CAD program? Want to make the most of your Amiga's multitasking capabilities? Ask

somebody who's been through it all. There's no better way to get more out of your Amiga.

To join CompuServe, see your computer dealer. To order direct or for more information, call 800 848-8199. If you're already a member, type GO AMIGA at any ! prompt.

CompuServe®


Circle 53 on Reader Service card.

AmigaWorld.93

printer or not. This means that with PageStream 2.0, Amiga desktop publishers can utilize the best of what these three scalable-font technologies have to offer. (If you wish, you can combine all three in the same document.) There are hundreds of Compugraphic and Adobe Type 1 typefaces available.

While PageStream's last release (version 1.8) proved to be more of a maintenance upgrade, PageStream 2.0 is clearly a feature-intensive offering. A couple of new problems, however, have crept into the blend. A particularly nagging one involves a false, intermittent "out-of-memory" error message when changing view modes. Although this pseudo error will not crash your system or wipe out data, you must force PageStream to redraw the screen in order to view your image again. Another problem is that while PageStream's tag operations work properly in object mode, when applied to text mode, they have a tendency to act upon entire units (blocks, articles, or documents) rather than only upon tagged items.

Although you can use PageStream's



YOUR TURN!

I have to say that I liked PageStream when it was first released. The current version is fantastic; there are a lot more features, and it's more intuitive. I really like the structured drawing tools and the features that rotate and skew text and graphics. The dictionary is a little slow when compared to those of word processors, but it works fine for the kinds of things we do.

Dennis McNow
Catonsville, MD

macros to automate almost any repetitive action, their usefulness is hampered by inadequate documentation. While much improved over that of the previous version, the manual devotes only two pages to explaining macros. Also, you are limited to having only ten active macros at a time, with each one linked to a function key. You can load a new set of ten macros at any time, however, so I was easily able to make PageStream imitate the command-

function keys of WordPerfect 4.1.

In closing, I believe that PageStream 2.0's powerful labor-saving features, advanced font- and graphic-handling capabilities, and its well-designed user interface make it the new Amiga desktop publishing king of the hill.

PageStream 2.0

Soft-Logik

11131 S. Towne Sq. Suite F

St. Louis, MO 63123

314/894-8608

\$299.95

One megabyte required.

GOLD DISK OFFICE

The whole enchilada.

By Irene C. Kobelski

NO ONE CAN resist a bargain—especially if you are shopping for several programs at once. One of the more via-

Continued on p. 98.

NEW!

Vistapro

3 Megs — \$149.95 List

Create beautiful painting-like landscape views and animations of Earth and Mars scenery!

- Same easy-to-use "point and click" interface based on a target/camera model as Vista.
- **NO MORE TRIANGULAR POLYGON LOOK!!!** Gouraud shading, combined with high res and interlace, produces painting-quality scenes of unparalleled beauty.
- Vistapro displays in 24 bit, high res, interlace, or HAM. Images may also be printed with a print function.
- Vistapro saves images as IFF, IFF 24, Turbo Silver objects (compatible with Imagine), and in 24 bit RGB for frame buffer output.
- Overscan may be selected in all display modes.
- Script support for 4 different animation modes: IFF, IFF 24, RGB, and Vistapro's proprietary VANIM mode. An animation player for VANIM files from hard disk is included.
- Scripting preview function shows the path your animation will follow through the landscape.
- Variable focal length "camera" lens, **unlimited number of lighting positions**, dithering, roughness, and blend controls all included.
- Vistapro can load and save colormap.
- User-defined palette, night sky, tree line, sea level, snow level, waves, haze levels, lakes, rivers, and full aircraft control perspective.
- 24 bit images can be viewed on Toaster, DCTV, Ham-E Board, and Mimetics Frame Buffer.
- **Inexpensive upgrade available for registered Vista owners**

NEW!

Scapes (Vista and Vistapro compatible)

- Valles Marineris — Mars. Exotic "Grand Canyon" of Mars. 6 disks. 88 scapes. \$79.95 list.
- California set #1 — Visit sunny California, Big Sur, Lake Arrowhead, Big Bear and Mt. San Geronio above Palm Springs. 6 disks. 68 scapes. \$79.95 list.

Virtual Reality Laboratories Inc., 2341 Ganador Court, San Luis Obispo, CA 93401 (805) 545-8515

Use **QUARTERBACK** to save your Data.

Use **QUARTERBACK TOOLS** to save your A**!

Have you ever deleted the wrong file (or worse yet, ALL your files) with a slip of the finger?

Have you seen this awful message:
"Error validating DHO"?

Then you need **QUARTERBACK TOOLS**, the *fastest* and *easiest* way to recover your lost files on any AmigaDOS volume.

QUARTERBACK TOOLS also optimizes the speed and reliability of your Amiga hard disks and floppy disks by:

- Repositioning your files to optimum locations on the disk, eliminating file fragmentation, and consolidating disk free space.
- Searching the entire disk for errors and marking bad areas "out of service."
- Curing validation problems; finding and fixing corrupted directories.

QUARTERBACK TOOLS runs on any Amiga using either the old or new filing systems, and runs with new and old Workbench versions.

QUARTERBACK TOOLS... *now this is no donkey!*

And to close the barn door *before* the horse escapes, use **QUARTERBACK** the *fastest* and *easiest* hard disk backup program for the Amiga.

Other useful products from Central Coast Software:

Mac-2-Dos for transferring Macintosh files to and from the Amiga.

Dos-2-Dos for transferring MS-DOS/Atari files to and from the Amiga.



Central Coast Software • 424 Vista Avenue, Golden, Colorado 80401
(303) 526-1030 • Fax (303) 526-0520



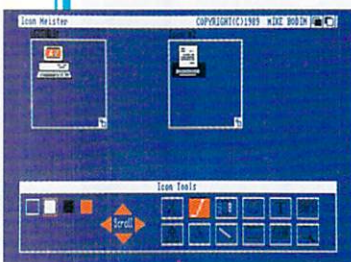
Dealer Inquiries Welcome



Buy 2, get 1 free!

Buy Any Two AmigaWorld Tool Chest Back Issues, And Get A Third One Free!

#AWTC11. Fix corrupted disks or recover accidentally deleted files. Sit back and enjoy original animation and sound clips. Enjoy colorfully wacky, shoot 'em up Arcade fun. Create single or double image icons, in four to eight colors. Get a rich assortment of HI-RES clipart monsters.



#AWTC12. Save money with a utility program which enables you to format disks that AmigaDOS chokes on. Generate different types of graphs. Cut out an excellent collection

of B&W clip art for your desktop publishing or graphic design needs. Generate an incredible assortment of colorful patterns. Add dazzle to your animations with detailed 3-D spaceships.

#AWTC13. Plot your biorythms. Make drive head cleaning easier. Create spectacular images with mandelbrots. 3-D objects perfect for ray traced animations — a sailboat, hot air balloon, windmill, and a lighthouse. A CLI utility to help you find files quickly and easily. Plus



holiday clipart, an AmigaFlight animation, and a technical discussion on how AmigaDOS stores information to disk.

#AWTC14. A 3D graphics special issue, containing vector objects, TicTacToe, a graphing program, and 3D ray traced animation. Keep names and addresses organized with a friendly database and addressbook. Perform an analysis of digitized sound and display it in a graphic manner. Get B&W clip art food images suitable for desktop publishing.

#AWTC15. A best selling issue! Combine great graphics with digital sounds to get an entertaining Amiga version of the classical connect-the-dot game. Insert a nice assortment of digitized animal sounds into your animations. See an instructive rendering of Cartoon Man in various stages of animation. Test your reflexes with a high-speed arcade game. Make multiple copies of custom labels.

#AWTC16. 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 fields to print on both sides of

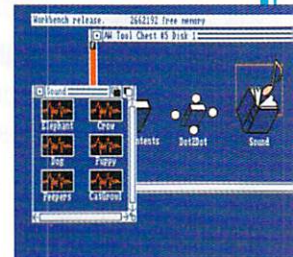
paper. Plus six digitized sounds perfect for animations and multimedia presentations and a mouse driven graphic adventure game with excellent digitized sounds. Also includes Tinyball, "The World's Smallest Baseball Arcade Game."



#AWTC21. 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.

#AWTC22. Design instruments and waveforms for use in other programs. Play your Amiga keyboard like a piano. Change the width, height, location, title, colors and depth 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.



☒ **YES,** I want to buy two Tool Chest Back Issues for \$29.90 and receive a **THIRD ONE FREE!** I save \$14.95. My selections are:

_____ # _____
_____ # _____
_____ # _____

☐ I am only interested in one issue at this time. Please send me the following issue for \$14.95:

☐ My check/money order is enclosed

Charge My:

☐ MasterCard ☐ VISA ☐ Am Exp. ☐ Discover

Card# _____

Exp. Date _____

Signature _____

Name _____

Address _____

City _____ State _____ Zip _____

Foreign orders add \$2.50 for delivery. Payment required in U.S. Funds which can be drawn on a U.S. Bank. Note that some animations require 1MB of memory. TCB1291

AmigaWorld Tool Chest Back Issues • PO box 802 • Peterborough, NH 03458

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

Software Discounters International

We're The #1 Software Source
For Thousands of Computer Owners

USA/CANADA

1-800-225-7638

Order Line Hours: Mon.-Thur. 9:00 AM-9:00 PM
Fri. 9:00 AM-7:00 PM - Sat. 10:00 AM-4:00 PM EST.

- Speedy Delivery
- Deep Discounts
- Incredible Selections
- Free shipping on orders over \$100
- No surcharge on MC/VISA
- Overnight & 2 day shipping available

NEW TITLES!!!

| | | | | | |
|--------------------------------|-------|---------------------------------|---------|--------------------------------|--------|
| A-10 Tank Killer | \$39 | Gretzky Hockey | \$32 | Rampage | \$14 |
| Buck Roger's Countdown | \$32 | Gunship | \$35 | Red Lightning | \$39 |
| Chessmaster 2100 | Call | Hardball 2 | \$32 | Red Storm Rising | \$35 |
| Disney Animation Studio | \$120 | Harmony | \$29 | Renegade | \$9.88 |
| Dragon Wars | \$32 | Hawaii Odyssey Scenery | \$19 | Risk | \$25 |
| Duck Tales | \$29 | Heatwave Boat Racing | \$29 | Robocop | \$9.88 |
| Elvira Mistress Dark | \$39 | Hero's Quest | \$39 | Scrabble | \$25 |
| Eye of Beholder | Call | Hillsfar | \$32 | Second Front | \$32 |
| F-19 Stealth | \$39 | Hockey League Simulator | \$25 | Shogun | \$14 |
| Flood | \$26 | Hoyle's Book of Games | \$23 | Shufflepuck Cafe | \$25 |
| Golden Ax | \$32 | Hunt for Red October | \$32 | Silent Service | \$14 |
| Harpoon | \$39 | Imperium | \$26 | Sim City | \$32 |
| Jack Nick Unlimited Golf | \$39 | Indi Jones Graphic Adv | \$32 | Sim City Terrain | \$16 |
| Math Blaster Plus | \$32 | Indianapolis 500 | \$32 | 688 Attack Sub | \$32 |
| Midwinter | \$32 | Iron Lord | \$26 | Space Ace | \$39 |
| Nightbreed | \$26 | Ishido | \$35 | Space Quest 1 or 2 | \$32 |
| Pro Tennis Tour | \$26 | It Came From The Desert | \$32 | Space Quest 3 | \$39 |
| Star Control | \$32 | It-Desert Scenario Disk | \$14 | Star Flight | \$32 |
| Untouchables | \$26 | Jack Nicklaus Golf | \$32 | Storm Across Europe | \$39 |
| Wings | \$32 | J.N. Golf 1990 Courses | \$16 | Street Rod | \$26 |
| Wolfpak | Call | J.N. Golf Champ Courses | \$16 | Strike Aces | \$32 |
| | | J.N. Golf Int'l Courses | \$16 | Strip Poker 2 | \$25 |
| | | Jet | \$32 | S.P. Data #1 Females | \$14 |
| | | Journey | \$19 | S.P. Data #2 Female/Male | \$14 |
| | | Keef the Thief | \$14 | S.P. Data #3 Females | \$14 |
| | | King Arthur | \$19 | Superbase Personal 2 | \$95 |
| | | King's Quest 1, 2 or 3 | \$32 Ea | Superbase Profess 3 | \$189 |
| | | King's Quest 4 | \$39 | Sword of Aragon | \$32 |
| | | Legend of William Tell | \$25 | Teenage Mutant Ninja | |
| | | Leisure Suit Larry | \$25 | Turtles | \$29 |
| | | Leisure Suit Larry 2 or 3 | \$39 | Test Drive 2: The Duel | \$32 |
| | | Loom | \$39 | T.D. 2: Calif. Scenery | \$16 |
| | | M1 Tank Platoon | \$39 | T.D. 2: Europe Scenery | \$16 |
| | | Magic Johnson's B. Ball | \$32 | T.D. 2: Muscle Cars | \$16 |
| | | Manhunter | \$32 | T.D. 2: Super Cars | \$16 |
| | | N.Y. or S.F. | \$32 Ea | Tetris | \$23 |
| | | Maniac Mansion (Hi-Res) | \$14 | The Immortal | \$32 |
| | | Marble Madness | \$14 | Their Finest Hour | \$39 |
| | | Midwinter | \$32 | Third Courier | \$32 |
| | | | | Times of Lore | \$25 |

ELECTRONIC ARTS

Fans of Populous will appreciate the complexity of this new world domination game.

POWERMONGER

List \$49.95 SDI
Discount
Price \$32



| | | | |
|-------------------------------|--------|-------------------------------|------|
| Might & Magic 2 | \$39 | 3-D Pool | \$23 |
| Mother Goose | \$19 | Treasure Trap | \$25 |
| Neuromancer | \$29 | Tunnels of Armageddon | \$26 |
| N.Y. Warriors | \$32 | Turbo Out Run | \$32 |
| North & South | \$29 | T.V. Sports Basketball | \$32 |
| Nuclear War | \$32 | T.V. Sports Football | \$32 |
| Omega | \$32 | Ultima 4 | \$39 |
| Omni-Play Basketball | \$32 | Ultima 5 | \$39 |
| Omni-Play Horse Race | \$32 | Vegas Gambler | \$26 |
| Operation Wolf | \$9.88 | War in Middle Earth | \$32 |
| Overrun | \$39 | Waterloo | \$39 |
| Pen Pal Word Processor | \$89 | Weaver Baseball | \$32 |
| Pictionary | \$25 | Weltris | \$23 |
| Pipe Dream | \$16 | Wings of Fury | \$25 |
| Pirates | \$29 | World Trophy Soccer IMB | \$32 |
| Police Quest | \$32 | Zak McKracken | \$21 |
| Police Quest 2 | \$39 | | |
| Pool of Radiance | \$32 | | |
| Populous | \$32 | | |
| Prince of Persia | \$25 | | |
| P.M. Fonts & Borders | \$23 | | |
| P.M. Art Gallery 1+2 | \$19 | | |
| Print Master Plus | \$25 | | |
| Projectyle | \$26 | | |
| ProWrite 3.0 | \$118 | | |
| Qix | \$9.88 | | |
| Quest For Clues: 2 or 3 | \$19 | | |
| Rambo 3 | \$9.88 | | |

ACCESSORIES

Abacus Books In Stock Call || Sony 3 1/2 DDD | \$13 Bx |
| Sony DSD Color | \$13.50 Bx |
| Disk Case (Holds 45) | \$6.88 |
| Disk Case (Holds 110) | \$8.88 |
| Disk Drive Cleaner | \$4.88 |
| Mouse Pad | \$5.99 |
| Winner M4 Mouse | \$29 |
| Wico Bat Handle J. Stk. | \$17 |
| Maxx Control Yoke | \$69 |

Send Money Orders or Checks to:

Software Discounters Int'l., 5607 Baum Blvd. Dept. AMW
Pittsburgh, PA 15206

- Fax MC/VISA orders with our fax #1-412-361-4545
- SHIPPING: Continental U.S.A.—Orders under \$100 add \$4; Free shipping on orders over \$100; AK, HI, FPO, APO—shipping is \$5 on all orders. Canada and Puerto Rico—shipping is \$7.50 on all orders. PA residents add 6% sales tax on the total amount of orders including shipping charges.
- Defective merchandise replaced within 60 days of purchase. Other returns subject to 20% restocking charge. You must call customer service for return authorization—412-361-5291. 9-5:30 EST.

Circle 128 on Reader Service card.

CALL OR WRITE TO BE ON OUR MAILING LIST

AMIGA UPGRADES

• AMIGA 2000 UPGRADE •

MegaChip 2000—this is the Amiga upgrade Commodore never wanted to see reach the general public: Now utilize the power of the Amiga 3000 by actually putting into your A2000 the new 2MB AGNUS chip (same chip used in A3000). Take advantage of doubling your "RAM" to custom chips. Utilize to the fullest Amiga multitasking, graphics and sound capabilities. Excellent for displaying advanced animations or graphics. Upgrades your A2000 to the latest technology. Simple plug-in board, no soldering. Includes free AGNUS chip puller (very important). We will buy back your 1MB AGNUS. 1 year warranty. **\$339.00 before rebate.**

• ENHANCED CHIP SET •

1 MB FATTER AGNUS (8372A) upgrade for A500/A2000. Utilize 1 MB of "Chip RAM" and notice a big difference in graphic display and run the latest software. Comes with new Commodore step-by-step instructions and free AGNUS chip puller. **\$99.50**

• AMIGA 1000 REJUVENATOR BOARD •

Tap the ultimate power of your A1000. Upgrade to the power of the A2000 and beyond. Utilize the new enhanced chip set (ECS), FATTER AGNUS (8372A), 2.0 ROM, additional 1 MB RAM, clock battery backup, video slot. Solderless installation (replaces daughterboard). 100% compatibility. **\$479.00 complete (PAL or NTSC)**

• A501-512K RAM UPGRADE •

512K upgrade plug-in board for your A500. Utilizes lithium battery and clock. **\$69.95 (with all RAM)**

• A500 "BIG FOOT" POWER SUPPLY •

The ultimate Amiga 500 switching power supply. Fan cooled 150 watts. Built-in connectors to handle 5 additional hard or floppy disk drives. No power supply can come close to this 150 watt unit. **\$99.95**

• KICK-BOARD ASSEMBLY •

When Workbench 2.0 is released, it is estimated that only 67% of the existing software will work with it. That leaves the computer owner swapping their ROMs back and forth in order to run various software. KICK-BOARD... A simple-to-install board that replaces your ROM inside your Amiga computer. You can add two additional ROMs. You can select any one of 3 ROMs. **\$37.95 (Same as above, but keyboard controlled \$79.95.)**

INSIDER II

(1.5 MB FOR THE A1000)

Simple plug-in board—battery clock/calendar—simple, fast and compatible. No soldering—1 year warranty. **\$199.95 (OK)**

• REPLACEMENT/UPGRADE •

CHIPS & PARTS

| | |
|-----------------------------------|----------------------------------|
| 8372 (2MB AGNUS).....\$119.95 | 68881/20 MHZ.....79.00 |
| 8520A CIA.....17.95 | 68882/16 MHZ.....129.00 |
| 8364 PAULA.....29.95 | 256 x 4/80 DIP.....6.95 |
| 8362 DENISE 1/2 Bt.....29.95 | 1 MG x 1/100.....6.95 |
| 5719 GARY.....17.95 | A500 P/S 80 watts.....69.95 |
| 1.3 ROM.....29.95 | A500 P/S 150 watts.....99.95 |
| 2.0 ROM.....CALL | A500 Service Manual.....29.95 |
| 1 x 4 MG/80 Zip (A3000).....49.95 | A500 Keyboard.....109.50 |
| 68010/8 MHZ.....15.95 | A2000 Hvy Dty P/S.....147.00 |
| 68020/16 MHZ.....69.95 | A2000 Keyboard.....114.95 |
| 68030/25 MHZ.....191.00 | A2000 Service Manual.....35.75 |
| 68881/12 MHZ.....49.00 | Keyboard for A1000.....129.95 |
| 68881/16 MHZ.....69.00 | Amiga Diagnostician Bk.....14.95 |

Above does not include UPS

• Important Catalog Announcement •

We have a new, FREE 30 page catalog of specialty items for Amiga, Commodore and IBM. This Free catalog contains: Low-Cost Chips, Upgrades, Diagnostics, Tutorial Video Tapes, Interfaces, IBM Upgrades, Cables, Heavy Duty Power Supplies and other super products you won't find anywhere else. (Dealers, use your letterhead.) Prices Subject to Change.



THE GRAPEVINE GROUP, INC.
3 CHESTNUT STREET
SUFFERN, NY 10901
1-800-292-7445 • 914-357-2424
FAX 914-357-6243
We Ship Worldwide



From p. 94.

ble ideas software developers have come up with is the integrated package: You can get everything you need all in one fell swoop.

Let's take a tour through Gold Disk Office, a package of five separate and powerful business programs that are as easy to use as they are to buy.

WRITE ON!

The package's multifeatured word processor, *Office Write*, goes beyond the basics. It allows you to create indexes, define macros, and place "bookmarks" within a document. You can convert individual letters or even entire words to upper- or lowercase simply by highlighting the text and either executing the command from the keyboard or selecting it from the menu. In fact, all of Write's menu commands are fully accessible from the keyboard or via the mouse—now *that's* flexibility.

With single-keystroke operations, you can also manage multiple windows simply and effectively, allowing you to select different page and text colors to keep documents separate. Furthermore, you can assign icons to windows to make them easier to identify. Office Write even comes with a built-in spelling checker to guard against embarrassing errors.

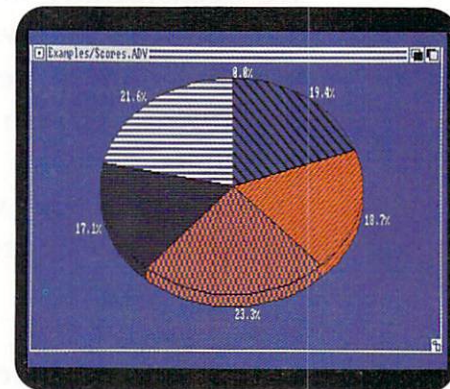
Although well designed, Write does have a few shortcomings. It provides no on-screen margins or page indicators and displays auto-hyphens only in preview mode. These omissions make formatting complex documents difficult. In addition, scrolling (controlled by a single gadget at the bottom of the screen) occurs in a way that makes it difficult to keep track of the cursor. These complaints are minor, however, in view of the extra features the program does provide.

The layout program, *Office Page*, enables you to create professional-quality newsletters, brochures, and ad designs with relative ease. The program allows you to select a standard or interlaced work screen, as well as to choose from a variety of layout tools such as grids, rulers, and columns. Any page can be viewed at magnifications up to 200 percent.

Page's own WYSIWYG word processor is best suited for creating short blocks of text or for making quick changes. Be-

cause of the delays caused by screen refreshes and font caching, long documents should instead be prepared with Office Write. By running Write simultaneously, you can edit existing blocks of text via a pop-up window.

Page displays text in a variety of fonts, sizes, and styles, and allows you to combine results within any box to achieve impressive effects. You can also incorporate graphics into your text. In addition



Have a slice of 3-D pie.

to letting you import bitmap graphics and Professional Draw clips, the program provides tools for creating structured graphics. Text may also be wrapped around any graphic without overlapping. Page supports both dot-matrix and PostScript printers and is capable of some impressive output.

Creating a flat-file database with *Office File* is as simple as designing a template and then adding data. You can easily manipulate records with indexes, filters, sets, and reports of your own design. Special Office File features worth noting include QuickCalc, which performs statistical calculations on a numeric field in a range of records; Formula Substitution, which changes the fields in multiple records based on a calculated mathematical expression; and Built-In Functions, which provides prewritten expressions for filters, searches, and formula substitutions. File also supports AREXX.

You can use files created in other Office modules—including Write, Calc (spreadsheet), and Graph (chart generation)—with database files you create with Office File, making it a very useful tool.

ROUNDING UP THE FIGURES

Office Calc, the spreadsheet program, records your home or business finances. ►

Project D: BackupTool - Copyright 1987,1990 Fuller Computer Systems, Inc.

Project D: BackupTool Version 2.0
Using "Diskcode.library" Version 3.8
Using Parameter File Number 1290

| | | | |
|---|--|--|---|
| BACKUP CONTROL SELECTOR | | TRACK POSITION SELECTOR | |
| <input type="button" value="BEGIN"/> | CHOOSE BACKUP MODE: <input checked="" type="radio"/> Standard AmigaDOS <input type="radio"/> AmigaDOS MultiCopy <input type="radio"/> AutoMAGIC Parameter <input type="radio"/> Manual Parameter | START AT CYL: 00 HEAD: 0 <input type="checkbox"/> | HEAD <input checked="" type="radio"/> Both <input type="radio"/> Head 0 <input type="radio"/> Head 1 |
| <input type="checkbox"/> VERIFY <input type="checkbox"/> INDEXSYNC <input checked="" type="checkbox"/> AUDIO BEEP | | STOP AT CYL: 79 HEAD: 1 <input type="checkbox"/> | |
| DRIVE CONFIGURATION SELECTOR SOURCE: <input checked="" type="radio"/> DF0: <input type="radio"/> DF1: <input type="radio"/> DF2: <input type="radio"/> DF3: TARGET: <input type="radio"/> DF0: <input type="radio"/> DF1: <input checked="" type="radio"/> DF2: <input type="radio"/> DF3: | | DISK BACKUP ERROR LIST | |

Designed and Written by Ben Fuller

Project D: OmniTool - Copyright 1987,1990 Fuller Computer Systems, Inc.

OmniTool v2.0 Copyright © 1990 Fuller Computer Systems
Select Options - Then Click On Begin To Start

| | |
|---|--|
| <input type="button" value="BEGIN"/> | COPY MODE <input checked="" type="radio"/> Standard <input type="radio"/> Advanced |
| <input type="checkbox"/> MULTICOPY <input checked="" type="checkbox"/> AUDIO BEEP | |
| DRIVE CONFIGURATION SELECTOR SOURCE: <input checked="" type="radio"/> DF0: <input type="radio"/> DF1: <input type="radio"/> DF2: <input type="radio"/> DF3: TARGET: <input type="radio"/> DF0: <input type="radio"/> DF1: <input checked="" type="radio"/> DF2: <input type="radio"/> DF3: | |
| TRACK POSITION SELECTOR START AT CYL: 00 HEAD: 0 <input type="checkbox"/> Both <input type="radio"/> Head 0 <input type="radio"/> Head 1 | |

STOP AT CYL: 79 HEAD: 1

Project D: EditorTool - Copyright 1987,1990 Fuller Computer Systems, Inc.

CHANGE MODE AmigaDOS Tracks **DEVICE** WB_2.x: (scsi.device / 1) **INFO**

STATUS:
TRK: 00030 SEC: 000 BLK: 002520 [000000]
OFFSET: 0: 000 M: 000 L: 000 (00000)

SEARCH
FILL
COPY
READ
WRITE
JUMP
BACK
ROOT
ASCII

Head 0 =

Project D: CatalogTool v2.0.042 - © 1987,1990 Fuller Computer Systems, Inc.

Catalog Files

| Catalog Files | Disk ID | Filename | Size |
|---|--|---|--|
| CatalogTool - Manual Record Entry | | | |
| Filename | | Disk ID | |
| Directory | | | |
| Comment | | | |
| Date | | File Size | |
| <input type="button" value="ADD RECORD"/> | | <input type="button" value="CLEAR RECORD"/> <input type="button" value="CANCEL"/> | |
| <input type="button" value="ADD CATALOG"/> | <input type="button" value="REMOVE CATALOGS"/> | | |
| <input type="button" value="CREATE CATALOG"/> | <input type="button" value="DELETE CATALOG"/> | | |
| <input type="button" value="MERGE CATALOGS"/> | <input type="button" value="PURGE CATALOGS"/> | | |
| <input type="button" value="OPEN CATALOGS"/> | <input type="button" value="PROCESS ENTRIES"/> | | |
| <input type="button" value="MANUAL ENTRY"/> | <input type="button" value="AUTO ENTRY"/> | <input type="button" value="AUTO SELECT"/> | <input type="button" value="SORT ENTRIES"/> <input checked="" type="button" value="SELECT ENTRY"/> |

*Say Hello
to Project D 2.0*

Available at fine Amiga dealers everywhere.

FULLER COMPUTER SYSTEMS, INC.

THE UTILITY COMPANY

Orders: (800) 874-DISK

Tech Support: (602) 497-6070

FAX: (602) 497-6071



**The
Best
Amiga
Disk
Copier
Just
Got
Better.**

THE AAMIGA CENTER

Formerly The 64 Store

CALL TOLL FREE

1-800-388-2700

10 AM to 6 PM Mon - Sat

| | |
|----------------------------------|---------------------------------|
| 2000 INTERNAL DRIVE . . . 99.00 | MEDIA PHILE KIT 45.00 |
| 3000 INTERNAL DRIVE . . . 119.00 | MICROFICHE FILER + . . . 115.00 |
| 3D PROFESSIONAL 275.50 | MIGRAPH SCANNER . . . CALL |
| 500 POWER SUPPLY 96.25 | MODELER 3D 65.00 |
| A.M.A.S. 140.00 | MOVIE SETTER 49.00 |
| A-10 TANK KILLER 31.25 | MUSIC BOX A or B . . . 45.00 |
| A-MAX II 156.50 | MUSIC X 187.50 |
| A-TALK 3 62.50 | NIGHT HUNTER 23.65 |
| ADAPT 75.00 | NITRO 25.00 |
| ADVANTAGE 1.1 125.00 | OFFICE 205.00 |
| AM-TRACK TRACKBALL . . . 75.00 | ONLINE PLATINUM . . . 43.75 |
| AREXX REF MANUAL 31.25 | PAGE FLIPPER PLUS FX . 86.75 |
| AUDIOMASTER III 62.50 | PAGE RENDER 99.00 |
| AUTO SCRIPT 50.00 | PAGESTREAM 2.0 . . . 187.50 |
| AWESOME 37.50 | PAGESTREAM FONTS . . 25.00 |
| BARS & PIPES 187.50 | PERFECT SOUND 74.95 |
| BROADCAST TITLER II . . . 244.00 | PHASAR 4.0 56.25 |
| CALGARI CONSUMER 151.25 | PHOTON PAINT II . . . 93.75 |
| CAN DOI 93.75 | PIXEL SCRIPT 99.00 |
| CHAMP. OF KRYNN 34.50 | POOL OF RADIANCE . . 34.50 |
| COMIC SETTER 49.00 | POWER MONGER CALL |
| COMIC SETTER CLIP ART . . 9.95 | PRO PAGE TEMPLATES . 37.50 |

Call For Latest Games

| | |
|-----------------------------------|--------------------------------|
| CURSE AZURE BONDS . . . 34.50 | PRO VIDEO GOLD 156.25 |
| CUTTING EDGE DRIVE . . . 200.95 | PRO VIDEO POST 220.00 |
| CZAR 115.00 | PRO PAGE 2.0 CALL |
| DBMAN V 187.50 | PRO PAGE CLIP ART . . . 37.50 |
| DELUXE PAINT III 93.75 | PROMOTION 62.50 |
| DELUXE PHOTOLAB 93.75 | PROSCRIPT 31.25 |
| DESIGN 3D 49.00 | PROWRITE 3.0 110.00 |
| DIGI MATE III 30.00 | QUARTERBACK TOOLS . . 56.25 |
| DIGI DROID 55.00 | QUARTERBACK 4.0 . . . 43.75 |
| DIGI-PAINT 3.0 62.50 | QUSAR SOUND 37.50 |
| DIGIVIEW GOLD 4.0 137.00 | RULES FOR TOOLS 45.00 |
| DISNEY ANIMATOR 115.00 | SAXON PUBLISHER 285.00 |
| DISTANT SUNS 43.75 | SCANLOCK 885.00 |
| DOS 2 DOS 34.25 | SCULPT ANIMATE 4D JR . 92.50 |
| DR. T's (all software) . . . CALL | SCULPT ANIMATE 4D . . 395.00 |
| DRAGON WARS CALL | SHADOW OF THE BEAST . 27.50 |
| DUNGEON MASTER 2 CALL | STAR CONTROL 31.25 |
| DYNA CAD CALL | SUPERBASE PRO 236.25 |
| E.C.E. MIDI 56.75 | SUPERGEN CALL |
| ELAN PERFORMER 37.50 | SUPERPLAN 93.75 |
| EURO GAMES CALL | SUPRA RAM 500/512K . . 79.00 |
| F-19 STEALTH 37.50 | SUPRA 2400 MODEM . . 123.75 |

Over 2500 items in stock

| | |
|---------------------------------|-------------------------------|
| FACT II 21.95 | THE IMMORTAL 37.50 |
| FALCON MISSION DISK 2 . 18.75 | THE KILLING GAME SHO . 31.25 |
| FORMS IN FLIGHT II . . . 79.00 | THE DIRECTOR 43.75 |
| FRAME GRABBER 579.95 | THE DIRECTOR TOOLKIT . 24.95 |
| GO I 31.25 | THE ACCOUNTANT 187.50 |
| GOLD DISK TYPE 37.50 | TIGER CUB 75.00 |
| GRAPHIC STARTER KIT . . . 49.95 | TITLE PAGE 125.00 |
| GRAVIS MOUSESTICK . . . 79.00 | TOP FORM 65.00 |
| HARPOON 40.50 | TRANS WRITE 43.75 |
| HOME BUILDERS CAD . . . 124.95 | TRUE BASIC 49.95 |
| ILLUMILINK 95.00 | TURBO SILVER 99.00 |
| IMAGINE 218.75 | ULTIMA V 37.50 |
| INDY 500 34.50 | ULTRA DESIGN 225.00 |
| INTERCHANGE 31.25 | VIDEO TOASTER CALL |
| INTERFONT 74.95 | VIDEOSCAPE 3D 125.00 |
| KARA ANIM FONTS 31.25 | WINGS 34.50 |
| KARA FONT HEADLINE . . 43.75 | WORD PERFECT 161.00 |
| LOOM 43.75 | WRATH OF DEMON . . . 31.25 |
| M (MUSIC COMPOSING) . 124.50 | X-10 SECURITY SYSTEM . 58.00 |
| M-1 TANK PLATOON 37.50 | X-10 AMIGA SOFTWARE . 27.00 |
| MAG-2-DOS 93.75 | X-CAD PROFESSIONAL . 343.00 |

Commodore's First Authorized Amiga Dealer
in the USA !!!

The AAMIGA Center
5920 Roswell Road
Atlanta, GA 30328

REVIEWS

For specific tasks such as taxes or mortgage repayments, you can use the professionally prepared spreadsheet templates included on the distribution disk, or you can create customized versions to suit your own needs.

To eliminate repetitive keystrokes, Calc lets you design macros for, and attach AREXX scripts to, individual cells. Like Office File, Calc provides a series of built-in functions for use in writing expressions.

To improve the appearance of your spreadsheets, you can manipulate cell widths, align decimal points, and even assign different colors and styles within your text. These text attributes can also be modified based on the results of calculations. For example, if you are working on a profit-and-loss statement, you can enter a formula that will display all negative numbers (losses) in red and all positive numbers (profits) in black.

Calc is not confined to using data created in Office programs; it also allows you to load Lotus and MaxiPlan files (with some limitations) and to export Lotus files. You can also use Calc with Write (to edit/read cells or add notations), Page (to include actual spreadsheet values as rows or columns in your publications), and Graph (to generate charts and graphs).

If you intend to make a business presentation or would like visually appealing reports, *Office Graph's* charts and graphs do the job nicely. The program opens to a spreadsheet window you can use to arrange your data in rows and columns. Although identical to Office Calc in appearance, the Graph spreadsheet is unable to recalculate the values in the cells according to formulas. You may enter data directly or import figures from Calc. After doing so, choose which data you wish to plot and the type of chart or graph you wish to use. There are ten choices, including 3-D pie and bar, some of which you can fine-tune for special display. For example, using the "all exploding" command separates the individual slices in a pie graph.

For superior printed output of your work, you can import files from Graph into the Office Page layout program. You can save Graph files as bitmap graphics (IFF) or as Professional Draw clips, but, as bitmap graphics often appear jagged when printed, you would probably find

that the latter option is preferable.

Gold Disk seems to have put a lot of thought into this package. By going the extra mile, the company has created a comfortable working environment for both mouse and keyboard users. Office's well-written tutorials guide you effortlessly through each program. While those with a 512K system are limited to running the programs separately, Gold Disk Office is still a bargain.

Gold Disk Office

Gold Disk

5155 Spectrum Way, Unit 5
Mississauga, Ont.
Canada L4W 5A1
416/602-4000
800/465-3375
\$295

No special requirements, but 1MB recommended.

TOP FORM

It's just a formality.

By Morton A. Kevelson

THE FILL-IN form has become an essential part of Western civilization. Between bank slips, credit card forms, and the like, rarely does a day go by that you don't use a form. If you are engaged in any type of interactive commerce, the chances are that you will occasionally need to inflict forms of your own upon others. Top Form, from Designing Minds, is a general-purpose, forms-creation program you can use to generate custom forms.

IMAGES WITH CHARACTER

Top Form's working page is a blank screen with an array of icons along the left side that make up the control panel. You can access many of the control-panel functions from both pull-down menus and keystroke combinations.

Although Top Form has a number of tools for drawing lines, boxes and grids, the program is actually character-based. All its graphics are printed using the block graphic characters that are a part of most printers' character sets. If your printer does not have in ROM the dozen graphics characters that Top Form re- ▶

SPIRIT INSTANT REBATE & COUPON BONANZA

Valuable Instant Rebates
PLUS \$250 In Spirit Coupons
For Future Spirit Purchases

A \$569
VALUE

2MB FREE RAM REBATE

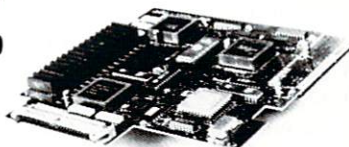
ON NEW
IN-MATE™

AT OK PRICE

PLUS
\$250 IN
SPIRIT
COUPONS!

Installs inside A500
Also in A2000

ONLY
\$549⁰⁰



**1 SCSI INTERFACE
IN-MATE** ... fast, SCSI
hard drive interface inside
leaves your 86-pin expan-
sion port free!

**2 RAM MEMORY EXPANSION
IN-MATE** ... 2, 4 or 8MB
zero wait state fast RAM
inside Amiga 500 or 2000!

**3 MATH CO-PROCESSOR
IN-MATE** ... 68881 Math co-
processor for programs
using floating math calcula-
tions.

**4 PLUS...
4-LAYER CMOS BOARD**
... low noise, 4 layer board
with low power CMOS
68000 processor and CMOS
circuitry and parts.

A \$709
VALUE

Regular OK: \$549
Regular 2MB: \$709
INSTANT REBATE: ... \$160
REBATE SPECIAL: ... \$549

IN-MATE also operates in an A2000. It'll move with you if you move up and frees-up A2000 expansion slots.

SCSI FEATURES

- Autoboot and Fast File System partitions.
- Non-DMA with transfer rates up to 500 Kbytes.
- Supports up to 6 SCSI devices and Tape Backup.
- Implements Commodore's Rigid Disk standard.
- Compatible with 86-pin expansion devices using DMA.

RAM FEATURES

- Up to 8MB zero wait state fast RAM.
- Autoconfig at boot time.
- Socketed Zip configuration expandable from OK:
1.0 & 2.0MB with 256K x 4 20-pin Zip DRAM
4.0 & 8.0MB with 1 Meg x 4 20-pin Zip DRAM

PLUS FEATURES

- Socketed for 68881 Math Co-processor.
- Uses less than 700 ma power with on board CMOS MC68000 microprocessor and CMOS parts and circuitry puts IN-MATE well within the power range of standard A500 power supply.
- Simple, solderless plug-in installation.
- Includes software support disk with test and utility programs.

A500 RAM MEMORIES

| | |
|---|-------|
| 512K MEMORY (A501 clone) INSIDE A500 | |
| "TRAPPER" OK | \$46 |
| With 512K memory | \$76 |
| 2 MB MEMORY INSIDE A500 | |
| "SIN SOK" OK | \$199 |
| With 0.5MB memory | \$239 |
| With 1.0MB memory | \$279 |
| With 2.0MB memory | \$359 |
| 2MB MEMORY FOR A500 MIGRATES INTO A2000 | |
| "X-RAM" OK | \$270 |
| With 2.0MB memory | \$398 |
| With 4.0MB memory | \$526 |
| With 6.0MB memory | \$654 |
| With 8.0MB memory | \$782 |

A2000 RAM MEMORY

| | |
|----------------------|-------|
| 2MB MEMORY FOR A2000 | |
| "OCTABYTE" OK | \$192 |
| With 2.0MB memory | \$320 |
| With 4.0MB memory | \$448 |
| With 6.0MB memory | \$576 |
| With 8.0MB memory | \$704 |

A1000 RAM MEMORY

| | |
|--|-------|
| 1.5MB MEMORY BOARD FOR A1000 | |
| IN1000 OK | \$199 |
| With 0.5MB memory | \$231 |
| With 1.0MB memory | \$263 |
| With 1.5MB memory | \$295 |
| 2MB MEMORY FOR A1000 MIGRATES INTO A2000 | |
| "X-RAM" OK | \$270 |
| With 2.0MB memory | \$398 |
| With 4.0MB memory | \$526 |
| With 6.0MB memory | \$654 |
| With 8.0MB memory | \$782 |

ST-506 HARD DRIVE INTERFACE PACKAGES!

| | |
|---------------------------------|------------|
| Drive not included | |
| FOR A500 and A1000 | |
| "HDA-506" SYSTEM | ONLY \$299 |
| FOR A2000 | |
| "SLOT MACHINE" HARD CARD SYSTEM | Only \$199 |

\$70 INSTANT REBATE INTERLOK™

MODEL IGL-1

Genlock/Encoder for All Amigas

ONLY
\$499⁰⁰



Regular NTSC: \$569
INSTANT REBATE: \$ 70
REBATE SPECIAL \$499

Regular PAL: \$749
INSTANT REBATE: \$ 90
REBATE SPECIAL \$659

The Genlock that won't crash your computer during video search editing ... that pays meticulous attention to artist's colors ... that offers professional video specs for the best price/performance in the market.

- Looping video IN with switchable termination.
- NTSC or PAL encoded video OUT.
- R-G-B & KEY outs.
- RGB matching level selection for A500/A1000/A2000.
- 0 to 100% fade overlay slider on removeable panel.
- Control Panel can be remoted to 25' or more.

PLUS
\$250 IN
SPIRIT
COUPONS!

\$20 INSTANT REBATE ON WORLDS
FASTEST HARD DRIVE BACKUP!

BYTE'N'BACK™

ONLY \$49 ... a \$69 value.

| | |
|--|-------------------------------------|
| Regular Price: | \$69 |
| INSTANT REBATE: | \$20 |
| REBATE SPECIAL | \$49 |
| • Faster ... only 55 Secs per disk (no verify) | • Drag-by-group file select. |
| • Stores more files per disk ... 935K | • Extra user friendly. |
| • Asynchronous scan mode. | • FREE updates to registered owners |

FLOPPY DISK DRIVES!

| | |
|--|-----------|
| AIR DRIVE EXTERNAL FOR ALL AMIGAS | |
| A1010 | ONLY \$99 |
| Low profile, lower power, 36" cable, pass thru, on/off switch. | |
| AIR DRIVE INTERNAL FOR A2000 | |
| A2010 | ONLY \$89 |
| Direct replacement or 2nd drive with dust door and mounting kit. | |
| AIR DRIVE INTERNAL FOR A3000 | |
| A3020 | ONLY \$99 |
| Direct replacement or 2nd drive, LED and compatible button. | |

GET THE SPIRIT! ORDER AND INFORMATION

TOLL FREE
1-800-433-7572

SPIRIT
TECHNOLOGY

Spirit Technology Corporation, 220 West 2950 South, Salt Lake City, Utah 84115
Phone: (801) 485-4233, FAX: (801) 485-6957, U.S.A. Sales: (800) 421-6045

VISA, MASTERCARD & AMERICAN EXPRESS cards accepted with no surcharge. COD accepted, add \$3.50. Shipping and insurance extra. All products shipped UPS 2nd day unless otherwise requested. All prices U.S. dollars, domestic U.S. sales only. Prices and specifications subject to change without notice. Prices of products containing RAM memory may vary due to fluctuations in the DRAM market.

AMIGA is a registered Trademark of Commodore/Amiga, Inc., IN-MATE, AX-S, Octabyte, Interlok, Trapper, Fat Trapper, Slot Machine and MIDI-Star are Trademarks of Spirit Technology Corp.; BYTE'N'BACK is a Trademark of Bytes and Pieces (Europe) Ltd.; AIR DRIVE is a Trademark of Advanced Integration Research

ALL SPIRIT PRODUCTS ARE BACKED WITH ONE YEAR WARRANTY AND EXCEPTIONAL TECHNICAL SUPPORT.

Circle 19 on Reader Service card.

commodore AMIGA™

MEMORY CHIP

| | |
|-----------------------------------|----------|
| 256K x 4-80 DIP | \$8.00 |
| 256K x 4-80 ZIPP | \$9.50 |
| 256K x 4-80 (Static for A3000) | \$10.00 |
| 1 MG x 8-80 SIMM | \$79.00 |
| 1 MG x 4-80 (Static for A3000) | *\$44.95 |
| NEW FATTER AGNUS | \$99.95 |
| Amiga Mouse | \$49.00 |
| External Hi Density 1.52 MG Dr. | \$199.00 |
| 1.5 MG Insider Board for A1000 | \$299.00 |
| Keyboard for A1000 | \$139.95 |
| A2000 Power Supply | \$139.95 |
| Power Supply A500 (Heavy Duty) | \$99.95 |
| 4 MG Base Board (for A500 w/2 MG) | \$249.95 |
| 4 MG Base Board (for A500 w/4 MG) | \$349.00 |
| Amiga Janus 2.0 | \$29.95 |

SUPRA

| | |
|-------------------------|-----------|
| 2 MG Expandable to 8 MG | *\$210.00 |
| 4 MG Expandable to 8 MG | \$349.00 |
| 40 MG Hardcard | \$549.00 |
| 40 MG HD (A500 w/512K) | \$699.00 |

GVP

| | |
|-------------------|-----------|
| 40 MG HD for A500 | \$699.00 |
| 40 MG Hard Card | \$599.00 |
| 100 MG Hard Card | \$899.00 |
| A3001 4/0 28 MHz | \$1699.00 |

GOLD DISK

| | |
|-------------|---------|
| Design 3D | \$39.95 |
| Moviesetter | \$39.95 |

Special sale this month while supplies last.

ASI

Ampex Systems, Inc.

(Not affiliated with Ampex Corp.)

5344 JIMMY CARTER BLVD.

NORCROSS, GA 30093

(Orders Only) (800) 962-4489 • Fax (404) 263-7852

(Information & Prices) (404) 263-9190

Circle 352 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

R E V I E W S

quires, you must download them into the printer's RAM as custom characters. You are not likely to have to do this, however, as these characters are standard on all printers that offer Epson or IBM emulation. Nevertheless, the Top Form disk provides eight downloadable fonts that cover 75% of the printers on the market.

Because the Workbench printer drivers do not provide the printer control that Top Form needs, the program comes with nearly two dozen of its own drivers. If you have an unsupported printer, you will have to create a driver. Top Form provides a driver-creation utility, which requires the appropriate ASCII control codes for your printer.

You can create forms of up to 8 1/2 x 11 inches, and a number of samples are included on the program disk. There is no provision for importing IFF graphics or incorporating color, and your forms are limited to just the one IBM-style font.

GET YOUR FILL

Although it is possible to fill out completed forms using Top Form, it is not a good idea. Top Form cannot distinguish fill-in data from the underlying structure of the form. It is entirely too easy to type the fill data over parts of the form and thereby obliterate the form itself. Filling out forms either by hand or by using Top Form's file-merge facility is a better approach. Top Form's Merge files are simply sequential files made up of structured blocks. You can easily create appropriate files to import and merge with these using a text editor or database program that supports ASCII. Unfortunately, I was unable to get Top Form's Merge feature to function; even the sample file on disk would not work.

Another quirk I encountered was Top Form's file requesters. Although they are standard in appearance, you cannot interrupt a requester until it has finished reading in the current directory. This can be annoying if you are working with a lot of small files on floppy disks. On the other hand, once a directory has been read in, Top Form retains it in a RAM buffer so that subsequent access to the file requester is instantaneous as long as the disk has not changed.

Text attributes such as italics, underline and bold are not visible on the working display. To see their effects, you must invoke a Preview mode, which dis-

plays the form in WYSIWYG (What You See Is What You Get) style but does not let you make any changes. Further, all of Top Form's layout operations, such as centering and justification, are based on a standard 80 characters per line. If you choose to use expanded or condensed print, both of which Top Form supports, these layout functions will not work.

Finally, when outputting Top Form files to my Panasonic KX-P1124 printer,

Appointment Check List

Day: _____

Date: __/__/__ Time: ____am/pm

Location: _____

Those present: _____

Objectives: _____

- ☐ Presentation materials
- ☐ Samples
- ☐ Contract
- ☐ Literature

A printout from one of Top Form's disk samples.

I found another problem. Draft-mode printing worked fine, but no matter what I did, I was unable to print more than a single form in near-letter-quality mode without restarting the program.

Top Form is little more than a single-page word processor. In fact, you can create forms just as effectively with any WYSIWYG word processor—such as Pen Pal or ProWrite—that allows you to draw lines. If you are looking for a dedicated forms-creation program, I suggest FormAction (reviewed Feb. '90, p. 18); it does a lot more for less money.

Top Form

Designing Minds

3006 N. Main

Logan, Utah 84321

801/753-4947

\$89

No special requirements.

Continued on p. 106.

The Software Shop, Inc.

Software & Hardware Special

1-800-752-0050

"Give Us the Opportunity to BEAT any advertised price"

GVP-A2000 ACCEL, MEM & HARDCARDS

| | |
|----------------------------|--------|
| A3001-68030-882/28MHZ+4MB | \$1469 |
| A3001-68030-882/33MHZ+4MB | 1679 |
| A3001-68030-882/50MHZ+4MB | 2559 |
| GVP-A2000-HC/8+0 SRSII | 233 |
| GVP-A2000-HC/8+2MG SRSII | 328 |
| GVP-A2000-HC/8+4MG SRSII | 430 |
| GVP-A2000-HC/8+6MG SRSII | 532 |
| GVP-A2000-HC/8+8MG SRSII | 633 |
| GVP-A2000-HC/8+0+Q-40MG | 529 |
| GVP-A2000-HC/8+0+Q-80MG | 706 |
| GVP-A2000-HC/8+0+Q-105MG | 739 |
| GVP-A2000-HC/8+0+Q-170MG | 1069 |
| GVP-A2000-HC/8+0+Q-209MG | 1125 |
| GVP-A2000-HC-SRSII+Q-40MG | 489 |
| GVP-A2000-HC-SRSII+Q-80MG | 666 |
| GVP-A2000-HC-SRSII+Q-105MG | 699 |
| GVP-A2000-HC-SRSII+Q-170MG | 1029 |
| GVP-A2000-HC-SRSII+Q-209MG | 1089 |
| GVP-A2000-HC/0 | 175 |

A2000 HARD CARDS

| | |
|---------------------------|--------|
| Hardframe 2000 | \$ 159 |
| Quantum 50mg w/HF2000 | 489 |
| Quantum 80mg w/HF2000 | 669 |
| Quantum 105mg w/HF2000 | 699 |
| Quantum 170mg w/HF2000 | 1035 |
| 209mg Conner w/HF2000 | 1099 |
| Wordsync Supra Controller | 129 |
| Quantum 50mg w/wordsync | 449 |
| Quantum 80mg w/wordsync | 623 |
| Quantum 105mg w/wordsync | 659 |
| Quantum 170mg w/wordsync | 989 |
| 209mg Conner w/wordsync | 1039 |
| ICD Advantage Controller | 139 |
| Quantum 50mg w/ICD Adv. | 459 |
| Quantum 80mg w/ICD Adv. | 633 |
| Quantum 105mg w/ICD Adv. | 699 |
| Quantum 1700mg w/ICD Adv. | 1009 |

NEW A500 DRIVES & MEMORY

| | |
|-------------------------|-------|
| AD-IDE Controller A500 | \$118 |
| AD-IDE-A500 w/40mg Teac | 459 |
| AD-IDE-A500 80mg Maxtor | 649 |
| Supra 500XP-20mg w/512K | 559 |
| Supra 500XP-20mg w/2mg | 649 |
| Supra 500XP-40mg w/512K | 669 |
| Supra 500XP-40mg w/2mg | 759 |
| Quantum 50mg w/GVP | 659 |
| Quantum 80mg w/GVP | 849 |
| Quantum 105mg w/GVP | 899 |
| Adram 540 A500 w/512K | 139 |
| Adram 540 A500 w/1mg | 159 |
| Adram 540 A500 w/2mg | 199 |
| Adram 540 A500 w/4mg | 299 |
| BaseBoard 512K | 139 |
| BaseBoard 1mg | 159 |
| BaseBoard 2mg A500 | 179 |
| BaseBoard 4mg A500 | 299 |

A1000 HARD DRIVES & MEMORY

| | |
|------------------------------|-------|
| Quantum 40mg w/Supra | \$659 |
| Quantum 80mg w/Supra | 849 |
| Quantum 105mg w/Supra | 899 |
| Starboard II 512K | 230 |
| Starboard II 1mg | 259 |
| Starboard II 2mg | 359 |
| Starboard 0K | 211 |
| HARDDRIVES | |
| Quantum drive 40mg 11ms acc. | 329 |
| Quantum drive 80mg 11ms acc. | 495 |
| Quantum drive 105mg | 539 |
| Quantum drive 170mg 11ms | 869 |
| 209mg Coner 15ms | 914 |
| SYQUEST 44mg w/cartridge | 649 |
| Syquest Media 44mg | 89 |
| A2000 MEMORY CARDS | |
| Supram A2000 2mg | 211 |
| Supram A2000 4mg | 289 |

| | |
|-------------------------|-------|
| Supram A2000 6mg | \$379 |
| Supram A2000 8mg | 439 |
| 8UP 2mg A2000 | 215 |
| 8UP 4mg A2000 | 295 |
| 8UP 6mg A2000 | 375 |
| 8UP 8mg A2000 | 459 |
| AdRAM A2080 2mg | 195 |
| AdRAM A2080 4mg | 275 |
| AdRAM A2080 6mg | 355 |
| AdRAM A2080 8mg | 435 |
| RamWorks 2000 2mg | 189 |
| RamWorks 2000 4mg | 269 |
| RamWorks 2000 6mg | 349 |
| RamWorks 2000 8mg | 429 |
| CHIPS | |
| Dram 1mg x 1 80/100ns | 9 |
| Dram 4mg Zip 10 | 10 |
| Dram 256 x 4 180/100ns | 9 |
| Sim Module 80/100ns | 75 |
| SCRam 4 x 1 70/80ns Zip | 75 |

ACCESSORIES

| | |
|--------------------------|-----|
| 6 outlet AC Surge | 16 |
| A/B/C/D Switchbox | 39 |
| A1000 Safe skin | 22 |
| A2000 Safe skin | 22 |
| A3000 Safe skin | 22 |
| A500 Safe skin | 22 |
| Amtrac Trackball | 79 |
| Boing optical mouse | 109 |
| Copy Stand | 69 |
| Ece Midi 1000 | 52 |
| Ece Midi 500/2000 | 52 |
| Ergo Joystick | 17 |
| Gravis Joystick | 37 |
| Modem cable A1000 | 15 |
| Modem cable A2000/50015 | 15 |
| Mouse pad | 9 |
| Printer cable 2000/50015 | 15 |
| Printer cable A1000 | 15 |
| Video int. A500 a | 65 |

CAD

| | |
|----------------------|-----|
| Draw 2000 | 183 |
| Home builder cad | 129 |
| Home builder choice | 53 |
| Home Builder library | 79 |
| Intro cad | 51 |
| Intro Cad Plus | 99 |
| Pro-Board | 399 |
| Pro-Net | 399 |
| Ultra Design | 269 |
| X-CAD Designer II | 97 |
| X-CAD Designer Pro | 215 |

COMMUNICATION

| | |
|-----------------|----|
| Online | 44 |
| Atalk III | 65 |
| Online Platinum | 67 |
| BBS pc | 96 |
| Skyline BBS com | 99 |

DATABASE

| | |
|--------------------|-----|
| Data retrieve | 51 |
| Dbman V | 189 |
| Super base | 52 |
| Superbase pers. II | 99 |
| Superbase Pro. 3.0 | 219 |

DESKTOP PUBLISHING

| | |
|-----------------------|-----|
| Gold spell II | 30 |
| Pro-page template | 42 |
| Pro-draw clip art | 42 |
| Transcript | 47 |
| Text pro | 50 |
| Publisher plus | 69 |
| Who-What-When | 69 |
| Wp library | 79 |
| Page setter II | 89 |
| Becker text | 92 |
| Pen Pal | 102 |
| Prowrite v3.0 | 99 |
| Professional Draw | 129 |
| Publishers Choice | 69 |
| City Desk 2.0 | 135 |
| Word Perfect | 149 |
| The Works Platinum | 164 |
| Professional Page | 175 |
| Excellence! 2.0 | 179 |
| Gold Disk Office | 189 |
| Professional page 1.3 | 199 |
| Page stream 2.0 | 199 |

EDUCATION

| | |
|---------------------|----|
| Adventure of sinbad | 32 |
| Aesop's fables | 32 |

| | |
|----------------------------|------|
| All about America | 35 |
| Animal kingdom | 32 |
| At the Zoo | 27 |
| Decimal dungeon | 32 |
| Dinosaur Discov. kit | 29 |
| Discovery game math | 25 |
| Discovery game spell | 25 |
| Fraction action | 32 |
| Intellitype | 35 |
| Kid talk | 35 |
| Kinderama | 32 |
| Learning curve | 52 |
| Letters For You | 28 |
| Master type | 25 |
| Math Odyssey | 33 |
| Math talk | 35 |
| Math wizard | 35 |
| Math talk fraction | 35 |
| Mavis beacon typing | 33 |
| Numbers Count | 28 |
| Project Master | 129 |
| Puzzle Story book | 29 |
| Read & rhyme | 32 |
| Read-a-rama | 32 |
| Rhyming note book | 30 |
| Spell bound | 25 |
| Speller bee | 35 |
| Tales from Arabia | 32 |
| Talking Animator | 34 |
| Where in the U.S. | 35 |
| Where in World C.S. | 32 |
| Where in Europe C.S. Diego | 35 |
| Wordmaster | 32 |
| World Atlas | 39 |
| World Odyssey | 33 |
| Your family tree | 32 |
| Font | |
| Calligrapher | 85 |
| Fancy 3d fonts | 52 |
| Font set I | 22 |
| Headline Fonts | 54 |
| Headlines 2 | 47 |
| Inter font | 76 |
| Kara Anim font 1 | 35 |
| Kara Anim Font 2 | 35 |
| Kara fonts color | 50 |
| Kara fonts Headline 2 | 48 |
| Kara fonts subheads | 48 |
| News letter fonts | 29 |
| Page Stream fonts 1-15 | 29 |
| Profonts I Prof. | 23 |
| Profonts II decorative | 23 |
| Studio font | 29 |
| Subheads | 47 |
| GRAPHICS & VIDEO | |
| DCTV | 439 |
| 3-Demon | 73 |
| 3d options | 35 |
| 3D Professional | 299 |
| AniMagic | 95 |
| Animate 3-D | 99 |
| Animation editor | 39 |
| Animation effects | 32 |
| Animation Flipper | 32 |
| Animation multiplane | 58 |
| Animation stand | 32 |
| Animation Station | 69 |
| Animation Studio | 111 |
| Animation Titler | 59 |
| Animation w/images | 89 |
| Animator apprentices | 185 |
| Animation | 65 |
| Architectural Design | 23 |
| Art Department | 59 |
| Broadcast Titler II | 229 |
| C light 3d editor | 39 |
| Caligari | 159 |
| Can do | 99 |
| Chroma paint | 48 |
| Comicsetter | 65 |
| Credit text scroller | 29 |
| Deluxe Paint III | 102 |
| Deluxe photo lab | 102 |
| Deluxe print II | 59 |
| Deluxe video III | 106 |
| Design 3-D | 67 |
| Designasaurus | 32 |
| Digi paint 3 | 69 |
| Digi View Gold 4.0 | 131 |
| Digimate III | 28 |
| Digworks 3d | 89 |
| Director Tape | 38 |
| Director's Toolkit | 26 |
| Elan Performer | 41 |
| Express paint III | 89 |
| Fantavision | 42 |
| Future design 3-d | 23 |
| Human design 3-d | 23 |
| Int. design sculpt3d | 23 |
| Interchange | 32 |
| Invision | 109 |
| Lights Camera Action | 49 |
| Microbot design 3-d | 23 |
| Modeler 3d | 64 |
| Movie clips | 29 |
| Movie setter | 65 |
| Page flipper fx | 95 |
| Pagerender 3-D | 105 |
| Photon Paint 2.0 | 97 |
| Piximate | 43 |
| Print master plus | 33 |
| Pro video plus set I | 83 |
| Pro video plus set II | 83 |
| Pro Video Post | 220 |
| ProVideo Gold | 163 |
| Scene Generator | 29 |
| Sculpt 3-d | 64 |
| Sculpt Anim. 4D | 399 |
| Sculpt-Animate 4-D Jr. | 95 |
| Super Clips | 22 |
| The Art Dept. | 59 |
| The Director | 46 |
| Turbo Silver 3.0 | 119 |
| Turbo Silver Module | 20 |
| Tv Text Prof. | 111 |
| Tv-show 2.0 | 64 |
| Tv-text | 64 |
| Video effects 3d | 121 |
| Video scape 3-d | 120 |
| Video titler | 95 |
| Vista | 69 |
| Zoetrope | 69 |
| HARDWARE | |
| A3000 Internal Drive | 99 |
| AD Flicker Free Video | 349 |
| ADSpeed A500 Accel. | 249 |
| AE 3.5 External Dr. HD | 215 |
| AE External Drive | 109 |
| AE Datalink 2000 MNPS | 175 |
| AE Datalink Exp. MNPS | 269 |
| Air Drive External | 99 |
| Amix II Emulator | 149 |
| Amigen | 153 |
| Asia 3.5 External Drv. | 115 |
| Baud Bandit level 5 | 155 |
| Color Splitter | 120 |
| Desktop budget | 46 |
| Easyl A1000 | 349 |
| Easyl A2000 | 379 |
| Easyl A500 | 345 |
| Flicker fixer | 425 |
| Flicker Free Video | 359 |
| FramebufferW/capture | 549 |
| Future sound | 129 |
| Internal 3.5drive A2000 | 89 |
| Mac 3.5 Drive | 229 |
| Mac Rom Chip | 149 |
| Midi Gold (500) | 60 |
| Migraph Scanner | 349 |
| Mini Gen. | 210 |
| Perfect sound V.3.0 | 75 |
| Power Supply A500 | 109 |
| Scanlock | 789 |
| Sharp JX 100 Scanner | 789 |
| Super Gen | 695 |
| Supergen 2000S | 1679 |
| Supra 2400bd internal | 149 |
| US Robotics 9600bd HST669 | |
| WV1410 Cam.W/lens | 199 |
| LANGUAGE UTILITIES | |
| A/C basic | 129 |
| A/C fortran | 195 |
| Adapt | 79 |
| Arex | 33 |
| Assem pro | 65 |
| Aztec C developer | 195 |
| Aztec C professional | 129 |
| B.A.D. disk optimizer | 32 |
| Benchmark c lib | 62 |
| Benchmark C library | 62 |
| Benchmark iff library | 62 |
| Benchmark modula 2 | 128 |
| Benchmark simplified | 62 |
| Benchmark SrcLevDebug | 62 |
| C.B. Tree | 65 |
| Cape 68k | 59 |
| Cross Dos 4.0 | 29 |
| Cygnused Professional | 65 |
| Dvcpak Vrs.2 | 66 |
| Disk 2 disk | 33 |
| Disk master 1.4 | 33 |
| Disk mechanic | 59 |
| Dissassembler | 45 |
| Dos 2 dos | 35 |
| Hisoft Basic pro. | 118 |
| Inovatools #1 | 54 |
| Lattice Dev.System 5.4 | 225 |
| Mac 2 Dos | 99 |
| Momentum Mail | 22 |
| Nag Plus Schedule Assist | 52 |
| Pixel script | 104 |
| Power windows v2.5 | 58 |
| Pro script | 32 |
| Project D | 32 |
| Quarterback 4.1 | 45 |
| Raw copy 1.3 | 39 |
| Source level debugger | 65 |
| Super Card A2000 | 79 |
| True basic | 65 |
| V.I.P. | 32 |
| W. shell | 33 |
| X-copy II | 29 |
| MONITORS | |
| NEC 3D multisync | 699 |

| | |
|------------------------------|------|
| Panasonic C1381HI/Res499 | |
| Sieko cm1430 monitor | 699 |
| Sony multi-scan Monitor535 | |
| Taxan 1000 20' Ultrasync | 2899 |
| Zenith 14' Flat CRT | 720 |
| PRINTERS | |
| 1124PanasonicPrinter | 349 |
| AlpsAllegro24PIN | 425 |
| Citizen200GX | 210 |
| CitizenGSX140PRT.Color399 | |
| HPpaint jet | 1029 |
| NECLC890laserPS | 3395 |
| Starnrainbow | 259 |
| SOUND & MUSIC | |
| 4-opdeluxe | 97 |
| Audiomaster | 37 |
| AudiomasterII | 67 |
| Backsongbook | 27 |
| Bars&Pipes | 179 |
| CopyistII | 179 |
| D-50 | 99 |
| Deluxemusic | 69 |
| Drdrums | 28 |
| Drkeys | 28 |
| DrT'sKeyboard | 160 |
| DrT'sMidiRec.Studio | 47 |
| Dxheaver | 97 |
| Dynamicdrums | 52 |
| Dynamicstudio | 129 |
| FuturesoundA500/A200092 | |
| KcsLevell | 225 |
| Matrix6 | 97 |
| MidiMagic | 97 |
| Mt-32 | 97 |
| Music-X | 205 |
| Musicstudent | 38 |
| Promidstudio | 129 |
| Prosounddesigner | 125 |
| Sonix | 51 |
| SoundOasis | 69 |
| SoundQuestTexture | 99 |
| Soundsampler | 78 |
| SoundTrackVol. | 135 |
| Studiomagic | 65 |
| Synthia | 59 |
| SynthiaPro | 199 |
| Texture | 97 |
| TigerCub | 62 |
| Utilities2(mimatics) | 43 |
| SPREADSHEET | |
| Advantage | 129 |
| AnalyzeI.2.0 | 95 |
| Easy Ledger | 189 |
| Financial plus | 189 |
| Haicalc | 32 |
| Maxiplan500 | 95 |
| Maxiplanplus | 126 |
| Money Mentor | 65 |
| Nimbus record keeper | 95 |
| Phaser | 65 |
| Service Industry Acc'ting225 | |
| Superplan | 97 |
| VIPProfessional | 65 |

TO ORDER BY FAX 1-508-799-9354

FOR PRODUCTS NOT LISTED CALL:

1-508-756-6452

PLEASE SEND ALL CORRESPONDENCE TO:

THE SOFTWARE SHOP, INC.

22 FRONT ST. P.O. BOX 55

WORCESTER, MA 01614

PRICES, TERMS AND AVAILABILITY SUBJECT TO CHANGE WITHOUT NOTICE.

POLICIES:

1-WE ACCEPT VISA, MASTERCARD

2-SHIPPING: ANY ITEM - \$6

ANY TWO ITEMS - \$7

NEXT DAY DELIVERY AVAILABLE.

3- COD CHARGE OF \$5

4-PURCHASE ORDERS MUST BE APPROVED

5-INTERNATIONAL ORDERS WELCOME.

6-RETURNS ARE SUBJECT TO 15% RESTOCKING FEE

CALL FOR ENTERTAINMENT SOFTWARE

AmigaWorld is a publication of International Data Group, the world's largest publisher of computer-related information. International Data Group publishes over 130 computer publications in more than 40 countries. Nineteen million people read one or more of 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 *Computerwelt 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 Danmark*, *PC World*, *Macworld*, *Unix World*; FINLAND's *Mikro PC*, *Tietoviikko*; FRANCE's *Le Monde Informatique*, *Distributique*, *InfoPC*, *Telecoms 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*; PEOPLE'S 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*, *International Custom Publishing*, *MacWorld*, *Network World*, *PC Games*, *PC World*, *Portable Computing*, *PC Resource*, *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*.

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, IDG Communications/Peterborough, Inc., 80 Elm St., Peterborough, NH 03458; telephone: 800-441-4403. **Subscription problems or address changes:** Call 1-800-525-0643 (in CO, 1-303-447-9330) or write to *AmigaWorld*, Subscription Dept., PO Box 58804, Boulder, CO 80322-8804. **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.

List of Advertisers

Reader Service Number

| | |
|------------|------------------------------------|
| 98 | ASDG, 85 |
| 32 | American Liquid Light, 93 |
| 72 | AmigaWorld EXPO, 80-81 |
| * | AmigaWorld Tech Journal, 65 |
| | AmigaWorld Videos, 71 |
| 352 | Ampex Systems, Inc., 102 |
| * | Applied Engineering, 31 |
| 68 | Blue Ribbon Soundworks Ltd., 16 |
| 132 | Brivall, 82-83 |
| 4 | California Access, 22 |
| 4 | California Access, 23 |
| 4 | California Access, 25 |
| 143 | Central Coast Software, 95 |
| 7, 83, 114 | Coast to Coast Technologies, 55-57 |
| 53 | CompuServe, 93 |
| 148 | Computability, 90-91 |
| 253 | Computer Basics, 89 |
| 199 | Creative Computers, 72-75 |
| 233 | Data East, 61 |
| 34 | Datamax Research Corp., 51 |
| 398 | DevWare, Inc., 117 |
| 29 | Digital Creations, 11 |
| 35 | Dr. T's Music Software, 43 |
| 183 | Fuller Computer Systems, Inc., 99 |
| 150 | Gold Disk, Inc., 1 |
| 316 | Golem, Inc., CIII |
| 164 | Grapevine Group, The, 98 |
| * | Great Valley Products, Inc., 4 |
| 265, 36 | Great Valley Products, Inc., 5 |
| 145, 62 | Great Valley Products, Inc., 7 |
| 245, 127 | Great Valley Products, Inc., 35 |
| 234 | ICD, Inc., 49 |
| 303 | JEK Graphics, 119 |
| 25 | Konami, Inc., 77 |
| 181 | M.A.S.T., 109 |
| 287 | Memory World, 119 |
| 301 | Michaelangelo Productions, 119 |
| * | Microway, 53 |
| * | Montgomery Grant, 112-113 |
| 38 | New Horizons Software, 9 |
| 102 | NewTek, Inc., CII |
| 119 | NewTek, Inc., CIV |
| 8 | Ooxi, Inc., 67 |
| 123, 310 | Psygnosis, 12-13 |
| 259 | Pulsar/Oxide Industries, Inc., 69 |
| 267 | Ramco Computer Supplies, 119 |
| 86 | ReadySoft, Inc., 2 |
| 45 | Roctec Electronics, Inc., 39 |
| 248 | Roger Coats, 107 |
| 275 | Safe Harbor, 86 |
| 40 | SAS Institute, 70 |
| 238 | Sideline Software, 87 |
| 66 | Sir-Tech Software, Inc., 63 |
| 340 | SMC Software Publishers, 119 |

Reader Service Number

| | |
|-----|----------------------------------|
| 211 | SoftLogik Corp., 17 |
| 175 | Software Concepts, 106 |
| 128 | Software Discounters Int'l, 97 |
| 261 | Software Hut, 119 |
| 226 | Software Support Int'l, 111 |
| 19 | Spirit Technology Corp., 101 |
| * | Supra Corp., 18-19 |
| * | Supra Corp., 21 |
| 61 | The AAmiga Center, 100 |
| 151 | The Hunter Group, Inc., 105 |
| 134 | The Software Shop, 103 |
| 270 | The Sterling Connection, 88 |
| 17 | Titus Software Corp., 79 |
| 74 | Utilities Unlimited, 115 |
| 170 | Vidtech Int'l, Inc., 37 |
| 346 | Virtual Realities Laboratory, 94 |
| 304 | Visionsoft, 119 |

* This advertiser prefers to be contacted directly

This index is provided as an additional service. The publisher does not assume liability for errors or omissions.

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*.

FYI

If you have any questions or concerns about advertisers in *AmigaWorld*, please contact: Margot L. Swanson, Customer Service Representative, *AmigaWorld* Magazine, 80 Elm Street, 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.

**SMASH HIT
RETURN ENGAGEMENT**

THE SECOND ANNUAL

WORLD OF AMIGA IN NEW YORK CITY

★ STARRING ★

THE AMAZING AMIGA

★ FEATURING ★

**AMIGA HARDWARE • AMIGA SOFTWARE
AMIGA ACCESSORIES • SEMINARS • BARGAINS**

Pier 90, New York Passenger Ship Terminal, New York NY

APRIL 5-7, 1991

Friday, Saturday & Sunday, 10 am - 5 pm

PRE-REGISTRATION (Deadline March 15):

\$10 per single day, \$25 for all 3 days

REGISTRATION AT THE SHOW:

\$15 per single day, \$30 for all 3 days

Admission includes exhibits and seminars.

World of Amiga in New York City is restricted to persons 12 years of age and older.



**WORLD OF
AMIGA
IN NEW YORK CITY**

Sponsored by Commodore Business Machines.
Produced by The Hunter Group. For more information
call (416) 595-5906 or fax (416) 595-5093.

SAVE WITH PRE-REGISTRATION

World of Amiga in New York City, April 5-7, 1991

Please register me for World of Amiga at the Special Pre-registration Rate
☐ \$10 for a single day ☐ \$20 for 2 days ☐ \$25 for all 3 days

NAME _____

COMPANY (if applicable) _____

ADDRESS _____

STATE _____

ZIP _____

CITY _____

Make Check or Money Order payable to

The Hunter Group, 3380 Sheridan Drive, Suite 120, Amherst, NY 14226



B A C K T A L K

CANDID RESPONSES TO AMIGAWORLD REVIEWS

The Doctor Is In

I am concerned about the negativity of your review of Dr. Ami.. (Free Spirit's disk and memory diagnostic and repair software), which ran in your November 1990 issue. So far, Dr. Ami.. has saved me twice.

The review seemed to compare Dr. Ami.. to Disksalv, a very useful but totally different piece of software. This is unfair, for Disksalv, like Diskdoctor and other disk utilities, does nothing to attempt repair of a damaged disk. These utilities only allow you to copy the data to another disk. This is great for diskettes, but a real pain with hard disks. Dr. Ami.. is one of the very few disk utilities that will go out and repair a hard drive with the data intact. (Dr. Ami runs fine with AmigaDOS 2.0 on my A3000.)

I have called Free Spirit's technical support and found them to be very helpful.

What really concerns me, and should concern others, is that if I did not already own and use Dr. Ami.., I certainly would not buy it after reading your review. The loss would have been mine.

John Rosner
Warrenton, VA

We wish to respond to an unfair "Your Turn" comment regarding our customer service in your review of Dr. Ami.. (Nov. '90, p. 104). Since our inception seven years ago, we have always made customer service a top priority. We respond to every customer inquiry. Requests for technical assistance are handled either by myself or a staff member (a former editor of Commodore Magazine). When necessary, we involve the individual programmer(s) in resolving a problem.

In the particular instance noted in "Your Turn," we spent a considerable amount of time with the customer trying to resolve the issue. He was trying to use Dr. Ami.. to diagnose board-level problems on the computers he was servicing. These were problems far beyond the capabilities of a software method of detection, and hence were an inappropriate application of the software.

We will continue to produce, support, and upgrade Dr. Ami.., because a large number of Amiga users have found it to be an indispensable tool.

Joseph R. Hubbard
President, Free Spirit Software ■

FLOPPY DRIVES

| | |
|-------------------------|-------|
| Amaz II | \$150 |
| Applied Engineering | |
| AE 3.5 880k | 109 |
| AE 3.5 HD Drive | 199 |
| California Access | 99 |
| Master 3A | 85 |

MEMORY EXPANSION

| | |
|-----------------------------|-------|
| Baseboard 0k | \$109 |
| ICD AdRam 540 | 109 |
| Ram Works 2000 0k | 109 |
| Ram Works 2000 2mg | 239 |
| Supra 8mb board w/2mb | 259 |
| Supra 512k for A500 | 69 |
| 1 x 4 Sims | CALL |
| 256K x 4 80 Dram | CALL |
| 1 mg x 1 80 Dram | CALL |
| 3000 memory upgrade | CALL |

We Have the Best Memory Prices...
Call for details!

Citizen Printers

| | |
|----------------------|-------|
| GSX140, 24 pin | \$299 |
| GSX200, 9 pin | 189 |

Color Option Available

MUSIC

| | |
|------------------------|-------|
| AMas | \$129 |
| Audio Master 3 | CALL |
| Bars & Pipes Pro | CALL |
| Tiger Cub | 65 |
| FCE Mid 500/2000 | 49 |
| Music X | 99 |
| Perfect Sound | 69 |

DESKTOP/WORD PROC.

| | |
|---------------------------------|-------|
| Pagestream 2.1 | \$169 |
| Pen Pal | 95 |
| Professional Page 2.0 | CALL |
| Professional Page Upgrade | 65 |
| Pro Write 3.0 | 109 |

MANTA

AUTHORIZED AMIGA SALES & SERVICE CENTER

GRAPHICS AND VIDEO

| | |
|--------------------------------|-------|
| Amigavision | \$ 89 |
| Animagic | 88 |
| Art Department | 55 |
| Art Department Pro | 149 |
| Broadcast Titler II | 225 |
| Color Splitter | 99 |
| Disney Animator | 99 |
| Deluxe Paint 3 | 99 |
| Digimate 3 | 67 |
| Digipaint 3 | 22 |
| Digiview Gold 4.0 | 134 |
| Golden Image Handscanner | 275 |
| Imagine | 199 |
| Invision Plus | 175 |
| Photon Paint | 59 |
| Pro-Video Post | 195 |
| Pro-Video Gold | 175 |
| Pro Draw 2.0 | 129 |
| Sculpt-Animate 4djr | 105 |
| Sharp JX-100 Scanner | 699 |
| 3-D Professional | 299 |
| TV. Text Pro | 105 |
| TV. Show 2.0 | 60 |
| Video Tools on Tap | CALL |

VIDEO TOASTER

\$ CALL \$

Let MANTA upgrade your Amiga system to take full advantage of NewTek's Video Toaster.

- GVP Accelerator Boards 28-50 MHZ • Memory Upgrades
- Hard Drive Packages • Removable Media • Time Base Corrections • Training Tapes

MANTA's video consultants will tailor a package for your needs.

Call for best package prices.

Full Amiga Service Center - Including Parts

- Fatter Agnus • Manuals
- Enhanced Chip Set
- Power Supplies • 8520 Chips • Keyboard

ENTERTAINMENT

| | |
|-----------------------------|------|
| Awesome | \$36 |
| Cadaver | 35 |
| Captive | 35 |
| Corporation | 35 |
| Das Boot | 32 |
| Dragon's Lair 2 | 40 |
| Drakkhen | 36 |
| Dungeon Master 2 | CALL |
| Falcon | 32 |
| Finest Hour | 37 |
| F-19 Stealth | 37 |
| Golden Ax | 31 |
| Midwinter | 28 |
| Monday Night Football | 36 |
| Pirates | 29 |
| Shadow Warrior | 36 |

Many More Titles in Stock.
New Arrivals Daily!

| | |
|---------------------------|----|
| Shadow of Beast 2 | 37 |
| Time Warp | 37 |
| TV. Sports Football | 33 |
| Unreal | 30 |
| Wings | 34 |
| Wrath of Demon | 31 |

HARD DRIVES

| | |
|------------------------------|------|
| GVP | |
| A500 HD 40 mg | CALL |
| A500 HD 100 mg | CALL |
| A2000 Series II Contrl | 225 |
| GVP Accelerators | CALL |
| Maxtor 200 mg | 819 |
| Supra | |
| 20mb 500XP w/512k | 539 |
| 40mb 500XP w/512k | 639 |

SYQUEST • \$449
44 mg / Removable Drive

| | |
|--------------------------|------|
| Wordsync Interface | 119 |
| Quantum 40Q | 349 |
| Quantum 105Q | CALL |

Other Drive Packages available.
Call for best pricing.

MISC. HARDWARE

| | |
|-------------------|------|
| At Once | CALL |
| DC TV | 399 |
| Bodego Bay | 319 |
| AD Speed | 219 |
| Firecracker | 1219 |

MONITORS

| | |
|--------------------------|-------|
| NEC Multisync 3D | \$599 |
| Seiko CM 1440 | 575 |
| Seiko CM 1450 | 699 |
| Panasync 1381 | 419 |
| Sony | CALL |
| Flicker Fixer | 235 |
| Flicker Free Video | CALL |

GENLOCKS

| | |
|--------------------------|------|
| AmiGen | 99 |
| SuperGen | 629 |
| SuperGen 2000s | 1395 |
| MagniGen | CALL |
| MiniGen | 205 |
| Neriki Imagemaster | 1649 |

FAX:
(201) 542-3654
IN N.J. Call:
(201) 542-4608

ORDER TOLL-FREE
1-800-477-7706
Walk-in Traffic Welcome!

115 Route 35
Eatontown, NJ 07724

OPEN 7 DAYS

Terms: VISA/MC, 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 restocking fee. Shipping non-refundable. Call for complete details. Amiga computers sold to walk-in traffic only. Prices may differ in retail location — Software Concepts, Eatontown.

**Thousands of Apple & Amiga Products In Stock
and Ready to Ship—Call today for a FREE Catalog.**

**I'm gonna make you a deal
you can't refuse...**



You need to buy something
for your system—right? So
you're gonna check out all the
other MOBs (*Mail Order
Businesses*) and see
what they gotta say.
Then you give me a call.
If I can't beat the other
MOBs best advertised
price in this magazine,
I'm gonna send you a
check for \$3.*
How can you refuse?



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

**Roger
Coats**

P.O. Box 171466
San Diego, CA 92197

OUR FINE PRINT:

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.
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
- Not responsible for product compatibility
- Sorry, no shipping, handling, or insurance refunds
- We really appreciate your business!





WHAT'S NEW?

If you're not careful, you'll fall in love with these new products for the Amiga.

Compiled by John Wolfskill

HAM PAINTER

Aegis SpectraColor (\$149.95) is a fourth-generation, 4096-color HAM paint and animation system for the Amiga. According to the company, the program is the first HAM paint program to support full animation of HAM-style ANIM brushes. Based on the company's popular Photon Paint, SpectraColor comes with a radically new user interface and proprietary color management that eliminates HAM color "fringing." The program also supports key-frame animation, provides brushes you can rotate to any angle, and enables you to flip on any axis, resize, bend, twist, or impart a special 3-D tilt effect. Brushes

can be wrapped on cones, spheres, tubes, ellipses, boxes, or other custom shapes.

SpectraColor's Brush modes include blend, add, subtract, minimum, maximum, AND, OR, and XOR. The program also supports transparent brushes and 3-D extrusion by color value.

Another feature is Pantomograph, a drawing tool that allows you to create art by tracing an on-screen object. Other standard features include brushes, erasers, fills, spray paint, lasso, marquee, straight lines, rectangles, ovals, and more. (Oxxi, 1339 E. 28th St., Long Beach, CA 90806, 213/427-1227.) RS# 504.



A HAM image created with Oxxi's SpectraColor.

VIDEO BLENDER DEBUTS

Progressive Peripherals & Software recently took the wraps off the **Video Blender**, (\$1295) a video switching system that works with all Amigas. Designed with the video professional in mind, the Blender provides video switching, luma-keying, genlocking, localized screen-color generation in 16 million colors, and a host of video fades/wipes. It also includes a stereo sound mixer.

The Blender can mix and manipulate composite video, NTSC RGB (with external synchronization), and Amiga RGB video inputs. An internal color generator produces background screens with up to 16 million colors. External devices such as video cameras and 24-bit framebuffers can also be assigned (slaved) to the NTSC RGB video channel to produce special video effects. The Blender's internal circuitry is designed to synchronize

multiple video inputs without time-base corrector hardware. In addition, you can synchronize the stereo audio channels with video.

The compact unit, controlled through the Amiga's serial port, allows you to mix 256 levels of red, green, and blue colors. The MixMaster software lets you program an unlimited number of wipes and other special video effects. The package comes with over 2,800 preset wipe patterns. In addition, you can save settings as "session" files, which you can use immediately or reload later on for editing. The Blender is compatible with other Amiga video peripherals, including digitizers, framebuffers, ADO boxes, and NewTek's Video Toaster. (Progressive Peripherals & Software, 464 Kalamath St., Denver, CO 80204, 303/825-4144.) RS# 503.

SPACE AGE LETTERS

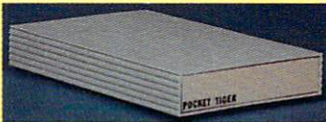
With the demand for professional video software on the rise, Kara Computer Graphics recently added two new products to their popular line of custom fontware. **Starfields** (\$59.95) are animated starfield background screens you can view from a front, oblique, or side perspective. Each starfield comes in 2- and 16-color versions, and each supports up to two Kara Fonts.

Animfonts 3 (\$49.95) provides a metallic-looking, gothic-style Animfont called Capsule, which you can use to add a sparkling effect to your video titles. Both products are compatible with DeluxePaint III and other programs that support the Anim format. (Kara Computer Graphics, 2554 Lincoln Blvd., Suite 1010, Marina Del Rey, CA 90291, 213/578-9177.) RS# 505. ►

POCKET TIGER

Pocket Size 1" high External Hard Drive

45MB 105 MB
\$399 \$699



Our Tiger range use hi-quality Fujitsu (the second largest computer company in the world) 19 msec drives - fast, reliable, low power & cost effective.

*Pocket drives are the smallest external units available 1" inch high.

*All Tigers may be combined with M.A.S.T.'s new 8 bit (450K/sec, \$49) or 16 bit (>950K/sec, \$99) bus-based SCSI controllers. Ask for our combo deal with Starblazer.

*All Tigers Autoboot, Automount, and come with a simple to use front end graphics interface for easy partitioning. Tigers make excellent second drives plugged into A590, etc.

90MB \$599

136MB \$699

182MB \$899

"TINY TIGER"



Tiny Tiger with front panel LED display is extra \$49

A2000 SCSI INTERFACES

FIREBALL - True DMA Controller for sustained speed when multitasking \$149.

TWOfer - For maximum flexibility try our two for one controller. The one card has logic for either an 8 or 16 bit interface. For the budget minded, an 8 bit controller with 450K transfer for only \$89 is great value. The speed freaks will love the 16 bit interface - >950K for only \$129. Naturally, you can upgrade from 8 to 16 bit.

FUJITSU HARD DRIVES:

45 megabyte \$299

90 megabyte \$499

136 megabyte \$599

182 megabytes \$799

340 megabyte \$1599

670 megabytes \$1999

1.2 Gigabytes \$3299

Please add \$150 for external 340/670/1.2G drives.

Syquest External (includes cartridge) \$699

Syquest Internal \$549 Cartridge \$89



ENHANCED UNIDRIVE

The drive with all the features

- * Digital Track Display
- * Hardware write-protect
- * Hardware Virus Protect
- * On-Off switches
- * Pass-thru
- * Low Power



\$149

UNIDRIVE - The NO FRILLS QUALITY External Drive for those on a budget \$99

MINIMEGS A500/A1000

Two megabyte external true fast RAM. NEW PRICE \$249.

MICROMECS - low power A501 clone, including clock \$69.

COLORBURST \$499

"FANTASTICALLY FANTABULOUS"

The Product That Amazed Visitors To Our Booths At The L.A. & Cologne Ami Expos

YES! Every single pixel on your Amiga screen can be any of 16.8 million colors. Now you can have color equal to that of a Mac and more flexibility. Colorburst is not HAM or Y-C mixing, it is pure 24 bit RGB - there is no blurring or loss of definition with colorburst.

Colorburst plugs into every Amiga and goes between the RGB connector and the standard Amiga monitor.

* Broadcast Quality Video for PAL & NTSC

* RGB Dynamic White Balance correction.

* The Two Amiga hardware playfields can be set on TWO 24 bit playfields for a total of FOUR Playfields. The transparency of each pixel can be set pixel by pixel.

* Real time image processing is a reality.

* Hi Resolution - up to 780 x 560 pixels - supports full overscan.

* Dynamic Real Time Amiga Graphics Overlay.

* Includes 24 bit Paint Package & Loaders for Digiview, Sculpt, etc.

* 1.5 Megabytes of additional on board chip RAM.

* Colorburst can be written to by the Blitter for hi-speed graphics.

* Colorburst can store up to 4 x 16 million colour frames at once & can do real time animation on 4096 colors out of a 16 million palette.

* Real time Horizontal and Vertical Scrolling.

* May be used with any Genlock.



Colorburst has many applications - one important video application is as a Professional frame by frame Video Paintbox, Editing and Special Effects Machine. Its low price makes it affordable to most Amiga owners. The Toaster is an excellent accessory to use with Colorburst, although there are many more uses than as a front end Video Paintbox to Toaster type effects. Call for our free color brochure or send \$10 (refundable with purchase) for a Video of this spectacular product.

BLITZ BASIC

The Program To Control Your Custom AMIGA Hardware

IT'S NEW! IT'S ULTRA FAST! IT'S EASY TO USE!

The ideal tool for anyone from beginner to professional to get the Amiga to do graphical gymnastics

- * Lightning fast compiler - up to 16,500 lines of code a minute
- * Rewrite of Amiga Graphics Libraries
- * Integrated Editor/Compiler
- * Special Effects e.g. Fade In/Fade Out
- * Commands to handle IFF and Anim Brushes, and Sound
- * Direct access to, and control of, Sprites, Blitter, Audio Hardware
- * Supports Dual Playfield, HAM and EHB
- * Queue system makes Blits very simple to use
- * Unlimited screens - memory dependent
- * Vertical interrupt command for smooth animation
- * Double buffering, page flipping with ease
- * Includes Sound Sequencer
- * Machine language sub-routines can be added
- * Spectacular graphics can be generated with minimal commands

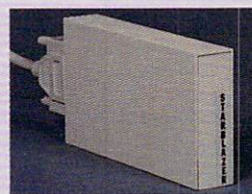
\$149

Now anyone can produce QUALITY COMMERCIAL CODE. Order your demo for \$5 showing VECTOR BALLS CALCULATED IN REAL TIME. This program alone should convince you of the POWER OF BLITZ BASIC. The source listing will convince you of the SIMPLICITY.

Demo also available through M.A.S.T. BBS (702)359-0132/0137

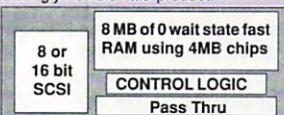
STARBLAZER A500/1000

external RAM+SCSI+Accelerator box



This compact unit fits snugly beside your A500 or A1000. Don't let its tiny size deceive you - it contains a mighty powerhouse of peripherals. The Starblazer base unit includes an 8 bit SCSI interface rated at 450K for \$129. When you need memory you can add up to EIGHT Megabytes. The memory is expanded 2Mb at a time using tiny 1"x1" memory boards that use the latest technology Four Megabit RAM Chips. Starblazer memory can be configured as 16 or 32 bit wide. Each 2 Mb module lists at \$199. If 8 bit SCSI isn't fast enough, simply replace the interface with our 16 bit WordMASTER interface - another plug-in module that gives transfers in excess of 950k Bytes - for only \$89. A 14 Mhz 68000 accelerator can be added that has full speed access to the 8 Mb RAM, almost doubling Amiga performance - \$89. A 16 Mhz (\$299) or 25 Mhz (\$399) 68030 accelerator module will shortly be available. 68040 support is a future option. Starblazer passes the bus through for those of you with unusual requirements not taken care of by this amazingly flexible little product.

panded 2Mb at a time using tiny 1"x1" memory boards that use the latest technology Four Megabit RAM Chips. Starblazer memory can be configured as 16 or 32 bit wide. Each 2 Mb module lists at \$199. If 8 bit SCSI isn't fast enough, simply replace the interface with our 16 bit WordMASTER interface - another plug-in module that gives transfers in excess of 950k Bytes - for only \$89. A 14 Mhz 68000 accelerator can be added that has full speed access to the 8 Mb RAM, almost doubling Amiga performance - \$89. A 16 Mhz (\$299) or 25 Mhz (\$399) 68030 accelerator module will shortly be available. 68040 support is a future option. Starblazer passes the bus through for those of you with unusual requirements not taken care of by this amazingly flexible little product.



Length 8" x Width 2.5"

brainSTorm

It had to happen and here it is!
The MAST ATARI Emulator

Make your Atari friends envious - now your Amiga emulates yet another computer, this time the ATARI. brainSTorm is a software/hardware combination from MAST Germany that runs 98% of Atari software (approx.), including MIDI support. It even emulates the Atari Keyboard click! All programs should run except the very small percentage that do direct DMA or program the MFP. It supports:

- * 8mb Fast RAM, 2mb chip ram
- * all ST resolutions including color
- * full page monitor emulation with scrolling.
- * Amiga serial & parallel ports.
- * all Amiga drives (df0-df3) simultaneously
- * two ST's at same time in one Amiga!
- * almost ST speed, text is 120% faster, disk 108%.
- * hardware emulates the ST custom chips, has sockets for Atari Roms, and does addr. translation.
- * Atari PD support on our BBS.

\$99

Atari is a TM of Atari Computers.

S.A.M. \$199

MAST Combination
SMPTE Time Code Reader
and MIDI Interface.

This economically priced unit features a SMPTE to MIDI Time Code Converter with SMPTE IN & SMPTE OUT. Some competitors tie up your favourite computer by having it do most of the work, leaving less time for multitasking and requiring special software support. In contrast SAM has its own dedicated microcontroller with none of these disadvantages. This Professional product has many features:

- * Because it converts to industry standard MIDI Time Code it works with any MIDI software that supports MTC.
- * SMPTE IN and OUT.
- * One MIDI IN and FOUR MIDI OUT.
- * Serial THRU - this can be controlled with Software or by a front panel switch!
- * Dedicated micro-chip reduces Amiga overhead.
- * 24,25,30 & 30 drop frame.
- * Reads and Writes Time Code both Forwards & Backwards.
- * Can handle tape speeds 0.25% normal speed to 2X (+20%) normal speed. It features extensive error correction.

M.A.S.T. Memory And Storage Technology 1395 Greg St Sparks NV 89431 Tel (702) 3590444 FAX (702) 359 0831
Australia (02) 281 7411 Germany (0221) 771 0918 Austria (03) 16 373763 Sweden (40) 190710

All advertised products are in production and available for export, however FCC approval may still be pending on new items as you read this ad - they cannot ship in the USA until approved.
Circle 101 on Reader Service card.

AND THEN SOME

WHAT WOULD YOU say to an expansion board that combines a SCSI disk interface, a memory expander, and a math coprocessor on a single card that fits inside your A500? Spirit Technology now offers the **In-Mate** (\$549), a multifunction card providing just that. You'll find an auto-booting SCSI interface, sockets for up to 8 MB of RAM expansion, and a place to park your favorite Motorola 68881 math coprocessor chip. Since the board also works with the A2000, it may be just the ticket for those who need to free up an expansion slot. (Spirit Technology, 220 W. 2950 South, Salt Lake City, UT 84119, 801/485-4233.) *RS# 506.*

Blue Ribbon SoundWorks (formerly Blue Ribbon Bakery) is ready to provide professional musicians, MIDI enthusiasts, and educators with a whole new way to play. **Bars & Pipes Professional** (\$379) is the first Amiga MIDI sequencer to feature integrated notation. Recorded notes are displayed on screen in standard notation. The assembled notes can then be edited directly from the notation display. Other new features include an event-list editor and MixMaestro, an option that allows you to graphically mix MIDI tracks with control of volume, panning, and other control-change parameters. Existing Bars & Pipes users can upgrade to the new version for \$99. (Blue Ribbon SoundWorks, 1293 Briardale, Atlanta, GA 30306, 404/377-2277.) *RS# 507.*

Speaking of firsts, Amiga users now have a complete bar-code scanning system with which to manage and massage their inventories. The **BarPro** system (\$899.50) includes an RS-232C-compatible, intelligent bar-code scanning wand with its own external power supply. The full decoding scanning-wand hardware supports UPC, EAN, 39, 25, 25, 93, 128, MSI, and Codebar formats. BarPro's software creates bar codes on screen in four sizes. You can save them as IFF images, and you can also print them, or execute the scanned bar codes as AmigaDOS commands. (MegageM, 1903 Adria, Santa Maria, CA 93454, 805/349-1104.) *RS# 508.*

Relief for the non-professional designer has arrived. **Graphic Designer** (\$125) is a powerful, yet easy-to-use structured drawing program for those who don't have time to learn complex CAD packages, but need accurate drawings. Notable among its features are "smoothable" Bezier curves, multiple

layer drawings, and a flexible text-handling system that allows you to use any Amiga font. The program also includes an ARexx port with a complete macro language.

For those Amiga users who don't own the more sophisticated hardware required to run a high-end word processor, there's **Quick Write** (\$75). The basic word-processing package includes a "What you see is what you get" (WYSIWYG) display, a mail-merge facility, a 50,000-word spelling checker, macros, file import and export options, an ARexx port, and automatic time and date markers. (New Horizons Software, PO Box 43167, Austin, TX 78745, 512/328-6650.) *RS# 509.*

AudioMaster III (\$99.95) is an advanced digital, sound-sampling, editing and manipulation software package that offers Interactive Visual Waveform Editing, a process that lets you load a sound file or digital sample and then display the waveform on screen to add special effects, including echo, backmasking, and low-pass filtering. Other features include multi-loop sequencing and a waveform tuner. (Oxxi, PO Box 90809, Long Beach, CA 90809, 213/427-1227.) *RS# 510.*

Draw it better and faster with **Maxi-Sketch** (\$499.95), a 1000-DPI drawing tablet that you can attach to your A500, 1000, or 2000. The auto-configuring tablet requires no software and emulates a variety of other tablets, including Summagraphics, GTCO, Hitachi, HIPAD, CALCOMP, the Amiga keyboard, or the ubiquitous Microsoft mouse. (Centaur Software, 4451-B Redondo Beach Blvd., Lawndale, CA 90260, 213/542-2226.) *RS# 511.*

Would you like to see 300-DPI, full-color printing on your Hewlett-Packard Deskjet printer? You can if you use the **Inkum Color Ink Kit** (\$48). With the Inkum kit, you simply print your document in four separate passes, using a different color ink cartridge for each pass. The result is an impressive, full-color printout. (Inkum Inks, 9528 Langston St., Cucamonga, CA 91730, 714/948-2243.) *RS# 512.*

Hopefully, you'll never burn the toast if you use Telegraphics International new series of video cassette training tapes for NewTek's Video Toaster. The tutorials are intended to help videographers, production studios, cable networks, or A/V departments who incorporate the Amiga into their work. Subjects covered in **Volume One** (\$49.95) are hardware requirements, production switcher operation, digital effects creation, tips and techniques, framestore applications, linear keying, and more. (Telegraphics International, 605 Dock St., Wilmington, NC 28401, 919/762-8028.) *RS# 513.*

Where can you experience the thrills of climbing the Whatsamatterhorn's dizzying peaks, the distress of exploring mummy-infested caves, or the triumph of capturing the elusive Sausage Lynx on film? Ask Scrooge McDuck—he's entered a contest to circumnavigate the earth seeking such adventures in **Ducktales: The Quest For The Gold** (\$44.95). Hint: You must learn to be discreet in order to protect Scrooge's interests from his arch-enemy, Glomgold. (Disney Computer Software, 500 S. Buena Vista St., Burbank, CA 91521, 818/567-5360.) *RS# 515.*

It's the Arabian nights all over again—but this time you get to be Valentino. In the **Prince of Persia** (\$39.95), you are a young adventurer from a far-off land. Courage, resolve, acrobatic agility, and brains are your best weapons when you enter this exotic and treacherous world to extricate the Sultan's daughter from a nasty predicament. (Broderbund, 17 Paul Dr., San Rafael, CA 94903, 415/492-3200.) *RS# 516.*

OK gearhead, it's time to play **Street Rod** (\$39.95) from California Dreams. After you buy your first set of wheels, you've got to bore and stroke that engine and chop and channel that body until you're ready to cruise. You build your reputation by drag or road racing until it's time to issue the ultimate challenge—to the King himself. Choose between 25 different cars, over 35 performance parts, five paint jobs, and other radical custom designs.

Strategic Simulations says it means war. In the **Second Front** (\$59.95), a World War II re-creation spanning Europe from Berlin to Stalingrad, you command over 150 German and 200 Soviet divisions. Alone or with a friend, you direct land or air operations by exercising complete control over production facilities or, if you prefer, you can succumb to the computer's whims.

Overrun! (\$59.95), a modern, land-warfare simulation, pits Europe against the Middle East. Choose from eight pre-programmed scenarios or create your own maps, troops, and missions with the tools provided. (Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404, 415/571-7171.) *RS# 517.*

Dirk the Daring lives on! Be the first on your block to play the new animated adventure based on the original arcade game. **Dragon's Lair II: Time Warp** (\$59.95) features full-screen animation and digitized sound, with more scenes than any previous animated adventure

game. (ReadySoft, 30 Wertheim Court, Unit 2, Richmond Hill, Ont., Canada L4B 1B9, 416/731-4175.) *RS# 518.*

Sweaty palms and near misses are the order of the day in **Highway Patrol II** (\$44.95), a driving simulation that pits you against fugitives from justice on the open road. The action gets fast and furious over wide-open deserts and crowded city freeways. (Titus Software, 20432 Corisco St., Chatsworth, CA 91311, 818/709-3692.) *RS# 519.*

Conquer a living world with **Power-Monger** (\$49.95), the latest work from Bullfrog, the UK artists group that brought you the mega-hit, *Populus*. The vividly rendered 3-D game casts you as the leader of a displaced tribe newly arrived in uncharted territory, which you conquer by any means; kindness, force, negotiation, or outright bribery. Sounds like the real world to me. (Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404, 415/571-7171.) *RS# 520.*

Here we go again! Broderbund's latest in the Carmen series, **Where in Time is Carmen Sandiego?** (\$44.95), shuttles you back and forth in time as you pursue the wily lady and her gang from 400 A.D. through the 1950s. During the chase, you get to know many of history's most famous people, events, and inventions. To help you unravel the clues, there's also a copy of the 1300-page *New American Desk Encyclopedia*. (Broderbund Software, 17 Paul Dr., San Rafael, CA 94903, 415/492-3200.) *RS# 521.*

Picture yourself in the year 2238, living on a planet ruled by TV networks and defense industries. In **Thunderstrike** (\$39.95), the winner of the Defense Olympics rules the world. You fly a sleek jet fighter as you participate in a deadly competition for power and glory. (LIVE Studios, 30151 Branding Iron Rd., San Juan Capistrano, CA 92675, 714/661-8337.) *RS# 522.*

Attention electronic linksters! Now available for your golfing (and duffing) pleasure is **Jack Nicklaus Presents the Major Championship Courses of 1990** (\$21.95). The third in a series of add-on course disks for Jack Nicklaus' *Greatest 18 Holes of Championship Golf*, the package contains simulations of the host grand-slam courses of this year's U.S. Open, British Open, and PGA Championships. (Accolade, 550 S. Winchester Blvd., Suite 200, San Jose, CA 95128, 408/296-8400.) *RS# 523.* ■

CONVENIENCE—FAST SERVICE—RELIABILITY—SUPPORT

WE CARRY A COMPLETE LINE OF ACCESSORIES FOR YOUR COMPUTER - ASK FOR OUR FREE CATALOG



**We Accept
VISA, M/C,
& Discover**

established
1967

MONTGOMERY

RETAIL Penn Station, Main Concourse
OUTLET: (Beneath Madison Square Garden)
New York City, NY 10001STORE Mon-Wed 9:00am-7pm/Thurs 9-8
HOURS: Fri 9am-3pm CLOSED Saturday/
Sunday, 9:30am-7pmFOR CUSTOMER SERVICE CALL:
(718) 692-1148
Mon-Thurs, 9:00AM-5PM
Friday, 9:00AM-3PM

24 HOUR FAX #: 718-692-3372

TELEX: 422132MGRANT

NO SURCHARGE FOR CREDIT CARD ORDERS. RUSH SERVICE AVAILABLE. LIFETIME TOLL-FREE TECHNICAL SUPPORT.

AMIGA 500 & AMIGA 2000 COMPATIBLE HARD DRIVE PACKAGES

INCLUDES
CABLES & SOFTWARE

SCSI CONTROLLERS

| SEAGATE DRIVE | DRIVE PRICE | XETEC MINI FASTCARD (A2000) | SUPRA WORD- SYNC A-2000 | TRUMP CARD 2000 | GVP Series II HC A-2000 | GVP Series II HC&O A-2000 | XETEC FASTCARD Plus A2000 (exp. to 8MB) | TRUMP CARD 2000 Professional | TRUMP CARD A500 (exp. to 4MB) | TRUMP CARD 500 Professional | XETEC FAST TRAK A500/A1000 (exp. to 4MB) |
|---------------------------|----------------|-----------------------------------|----------------------------------|-----------------------|----------------------------------|------------------------------------|--|---------------------------------------|--|--------------------------------------|---|
| ST-138N-1 (30MB, 28MS) | \$239 | \$324 | \$339 | \$355 | \$389 | \$439 | \$409 | \$429 | \$419 | \$479 | \$535 |
| ST-157N-1 (49MB, 28MS) | \$269 | \$354 | \$369 | \$379 | \$419 | \$469 | \$439 | \$449 | \$459 | \$519 | \$563 |
| ST277N-1 (60MB, 5.25") | \$279 | \$349 | \$379 | \$389 | \$429 | \$479 | \$449 | \$459 | — | — | — |
| ST-296N (80MB) | \$319 | \$399 | \$429 | \$429 | \$469 | \$519 | \$489 | \$499 | — | — | — |
| ST-1096N (80MB, 3.5") | \$349 | \$429 | \$449 | \$459 | \$499 | \$549 | \$519 | \$529 | \$519 | \$589 | \$645 |
| QUANTUM (40MB) | \$319 | \$399 | \$409 | \$419 | \$469 | \$519 | \$479 | \$499 | \$479 | \$559 | \$609 |
| QUANTUM (60MB) | \$489 | \$559 | \$569 | \$579 | \$639 | \$689 | \$659 | \$669 | \$679 | \$739 | \$779 |
| QUANTUM (105MB) | \$529 | \$609 | \$619 | \$639 | \$679 | \$729 | \$699 | \$709 | \$719 | \$779 | \$819 |
| QUANTUM (120MB) | \$659 | \$739 | \$749 | \$769 | \$809 | \$859 | \$729 | \$839 | \$849 | \$909 | \$949 |
| QUANTUM (170MB) | \$819 | \$899 | \$919 | \$929 | \$959 | \$999 | \$984 | \$999 | \$999 | \$1059 | \$1089 |
| QUANTUM (210MB) | \$949 | \$1019 | \$1049 | \$1069 | \$1079 | \$1129 | \$1089 | \$1119 | \$1119 | \$1189 | \$1219 |

HARD DRIVE CARD PACKAGES AVAILABLE - CALL

GVP

28Mhz. 68030 Accelerator for A-2000.....\$649
 GVP 3001 Kit (28 MHz) w/68030,
 2MB+ 68882.....\$1189
 GVP 3001 Kit (28Mhz.)
 w/68030, 4MB, 68882.....\$1379
 GVP 3001 Kit (4MB) w/Quantum 40MB.....\$1729
 GVP 3001 Kit (4MB) w/Quantum 80MB.....\$1879
 GVP 3001 Kit (4MB) w/Maxtor 200MB.....\$2399
 GVP 3033 Kit (33 MHz.)
 w/68030, 4MB, 68882.....\$1529
 GVP 3033 Kit w/Quantum 40MB.....\$1869
 GVP 3033 Kit w/Quantum 80MB.....\$2069
 GVP 3033 Kit w/Maxtor 200MB.....\$2629

GVP 3050 Kit (50Mhz.) w/68030, 4MB, 68882.....\$2379
 GVP 3050 Kit w/Quantum 40MB.....\$2679
 GVP 3050 Kit w/Quantum 80MB.....\$2899
 GVP 3050 Kit w/Maxtor 200MB.....\$3369

We can re-configure all GVP
 accelerator kits with any size hard drive.....CALL



WE WILL NOT BE UNDERSOLD ON ANY
 GVP PRODUCT!!

GVP A-500 HD 8+0/45MB.....\$599
 GVP A-500 HD 8+0/52MB Quantum.....\$699
 GVP A-500 HD 8+0/105MB Quantum.....\$899

Supra
**500XP HARD
 DRIVES**
 512K RAM Expandable
 to 8MB
 512K, 20MB.....\$525
 512K, 40MB.....\$625
 512K, 105MB.....\$859
 2MB THRU 8MB VERSIONS
 AVAILABLE

NEW SUPRA RAM 500RX

Thin, Compact, Fits into your Bus Port of
 A-500, but allows other peripherals to be
 connected thru the Bus.
 512K Expandable to 8MB

CALL

Supra
RAM 2000
 2, 4, 6, & 8MB configurations available • Easy to add
 memory • Works on all Amiga® 2000 computers
 • Reliable Four-Layer Board with Zero Wait States &
 Hidden Refresh • Installs easily in any Amiga internal
 expansion slot • Made in USA
 OK.....\$108 6MB.....\$339
 2MB.....\$184 8MB.....\$419
 4MB.....\$269

Supra RAM 500
 512K EXPANSION
 for A-500 **\$59.00**
 SUPRA 3.5" **\$92**
 EXTERNAL DRIVE
 SUPRA **\$105**
 WORDSYNC
 SCSI INTERFACE

Supra 44R Internal Tape w/SCSI.....\$679
 Supra 44R External Tape/no SCSI.....\$769
 SUPRA MODEM 2400 EXTERNAL w/CABLE.....\$105
 SUPRA MODEM 2400 ZI INTERNAL.....\$114

**NO NONSENSE - NO GIMMICKS - NO PETTY DISCOUNTS ON OVER-INFLATED PRICES! JUST THE
 EVERYDAY LOWEST PRICING, LIFETIME TOLL FREE TECHNICAL SUPPORT AND EXPERIENCED,
 COURTEOUS SERVICE! ALL YOU'VE GROWN TO EXPECT FROM MONTGOMERY GRANT!**

Certified check, bank check, money orders, approved P.O.'s, Visa, Mastercard, Diner's Club, Am-Ex, Optima, Cart Blanche, C.O.D.'s & wire transfers accepted. Please call before submitting P.O.
 No additional surcharge for credit card orders. Non-certified checks must wait 4-6 weeks for clearance. Prices and availability subject to change without notice. Not responsible for typographical
 errors. Return of defective merchandise must have prior return authorization number, or returns will not be accepted. Please add 5% shipping & handling (min. \$6). Orders over \$1200 are discounted to
 shipping & handling. Orders over \$3000 are discounted to 2% (Canadian orders please call for shipping rates). Second Day & Next Day Air available with extra charges. APO/FPO orders please
 add 10% shipping & handling (over \$1200-8%, over \$3000-6%). All APO/FPO orders are shipped first class priority air. All orders can be shipped Air Express-call for details. D.C.A. #800233.
 Amiga is a registered trademark of Commodore-Amiga Inc.





AMIGAWORLD
2/91

ORDER HOURS:
Mon-Thurs 9am-7pm/Fri 9am-3pm/
Sun 9:30-6/Closed Saturday
(ET)

FOR ORDERS & INFORMATION
IN USA AND CANADA
CALL TOLL FREE

1-800-759-6565

OUTSIDE USA & CANADA CALL **718-692-0790**

OR WRITE TO: MONTGOMERY GRANT
MAIL ORDER DEPARTMENT P.O. BOX 58
BROOKLYN, N.Y., 11230

commodore
1084
RGB
MONITOR
\$279

VIDEO TOASTER



\$1469

PROGRESSIVE PERIPHERALS & SOFTWARE

FRAME GRABBER

\$519



| | |
|--------------------------------------|-------|
| FRAMEGRABBER 256..... | \$569 |
| 512K Expansion for A-500..... | \$57 |
| MINIGEN..... | \$185 |
| PROGEN..... | \$339 |
| CICTAPE 60MB External Tape..... | \$449 |
| EXP-1000 1MB Upgrade for A-500..... | \$129 |
| FRAMEGRABBER 2.0 Software..... | \$75 |
| BAUD BANDIT 2400 External Modem..... | \$99 |
| BAUD BANDIT 2400 Level 5..... | \$127 |

AMIGA COMPATIBLE PERIPHERALS & ACCESSORIES



| | |
|--|-----------|
| AIR DRIVE Internal Drive for A-3000..... | \$85 |
| AMIGA 1000 Memory & Accessories..... | AVAILABLE |
| AMIGA 3000 32 Bit Memory..... | AVAILABLE |
| AMIGA Appetizer Software (Word Process, Music, Paint, Game, Tutorial Program)..... | \$39 |
| AMIGA VISION Software..... | \$89 |
| AMIGA 1.3 ROM (8850)..... | \$39 |
| AMIGA 1MB Fatter Agnus Chip (8372A)..... | \$94 |
| AMIGA 500 Power Supply..... | \$66 |
| AMIGA 2000 Power Supply (w/Trade-in)..... | \$99 |
| A-MAX Mac Emulator for Amiga..... | \$109 |
| A-MAX Emulator 2..... | \$134 |
| A-MAX ROM..... | \$149 |
| CUTTING EDGE Mac Compatible Drive for A-MAX..... | \$149 |
| AMIG-A-TOSH PLUS..... | \$239 |
| APPLIED ENGINEERING 1.52MB Hi-Density Drive..... | \$189 |

BASEBOARD

Memory Expansion for A-500
(uses A-501 Expansion Slot)

| | | | |
|-----------|-------|----------|-------|
| OK..... | \$99 | 2MB..... | \$199 |
| 512K..... | \$129 | 3MB..... | \$269 |
| 1MB..... | \$149 | 4MB..... | \$329 |

| | |
|---------------------------------------|-------|
| CHINON Internal Drive for A-2000..... | \$69 |
| COLOR SPLITTER..... | \$109 |



CALIFORNIA ACCESS

(Bodega Bay) Expansion Console -
Turn your AMIGA 500 into a
A-2000 Compatible..... **CALL**

| | |
|---|-------|
| CALIFORNIA ACCESS CA-880 3.5" DISK DRIVE..... | \$95 |
| DIGIFEX 16Mhz. Accelerator Board for A-500 & A-2000..... | \$199 |
| DENISE Extender for FLICKER FIXER..... | \$119 |
| DIGITAL CREATIONS DCTV DC-10..... | \$389 |
| FLICKER FIXER..... | \$259 |

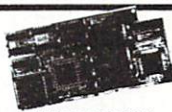
GENLOCKS

| | | | |
|--|--------|--------------|-------|
| AMIGEN..... | \$89 | MINIGEN..... | \$185 |
| OMNIGEN 701..... | \$1599 | | |
| SUPER GEN..... | \$599 | | |
| SUPER GEN 2000S..... | \$1339 | | |
| MAGNI 4004 or 4004S w/Controller..... | \$1449 | | |
| NERIKI GENLOCK..... | \$1469 | | |
| NERIKI DESKTOP..... | \$879 | | |
| VIDTECH SCANLOCK..... | \$729 | | |
| PRO GEN..... | \$339 | | |
| VIDTECH VIDEOMASTER..... | CALL | | |

ICD AD-RAM 2080

(Memory Expansion for A-2000)

| | | | | | |
|----------|-------|----------|-------|----------|-------|
| OK..... | \$139 | 4MB..... | \$339 | 8MB..... | \$529 |
| 2MB..... | \$229 | 6MB..... | \$419 | | |



MICROBOTICS

Memory Upgrades for A-2000

| | | | | | |
|----------------|-------|----------------|-------|----------------|------|
| 8up OK..... | \$129 | 8up w/2MB..... | \$229 | 8up w/6MB..... | CALL |
| 8up w/4MB..... | \$349 | 8up w/8MB..... | CALL | | |

| | |
|--|-------|
| LATTICE C5.1..... | \$189 |
| MASTER 3A-1 3.5" Disk Drive..... | \$88 |
| MASTER 3A-1D..... | \$129 |
| MEGA-MIDGET RACER (25Mhz)..... | \$689 |
| PANASONIC 1410 w/Lens..... | \$199 |
| PERFECTVISION Digitizer..... | \$199 |
| PULSAR A-500 PC EMULATOR BOARD..... | \$498 |

REJUVENATOR 1000

Turn your Amiga 1000
into a A-2000 compatible.....

\$599

| | |
|--|--------|
| SHARP JX 100 Color Scanner w/Software & Cables..... | \$689 |
| SHARP JX 300..... | \$1689 |
| SHARP JX 450/730..... | CALL |
| SHARP 9600 Baud Ext. Modem..... | \$339 |



XETEC CD ROM

| | |
|------------------------|-------|
| CDX-650E EXTERNAL..... | \$689 |
| CDX-650I INTERNAL..... | \$589 |



AMIGA 500

AMIGA 2000

AMIGA 2000HD

AMIGA 2500/30

AMIGA 3000

**ALL MODELS
IN STOCK**

**PRICES SO
LOW**

**WE ARE NOT
PERMITTED**

TO PRINT THEM

**ALL AMIGA PERIPHERALS &
ACCESSORIES
IN STOCK**

HEWLETT PACKARD

| | |
|------------------------------|----------|
| HP DESKJET 500..... | \$529.95 |
| HP LASERJET IIP w/Toner..... | \$969.95 |
| HP PAINTJET..... | \$929.95 |
| HP LASERJET III w/Toner..... | \$1639 |
| HP PAINTJET XL w/Toner..... | \$1849 |

STAR

| | |
|----------------------|----------|
| NX-1000II..... | \$139.95 |
| NX-1000 RAINBOW..... | \$184.95 |
| NX-1001..... | \$159.95 |
| NX-1020R..... | \$219.95 |
| NX-2420..... | \$299.95 |
| NX-2420R..... | \$339.95 |



NEC MULTISYNC IIID MONITOR.....\$649

BROTHER HR-5 80 Col. Thermal Printer.....\$39

PANASONIC

| | |
|------------------------|----------|
| KXP-1180..... | \$149.95 |
| KXP-1191..... | \$219.95 |
| KXP-1124..... | \$289.95 |
| KXP-1624..... | \$329.95 |
| KXP-4420 Laser..... | \$879.95 |

EPSON

| | |
|------------------------|----------|
| LX-810..... | \$189.95 |
| FX-850..... | \$334.95 |
| LQ-510..... | \$279.95 |
| EPL-8000 Laser..... | \$879.95 |

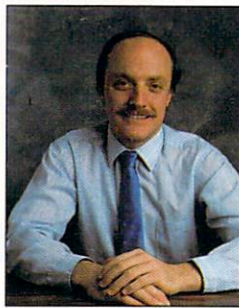
CITIZEN

| | |
|------------------------|----------|
| GSX-140..... | \$284.95 |
| 200GX..... | \$179.95 |
| Color Option Kits..... | CALL |

CANON

| | |
|--------------|----------|
| BJ-130E..... | \$599.95 |
|--------------|----------|

THE



PD PROSPECTOR

A quick look at what's new, interesting and exciting on the major nets.

Compiled by Tim Walsh

Winter days are here again, and there's no better time to check out the files listed below with file numbers and library locations.

People/Link

AIBB201.LZH (AmigaZone Section 4, File #25424) Version 2.01 of AIBB—an Intuition-based program for benchmarking system performance.

FIXDISK1.2.LZH (AmigaZone Section 4, File #25408). Disk-salvaging utility that serves as a handy complement to both DiskSalv and DiskDoctor.

LOCKDEVICE.LZH (AmigaZone Pro Section 5, File #2645) Avoids loss of data by preventing the hard disk from being accidentally formatted.

BOOTCACHE.LZH (AmigaZone Pro Section 5, File #2625) BootCache disables processor caches on 68030-equipped machines for program compatibility.

Scanning P/Link's vast Amiga libraries reveals an all-time high of uploading activity of quality programs, thanks in large part to Harv Laser.

CompuServe

FILEMA.LZH (AmigaTech, Library 1) Super Fileman Version 1.11. Archive, sort, copy and catalog are but a few of the options provided by this shareware disk utility.

LISTX.LZH (AmigaTech, Library 1) Replacement for the AmigaDOS List command that provides an informative breakdown of directories.

PPMORE.LZH (AmigaUser, Library 7) Enhanced text reader that's similar to the program More.

GRAMMA.LZH (AmigaUser, Library 7) Discover how your grammar compares to that of Steinbeck, Hemingway, and a major computer publication.

Recent e-mail from assistant sysop Betty Clay reveals that the most popular file in CompuServe's AmigaTech area has been NEWALE.ZOO (Library 11) which interprets gurus.

GEnie

DEK111.LZH (Amiga Library 4, File #9514) Disk and file editor. Use it to fix errors and recover deleted files.

TAPRISKA.LZH (Amiga Library 4, File #9513) Version 1.1 of TAPRISKA. Lists background tasks for both identification and modification.

JOY_MOUSE_SWAP.LZH (Amiga Library 4, File #9502) This unique CLI-based routine toggles between ports so that you can control with either a mouse or joystick.

HD_FLOPPY.LZH (Amiga Library 11, File #9499) Use this device driver to mount a simulated floppy-disk drive on your Amiga's hard-disk drive.

GEnie is now offering a service whereby e-mail messages can be forwarded to friends and relatives stationed in Saudi Arabia. Log on for specific details.

Prospector's Perch: Got a modem? Become a telecommie power user!

THERE'S A LOT to be said for telecommunications. If you've hesitated to explore networks with your Amiga for fear of invading the domain of elite groups of Amiga enthusiasts, then you've been misinformed. The nets are not composed of techies sharing obscure programming techniques and complex video and computer interfacing. Rather, most of the so-called telecommies in the Amiga areas on the nets are Amiga users of average levels of expertise. You should really endeavor to view their domain as a fast, easy and truly useful resource of freely-distributable files that make life

more pleasant with your Amiga.

Suppose you inadvertently delete an important directory on your Amiga at 10:30 on a Sunday night. Your boss needs that report at 7:30 sharp on Monday morning. If you're equipped to do so, you log on to your favorite network, find a disk-salvage utility, and in a matter of minutes you've recovered the lost information. If you don't have a modem, well, maybe you can call in sick and say the blister on your mouse finger flared up.

Or let's say that you're putting together a multimedia or video presentation and need a crucial piece of

clip art or a background to make the graphic complete. Again, log on and find some terrific art work to download. Best of all, there are always plenty of friendly folks willing to help out on the nets.

Over the years, the nets have saved me countless hours of research, and I've made friends, sent files to and from other telecommies and generally simplified nearly every aspect of my computer life. Time and again I've turned to one of the networks to find that elusive file. True, you may find the same files offered by PD disk collections, but when time is of the

essence, telecommunicating is the answer.

If you're interested in establishing an account on any of the above networks, here are the voice numbers to call to get under way:

CompuServe: 800/848-8199
614/457-8650 from Ohio

American People/Link: 800/524-0100

GEnie: 800/638-9636

Next month: Music and sound. ■

TRADE-IN...

ALL NEW

TRADE UP TO THE BEST !!!



SUPER CARD AMI II



Do you already have Amiga backup programs, or hardware that's just sitting on the table gathering dust cause they just don't work? Well trade up to the AMI-II the one and only 100% backup system. Send in your old backup Amiga software or hardware for a \$30.00 credit toward the AMI - II. That's right you can get AMI - II with your trade in **for only \$69.95**

Now is the time to own the most powerful backup system that ever will be made. We have searched for a program that this software, hardware package can not backup, and it is yet to be found. Over 10,000 units sold!!! Please join our search.

NEVER BEFORE 100% BACKUP.....

- Easy to use, mousedriven software.
- Most software backed up in 60 seconds!
- Transparent when not in use.
- Fits any Amiga, even the 3000! (Please specify when ordering).
- Backup any 3.5" disk (IBM, ATARI, MAC, AMIGA).
- No soldering required!
- Cross-country BBS support system (Call for # nearest you).
- Backup your original - the day you buy it!
- Super Card AMI II works on NTSC (60 Hertz) and PAL (50 Hertz) systems.
- Tested world wide to be the 'one and only' 100% backup system.

Don't wait, one original lost can cost more than this backup system! We have a full stock on hand and your system can be on its way to you fast!

Remember, specify the Amiga you have when ordering. A500/1000/2000/2500/3000 using one or more external drives, or A2000/2500/3000/ with two internal drives.

AMI-II SOFTWARE UP-DATE

Now Available 1.0 Software

- Copier files that allow 60 second backup for most programs.
- Easy to use instructions.
- Save those programs onto the copier files for future use.
- Join our automatic up-date list, and never miss another up-date.

AMI SUPER TRACKER

Have you ever wanted to know where problem tracks are located? Now, with super tracker AMI you can tell! This beautiful digital track display simply plugs into the last drive in your Amiga system (all Amiga computers will work). The head location (track) side (top or bottom head) and where write protect position are all

NOW

\$79⁹⁵

Add \$4.00 Shipping and Handling - Add \$3.50 C.O.D. in U.S.A. only. Add \$3.00 to all foreign shipments. VISA and MasterCard are accepted.

AMI ALIGNMENT SYSTEM

A memory and drive diagnostic utility for the Amiga line of personal computers. Test your speed and align your drives.

\$49⁹⁵

DOCTOR AMI

Allows you to test the integrity of system RAM (including expansion) and both floppy and hard disk media. Errors are located, identified and mapped out. Doctor AMI uses a full intuition interface and is quite simple to use.

\$49⁹⁵

SUPER-CARD UTILITY PACKAGE

Copier Construction Set - Create copier files for Super-Card AMI II v1.0 software.

Disk Analyzer - Display format and structure information of tracks. This will help determine which mode you should use with Super-Card AMI II.

Drive Speed Checker - Checks drive speeds of ALL drives.

Drive Alignment Checker - Checks drive alignment of ALL drives.

MFM Editor - Read & Write MFM data. Works in conjunction with Copier Construction Set to help create copier files.

\$39⁹⁵

KICK BOARD

When Workbench 2.0 is released, it is estimated that only 67% of the existing software will work with it. Nearly all commercial games will not run under the new Kickstart ROM. That leaves the consumer swapping their ROMs back and forth in order to run various software. This is a terrible inconvenience to the consumer.

Introducing, KICK-BOARD..... A simple to install board that replaces your ROM inside your Amiga computer. Remove your old Kickstart ROM from it's socket and place it in our board. Now, plug the KICK-BOARD'S ribbon cable into the empty ROM socket. That's it! You can add two additional ROMs to the KICK-BOARD besides your original. Giving you the total of three possible ROMs to use in your Amiga.

By simply moving the switch provided to one of the three positions, you can select one of the available ROMs. No more compatibility problems! By using a ribbon cable assemble, we have insured that this product will work with all processor accelerators, which generally cover the ROM socket completely.

\$39⁹⁵

Introductory Price

BOOT DRIVE SELECTOR

Tired of that annoying "Clicking" that your drive makes when there is no disk inserted? Have you ever wanted to boot from one of your external drives? Did you know that some commercial programs (generally European games) actually require your external drives to be disconnected from your Amiga!!

Introducing, BOOT DRIVE SELECTOR.... A simple to install board that fixes all of the above mentioned problems for good!! This unit installs between your CIA chip and your internal drive. Once installed, the "Clicking" (which will eventually wear out your drive) will be a thing of the past.

What happens if your internal drive malfunctions? You are stuck without your computer! Not if you have this unit installed! Simply select which external you want to boot from and you again have a usable system. The external drive you select and your internal (DFO) drive actually "Swap" locations, allowing the normal usage of all drives.

No more removing your external drives for those programs that require that there be only one drive online. Simply flip the switch, and presto! All external drives are disabled! This product will pay for itself without question!

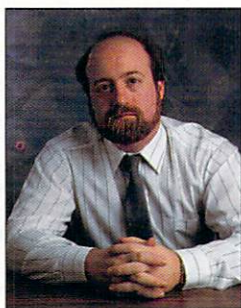
\$49⁹⁵

Now with Anti-Virus

UTILITIES UNLIMITED OF OREGON, INC.

P.O.Box 532 North Plains, OR 97133

ORDERS TAKEN 24 HOURS A DAY AT (503) 647-5611 FAX LINE (503) 648-8992



HELP KEY

From the dawn of (Amiga) time to the cutting edge,

Lou is ready to quip a tip on any subject.

By Louis R. Wallace

TROUBLING TRIO

Q: *I have three questions: Can the Amiga 500 use the new ECS chips? Can the Amiga 500 use the new Amber chip to de-interlace its display? If the Amiga 500 cannot use Amber, would the Rejuvenator board allow it to do so?*

T. Fearman
Flin Flon, Manitoba

A: The answer to your first question is certainly, the A500 could use the ECS, but the real question is will it? There is no technical difficulty in the issue, for the A500 is really the same computer as the A2000, differing essentially only in the design of its box and the ease of expansion. Both can use the new chips.

Rumor has it that some discussion is going on at Commodore about this. A few people there believe it would be better to keep the more advanced Amiga 2.0 Operating System (Amiga OS) and the ECS for the professional series of Amiga (the A2000, A2500, A3000, and so on) and to let the A500 line use 1.3 and the existing chip set. Their arguments are that this will ensure compatibility for the large line of entertainment products for the A500 while helping to differentiate the high end machines from the low.

Based on what I have heard, however, this "separation of product lines" will not come to pass. As soon as Amiga OS 2.0 is complete and in ROM, 2.0 enhancer packages will appear at dealers for both the A500 and the A2000 series, complete with the new ECS and 512K ROMS.

The answer to your second question is not as encouraging. The Amber chip was designed for creating de-interlaced displays for the A3000 and was used in the new A2320 display enhancer for the A2000. As far as I know, Commodore plans no such device for the A500.

Don't despair: The Rejuvenator board could use the A2320 card (which has Amber on it). The A2320 is only for the A2000, however, not the A500. At the recent AmiEXPO in Anaheim, CA, ICD (1220 Rock St., Rockford, IL 61101, 815/968-2228) demonstrated an internal de-interlacer that would work on the A500, A1000 and A2000 line. With one of these internal cards and a multiscan monitor, anyone can enjoy de-interlaced displays.

HISTORICAL DIG

Q: *Where can I get a Version 1.1 Kickstart and Workbench for my A1000?*

J. Barzkowski
San Francisco, CA

A: Hmmm. I guess you want to use some of the older software that doesn't run properly under the 1.2, 1.3, or 2.0 operating systems. First, check with the Amiga dealers in your area. I also recommend that you find and join a user group (San Francisco has several good ones). There you are bound to find someone who has the 1.1 operating system.

UNENHANCED

Q: *Help! I just bought the A2300 genlock for my A3000 and am having some problems. When I have the monitor (an A1950 multi-scan monitor) connected to the genlock, it works fine as a NTSC display. Doing this, however, I can't take advantage of the display enhancer, because the monitor is connected to the genlock output and not the VDE output. Again no problem, all I have to do is disconnect the monitor from the genlock and connect it to the VDE output when I want de-interlaced displays, right? Wrong! My screen is scrambled when I do that. If I use the A2300 genlock, does it prevent me from using the*

display enhancer as long as the genlock is installed?

F. Hollings
Tampa, FL

A: Not at all. You can still use the display-enhanced video in the A3000 when the genlock is installed, but there is a little trick to getting it to work. When you are not using the genlock, just switch the monitor cable from the genlock to the VDE display port. Next, connect a synced video source to the genlock. As long as the genlock is getting video in, the display enhancer in the A3000 will work fine. The trick is to keep video coming in to the A2300, even when not using it.

A note to A3000 owners with A2300 genlocks: There is a modification required to older A2300s before they are fully A3000-compatible. If yours has not been modified, see a service center about it. They should have received information and instructions from Commodore on making the change.

'VISION PROBLEMS

Q: *I just got AmigaVision (version 1.53G), and I am having a bit of a problem using the Text Icon. According to the manual (page 4.42), to make the text window scroll, I use a Response of page up, page down, line up, or line down. I have tried these, and they don't work. However, quit works just fine. Solution, please?*

S. DeBoise
Dallas, TX

A: The reference on that page of the AmigaVision manual is incorrect. The correct Response should be pageup, pagedown, lineup, or linedown, all without spaces. You will find it explained correctly on page 6-107. ■



\$5.95 ea
1-9 Disks

\$4.95* ea
10-24 Disks

\$3.95* ea
25+ Disks

* Anti-Virus Free on all orders
with 15 or more disks!

Public Domain Library

We are the Official Public Domain Library of Amiga Plus, we have been the Official PD library of Amiga World. Find out why these magazines choose us! Each of our disks are jam packed with nothing but 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 FREE volume on your next purchase. We always use only SONY disks!

Featured Disk

WB12: Disk Utilities #1 - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery, archiving and organizing, and all sorts of file and directory manipulation. Includes SID, greatly reduces CLI use.

New Disks

FD43: Game tricks/hints - a disk full of games cheats, hints, and backdoors for all of your favorite games. Hints for shadow of the beast, dungeon master, space ace, leisure suit larry, moria, neuromancer, and over 300 more games.

FD44: Game - Mechtight 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 of their 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...

FD45: Arcade - Three good shoot'em ups. Batman - save the city from the Joker, DriveWar - gangsters are moving in on your territory, stop them at all costs, Web - a spydri, bag affair of eat or be eaten.

WB72: Directory Utilities - The programs on this disk are very powerful and come highly recommended. They are designed to make CLI and shell tasks virtually obsolete. These programs make the Amiga much easier to learn and use. From the workbench environment, do file and directory manipulation including copying, deleting, moving, display text, edit text, view images, playing sounds, create directories, find files, group unarchiving, with many user definable functions and options, and much much more.

WB73: Keyboard Utilities and more - Dmouse - one of the most useful type programs available, contains an all in one, mouse excellerator, screen blanker, Shell evoker, Function key defines, and more. KeyMacro - set up macro definition for any keystroke combination. KeyMapED - remaps the keyboard display to any user definable character. Also Ntsc-Pal - converts any european (pal) or US (ntsc) to your standard, Pbar - window pull down bar paint program, and TPr - a full featured video title.

WB74: 3000 Utilities - several programs for the Amiga 3000 user, MacHill - our favorite mouse, hokey, screen blanker, autoCLI and autopoint all in one program, Iconize - a 16 color icon editor, Blanker - starfield screen blanker, NoClick - stop drive clicking, ReMapIcon - convert 1.3 icons to 2.0, and more.

WB75: Music - over 100 instruments files (.inst) and sample sound files (.ss) for your music programs.

DD46: Arex examples/utilities #3 - several working examples and programs to aid the arex user and programmer.

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 the Rush Hour - 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 Amiga graphic interface. Play time several weeks!

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, Paranoids, 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, Trax - a Qix type clone.

FD16: Strategy Games - Includes Diplomacy and Empires, both great conquer and rule multiplayer games similar in concept to Simcity and Populace. Also includes blackbox, hearts, and others.

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.

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 you mission, SpKiller - try and penetrate enemy lines with this game, and Retaliator - another great game.

FD32: Flight Simulator - Includes an instrument flight simulator for a DC10.

FD33: Arcade Games - Freddy a mario brothers type of game, Gerbil's target practice game, Pipeline a German interpretation of Pipe Dreams, Tron a light cycles version, and wretoids a wonderful version of asteroids with a hilarious twist.

FD37a & b: Tactical Games - Empire (2.2w) This game comes highly recommended. Now with a full-featured graphic front end. Empire is a rich simulation of international politics, economics and war, which is played over a period of a few of months by 2 or more people. Players can run their countries from the normal

Amiga keyboard, or via a modem at 300 to 2400 baud. Counts as two disks.

FD38: Games - Cribbage Master - A great cribbage game and tutor, Spades - a well done card game, ChineseCheckers - A computer version of this classic, Puzzle - a slide piece puzzle game and construction set.

FD39a & b: Tobias Star Trek - This is a new, 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. Requires 512k memory, and a 500, 2000 or Pal Amiga.

FD40: Arcade - MiddleEast - a timely arcade game of death and destruction set in Iraq, BackToTheFutureII - a very playable demo version of this soon to be released commercial game, City - a missile command clone.

FD41: Games - Includes Capital Gains - a stock market game, Ball a Arkanoids type of clone with many great twists, and Desert Shield - a shoot'em up with a destroy and conquer theme.

FD42: Games - Includes SpaceWar3 - a remake of this original Amiga classic, Wripin - a fascinating board game of intrigue, strategy, and player manipulation, Dominion - an engrossing strategy game of galactic war and conquest, Frog - a frogger type clone, and Mines - a very challenging strategy board game.

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.

WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.

WB10: Virus Killers - The latest and best VirusX(4.0), Kv(2.1), and ZeroVirus(1.3).

WB13: Printer Drivers and Generator - over 70 different drivers, and if these don't do it, with PrtDrvGen you can make your own.

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 Processor - 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, TexED(v2.8) an enhanced Emacs type editor, and a spell checker.

WB20: General Interest - DiskSalv V1.42 a disk recovery program for all Amiga file systems, FixDisk V1.0 another file recovery program with features DiskSalv doesn't have, 3Dlook gives a 3D appearance to your WorkBench, Clean V1.01 a program to de-fragment memory, Tracer - trace any part of an image.

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 - 26 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, Fracgen - 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, you'll love it!

WB33: Circuit Board Design - several terrific routines for the electronic enthusiast, including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Moad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for inclusion into schematics.

WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images,

Roses - produce an unlimited number of variations of images that a symmetrical similar to a rose, SimGen - display those spectacular images as part of your workbench screen, and RayShade - a very good raytracing program, create your own beautiful 3d graphics.

WB38: Plotting and Graphics - Plotxy is the most powerful full featured plotting package. Used by many colleges and universities. A welcome addition to our library! Highly recommended. Plans - a incredibly well done Computer Aided Drafting program, very full featured. Tessellator - a program that helps generates fantastic looking, recursive M.C. Escher type pictures.

WB39: Music - Intuitracker is a German offer of an exquisitely well done program that allows you to play music on your Amiga with CD like controls. Lets you strip out music from your favorite games or others and include them in your music library.

WB40: Music - "CD on a disk", 50 minutes of modern music on this well presented collection.

WB41: Music - MED an incredibly well done, full featured music editor. Create your own stunning music directly on your the Amiga. Similar to SoundTracker but better. Very powerful, easy to use program.

WB43: Business - This disk contains AnalytiCalc - probably the most powerful spreadsheet program on the Amiga. A full featured spreadsheet with many features expected in a commercial package.

WB53: Graphics - The disk contains C-light - The easiest to use raytracing we have seen to date. This one started out life as a full featured commercial product similar to Sculpt3D. Raytracing programs can generate stunning images that realistically shaded objects and move - a full featured video text title similar to ProVideo, Broadcast Titler. Great video scrolling, wipes, special effects, and more...

WB54: Printing - This disk contains several routines to help with the chore of printing. Includes Gothic - Finally a Banner printer for the PD! PrintStudio - a well implemented all-purpose printer utility with a very comfortable graphic interface and many advanced features, Lila - with ease, print ASCII files to a PostScript printer, and many more.

WB55: Application - XCOPYIII - a full featured disk copier, make backups of write protected disks. RoadRoute - find the quickest route from one city to another, highway description included, Diary - a diary program like "Dougy Howard M.D.", Cal - a calendar program, Magman - a database tailored to maintain records on articles and publications.

WB71: C64 Emulation - The A64 Package is a complete, very powerful, Commodore 64 emulator.

DD47: Pascal - This disk contains everything needed to program in Pascal. Includes, A68k (1.2) 68000 assembler, Blink linking software and PCQ (1.0) a modest Pascal sub-set compiler.

DD48: Compiler - contains Zcc (1.01) fully K&R, zcc(1.0) front end, A68k(1.2) assembler, Blink linker.

DD51: Circuit Analysis - Aspic (2.3) A full featured program for electric circuit analysis.

DD52: Scientific - Includes Elements - an incredibly well done periodic table program with source, Scientific plotting - over 600k of Lattice C source routines that can be included in your own programs.

DD54: Compression - This disk is loaded with ALL of the best file compression programs and aids for the Amiga. Many of the programs can be used by the new user. Includes Arc(2.3), Lharc(1.0), Lhwarp(1.03), Pkax(1.0), PowerPacker(2.3a) a must have by all, Zip(1.0), Warp(2.04), and Zoo(2.0). Also IFFcrunch an excellent compression for IFF files.

DD55: ARP - On this disk you will find the complete ArpRel3.0 release including the full user docs, the full developers guide, and Conman (1.4). ARP is the official AmigaDOS Resource Project (ARP) release 1.3. ARP makes many improvements to AmigaDOS and makes your system easier to use from the CLI.

DD57: Advanced Utilities - Msh - like Cross-dos, copies files to and from MS-DOS, Pal-NTSC - convert any pal program to NTSC and vice versa. Also several utilities that improve your start-up sequence, plus 25 more programs.

DD62: Basic and Xscheme - Cursor - a full featured Amiga Basic compiler, basic and text - several wonderful routines to help in basic programming, and Xscheme - an interpreted object oriented language.

DD65: C Tutorials - Several well done tutorials on how to program the Amiga. Includes tutorials and working examples on Device drivers, IFF reads and writes, Sound implementation, Arcade game design and implementation, Double Buffering, and others. A must have for Amiga Programmers.

DD71: C compiler - This disk contains Dice, Matthew Dillon's full featured, powerful C compiler and environment system.

SONY Blank Disks:

DD50 3.5"

New Prices

10 for \$8.90 (.89 cents ea)
25 for \$18.90 (.76 cents ea)
50 for \$34.90 (.70 cents ea)
100 for \$68.90 (.68 cents ea)

Sony QD-6150 data cartridge \$24.00 ea.

No shipping charge on USA blank disk orders, Canada and Mexico add \$.10 each, Sorry no other foreign.



Anti-Virus

Now Only \$19.95

☆☆☆☆, INFO Sep 89

✓✓✓✓, Amiga Resource Oct89

Anti-Virus(c) is not Public Domain

Please send me the following:

Enter disk id (Ex. DD17, FD5, WB3)

☐ Payment Enclosed
☐ Please charge my
☐ Visa
☐ Master charge

Account #

Signature

Name

Address

City

ST Zip

Exp

Total disks x \$ each \$

Disk based catalog (add \$2.50) \$

Anti-Virus (add \$19.95) \$

Sony Blank Disks# \$

CA residents add 7.25% sales tax \$

Foreign Shipping \$

Total Due \$

DevWare, 11835 Carmel Mtn Rd., #1304-A11 San Diego, CA 92128

Orders Only! 800 879-0759 Support & Questions 619 673-0759

Circle 398 on Reader Service card.

InfoMarket

Public Domain Software Resource

Choose only the Amiga public domain programs you want using our custom ordering service. PDSResource offers hundreds of the best Amiga freeware and shareware programs. Send for our free catalog. Each custom disk is only \$6.00. Remember, with PDSResource...



PDSResource

"You have a choice!"

P.O. Box 7175 Loma Linda, CA 92354

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

MORE MEMORY FOR LESS

NEW for Amiga 3000

STATIC ZIPS

1 meg x 4 — only

\$49.95 each

256 x 4 — 80ns. **\$9.50 ea.**

FPU Math Co-processor

68881 — 20 MHz

\$50.00 each

32K Buffer Chip

Panasonic Printer

1124, 1524, 1624, 1180, 1191

Only

\$20.00

w/instructions

Memory Board

HP Laser Printer

1 meg \$115, 2 meg \$165, 4 meg \$249

MEMORY WORLD

2476 Croyden Court

Bensalem, PA 19020

Attn: Amiga Dept.



215-741-6225

Fax 215-741-6229

Add \$3.00 S&H Add \$6.00 2nd Day Add \$4.00 COD

VISA / MC / Check / COD

NEW!! ULTRA HIGH RESOLUTION 35mm COLOR SLIDES

from your COLOR POSTSCRIPT or BITMAP Paint Files (IFF or HAM)

• 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

Hypertext for the Amiga

Thinker

Write, design, think, plan, Outline. Multimedia idea processor with Hypertext!

\$80 ARexx support
Upgrades 1.x \$25, 2.0 \$10

Poor Person Software, Dept 10, 3721 Starr King Circle
Palo Alto, CA 94306 (415) 493-7234

Version 2.1: Mixed text styles! Colors! Images in documents! Enhanced Interface! CLI access! - Multimedia database!

"Its flexibility far exceeds any other program I've used on any computer." Robert Klimaszewski, Amazing V5.1

"Will certainly whet a lot of HyperAppetites"

Neil Randall, Amigaworld 1/90



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 (18+) to:

CLEARLIGHT SOFTWARE

PO BOX 1411, DEPT. A
MILWAUKEE, WI 53201

AMIGA™ ARE YOU RUNNING OUT OF "CHIP RAM"? AMIGA™

• MEGACHIP 2000 • The #1 AMIGA 2000 UPGRADE •

This is the Amiga upgrade Commodore never wanted to see reach the general public.

Now utilize the power of the Amiga 3000 by actually putting into your A2000 the new 2MB AGNUS chip (same chip used in A3000). Take advantage of doubling your "RAM" to custom chips. Utilize to the fullest Amiga multitasking, graphics and sound capabilities. Excellent for displaying advanced animations or graphics.

- Double your chip RAM
- Great for multimedia applications and desktop publishing
- Upgrades your A2000 to the latest technology
- Fully compatible with Workbench 2.0 and DENISE
- Simple plug-in installation, no soldering (plug-in board)
- Double the length of samples when digitizing sound
- Includes free AGNUS chip puller
- 1 year warranty

\$339.00 Before Rebate

THE GRAPEVINE GROUP, INC.

3 CHESTNUT ST., SUFFERN, NY 10901

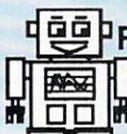
We Ship Worldwide

FAX 914-357-6243

800-292-7445

914-357-2424

Prices subject to change



FOR FAMILIES WITH KIDS FROM FIVE TO TWELVE - READY ROBOT CLUB DISK MAGAZINE

Requires 1-MB & 2-Drives! Every 2 months: Original package of educational fun! Speech Option, Point & Click, Science Experiments, Illustrated Stories, Music, Games, Reviews, Coloring Book, Things To Do, Space Updates, and More... **BY SUBSCRIPTION ONLY!**

U.S.A.: \$28/6mo. \$48/YR. Canada: \$30/6mo. \$50/YR. Others: \$33/6mo. \$54/YR.

VISA, M/C accepted by phone only. DEMO \$5.00 School license available

INFO: 916-944-4282 ORDERS ONLY: 800-634-2952 (U.S.A. & Canada)

Include Phone # For Database. No C.O.D. Money Orders U.S. Payable To:

SIGNS ETC. BY D. KNOX, BOX 628, CARMICHAEL CA 95609, U.S.A.

3.5" FLOPPY DISK DRIVE SPECIAL!

External for all Amigas

A1010

A.I.R.

DRIVE

Shipping & handling extra. Low profile, 36" cable, pass-thru, on/off switch.

ONLY \$99

Internal for A2000

A2010

A.I.R.

DRIVE

Shipping & handling extra. Direct replacement or 2nd drive, w/dust door and mounting kit.

ONLY \$89

Use major credit cards or COD. Price in US dollars

ORDER TOLL FREE: 1-800-433-7572



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

BIGFOOT



DUAL SWITCHING, FAN COOLED
150 WATT POWER SUPPLY For
AMIGA 500. WILL POWER 5
HARD OR FLOPPY DRIVES!
\$129.95



For ALL COMMODORES & AMIGAS
Joystick/Mouse Switch
CONNECT 2 DEVICES TO ONE
PORT & SELECT WITH SWITCH.
\$29.95 AMERICAN MADE

MODEL PP-256



PRINTER BUFFER FOR ALL AMIGA COMPUTERS
FASTER PRINTING OUTPUT!
CUTS GRAPHICS
PRINTING TIME BY 70%
\$149.95

CALL YOUR DEALER OR MICRO R&D NOW! 308-745-1243 FAX 308-745-1246
137 NO. 7th ST., LOUP CITY, NEBRASKA 68853

Make the most of your advertising investment!
Reserve your space in the AmigaWorld Info-
Market today! Call Heather Paquette at 1-800-
441-4403.

PRO FILLS

"...AN EXCELLENT COLLECTION OF PROFESSIONAL QUALITY PATTERNS, TEXTURES AND PALETTES FOR VIDEO PRODUCTIONS."

Jim Plant, Editor/Publisher The Amiga Video Journal June 1990

Add variety to your Amiga video titling and desktop presentations with Pro Fills patterns, textures and palettes. Over 100 high resolution and interlace resolution IFF brushes for use with fill tools and tile functions in any IFF compatible program. Thirty custom 16 color palettes included, designed with color ranges for instant drop shadows and highlights. All palettes are color font compatible.

Available at fine Amiga dealers everywhere.

To Order send \$29.95 plus \$1.50 handling to:



JEK GRAPHICS
12103 S. Brookhurst, Ste. E-125
Garden Grove, CA 92642-3065
Phone (714) 530-7603

Circle 303 on Reader Service card.

Authorized Amiga Service Center

Special offer on the Enhanced Chip set and new 2.0 Operating system software. At ad time pricing is still tentative so call for detailed information and pricing.

****Special offer — We will install the new ECS for free with the purchase of the chips and software (\$75.00 value). All you have to do is pay shipping.

Amiga 500 repair — \$124.95 + shipping * Amiga 2000 repair — \$189.95 + shipping * We also do all warranty repairs on Amiga systems bought from Authorized Dealers. Our turn around time is 1 to 3 days on ECS installation and repairs. Other Specials:

| | | | |
|--------------------------|----------|--------------------------------------|-----------|
| AmigaVision..... | \$ 99.00 | SuperGen 2000S genlock .. | \$1769.00 |
| A2000 Power Supply | 143.00 | Supra External Drive | 119.00 |
| 8520 Chip | 16.50 | Supra 501 RAM Exp. | 85.00 |
| Fatter Agnus Chip | 90.00 | Heavy Duty A500 Pow Sup. | 119.00 |
| Janus Library 2.0 | 27.00 | All Supra 5000XP HD in stock...Call | |
| A500 Keyboard | 112.00 | All RAM Chips in stock | Call |
| A2000 Keyboard | 118.00 | All Baseboard config in stock...Call | |
| 1.3 Kickstart ROM | 29.00 | All Quantum Drives in stock | Call |

Many other products in stock including over 600 software titles. If you are in the area please stop by to see the complete line of Amiga computers.

Software Hut, Inc.
2534 S. Broad St.
Philadelphia, PA 19145

To order call
(800) 848-0079
In PA or for information
call (215) 462-2268

* Please call for complete details on these repairs and to get an authorization number.

Circle 261 on Reader Service card.

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, a 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 Paquette at 1-800-441-4403 or 603-924-0100. We accept checks, money orders, MasterCard or VISA.

MEMORY FOR LESS

D RAM BLOWOUT!!

| | | | |
|--------------------------------|--------------|---------------------------|-----------|
| 256 x 1 150n.s..... | \$ 1.50 ea. | 68000 16 Mhz | \$ 35.00 |
| 256 x 1 120n.s..... | 1.75 ea. | 68010 8/10 Mhz | 35.00 |
| 1 meg x 1 80n.s..... | 6.50 ea. | 68020 16 Mhz | 75.00 |
| 256 x 4 100n.s..... | 6.25 ea. | 20 Mhz | 109.00 |
| 256 x 4 80n.s..... | 6.50 ea. | 33 Mhz | 199.00 |
| 256 x 4 80n.s. zips .. | 8.00 ea. | 68030 25 Mhz | 289.00 |
| 256 x 4 100n.s. zips .. | 7.50 ea. | 33 Mhz | 345.00 |
| 64 x 4 100n.s..... | 3.00 ea. | Math Co's | |
| Paula / Denise | 56.50 ea. | 68881 12 Mhz | 69.00 |
| 1 meg x 8 Simm 80ns55.00 ea. | | 16 Mhz | 75.00 |
| ZIP Sockets Available | | 20 Mhz | 69.00 |
| FATTER AGNUS | 95.00 | 68882 25 Mhz | 225.00 |
| 1.3 Kickstart ROM | 29.95 | 33 Mhz | 275.00 |
| For Amiga 3000 | | All Crystals | 10.00 ea. |
| 1 x 4 Static Zips..... | 49.95 | APO/FPO, AK & HI, Foreign | |
| 256 x 4 80n.s | | Call for shipping charges | |
| Static Zips | 8.50 | | |

| | | | | | |
|----------------|-------|---------|-------|-----------|-------|
| SPIRIT BOARDS | 0K | 1/2 meg | 1 meg | 1 1/2 meg | 2 meg |
| IN 1000 | \$199 | \$215 | \$230 | \$231 | — |
| SIN 500 | \$199 | \$235 | \$270 | \$309 | \$319 |
| X-RAM 500/1000 | \$219 | — | — | — | \$339 |

MEMORY WORLD 215-741-6225
2476 CROYDEN COURT FAX 215-741-6229
BENSALEM, PA 19020 Add \$3.00 S&H Add \$4.00 COD
ATTN: AMIGA DEPT. VISA / MC / CHECK / COD

Circle 287 on Reader Service card.

COLOR RIBBONS & PAPER

Colors: Black, Red, Blue, Green, Brown, Purple, Yellow

| Ribbons: | Price Each | Black | Color | T-Shirt Ribbons |
|-------------------------|------------|--------|--------|-----------------|
| Brother M1109 | \$4.95 | \$5.95 | \$7.00 | |
| Citizen 200/GSX 140 | 4.50 | 5.50 | 7.50 | |
| Citizen GSX 140 4 color | — | — | — | |
| Okidata 182/192 | 5.50 | 7.50 | — | |
| Panasonic 1190/1124 | 5.75 | 7.75 | — | |
| Seikosha SP800/1600 | 5.00 | 6.00 | 7.50 | |
| Star NX1000 | 3.75 | 4.75 | 6.75 | |
| Star NX1000 4-color | — | 6.75 | 10.00 | |

T-Shirt (Heat Transfer Ribbons)

Colors: Black, Red, Blue, Green, Brown, Purple, Yellow

| | | |
|--------------------------|-------------------|-------------|
| Color Paper | 200 shts assorted | |
| Bright Pack: | 91/2x11 | \$10.90/pk |
| Pastel Pack: | 91/2x11 | \$8.90/pk |
| Color Certificate Paper: | 100 sheets | \$9.95/pk |
| Color Banner Paper: | 45 ft/roll | \$8.95/roll |

Min. orders: \$25.00. Minimum S&H: \$4.00. Call for other ribbons and supplies. Price & spec. are subject to change w/out notice.

RAMCO COMPUTER SUPPLIES

PO Box 475, Manteno, IL 60950 U.S.A.
USA 800-522-6922 or 815-468-8081
(Canada) 800-621-5444

Circle 267 on Reader Service card.

RAM UPGRADES



CI-RAM
for A500 & A2000

CI-RAM fits under the 68000 CPU
CI-RAM uses 0 wait states, hidden refresh
CI-RAM uses no ports or expansion slots
CI-RAM comes with 2, 4, 6, or 8
Megabytes of Fast RAM

CI-RAM is upgradable to 4, 6, or 8Megs
CI-RAM utilizes a VLSI RAM controller
CI-RAM with 2Meg is only 199.95 (Suggested retail)

For more information and latest prices please call:

COMPUTROL INDUSTRIES
35-28 33rd STREET
ASTORIA, NY 11006
(800) 477-2131
(718) 626-2400
Fax: (718) 626-3293

Dealer inquiries invited

ATTN: DIGITIZERS!

THIS INFO-PACKED VIDEO WILL HELP YOU ON THE WAY TO

ACHEIVE PROFESSIONAL RESULTS USING THE KEY TECHNIQUES NOT EVEN COVERED IN THE MANUAL! LEARN WAYS TO CASH IN ON YOUR INVESTMENT!

WANNA WORK IN VIDEO??

THIS INFO-PACKED VIDEO MADE BY A HOLLYWOOD PRODUCTION COMPANY, SHOWS THE INS AND OUTS OF THE VIDEO BUSINESS USING THE AMIGA COMPUTER! COVERS ABSOLUTELY EVERY FACET OF PRODUCTION, FROM SHOOTING TO EDITING TO TITLING.

\$19.95 EACH OR \$34.95 FOR BOTH
ADD 2.50 PER TAPE S&H

CALL US AT: 1-800-800-7404
FAX US AT: 213-874-9460

OR SEND ORDERS TO: MICHAELANGELO PRODUCTIONS

1755 EL CERRITO PL. #403

LOS ANGELES, CA 90028

VISA

MC

Circle 229 on Reader Service card.

FREE - 6 DISKS - FREE FULL OF GREAT SOFTWARE

TRY US! 6/3.5" disks full of our bestselling software for
AMIGA® COMPUTERS.

Games, Business, Graphics,
Education, Finance, and more.
Pay only \$5.00 shipping/handling.

SATISFACTION GUARANTEED

ORDER TODAY - CALL
619 942-9998

SMC SOFTWARE PUBLISHERS
since 1985

Circle 340 on Reader Service card.

EXPAND! EXPAND! EXPAND!

| MEMORY | UNIT | 2MB | 4MB | 8MB |
|-------------------|------|-----|-----|-----|
| 1 x 8-80 SIMM | \$55 | 110 | 210 | 400 |
| 256 x 4-80 | 7 | 112 | 208 | 384 |
| 1M x 1-80 | 7 | 112 | 208 | 384 |
| 256 X 1-80 | 2 | 128 | 256 | 486 |
| 256 x 4-80 SC ZIP | 10 | 160 | 320 | 608 |
| 1M x 4-80 SC ZIP | 50 | 200 | 380 | 720 |
| ICD AdRAM 540 | 109 | 199 | 299 | — |
| ICD AdRAM 2080 | 119 | 219 | 309 | 489 |
| RAMWORKS 2000 | 109 | 209 | 299 | 479 |
| IVS META 4 | — | 259 | 349 | — |
| ICD AdSCSI 2080 | 199 | 299 | 389 | 569 |
| GVP SERIES 2 HC | — | 349 | 459 | 659 |

| | | | |
|----------------------------|-----|----------------------|-----|
| AE HD 3.5" DRIVE | 189 | ICD AdSPEED | 259 |
| DL EXPRESS/MNP/FAX | 199 | ICD AdIDE | 119 |
| DL 2000/MNP/FAX | 159 | FLICK FREE V | 369 |
| TRUMP 500 PRO/40M/HD | 549 | AMIGA VISION | 89 |
| SUPRA500XP/40M/512K | 659 | SEAGATE HD/80M | 399 |

\$4.00 S/H Visa / MC / Money Order

ORDERS
800-735-2633

INFORMATION
408-626-1530

VISIONSOFT PO Box 22517 • Carmel, CA 93922

Circle 354 on Reader Service card.

EAR TO THE WALL

Lapsing laptop. Many months ago, we reported that the German-based company, Gigatron, was developing an Amiga laptop. The latest information reveals that the combination of technical problems and legal hassles from Commodore in Germany has apparently closed the lid on the project.

Legal lollygagging. We are hearing rumors of legal wrangling over Atari-ST emulation for the Amiga. As expected, Atari is reportedly trying to block the project.

Golden opportunities. Productivity software developer Gold Disk has announced a contest to promote its latest offering, HyperBook, a graphic presentation program. A presentation disk created with HyperBook is being made available free with Gold Disk products, through both

dealers and mail order. At the end of the presentation, a screen appears that indicates whether that disk is a winner and what the prize is. Prizes include Sony Discmans, posters, tee-shirts and more.

Speaking of Gold Disk, we misstated the price of ProDraw 2.0 in our December '90 review. The product's correct retail price is now \$199.95.

How's your résumé? In the December issue of *AmigaWorld*, we reported the exodus of several key Commodore marketing executives and product managers. As of press time, there is still no word on possible replacements or whether Commodore plans to reshuffle the deck.

Fame? What's your name. . .? We keep hearing of more celebrity Amiga users. Apparently country stars Alabama and rock-legend Robert Plant both use Ami-

gas for onstage MIDI and visual work.

Where art thou, Unix? Commodore, which has been demonstrating Unix for more than a year, has overshot its promised fall announcement. AT&T's sluggishness in finalizing Unix 5.4 code and Commodore's own marketing and support stumbling blocks are blamed for the setback. The firm is, however, shipping pre-release systems to educational customers, and reportedly is building a beefier Unix support group within CATS.

Editor's note: Last month, we inadvertently credited the Soap Box illustration to the wrong artist. The credit should have gone to Michael Klein.

SOAP BOX

EDITOR'S NOTE: Each month in this new department, we will present an opinion piece—an essay, really—that we hope will provide food for thought for members of the Amiga community. Essays will come from a variety of different members of that community: AW editors and readers, Amiga users and developers, or even a spokesperson from Commodore on occasion. We welcome feedback from all quarters; perhaps some of the responses may become the basis for future "Soap Box" essays. If you would like to reply to any opinions expressed here, please write to Jan Jackson, "Soap Box," *AmigaWorld*, Elm St., Peterborough, NH 03458.

Homing in on the Future

A portrait: Everyone was busy at the Smiths' house when Bob got home from work. While Johnny waged interactive-video war on his Amiga 9000, Susie stared rapturously into her latest boyfriend's eyes on her networked A9500's visual phone. Passing on to the kitchen, Bob clearly heard Mary and a strange man speaking in tongues—French perhaps?—something about preparing sauce béarnaise. Realizing it was only Chef Pierre's Interactive Haute Cuisine video disk playing on Mary's countertop A5000, Bob punched "p" to pause Pierre in mid-whisk, pecked his wife's cheek and headed for the living room and his wall-mounted A10000.

Shutting down the French Provincial Mansion image left over from last night's dinner party, Bob booted the Hawaiian lagoon optical disk. Instantly, the living room was transformed into a lush, tropical paradise with a waterfall cascading into a clear, blue pool. "Real soothing," he thought, kicking off his shoes. "Now where's that video editing program? I'd like to polish up that tape of Johnny's last Little League game before Mary's parents come over this weekend."

A charming domestic picture of the future, but the Amiga's role in this scenario is in serious jeopardy. The home has long been the source of most Commodore US sales, mainly because IBM never considered it important. Multimedia, however has changed that kind of thinking. Now, IBM is moving into the home multimedia battle with all guns blazing. And if Commodore does nothing, Amiga sales may cease altogether. That means no more new software or hardware.

Although Big Blue is an awesome foe, Commodore can take

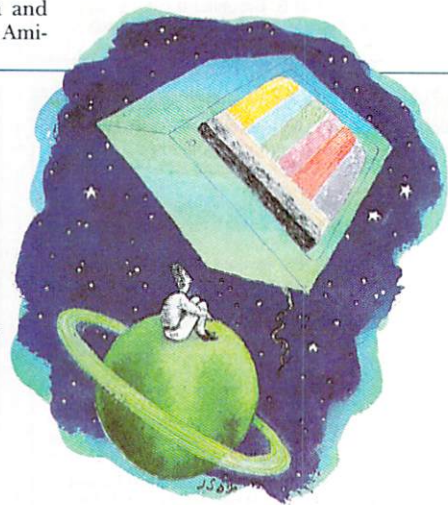
a lesson from Apple about carving out some special territory for the Amiga. When Apple launched the Mac, it realized the futility of trying to compete with IBM on all fronts. So the company focused on one key area, desktop publishing, and devoted more resources to it than IBM was willing to do. Apple thus established a foothold and built it up from there. That's exactly what Commodore must do with video.

America is ready for a home-video computer—just look at the success of home-video shows—and Commodore should reap the benefits. Remember, the Amiga has a head start. We already have high-end video-effects devices and highly specialized animation programs and editors. But that's not enough. Commodore must focus all its energies now, before the company loses its edge.

We can help Commodore. If you would like a future version of your favorite software to run on the A10000, advance to the battlefield now and fire a shot. Ask local video dealers, "Do you carry the Amiga computer from Commodore?" If they do, ask for a demonstration. If you discover that you know more than they do, teach them. If they don't carry it, simply say, "Well, I heard it was a video computer!"

The future of home video is almost here. If you're like me, you know the Amiga deserves a place right in the middle of it. Help make it happen.

—Brian Sarrazin
Free Spirit Software



AMIGA WORLD EXPO

*March 15-17, 1991
New York Hilton
New York City*

REGISTER TODAY!

*Register by Mail, or Bring This Coupon to the show or Call 800-32-AMIGA Nationwide (or 914-741-6500)
For Your Ticket to The Amiga Event!*

Yes, I want to come to AmigaWorld Expo!

☐ Friday ☐ Saturday ☐ Sunday

**Registration is
\$5 Additional
At The Door**

One day - \$15 _____

Two days - \$20 _____

Three days - \$25 _____

Novice Class(es) - List Class and Time - \$30 Each

Master Class(es) - List Class and Time - \$60 Each

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:

AmigaWorld Expo

465 Columbus Ave., Ste. 285

Valhalla, NY 10595

800-32-AMIGA

914-741-6500



CHARTER SUBSCRIPTION OFFER

SUBSCRIBE & SAVE

THE AMIGA WORLD
TECH JOURNAL

AVAILABLE
ONLY FROM
AMIGA
WORLD



YES! enter my one-year (6 bi-monthly issues, plus 6 invaluable disks) Charter 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.

Canada and Mexico \$74.95. Foreign Surface \$84.95, Foreign Airmail \$99.95. Payment required in U.S. funds drawn on U.S. bank. Available March 15.

Name _____

Address _____

City _____ State _____ Zip _____

☐ Check/Money order enclosed

Charge my: ☐ Mastercard ☐ AMEX ☐ Visa ☐ Discover

Account# _____ Exp. _____

Signature _____

Or call **800-343-0728** ☎ **603-924-0100** for immediate service.

TJ2915

NEW!

6 BI-MONTHLY ISSUES

PLUS

6 INVALUABLE DISKS



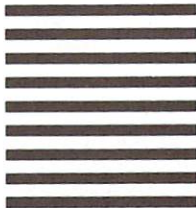
NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT #73 PETERBOROUGH, NH

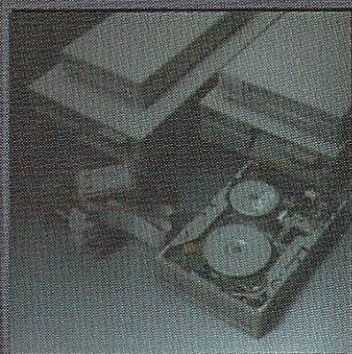
POSTAGE WILL BE PAID BY ADDRESSEE

The AmigaWorld Tech Journal
P.O. Box 802
Peterborough, NH 03458-9971



GOLEM

Europe's Largest Amiga Developer



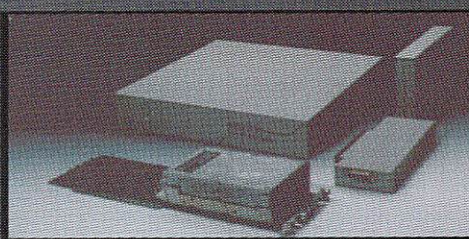
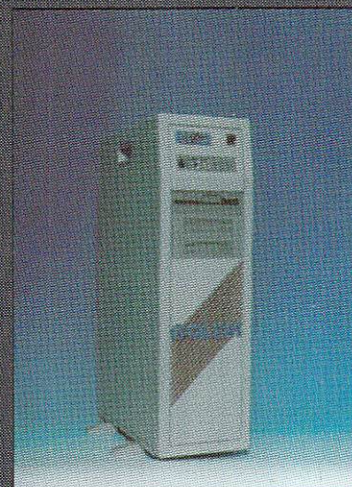
Golem Drives

High quality Amiga floppy disk drives with a pass through buss, On/Off switch, dust proof casing, built in LED track display.

Track Display for the Amiga 2000 shows actual position of stepper and heads of both internal disk drives. There's no drop in disk speed or software required.

Golem Tower

Put your A2000 in the Golem Tower and clean up your desk! Fits all your external units, such as hard drives (up to 1 gigabyte), 2 3.5" floppy drives, 2 5.25" floppy drives, a tape streamer and much more.



Golem SCSI II Controller

- State of the Art •
- High performance SCSI controller with 16 Bit SCSI II bus system, DMA Free data transfer, up to 1.42 MB/sec transfer rate. Available as either an internal card for the A2000 series or in a external case for the A500 or A1000.

Golem, Inc. • 421 Hudson, M12 • New York, NY • 10014
Tel: (212) 727-0548 • Fax: (212) 627-3965

Just The Facts:

What Makes Digi-Paint 3 the Ultimate Paint Program?



"Finding the best paint program for your Amiga can be confusing, but once you have the facts it's simple."

Laura Longfellow
Sales Manager
NewTek Inc.

"Why is Digi-Paint 3 better than DeluxePaint III™?"

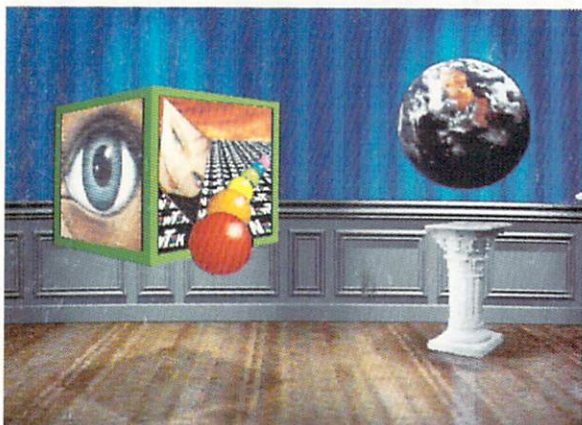
Digi-Paint 3 works in the Amiga's powerful Hold And Modify (HAM) mode, which allows you to paint using all 4096 colors simultaneously. By comparison, Deluxe Paint III (by Electronic Arts) operates in less sophisticated modes, restricting you to a maximum of only 64 colors. Advanced features available in Digi-Paint 3—including Colorizing, Variable Transparency, Shading, Lighten, Darken and Range Painting—are simply not possible in Deluxe Paint III due to its 64 color limitation. AMIGAWORLD warns, "Competitors may want to head back to the drawing board, because Digi-Paint 3 is hard to beat!"



"What makes Digi-Paint 3 better than other HAM paint programs?"

Digi-Paint 3 is the only Amiga paint program written in 100% assembly language. Although challenging to program (taking up to 10 times longer than other computer languages), it's the only way to achieve the incredible speed found in Digi-Paint 3. AMIGAWORLD calls it "the fastest HAM paint program yet" and AMIGA SENTRY estimates it's, "6-10 times faster" than the nearest contender.

Other advanced features found *only* in Digi-Paint 3 include: anti-aliased texture mapping, anti-aliased fonts, ARexx support, 1024 x 1024 super bitmaps with auto-scrolling and dithering to 30 bits per pixel (over a billion colors internally, giving you tens of thousands of apparent colors). COMPUTER SHOPPER magazine reports "Digi-Paint 3 is without a doubt the most advanced HAM paint program to date!"



"But is Digi-Paint 3 easy to use?"

I've learned that no matter how powerful a program is, if it's not friendly it's not worth my time. We designed Digi-Paint 3 with all users in mind—from the beginner just starting out with computers, to the "power user" who demands the most advanced features possible. The spiral-bound manual contains a step-by-step Guided Tour, 11 hands-on tutorials, a color coded reference card, and almost one hundred example photos.

Digi-Paint 3's intuitive user interface was created by Digi-View designer (and NewTek Founder) Tim Jenison and renowned Amiga artist Jim Sachs. It features innovative "Dashboard" controls which AMIGAWORLD regards as "a joy to use" and "very easy to learn and understand". INFO MAGAZINE says the new interface "looks great and works logically".



"What is the Transfer 24 program included with Digi-Paint 3?"

Transfer 24 is a separate program disk included in the Digi-Paint 3 package, allowing you to alter any picture's brightness, color saturation, contrast, hue and sharpness, almost as easily as adjusting the controls on your television set. Transfer 24 also lets you modify the size, palette, and resolution of any picture. These powerful features, known as "Image Processing", give you incredible control over your final artwork. You can also save your image in any of the Amiga's 24 resolution modes (up to 768x480) making it compatible with all Amiga graphics software. AX MAGAZINE notes that "Transfer 24 gives you even more options as to the final appearance of your work". AMIGAWORLD declares, "Transfer 24 is great for making overall changes."

"What technical support does NewTek offer?"

Digi-Paint 3 has one other thing you won't find in any ordinary paint program: a toll-free help line. If you should have any questions while using Digi-Paint 3, you're not on your own. Call NewTek's technical support team at 1-800-736-7617 Monday through Friday, 8 am - 7 pm Central Time.

Digi-Paint 3 is available now at your local Amiga dealer or call
1-800-843-8934 or 1-913-354-1146.

NEWTek
INCORPORATED

Digi-Paint 3, Digi-View, and Transfer 24 are trademarks of NewTek Inc. DeluxePaint III is a trademark of Electronic Arts. All brand and product names are trademarks of their respective holders.

Circle 102 on Reader Service card.