

**HARD  
DRIVES**  
Buyer's Guide—p. 43

# AMIGA

## WORLD

August 1992

U.S.A. \$3.95

Canada \$4.95

UK £2.80

Get Ready For The...

# Ultimate Amiga!

**12** Power-User  
Upgrades

**PLUS!**

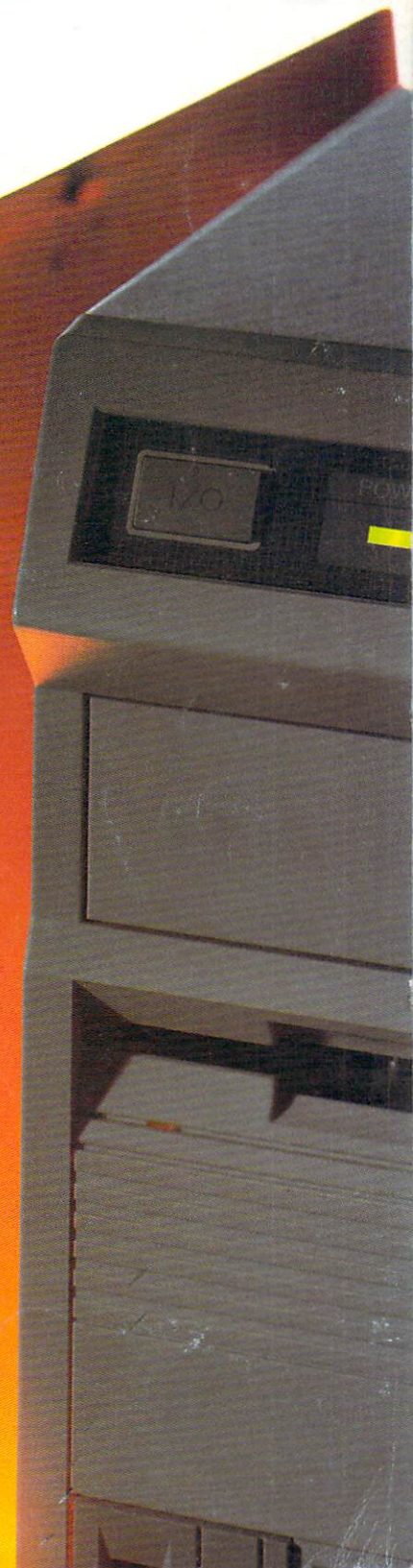
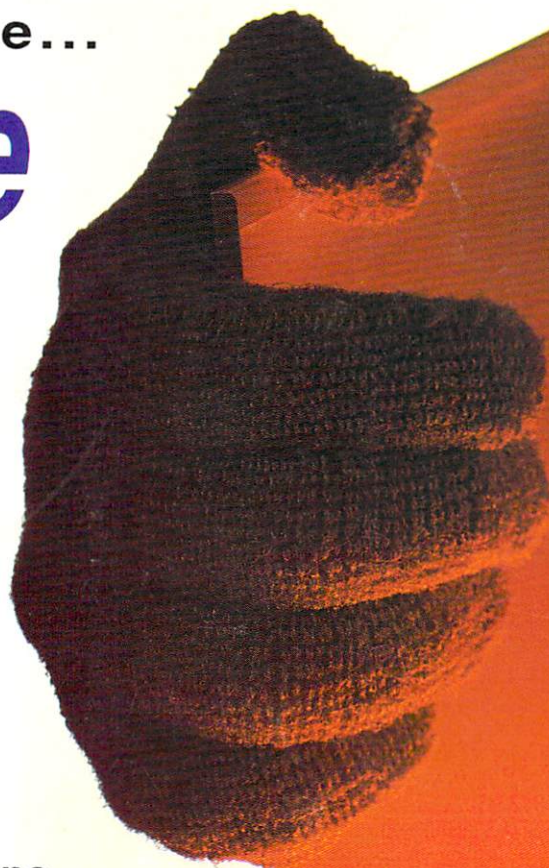
- Maple's Math Magic
- Video Editing Tips
- Electronic Batik
- 35+ Hard Drive Solutions
- "How-To" Guide To Amiga CD-ROM

**REVIEWS:** • Pro Page 3.0 • PageStream 2.2  
w/HotLinks • G-Force Combo... And More!

**Special! All-New Games Section—p. 84**

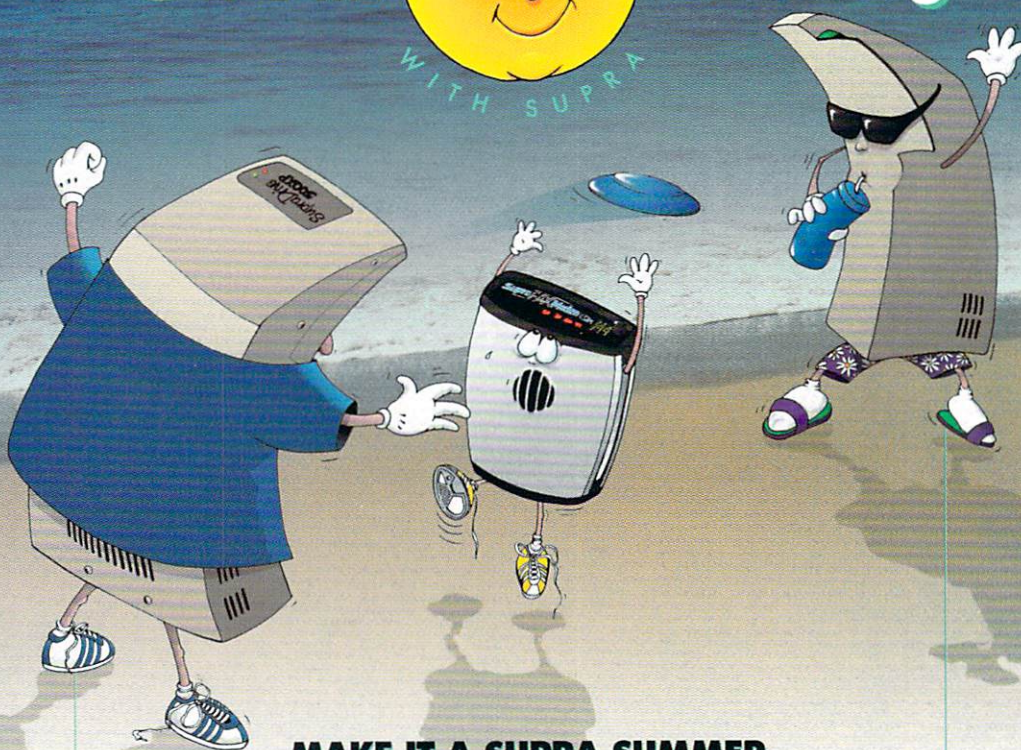


An IDG  
Communications  
Publication





# FUN IN THE SUN!



## MAKE IT A SUPRA SUMMER AND GET A FREE "FUN IN THE SUN PAK!"

Introduce your Amiga® to one of these great Supra products, and get a Supra "FUN IN THE SUN PAK" absolutely FREE! You'll get a Supra T-shirt, frisbee, squeeze bottle, and visor:

everything you need to enjoy the outdoors ... when you're not indoors with your Amiga!

The Fun In The Sun Pak:  
It's available only from

Supra. It's only for a limited time. And it's easy! Just purchase any of the Supra products shown in this ad before July 31st. Then write "FUN IN THE SUN WITH SUPRA" on your original, dated sales receipt, and send it to us with your completed warranty card. (Include your UPS address, if it's different.) We'll send your Fun In The Sun Pak right away. But hurry — this Supra Summer Special won't last forever!



### SupraFAXModem Plus

9600 S/R FAX • 2400 DATA  
• VOICE\* • CALLER ID\* •  
GPFAX™ & A-TALK-III™  
SOFTWARE • \$219.95 ▽

### SupraFAXModem V.32bis

14,400 S/R FAX & DATA •  
VOICE\* • CALLER ID\* •  
GPFAX™ & A-TALK-III™  
SOFTWARE • \$479.95 ▽

### SupraRam 500RX™

1, 2, 4, OR 8MB RAM •  
AMIGA BUS PASS-THROUGH •  
STARTING AT \$169.95 ▽

### SupraDrive 500XP™

FAST MICRO-POWER DRIVES •  
1-8MB RAM • SCSI PORT •  
AMIGA BUS PASS-THRU •  
STARTING AT \$599.95 (52MB) ▽

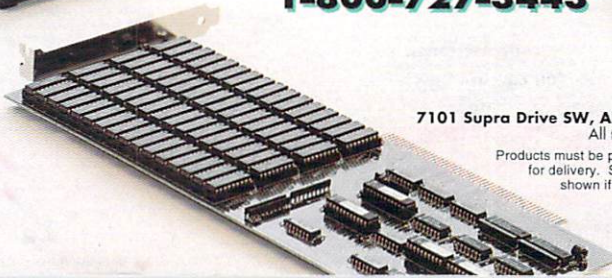


**Supra Corporation®**

**1-800-727-3443**



**SupraRam 2000™**  
2, 4, 6, OR 8MB RAM • ZERO  
WAIT STATES AND HIDDEN  
REFRESH • STARTING AT \$149.95  
(ØK) ▽

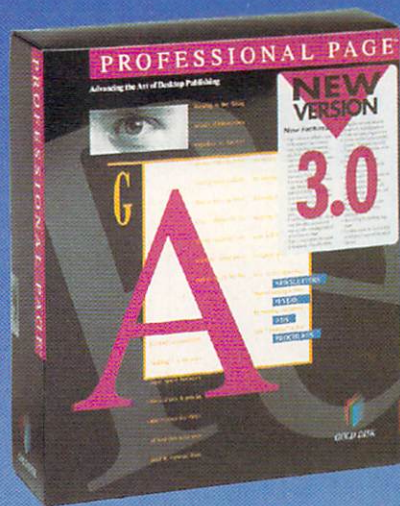
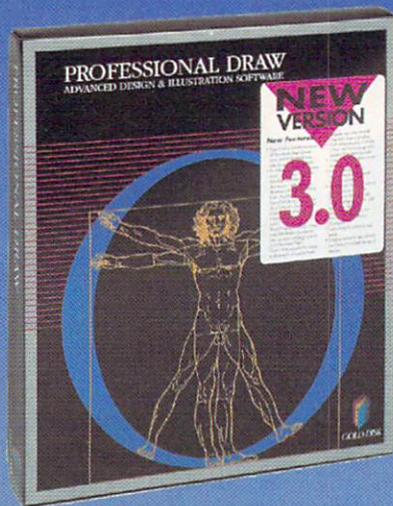


7101 Supra Drive SW, Albany, OR 97321 USA • Fax: 503-967-2401 • 503-967-2410  
All trademarks belong to their respective companies

Products must be purchased new between June 1 and July 31, 1992 to qualify. Allow 3-4 weeks for delivery. Supra reserves the right to substitute FUN IN THE SUN items other than those shown if necessary. Offer good while supplies last.



# Unleash the Power!



## The Publishing Team With The Genie Edge

**Team work. Automation. Integration.** Great concepts that haven't applied to desktop publishing, until now. Introducing Professional Page 3.0 and Professional Draw 3.0, two programs that through Genies\* and our open linking architecture are re-defining the way you work. Genies automate everything from actually laying out newsletters and ads for you, to time saving functions like step and repeat and copy object attributes. A full set of Genies come with each program, to help you work better and faster. Plus you can make your own Genies to automate the things you do most.

Our intelligent hot-linking system lets you instantly take a drawing to Professional Draw 3.0 for editing, or take text to our Article Editor for speedy changes and spell checking. Link to Professional Calc\* for instant tables or to Art Department Professional\* for image manipulation. These links come free, and more are on the way. But you don't have to wait, because with our open linking architecture you can create your own links to any of the hundreds of programs that support ARexx. With Genies and linking, the possibilities are endless.

### Professional Draw 3.0® -

#### A New Standard In Illustration

We've added a number of hot new features that make it easier than ever to create high-res full color illustration, exciting type effects, and more. You get automatic linear and radial gradient fills. Type directly on the page and use AGFA Compugraphic or Type 1 fonts. Variable X-Y bolding & scaling. The PANTONE®\*\* Color Matching System is built-in. An improved Auto-Trace converts bitmaps. Auto-Tiling of large pages. Un-Do. A Free Clip Art collection, and more!

#### Magic Functions

Professional Draw 3.0 also features over 25 time saving Function Genies\* like Step and Repeat, Style Tags for Objects, Copy Object Attributes, Make Avery Labels, Hot-link to Art Department Pro\*, Rounded Rectangles, Polygons, and more.

### Professional Page 3.0® -

#### A New Standard In Publishing

With Professional Page 3.0 you get all the features you would expect from the leading publishing system for the Amiga. Adobe Type 1 font support, Irregular Text Wrap, Built-in PANTONE®\*\* Color, a complete range of typefaces, Auto-Tiling, superior Color Separations and more. Plus you get an Article Editor and spell checker that others make you pay for.

#### Automatic Layout

Page Genies\* revolutionize desktop publishing by actually laying out pages for you. Answer a few questions and in just minutes you have a professional layout. Plus our new Function Genies perform over 60 functions like Mail Merge, Drop Caps, Drop Shadows, Step and Repeat, and more that will save you time and simplify your work. Plus you can write your own.

### Join The Professional Publishing Team - Trade Up To The Best!

Combine the power of Professional Draw 3.0 and Professional Page 3.0 and you'll own the ultimate publishing system for your Amiga. And for a limited time, you can join the team for less. Just \$99 lets you trade up to Professional Page 3.0 or Professional Draw 3.0 from any other DTP or illustration program\*. You can even get them both for \$198! Call today for this special offer or for the name of an Authorized Software Center near you:



**Get Them Both For \$198! Call 1-800-GOLD-DISK or 1-416-602-4000**

Professional Page, Professional Draw, Professional Calc, and Gold Disk are trademarks of Gold Disk Inc. \*Genies and marked links require ARexx. ARexx comes free with Workbench 2 or can be purchased at a reduced price with coupon inside Professional Page 3.0 box. \*\*PANTONE is Pantone, Inc.'s check-standard trademark for color. \*Trade Up \$99 upgrade offer is limited and subject to cancellation at any time. Please add \$7 shipping and handling per item. Circle 154 on Reader Service card.



# THINK ALL '040 ACCELERATORS ARE THE SAME?

## THINK AGAIN!

*As a high power Amiga® 3000/3000T user you need a 68040 accelerator board for one reason ... and one reason only ... SPEED!*

And once you know what makes one 68040 accelerator better than another, the only board you'll want is the G-FORCE 040 from GVP.

### WATCH OUT FOR SLOW DRAM BOTTLENECKS

Yes, all 68040 CPU's are created equal *but* this doesn't mean that all accelerator boards allow *your* A3000 to make the most of the 68040 CPU's incredible performance.

The A3000 was designed to work with low-cost, 80ns DRAM (memory) technology. As a result, anytime the '040 CPU accesses the A3000 motherboard, memory lots of CPU *wait-states* are introduced and all the reasons you bought your accelerator literally come to a screeching halt!

Not true for the G-FORCE 040...

### SOLUTION: THE G-FORCE 040's FAST, 40ns, ON BOARD DRAM

To eliminate this memory access bottleneck, we designed a special 1MB, 32-bit wide, non-multiplexed, SIMM module using 40ns DRAMs (yes, *forty nano-seconds*!). This revolutionary memory module allows the G-FORCE 040 to be populated with up to 8MB of state-of-the-art, high performance, on-board DRAM. Think of this as a giant 8MB cache which lets the '040 CPU race along at the top performance speeds you paid for.

### SHOP SMART: COMPARE THESE G-FORCE 040 SPECS TO ANY OTHER '040 ACCELERATOR

► 68040 CPU running at 28Mhz providing 22 MIPS and 3.75 MFLOPS!

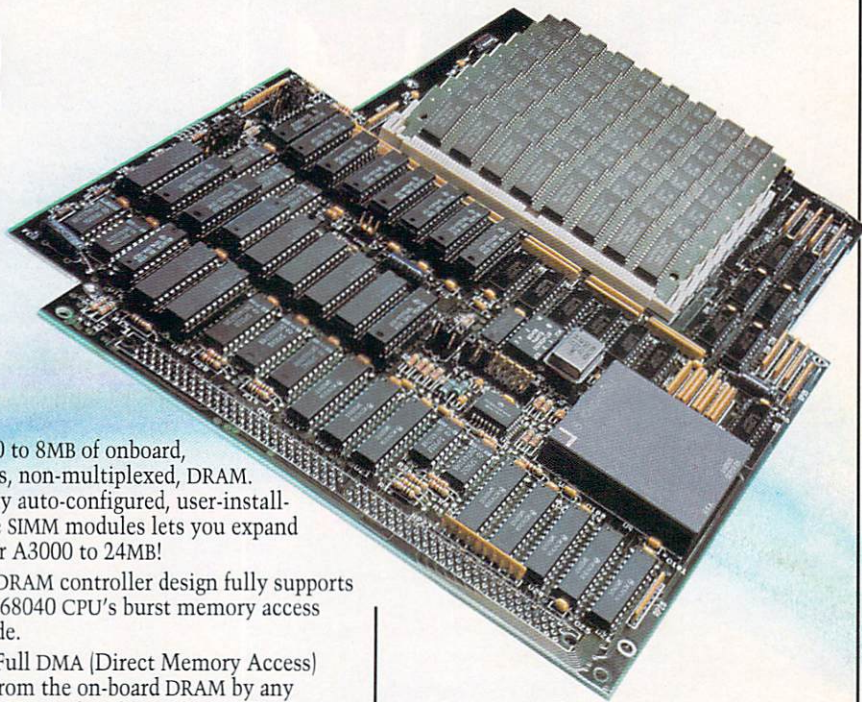
NOTE: The 68040 incorporates a CPU, MMU, FPU and separate 4KB data and instruction caches on a single chip.

- 0 to 8MB of onboard, 40ns, non-multiplexed, DRAM. Fully auto-configured, user-installable SIMM modules lets you expand your A3000 to 24MB!
- DRAM controller design fully supports the 68040 CPU's burst memory access mode.
- Full DMA (Direct Memory Access) to/from the on-board DRAM by any A3000 peripheral (e.g. the A3000's built-in hard disk controller).
- Asynchronous design allows the 68040 to run at clock speeds independent of the A3000 motherboard speed. Allows easy upgrade to 33Mhz 68040 (over 25.3 MIPS!) when available from Motorola.
- Hardware support for allowing V2.0 Kickstart ROM to be copied into and mirrored by the high performance on-board DRAM. Its like caching the entire operating system!
- Software switchable 68030 "fallback" mode for full backward compatibility with the A3000's native 68030 CPU.
- Incorporates GVP's proven quality, experience and leadership in Amiga accelerator products.

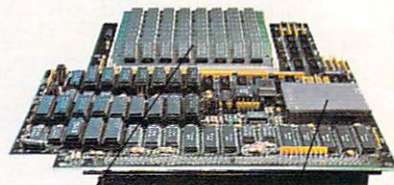
### TRY A RAM DISK PERFORMANCE TEST AND SEE FOR YOURSELF HOW THE G-FORCE 040 OUTPERFORMS THE COMPETITION

Ask your dealer to run any "RAM disk" performance test and see the G-FORCE 040's amazing powers in action.

So now that you know the facts, order your G-FORCE 040 today. After all, the only reason why you need an '040 accelerator is **SPEED!**



# G-FORCE 040™



Up to 8MB of high speed (40ns) DRAM

Motorola 68040 CPU running at 28 Mhz

A3000 "CPU slot" connector



SEE US AT  
**world of  
commodore  
AMIGA**  
PASADENA, CA • SEPT. 11-13, 1992

Circle 1 on Reader Service card.

# GVP

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

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

G-Force 040 is a trademark of Great Valley Products, Inc.  
Amiga is a registered trademark of Commodore-Amiga, Inc.  
© 1991 Great Valley Products Inc.



# CONTENTS

VOLUME 8, NUMBER 8, AUGUST 1992

## FEATURES

### THE ULTIMATE AMIGA

By Lou Wallace ..... 25

Ever wonder what a fully expanded Amiga might look like (not to mention what it could *do*)? *AW*'s Lou Wallace takes you through an "ultimate" upgrade as he assembles a power user's dream machine.

## ARTICLES

### MATH SPOKEN HERE

By Marvin Weinstein ..... 29

Scientists, engineers, computer professionals—take note: Software for serious computation and scientific applications is finally available for the Amiga. Meet Maple VI!

### THE CHARGE OF THE CD

BRIGADE By John Foust ..... 35

If you want to tap into the enormous data capacity of CD-ROM, here's a hands-on guide to setting up a CD-ROM system on your Amiga. What you need, how to do it, and the benefits you'll enjoy.

### "BIG 3" UPGRADES—PART III:

#### MASS STORAGE

#### HARD ACTS TO FOLLOW

By Sheldon Leemon ..... 43

In the final installment of his essential-upgrades series, our hardware guru outlines a slew of hard-drive and other mass-storage solutions to your data problems. More than 35 products—with recommendations and advice.

## COLUMNS

### CHIEF CONCERNS By Doug Barney ... 6

Barney dusts off his crystal ball to see what might be in store for the Amiga.

### ACCENT ON GRAPHICS

By Joel Hagen ..... 52

Joel adds image processing to some paint-program techniques to show you how to create beautifully rich and colorful Batik patterns—without getting your hands full of dye!

### VIDEO SUITE By Martin Ricketts .... 54

If you'd like to add digital nonlinear editing capability to your video-editing setup at a fraction of pro-quality system costs, try this ShowMaker tutorial.



"The Ultimate Amiga"—p. 25

## DEPARTMENTS

### OVERSCAN ..... 8

All the latest information on Amiga new products, news, and the public domain.

### HELP KEY ..... 16

Tech teasers? Hardware hangups? Software snafus? Put Lou in your loop!

### THE LAST WORD ..... 112

Feed us your feedback each month.

**ALL NEW!** This month *AW* introduces its brand-new Games section (p. 84) plus a "new look" to Reviews (p. 22).

## REVIEWS

### PROFESSIONAL PAGE 3.0

(Gold Disk) ..... 22

The new Pro Page looks ready for serious competition with Mac/PC heavyheads.

### PAGESTREAM 2.2 (Soft-Logik) ..... 24

Spiffy update to the "other" Amiga DTP system—plus "HotLinks Editions."

### G-FORCE COMBO (GVP) ..... 58

A2000 '030 board in 25/50-MHz versions.

### THE COMPLETE COLOR

SOLUTION (Rombo) ..... 60

Framegrabber/color splitter/image processor/HAM paint all in one digitizer.

### EDUCATION SOFTWARE

ROUNDUP ..... 70

Four new educational games.

TAKE-2 (Rombo) ..... 74

Animation pencil-test/presentation software.

MULTITRACE (AltoFirma) ..... 75

Debugging library for SAS/C compilers.

WORLD ATLAS 2.5 (Centaur) and

WORLD TOUR SERIES

(Designing Minds) ..... 75

Maps, facts, and geography games.

HOME FRONT 2.0 (Designing Minds) 78

Financial manager/home organizer.

## GAMES

CRIB NOTES By Peter Olafson. .... 84

One last go-around with Elvira before *AW*'s gamesmeister moves on to tackle other prey.

BLACK CRYPT (Electronic Arts) and

EYE OF THE BEHOLDER II

(Strategic Simulations) ..... 84

Thumbs up for both EA's latest dungeon

dandy and The Legend of Darkmoon.

PANZER BATTLES (Strategic Studies) . 86

WWII tank battles on the Russian front.

SIX FROM SIERRA ON-LINE ..... 86

Five sequels topped by King's Quest V, plus the all-new Castle of Dr. Brain.

COMPUTER THIRD REICH

(Avalon Hill) ..... 90

Famous strategy board game goes Amiga.

CASTLES (Interplay) ..... 93

Lively medieval fortress-building game.

SHORT TAKES ..... 94

Capsule reviews of recent Amiga games.

THE NEXT ROUND ..... 94

Announcements of new games about to hit the Amiga market.

### AW PRODUCT INFORMATION..106

To contact the developer of any product mentioned in this issue of *AmigaWorld*, consult our all-in-one "Manufacturers'/Distributors' Addresses" list.



**IF YOU THINK YOU'RE UP FOR  
A REAL CHALLENGE**

# **APPLY TO JOIN OUR GROWING TEAM**

*If you didn't already know, Great Valley Products is the world's largest supplier of peripherals for the Commodore Amiga®; and we're still growing, with many exciting new products in development! We offer a challenging and stimulating environment. Working at GVP is not just a job, it's an adventure! At this time, the following positions must be filled:*

## **★ TECHNICAL SUPPORT REPRESENTATIVE**

Join the best dedicated Technical Support team and assist customers and resellers with their questions about our products via telephone calls, faxes and letters. Must have strong written, verbal and interpersonal skills. Must understand detailed hardware and software concepts and operation. Technical knowledge of GVP products a big plus.

## **★ PRODUCT MANAGER**

Join our new Product Management group and be in charge of all aspects of new product introductions and ongoing development. Interact with all parts of the company including engineering, sales/marketing, technical support, purchasing, manufacturing as well as resellers, customers and beta testers. Must be highly organized and energetic. Must have technical background (software or hardware) as well as a customer focus. Must be fanatical about quality and detail-oriented. If you want a big challenge, this is the job for you.

## **★ AMIGA SYSTEMS SOFTWARE ENGINEER**

Develop system level and other software for our exciting products (mainly in C and assembler). You must have a B.S. or equivalent experience, and a thorough grounding in C and/or 680x0 assembler. Firmware, device driver and/or broad-based GUI experience a big plus. Must be able to work according to schedules, and interact with others as necessary (beta testers, product managers, hardware engineers, etc.)

## **★ USER DOCUMENTATION MANAGER**

Oversee all of our new product manual development. Must manage outside contract writers and desktop publishers. Must be fanatical about creating, tracking, and maintaining schedules for all projects. Must be highly organized and disciplined. Strong written skills required. Customer-oriented mentality desired. Desktop publishing skills a big plus. Amiga experience a plus.

**Send all inquiries to: Great Valley Products, Inc. • Attn: Human Resources • 600 Clark Ave. King of Prussia PA 19406  
Or fax them in to 215-337-9922.**



GREAT VALLEY PRODUCTS  
600 CLARK AVENUE  
KING OF PRUSSIA, PA 19406  
U.S.A.

PHONE 215•337•8770  
FAX 215•337•9922

## **AMIGAWORLD**

DALE STRANG, *Publisher*

DOUGLAS BARNEY, *Editor-in-Chief*

DANIEL SULLIVAN, *Executive Editor*

SWAIN PRATT, *Managing Editor*

BARBARA GEVERT, *Senior Editor*

LOUIS R. WALLACE, *Senior Editor, Technology*

LINDA BARRETT LAFLAMME, *Review Editor*

EDITORIAL OFFICES: 1-603-924-0100

GENE BRAWN, JOEL HAGEN, DAVID T. MCCLELLAN,

PETER OLAFSON, *Contributing Editors*

HOWARD G. HAPP, *Art Director*

LAURA JOHNSON, *Assistant Art Director*

ANN DILLON, *Designer*

DEBRA A. DAVIES, *Production Supervisor*

ALANA KORDA, *Manufacturing Manager*

MICHAEL MCGOLDRICK, *Advertising Director*

BARBARA HOY, *Sales Representative*

HEATHER GUINARD, *Sales Representative*

MEREDITH BICKFORD, *Advertising Coordinator*

ADVERTISING: 1-800-441-4403, 1-603-924-0100

GIORGIO SALUTI, *Associate Publisher, West Coast Sales*

533 Airport Blvd., Fourth Floor, Burlingame, CA 94010

1-415-375-7018; FAX: 1-415-375-7019

WENDIE HAINES MARRO, *Marketing Director*

LISA JAILLET, *Desktop Publishing Manager*

DEBORAH M. WALSH, *Circulation Manager*

## **TECHMEDIA PUBLISHING**

DALE STRANG, *President*

SUSAN M. HANSHAW, *Director of Operations*

LISA LAFLEUR, *Business & Operations Manager*

MARY MCCOLE, *President's Assistant; Customer Service Liaison*

KENNETH BLAKEMAN, *Associate Publisher, Ancillary Products*

LYNN LAGASSE, *Video Products Manager*

CHRIS CONROY, *Technical Director, Video Products*

TIM WALSH, *Ancillary Products Manager*

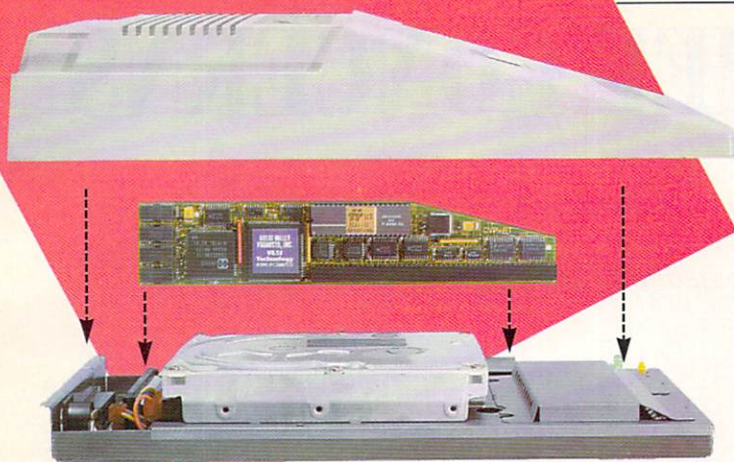
LINDA RUTH, *Single Copy Sales Director*

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

*AmigaWorld* (ISSN 0883-2390) is an independent journal not connected with Commodore Business Machines, Inc. *AmigaWorld* is published monthly by TechMedia Publishing, Inc., an IDG Company, 80 Elm St., Peterborough, NH 03458. U.S. subscription rate is \$29.97, one year; \$57.97, two years; \$84.97, three years. Canada \$41.97 (includes GST). Mexico \$38.97. Foreign Surface \$49.97. Foreign Airmail \$84.97. Prepayment in U.S. funds drawn on U.S. bank is required on all foreign subscriptions. All foreign rates are one-year only. Second-class postage paid at Peterborough, NH, and at additional mailing offices. Phone: 603-924-0100. Entire contents copyright 1992 by TechMedia Publishing, Inc. No part of this publication may be printed or otherwise reproduced without written permission from the publisher. **Postmaster:** Send address changes to *AmigaWorld*, Subscription Services, PO Box 58804, Boulder, CO 80322-8804. Nationally distributed by Kable News Co. *AmigaWorld* makes every effort to ensure the accuracy of articles, listings and circuits published in the magazine. *AmigaWorld* assumes no responsibility for damages due to errors or omissions.



MORE MAGIC FROM GVP



# NOW ADD 286 "PC/AT"™ COMPATIBILITY TO YOUR A500™ IN A "SNAP" WITHOUT VOIDING THE WARRANTY ON YOUR A500!

## GVP's SERIES II™ A500-HD8+ NOW FEATURES AN OPTIONAL, PLUG-IN, 16MHZ PC286 EMULATOR MODULE!

Not only have we added a PC286 emulator option to our best selling A500 hard drive subsystem but our Series II™ A500-HD8+ units are now equipped exclusively with Quantum™ hard drives offering the fastest access times and data transfer rates, unique disk caching and the highest reliability (MTBF) rating in the industry. Coupled with our world acclaimed DMA SCSI controller, everything from loading software to saving files is so much faster that you finally have the time to enjoy the fun and productivity that you bought your A500 for in the first place.

### THE MAGIC BEHIND GVP's SERIES II A500-HD8+ HARD DRIVE MUSCLE

Check out these unequalled features:

- ▶ Choice of factory-installed 50, 120 or 240MB Quantum SCSI hard drives. Provides storage space of 56, 130 or 260 floppy disks!
- ▶ Game Switch for disabling the hard drive allowing compatibility with those few badly behaved games which don't like hard drives!
- ▶ A2000™ Hard Drive Performance. The A500HD8+ uses the same Custom DMA VLSI Chip and FAASTROM technologies as our top-selling, high performance, Series II™ A2000 SCSI controllers.
- ▶ Up to 8MB of User-Installable Internal FAST RAM expansion (SIMMs).
- ▶ External SCSI port for connecting additional SCSI Peripherals such as Tape Drives, CD-ROM drives, etc.
- ▶ Unique Internal "Mini-Slot" Expansion Connector and Fan for Cool, Reliable Operation.

▶ Includes Dedicated Power Supply ensuring that your A500 power supply is not overloaded (a MUST for adherence to Commodore specs).

PLUS, now we offer something NO OTHER HARD DRIVE SUBSYSTEM can, an optional plug-in 16Mhz 286 "PC" Emulator!

### THE MAGIC OF THE GVP/PC286 EMULATOR OPENS MICROSOFT WINDOWS — AND MORE.

Our new GVP/PC286 emulator module is the first A500 peripheral specifically designed to be plugged into our unique internal "Mini-Slot". Unlike other 286 PC emulators, this one fits right inside your A500HD8+ housing! So installation is a snap and there's no need to open and dismantle your A500™ and run the risk of VOIDING YOUR Computer's WARRANTY.

In fact your warranty worries are over, because the A500-HD8+ as well as the optional GVP/PC286 emulator module are now warranted for 2 FULL YEARS!!

The GVP/PC286 "Mini-Slot" module features:

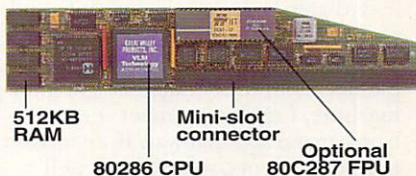
- Runs MS-DOS (V3.2 or up), Microsoft Windows™ and literally thousands of PC applications. NOTE: MS-DOS Operating system is NOT Included.
- 16Mhz 80286 CPU. Up to 15 times faster than IBM's original PC!
- Complete Hercules™, CGA, EGA/VGA (monochrome) and T3100 video emulations. MS-DOS applications can use the A500's™ built-in parallel and serial ports transparently.
- Use the A500's floppy drive(s) to read/write MS-DOS floppies.
- Let's your A500 run MS-DOS and

AmigaDOS Applications Concurrently!!

- 512KB of On-board Memory (RAM) for exclusive use by MS-DOS. Transparent access to the A500's memory for MS-DOS applications requiring more than 512KB of memory!
  - Socket for optional 80C287 (CMOS) Floating Point Unit.
- PLUS, your Series II A500-HD8+ matches your Amiga™ 500's good looks line-for-line and curve-for-curve.

So... Be Smart, before you buy anyone else's A500™ hard drive or RAM expansion system, ask the question: "Does It Have a Mini-Slot"? Why settle for anything less?

### GVP/PC286 MODULE



GVP

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

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

Amiga is a registered trademark of Commodore-Amiga, Inc.  
© 1991 Great Valley Products Inc.



SEE US AT  
**world of  
commodore  
AMIGA**  
PASADENA, CA • SEPT. 11-13, 1992





# CHIEF CONCERNS

*Commodore is taking aggressive new steps to pitch its image to the public.*

TODAY I GOT a handwritten letter from Joe Riviera. At least I think it said Riviera, but with bad handwriting you can't always tell. After buttering me up with praise for the magazine, Joe got down to business.

Like thousands of our readers, Joe wants to hear about the future of the Amiga so he can decide whether to dump more money into his machine. Without answers to these questions, Joe feels lost. He's in good company.

I agree that there is a certain silence that is nerve-racking. We hear Apple this, IBM that, and Amiga nothing. Well, I've been doing a little digging, and have come up with a few nuggets you might find encouraging. For a quiet company, Commodore's been plenty busy.

First off, Commodore has just hired a gent named David Pleasance to head up consumer sales. Pleasance was most recently general manager for the Swiss-based Commodore Electronics Limited, and he ran operations in 27 countries, including the exploding (in terms of Commodore sales) Eastern Bloc. He has also been credited with helping build the UK market, which is thriving more than any.

Here is his plan: Commodore will try to do here what it has done so well overseas, which is to generate excitement for the low end of the line. We will see bundles featuring hot unreleased games, aggressive pricing, and, we hope, good distribution.

Although I've heard many complaints about the Amiga being a game machine, I can't remember it ever being marketed that way. If we already have that stigma, we might as well benefit from it. Besides, I don't think that game sales are bad at all. Apple is getting into mass merchandisers, and

the most popular computer game platform today is MS-DOS!

Pleasance also pledges a new face for Commodore. He plans to revive relationships with user's groups and to have an open, more accessible approach with the press and developers.

There's plenty going on in the high end, as well. Commodore's Dave Archambault has spearheaded a new print ad campaign, one that should have been done years ago. If you read *InfoWorld*, *PC Week*, or any of the other high-powered PC trade books, you've probably seen it. The idea is to sell Amigas to corporations for desktop video and multimedia. Unlike past campaigns, I think this one has legs.

Ads, bundles, and good relations are fine, but what you really want are new and better Amigas. On this front, I can assure you, engineering is honking. We can't give out details, but new systems will be coming out that push the Amiga forward in every way.

Best of all, Amiga developers remain committed to bringing out the most innovative and cost-effective products in any market. And finally, there are now over three million Amigas worldwide.

You know, it's funny. What makes the Amiga so great is simple. A small, tight, multitasking operating system, custom chips to make graphics, video, and animation fly, and video compatibility. That's it. As easy as it sounds, no one in either the Mac or PC market has been able to duplicate any of these feats.

And I've heard of nothing in development that will change that. It's almost as if there is a conspiracy between Intel, the clone makers, and Microsoft to maintain the demand for faster CPUs. You see, if the PC had custom chips like the Amiga, you wouldn't need those expensive Intel 486s, 586s, and what not.

If you're looking for the most awesome spreadsheets and databases money can buy, then the Amiga really has little to recommend it. And clearly Amiga development efforts are not

moving in that direction. But look at our last few review sections. Extraordinary new graphics and animation products are launched every month.

## NOT A PRETTY SIGHT

I've seen plenty of computer markets die. I watched Tandy's TRS-DOS systems thrash for years before keeling under. I was mesmerized by the full spectacle of the Osborne as it suffocated under the weight of an IBM-compatible Compaq portable. And I watched with glee as the DEC Rainbow whimpered its last Abort, Retry, or Ignore.

What each of these systems had in common was obsolescence. Don't get me wrong. PCs and Macs are growing up. But they are still not better than the Amiga. If they were, the Amiga would have kicked the bucket long ago.

So what does all this say about the future? We are not going to knock off the Mac and PC in the area of general-purpose computing. Dull computers serve those needs just fine. Nor will we seriously dent the game sales of Sega and Nintendo to prepubescent across the nation.

But we are going to see new Amigas, tons of great third-party stuff, and perhaps a new resolve on the part of Commodore. As The Talking Heads once sang about the Amiga: "This ain't no party, this ain't no disco, this ain't no C-64!" ■





# 50 or 40MHz '030...

## 32-Bit RAM EXPANSION... DMA SCSI CONTROLLER... HARD-DISK-CARD & MORE...

Our new  
G-Force  
030 Combo  
board for the  
A2000 is truly  
in a class of its  
own and has no  
equal. It's equivalent to four expansion boards in a single slot!

With its '030 Central Processor and 68882 Floating Point Processor (both running at a clock speed of up to 50MHz), 4 to 16MB RAM and on-board DMA SCSI Controller, the G-Force 030 Combo gives you more performance and control for the money than any other single board out there.

### G-FORCE 030 COMBO THE MUST HAVE A2000 ADD-ON

Give your Amiga a massive memory boost...

Make your Amiga faster than a speeding bullet...

Use your Amiga with virtually every and any SCSI device on the market — from CD-ROM drives, to Magneto-Optical and tape-based storage devices...

Get all the storage capacity and performance of the latest SCSI hard drives — with our optional hard drive mounting bracket you can even turn it into a 240MB Quantum Hard-Disk-Card...

Save lots of time working with desktop publishing, animation, ray tracing and modeling programs...

Speed up all your New Tek Video Toaster™ applications. A perfect match...

Plus, the G-Force 030 Combo plugs into your A2000's CPU slot, leaving all your normal expansion slots open and free for other uses!



SEE US AT  
**world of  
commodore  
AMIGA**  
PASADENA, CA • SEPT. 11-13, 1992

IT'S A COMPLETE SYSTEM  
ON A SINGLE BOARD

It's no wonder we say the G-FORCE 030 Combo is the *Must Have* Add-on for your A2000.

### IT'S A COMPLETE SYSTEM ON A SINGLE BOARD

Just look what you get from this workhorse, powerhouse:

- 50MHz 68030 or 40MHz 68EC030 CPU. Whichever one you choose your A2000 will out-perform even the latest A3000 systems.
- 50MHz or 40MHz 68882 FPU, math processor.
- 4MB of high performance, 60ns, 32-bit wide RAM expansion. User upgradeable to 16MB with easy-to-install 4MB SIMM modules.
- High Performance, Auto-booting, DMA SCSI controller which can DMA directly to/from the full 16MB range of 32-bit wide RAM — just like the A3000!
- SCSI connectors for connecting both internal and external SCSI peripherals.
- Hardware support for mapping the A2000 Kickstart ROM into the high-speed 32-bit wide on-board RAM. It's like caching the entire operating system!
- Icon-based, Software Switchable, 68000 fallback mode.
- Converts to Hard-Disk-Card with Optional Hard Drive Mounting bracket.



G-FORCE 030-50/4 with optional "Hard-Disk-Card" Conversion Kit

# G-FORCE 030 COMBO

### AND FOR THE MUST HAVE OF ALL HARD DISK CARDS...

Our optional "Hard-Disk-Card" Conversion Kit turns your G-Force 030 Combo board into a Hard-Disk-Card — the drive mounts directly on the Combo board itself — even saving you a peripheral bay! For real price/performance ask your dealer about our factory installed 120MB or 240MB Quantum hard drive bundles - look for our seal! Not only do you get a great price but with our new two-year warranty, you will get the piece of mind you deserve.

# GVP

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

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

G-Force 030 is a trademark of Great Valley Products, Inc.  
Amiga is a registered trademark of Commodore-Amiga, Inc.  
All other trademarks are the property of their respective owners.  
© 1991 Great Valley Products Inc.

Circle 1 on Reader Service card.



# OVERSCAN

## News, New Products and Networks

### AN AMIGA FOR THE TEACHER

PHOENIX, ARIZONA—While Apple computers may be as common in American classrooms as dandelions in the spring, many teachers attending the 32nd annual National Art Education Association (NAEA) convention May 1–5 became eager to add Amigas to their schools. Hundreds of teachers and administrators visited an exhibit produced by Curt Kass/Ontological Survey and cosponsored by Commodore, Sharp Electronics, Digital Creations, Electronic Arts, Great Valley Products, and NewTek.

There, teachers were able to watch two professional Amiga artists use DCTV for watercolor effects and Deluxe-Paint for painting and animation—and then try their own hands at the mouse. Attendees also got to see NewTek's Video Toaster, a laser-disk player, a Sharp large-screen projector showing AmigaVision, and a GVP-accelerated workstation.

"I am very impressed," said Kay Hansen, an art teacher from the Neenah (Wisconsin) public schools. Like many trained in traditional art media, Hansen expressed trepidation about learning to use a computer, but stated that "it looks very easy."

#### TOOLS AND TRAINING

Educator Curt Kass orchestrated the exhibit through his connections with the NAEA and Commodore. Kass has been



**Tony Kashinn (right) discusses color theory and computer fine art with Dr. Richard A. Ciganko, of Ohio State University's Lima campus.**

working with Commodore for nearly two years, researching the Amiga's application to art education. Kass has led several workshops exploring how children learn art skills using the computer alongside traditional art media. He and Dr. David Baker, past president of the NAEA, and Dr. Joe Reis, former multimedia producer for the National Gallery in Washington, DC, produced a video of Kass's "College for Kids" last summer, to which Commodore loaned 18 A3000 workstations.

Kass looks forward to Commodore's continued support, which he said is unique. Commodore is helping to educate teachers "so that they're empowered with knowledge, as opposed to just

dumping technology into the schools and then letting kids get ahead of the teachers," says Kass.

Art teachers found the Amiga well suited for pure artistic freedom. So does artist Anthony Kashinn, who will have two Amiga-generated paintings in the seventh edition of the *Encyclopedia of Living Artists in America* (Art Network, 1992). After demonstrating watercolor-like painting to "several hard-core Macintosh users," Kashinn got "concessions that an Amiga equipped with DCTV could do things their Macs could not." The Mac is a "memory hog and has very few keyboard commands, which bogs down the creative process," he said, and noted that several Mac users came back to request a second demonstration.

Teacher Herb Eveland, from Plymouth (Indiana) High School, plans to add Amigas to the school's computer-graphics lab, which now contains a dozen Apple and Mac workstations. "I think we need to expand the students' experience with a lot of different computers," he said.

Response to the exhibit has been excellent, said Kass, who has already been invited to give presentations to next year's convention in Chicago and to several regional conventions later this year. Educators are receptive "because they're seeing that there's some curricular background to all of this," he said.

—Laurel A. Kashinn

### SELL OR BUY

You won't find many deals on new and used Amiga-related products in the classified ads of your daily newspaper, but you will on NAEX, the **National Amiga Exchange**. NAEX is a free electronic classified-ad listing that is updated continuously and available instantly to anyone in the world by fax. To get a copy, dial 703/620-9499 from your fax machine, then press the button(s) that set your machine to receive a fax message. (The button is labelled Poll on many fax machines, and the feature is not provided on some computer-based fax systems; consult your manual for specifics on your unit.)

Want to sell instead of buy? An advertising form is supplied with the listing, and NAEX charges 10% of your asking price (minimum \$3; maximum \$25). For more information, contact **DC Computer Repair**. (RS# 102.)

### COMMODORE SAYS...

The word from Commodore concerning its A570 CD-ROM drive for the A500, which we hailed in our June issue (see "O Say Can You CD," p. 24), is that the unit is awaiting FCC approval. No release date has been scheduled, nor a price set, but we'll keep you posted.

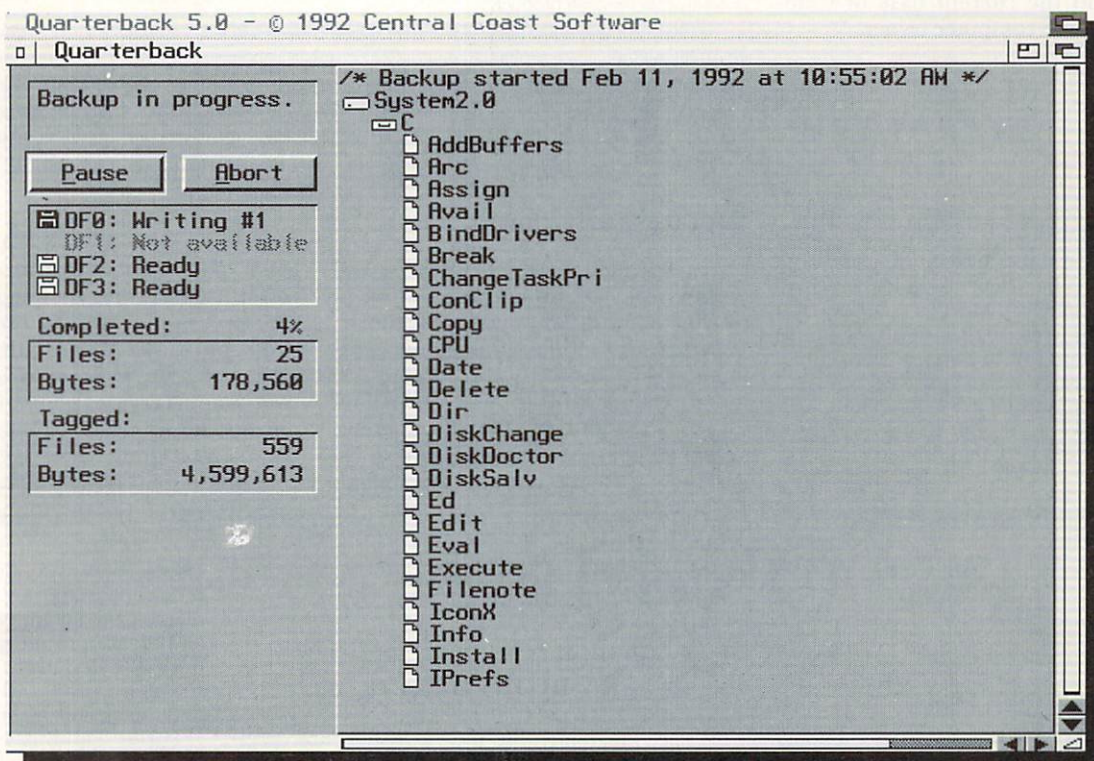
More solid news is Commodore's recent appointment of David Pleasance to ▶

To locate the vendors of products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 106.



# Quarterback 5.0

## The Next Generation In Backup Software



- The fastest backup and archiving program on the Amiga!
- Supports up to four floppy drives for backup and restore
- New integrated streaming tape support
- New "compression" option for backups
- Optional password protection, with encryption, for data security
- Full tape control for retention, erase and rewinding
- New "interrogator," retrieves device information from SCSI devices
- Capable of complete, subdirectory-only, or selected-files backup and restore
- Improved wild card and pattern matching, for fast and easy selective archiving
- Restores all date and time stamps, file notes, and protection bits on files and directories
- Supports both hard and soft links
- Full macro and AREXX support
- Full Workbench 2.0 compatibility
- Improved user interface, with Workbench 2.0 style "3-D" appearance
- Many more features!

Thousands of people rely on Quarterback for their backup and archival needs. Now, with Quarterback 5.0, there is even more reason to do so. Greater speed, even more features, and proven reliability. And a new "3-D" user interface puts these powerful capabilities at your finger tips. With features like these, it is no wonder that Quarterback is the best selling backup program for the Amiga. Would you trust your data with anything less?



**Central Coast Software**

A Division Of New Horizons Software, Inc.

206 Wild Basin Road, Suite 109,  
Austin, Texas 78746

(512) 328-6650 • FAX (512) 328-1925

Quarterback is a trademark of New Horizons Software, Inc.



the post of Vice President of Consumer Sales for the US. Until recently general manager of Commodore Electronics Limited in Switzerland, Pleasance plans to "strengthen relationships with the retail distribution channel, software developers, and the current base of Commodore home-computer owners."



## OVERHEARD

C programmers, the Amiga C Club (ACC) wants you! With members in 37 countries, the two-year-old club continually updates its Amiga C Encyclopedia, which contains shareware and ACCware that members are authorized to use in their own programs. Membership (\$60) includes the encyclopedia, plus assistance and advice when you need it. For more information, contact Datra, Amiga C Club, Anders Bjerin, Tulevagen 22, 181 41 Lidings, Sweden.

## RUN, REXX, RUN!

Want to run faster? The **REXX Plus Compiler** (Dineen Edwards Group, \$150) goes where Keds fear to tread. REXX Plus promises to make your ARexx programs run two to fifteen times faster. The programs it compiles are fully reentrant; you can even make them resident so that ARexx macros can execute as part of the host program. For a \$10 yearly license, you can distribute your compiled code as a commercial or freely distributable product.

The compiler generates 68000 assembler object code in a BLINK-compatible format, which C and other compatible languages can call. Execution of compiled programs requires the interpreter plus 32K (for the rexxplib.library and the controlling task), in addition to the RAM needed by the executable.

REXX Plus's error messages provide line numbers and often a column number. It comes with a more than 270-page manual, works best with 1MB of RAM, and runs under both 1.3 and 2.0. (RS# 101.)

## JUST SAY KNOW

Are they games? Are they tutors? Yes! A group of new programs promise to provide not only knowledge, but fun.

**Parth Galen's PhunnyPhonemes** (\$33) targets 6-11 year-olds and requires no initial reading skill. In a set of spelling exercises grouped by phonetic content, animated characters deliver 16 lessons, and more than 100 spelling "tests" chal-

lenge you to build walls at an outer-space construction site by arranging letter tiles. The program comes on two noncopy-protected disks and requires 1MB of RAM and a single floppy drive. The 80-page manual reviews phonetics and documents the six utilities that accompany the main program. (RS# 103.)

**Mathasaurs** (CanCor, \$24.95) teaches ▶



# ON-LINE SCAN

By Tim Walsh

No polls need be taken to reveal that telecommunication networks can play a significant role in either finding new hobbies or making valuable contacts in present ones. While nearly every net has an area called Hobby, it is typically reserved for research-type activities such as genealogy and creative or workshop hobbies. An example is CompuServe's Woodworking section, which was mentioned in the February '92 issue of *Fine Wood-Working* magazine.

These, however, are just some of literally thousands of hobbies covered on the nets. Some "hobbies" may not be perceived as such; most folks don't consider cooking a hobby, they just like to create culinary delights. Regardless, BIX serves up a Food forum, CompuServe answers your craving with a Food/Wine forum, Portal has a Special Interest Group (SIG) devoted to Cooking and Recipes, and GENIE offers a Food and Wine RoundTable.

If you get a high out of flying, check out the Aviation areas on BIX, GENIE and CompuServe. And you can find video, music, graphics, and writing forums

throughout the nets. Programming is also accommodated as a hobby on every network; budding programmers readily swap routines and reference materials with real-time spontaneity, and the nets serve as a gathering place to share ideas.

### REINING IN THE SING

Music has been around longer than computers, and many computerists have more than just a passing interest in it. Whether you enjoy music as a musician, an aficionado, or an audiophile, you can discover others who share your interest throughout all the nets, both within and outside of music forums.

Within the Extended Hobbies/Lifestyles/Education area on CompuServe is an Arts/Music/Literature area packed with music news and files. GENIE's answer to music is found in MIDI/WorldMusic RoundTable, and BIX's Entertainment and Leisure Exchange offers an area simply called Music.

Unlike CompuServe and GENIE's timely, wire-fed resources of mass information updates on the music world, BIX's Music area and Portal's Audiophile

SIG serve as friendly, note-swapping forums for personal music discussions. Your ability quickly to recall all of Gilbert O'Sullivan's and Karen Carpenter's Top-40 hits from the early '70s probably won't put any groceries on the table, but it might give you revered standing in certain circles.

### SPORTS BARS

Whether the "Life's short, play hard" drill of television advertising or our unrelenting pursuit of happiness is to blame, many of us are afflicted with a consuming desire to engage in sports with an intensity that borders on pure fanaticism. When it comes to talking big about sports, the nets are the place to be: Talk comes from bench warmers, jocks eager to flaunt their athletic prowess, and everyone in between. Trivia buffs talk stats and match wits in recalling historic events.

CompuServe's Outdoor forum is a sports participant's dream come true, with events ranging from firearms to cycling. GENIE offers a long list of various sports and upcoming activities in its expansive Leisure Pursuits &

Hobbies area. BIX offers an Entertainment and Leisure area that contains libraries, messages, and discussions on sports and other activities, and its Outdoors conference covers such activities as camping and angling.

Portal contains expansive Usenet Archives, Clarinet, and Internet services (still being tested at this writing) that can take you days to browse through for activities and events to fill your leisure time.

When a little R & R is in order, here's how to contact the nets:

BIX  
General Videotext Corp.  
1030 Massachusetts Ave.  
Cambridge, MA 02138  
800/227-2983  
617/354-4137

CompuServe  
PO Box 20212  
5000 Arlington Center Blvd.  
Columbus, OH 43220  
614/457-0802  
800/848-8199

GENIE  
401 North Washington St.  
Rockville, MD 20850  
800/638-9636

Portal Communications  
Company  
20863 Stevens Creek Blvd.  
Suite 200  
Cupertino, CA 95014  
408/973-9111 □



# GVP Enters the SOUND ZONE

*With the most powerful, comprehensive 8-bit Digital Sound Package to ever orchestrate an Amiga*

## Digital Sound Studio

*The Affordable Answer to Your Audio Dreams*

### Record, Edit, Compose . . .

*With a high-quality stereo sound sampler, A fast, powerful, easy-to-use sound editor, And a self-contained 4-track sequencer.*

*For all the sound effects and music you could ever imagine.*

► **Record** sound samples from any source, including voices, noise, and pre-recorded instruments, to create your own instruments and effects.

► **Edit** sounds quickly in real time. Add effects like reverb and echo, run sounds backward, alter wave forms, cut and paste sound segments, create loops, eliminate pops and scratches.

► **Compose** easily using the DSS 4-track sequencer and your Amiga or MIDI keyboard. Draw from up to 31 instruments at a time, in up to four octaves with 8 different variable effects. Mix and modify sounds in real time as you compose, through direct interface with the sound editor.

### DSS Stretches the outer limits of 8-bit sound

- Create your own 4-track, self-playing musical compositions.
- Make soundtracks for home video, animation or visual presentations complete with voice-over, sound effects and music.
- Analyze voice patterns and stereo separation.
- Analyze graphic equalization of real-time sound.
- Remove "pops" from old phonograph recordings.
- Create custom instruments and sound effects by collecting and/or modifying pre-recorded instruments, voice, or sounds from any source, and use them in your own compositions.
- Save your sound and music to disk or send it out via modem for replay on any Amiga.

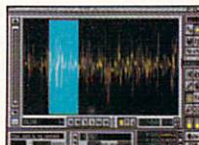
### Check out these unparalleled features

- ✓ AmigaDOS 2.0 compatible; written in assembly language.
- ✓ Multi-tasking operation.
- ✓ 68020 and 68030 compatible.
- ✓ Comprehensive tutorial manual helps even beginners get started right away.
- ✓ Intuition-based graphic interface makes operation easy.
- ✓ MIDI-in capability.
- ✓ Direct interface between sequencer and editor.
- ✓ Hold 31 sound samples in memory at once — all shown on screen so they are easy to manipulate.
- ✓ Effects and processing capabilities include echo, mix, filter, re-sample, sound data inversion, playing sounds backwards, loops, fade-in/fade-out and more.
- ✓ Manipulate sound samples in real time, as you listen.
- ✓ Create sampled instruments with 1, 3 and 5 octaves.
- ✓ HIFI recording for highest quality playback.
- ✓ Controls for faster/slower playback and filtering high frequencies during playback.
- ✓ Load and save samples, songs and instruments in multiple formats.
- ✓ Multiple effects for each note.
- ✓ Stereo and monophonic operation. Also convert mono to stereo or separate stereo.
- ✓ Auto-playing music modules.

- ✓ Real-time oscilloscope and spectrum analysis.
- ✓ Real-time reverberation.
- ✓ Graphic editing of wave forms through easy-to-use functions, including zoom in/out and precision controls for position, frequency and amplitude.
- ✓ Draw sound waves freehand using the mouse.
- ✓ Direct editing of individual sample numeric values.
- ✓ Maximum recording speed of 51,000 samples/second (38,908 samples/second in stereo).
- ✓ Savable Preference settings.
- ✓ Saves in IFF, SONIX or RAW formats.
- ✓ Compatible with SoundTracker, NoiseTracker and SoundFX modules.

# DSS

DIGITAL SOUND STUDIO



**GVP**

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



SEE US AT  
**world of  
commodore  
AMIGA**  
PASADENA, CA • SEPT. 11-13, 1992

Circle 1 on Reader Service card.

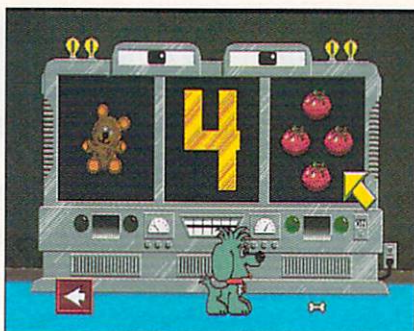
Amiga is a registered trademark of Commodore-Amiga, Inc.



simple, one-digit equations in flash-card style to kids of preschool or elementary age. The kids' objective is to rescue the Babysaurs, and one or two can play. Accompanying the characters on screen are digitized voices and sounds. (RS# 104.)

**FlashBlaster** (*EasyScript*, \$49.95), designed for ages 5-12, takes an arcade-game approach, combining digitized sound with a variety of animation effects. Children are rewarded for a good job by being inducted into one of FlashBlaster's halls of fame. The program requires 1MB RAM and works with either 1.3 or 2.0 AmigaDOS. (RS# 105.)

For those just learning to count (ages 2-6), **Devasoft** introduces **Amy's Fun-2-3 Adventure** (\$49.95), the first in a planned series of instructional programs that will feature a puppy called Amy. In Fun-2-3, Amy guides youngsters through a variety of activities that employ game-like design, detailed animation, music, and digitized speech to reinforce learning. The noncopy-protected program is



**Amy's Fun-2-3 Adventure introduces numbers to preschoolers.**

hard-drive installable, 2.0 compatible, and requires no typing, so children can run it by themselves. (RS# 106.)

**Mark's MathLab** (*EasyScript*, \$49.95) targets a more advanced audience: high-school level and beyond. In addition to providing experimental fun, this numeric-computation program can demonstrate function behavior in two or three

dimensions, assist engineering design and analysis, and more. The program plots functions containing variables, allows 75 tokens and quads and 30 constants per expression, and provides requesters—capable of holding up to 150 or 225 characters—with default values for novices. MathLab's parser also recognizes 34 built-in math functions. You can view the graph you create from any rotational position, and then save it as an IFF file. The program runs with 1.3 or 2.0, and requires 1MB RAM. (RS# 107.)

Having trouble choosing educational software? *Pride's Guide to Educational Software* (*Crossway Books*, \$25) rates over 750 programs for preschoolers to adults on Amiga, PC, Mac, and Apple platforms. The book aims to teach you everything you need to know about educational computing, even if you're a novice. It includes an introduction to multimedia, five computer-term glossaries, a beginners' guide to hardware, and a suppliers' index. (RS# 108.)

## NEW MATH

Whether you use **MathVISION** (*Seven Seas Software*, \$197) for artistic or mathematical work may determine which of the four library disks you choose. To get one for free, you must either purchase MathVISION or introduce it to an eventual purchaser. MathVISION lets you enter and edit equations and recursive routines, and it displays in full-color graphs the mathematical constructs resulting from their execution.

The library disks contain sample formulas, pictures, and hooks that allow you to use the program for special purposes. The disks—entitled *Secrets of an Artist*, *Animation and 3-D*, *Mandelbrot Variations*, and *Complex and Polar Arithmetic Library*—normally retail for \$49-\$79. (RS# 109.)

## TOAST MASTERS

**Toast and Coffee.** It's not just for breakfast anymore. Now it's a "user's group on video" for owners of NewTek's Video Toaster. The bimonthly video (produced by *Videographix*, \$48 per year) promises to give you tips, techniques, product demonstrations, and a showcase for subscriber-submitted material. (RS# 110.)

Veteran video-engineering firm **Cardinal Video** enters the Amiga market with **Breadboard** (\$398), a video-delay and buffer board for use with the Toaster. The board fits in one of your A2000's PC slots and permits downstream keying of Toaster signals with other effects equipment.

The BreadBoard's five video amplifiers provide adjustments for unity gain. Three of these have delay lines, which you can set for delays of near 0 to 500 nanoseconds. You can strap the delay channels to the Toaster's inputs 1 to 4, to the key-insert signal, and to the alpha channel that provides a key-source signal. The remaining amps provide addi-

tional program and preview outputs. (RS# 111.)

Who says you must learn ARExx to automate the Toaster's switcher software? **The Byte Factory's Toaster Sequence Editor** (\$75) lets you control all ARExx-accessible Toaster functions through script files that you create in its point-and-click environment. In fact, the Editor does not require ARExx in order to work (although you can save the scripts as ARExx programs).

In addition to setting inputs, performing transitions, and loading and saving frames, you can create functions—including variable-speed effects—that are unavailable through the Toaster's standard interface.

The Toaster Sequence Editor works with Toaster versions 1 and 2 and AmigaDOS versions 1.3 and 2.0. If you'd also like to rearrange effects, change default speeds, and add or delete new effects to or from a project file, watch for **The Toaster Project Editor**, coming soon from The Byte Factory. (RS# 112.)

## MUSIC, MAN

If you can't adjust the tunes that come out of your boom box, then you don't have the right kind. **Dr. T's BoomBox** features an interactive Remix screen to add echo and effects to either your own arrangements or the songs provided on disk. BoomBox transforms your Amiga into a beat box and promises to make a rapper out of anyone. You can loop sections of the grooves, repeat them, or just jam along by triggering samples from the Amiga's keyboard or a joystick. BoomBox puts y-y-y-you in control! (RS# 113.)

Prefer jazz over rap? **Jazz Through MIDI** (*New Sound Music*, \$49.95) promises fun and easy improvisation at your own pace in a variety of jazz styles. To use the program, you'll need a MIDI keyboard or sound module, a sequencer, and a MIDI interface. It provides performances that you can play in various keys and tempos, and it lets you mute any parts and substitute your own playing.

Whether you're a novice, intermediate, or advanced player, **Jazz Through MIDI** has skill levels for you. Beginners cover ear-training drills and exercises for the 11-V-1 progression, cycle, and more. Intermediate levels feature 54 accompaniments and solos set up in 8- to 24-bar phrases. Advanced players can choose from 12 popular songs—arranged in 32- to 48-bar phrases—some of which are note-for-note renditions of original recordings. Every sequence is written out so you can see as well as hear what's happening. (RS# 114.)

Need to compose background music ►



# #1-AND DRIVE-ING HARD TO STAY THAT WAY!

**IMPACT**  
Series II

**Only GVP Factory Installed A2000 HC8+/52Q, 105Q or 200 SCSI Hard Disk+RAM Boards have a track record this good—over 20,000 satisfied Amiga® users and now a 2-Year Warranty!**

Don't waste your valuable time or money building a SCSI+RAM Controller from parts...

Because of our unprecedented pricing structure you can now get GVP's, brand name, factory installed A2000 HC8+/52Q, 105Q or 200 at a very competitive price.

► **GVP's A2000 HC8+/52Q, 105Q or 200 — THE SAFEST CHOICE**

Look for the GVP Factory Installed Drive Seal... it's your assurance that your A2000 HC8+/52Q, 105Q or 200 has been installed and tested in GVP's own factory...

And the 2 year limited warranty protects you better and longer than any third party installed drive. And with third party drives you run the risk of a run around if anything does go wrong.

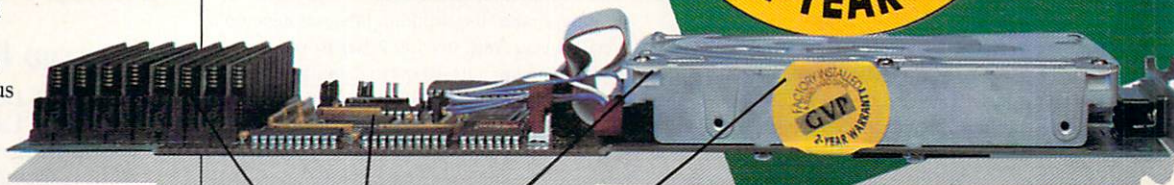
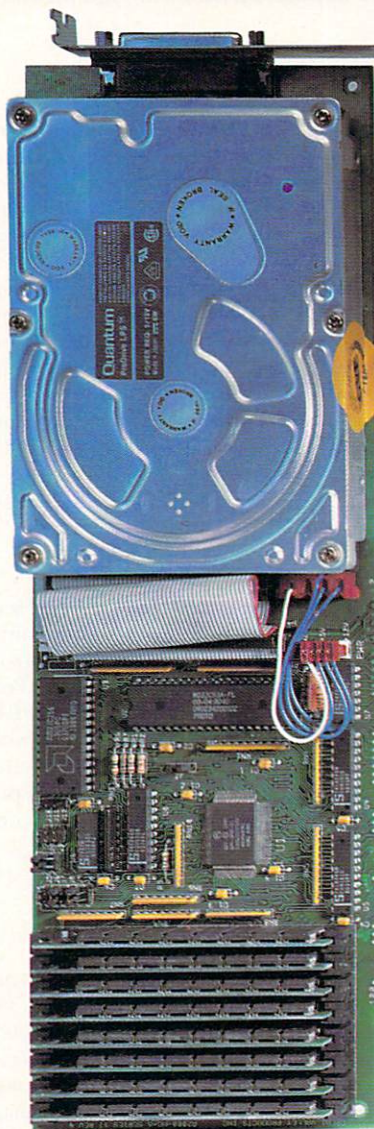
► **GVP's A2000 HC8+/52Q, 105Q or 200 — NOW EVEN FASTER WITH FAAASTROM™ 4.0**

All A2000 HC8+/52Q, 105Q or 200 have been redesigned and equipped with GVP's newest fastest SCSI Driver — FAAASTROM 4.0. Plus, we've also doubled Western Digital's SCSI Controller clockspeed to 14Mhz—for a tremendous increase in speed...

► **GVP's A2000 HC8+/52Q, 105Q or 200 — JUST LOOK AT THESE FEATURES**

- Custom chip design for the fastest possible data transfer rates and DMA performance—even in a multi-tasking environment.

★ Ask your dealer about Syquest 44MB or 80MB removable hard drives for use with any GVP SCSI Controller. Special factory-bundled configurations are now available.



Up to 8MB  
FAST RAM  
Expansion

Factory Installed  
3.5" Hard Disk  
Drive

GVP Custom  
VLSI Chip

GVP Factory  
Installed Seal



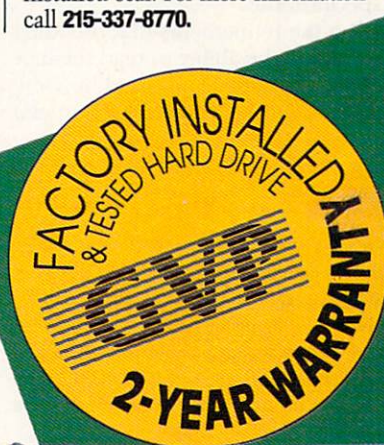
SEE US AT  
**world of  
commodore  
AMIGA**  
PASADENA, CA • SEPT. 11-13, 1992

- Easy-to-Install SIMM memory modules for configurations up to 8MB—and support BridgeBoard users with the 6MB FAST RAM.
- Support for virtually any SCSI device.
- Fastest and easiest SCSI installation possible.

► **GVP's A2000 HC8+/52Q, 105Q or 200 — JUST LOOK FOR THE GVP FACTORY INSTALLED SEAL**

Remember if the GVP Factory Installed seal shown in this ad isn't on your A2000 HC8+/52Q, 105Q or 200 box... it isn't the fastest, most powerful, longest warranted, safest A2000 HC8+/52Q, 105Q or 200 you can buy.

Ask for and accept only GVP A2000 HC8+/52Q, 105Q or 200 with the Factory Installed seal. For more information call 215-337-8770.



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



of specific lengths for your multimedia presentations? Lack music training? **Digital Expressions' Video Music Box** (\$109, plus \$6 shipping) wants to help by generating basic instrumental parts for common musical styles. Prearranged patterns and chord progressions get you

started; with note-editing tools, you can add new melodies, chord arpeggios, or fills fitting the chord progression. Your resulting production can include multiple segments with different tempos and volumes, and you can preview them either through MIDI or through the Ami-

ga's internal audio. When you're satisfied, save your tunes as MIDI or IFF-SMUS files for use with any authoring software. (RS# 115.)

## MATCH BOXES

A universal synchronization box, **SyncPro** (*The Blue Ribbon SoundWorks*, \$199) works with any application supporting MIDI time code to sync with video and audio hardware. The unit supports all major synchronization formats, including SMPTE, MIDI, and Song Pointer. It can generate and read all SMPTE frame formats, duplicate recorded SMPTE stripes, convert SMPTE to MIDI time code, and more. It also promises to recover from tape dropout, and offers a remote-start accessory for Super-JAM! and Bars&Pipes Pro. (RS# 116.)

**Black Knight Peripherals' SAM** (\$299) also works with Bars&Pipes, MusicX, and all music software supporting MIDI time code. SAM, an "integrated SMPTE and MIDI time-code converter," syncs the Amiga and any attached instruments to audiotape, videotape, or any SMPTE signal, and it offers four MIDI-out ports, one MIDI-in, a serial pass-through, and a front panel that displays the unit's operational status. A built-in CPU generates crystal-locked SMPTE and MIDI code without overhead. The unit reads and writes SMPTE in PAL, NTSC, film format, in both forward and reverse directions, from less than 25 percent to 200 percent of normal speed. SAM's software includes a Timecode Tool for monitoring and recording time-code signals. (RS# 117.)

## EDITORIAL FOCUS

**FutureVideo's** new **Pro MkII** (\$695) and **Pro/TC MkII** (\$1198) video edit controllers are an evolutionary step up from the firm's EC1000 Pro series units. In fact, FutureVideo will upgrade EC1000s to the new specifications.

Among the refinements that the MkII units offer are the ability to read the new 8mm RC time code (supported by some Sony, Ricoh, and Yashica Hi8 camcorders)

and to edit within three frames. A new seven-digit LED panel displays hours/minutes/seconds/frames of RC code, control-track timing, and, in the case of the Pro/TC model, longitudinal SMPTE or EBU time code. The units are compatible with camcorders and VCRs equipped with the Control-L connector or Panasonic's 5-pin edit terminal, and with some RS-232-controlled professional VCRs. (RS# 119.)

## BETTER TO SEE, MY DEAR

It's new. It's two. **Flicker Free Video 2**, that is, **ICD** used recent advancements in VLSI circuit technology to add a number of features and reduce the size of its display enhancer, which fits under the Denise chip of Amiga 500s, 1000s, and 2000s. The board's retail price is \$299.96; registered owners of the original product can trade up for \$139.

Like the earlier version, **FFV2** eliminates interlace flicker and visible scan lines. It promises full compatibility with all software, DOS revisions, and Commodore's enhanced chip set; it automatically bypasses Productivity mode and lets you manually bypass SuperHiRes mode with an optional switch. The latter feature depends on your monitor's provision of a 15.75-KHz horizontal scan rate, but in any case, **FFV2** requires a VGA or multisync monitor. The board provides automatic fine tuning and comes with **Flicker Free Video Preferences**, software that allows adjustable vertical refresh frequency for a steadier display.

**Flicker Free Video Preferences** is also available by itself for \$29.95 (owners of the original

board can buy it for \$15). The program does not limit itself to use with **FFV**, however. Both the Amiga 3000 and Commodore's A2320 display-enhancer board support all its features. You can also use it with any other display board, or sans a display enhancer and with any monitor, though this may limit its capabilities.

In any case, the program lets you raise your vertical scan rate (to 100.2 Hz) to reduce eye strain, or lower it (to 49 Hz) to create a larger display. It also lets you adjust Workbench overscan for maximum display area and adjust the number of Workbench 2.0 screen colors from two to sixteen. The software runs not only under DOS 2.0, but also 1.3 and 1.2. (RS# 118.)

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



## OVERHEARD

**MultiCon's AmigaMPD** is a freely distributable videotape showcase for Amiga-only art of all sorts: music, still and animated 2-D and 3-D graphics. The series project is intended to educate the public on the Amiga's creative prowess. You can submit your work in a variety of formats and media; anything placed in the series becomes "multimedia public domain." To see what's on the latest edition, send a blank VHS or SVHS cassette and return postage to **MultiCon**, 2037 E. 25th St., Oakland, CA 94606. Call 510/261-1001 for details... and don't forget to pass it on!

## IN CONTROL

**Mellen's ADAPT** (Advanced Data Acquisition Processing Technology) system for the A3000 promises applications to research and industry. It can perform a variety of complex control operations while generating graphics for real-time plotting of data acquired.

The hardware/software combination monitors and controls up to 48 individually configurable channels. It also accepts a variety of process-variable (PV) inputs (including temperature, pressure, millivolts, and other analog signals) and uses an 18-bit A/D microprocessor for increased resolution.

Each system comes with customized menu-driven software, including up to 500 program segments or steps. A graphical interface displays PV data in real time, without processor interruption. Visual PID loop tuning eliminates guesswork in selecting PID values by plotting each term and the effect of your tuning changes on PV stability. (RS# 121.)

## CELLULOID HEROS

**ASDG's** Art Department Professional now supports **Lasergraphics' LFR** and **LFR Plus** film recorders (\$8750 and \$13,750, respectively), thanks to a **new program module** (\$250). Both recorders come with a 35mm camera back, or you can opt for 4x5, 8x10, or pin-registered motion-picture backs. With the help of **FRED**, **ASDG's** animation controller, you can write entire animations—including sophisticated wipes, dissolves, and digital compositions—automatically to film. (RS# 122.) ■



# YOU'LL BUY IMPACT VISION 24 FOR ONE VIDEO NEED AND FIND YOU NEED IT FOR EVERYTHING VIDEO



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

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

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



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

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

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

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

► **Video Interface Unit.** Transcode composite or S-VHS video into RGB. (Optional version available with YUV input/output.)

► **Flicker-Eliminator.** Duplicates and enhances the A3000's display enhancer circuitry. It even de-interlaces live external video! A must for any A2000 owner. Ask about our A2000 "genlock slot trade-up" program.



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

SEE US AT

**world of  
commodore  
AMIGA**  
PASADENA, CALIFORNIA • SEPT 11-13, 1992

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

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

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

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

• **Caligari™-IV24.** An exclusive

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

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

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



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

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



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

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

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

# IMPACT VISION 24



# GVP

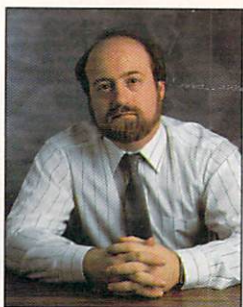
**GREAT VALLEY PRODUCTS, INC.**  
600 Clark Ave., King of Prussia, PA 19406  
For more information or your nearest GVP dealer, call today. Dealer inquiries welcome.  
Tel. (215) 337-8770 • FAX (215) 337-9922



Circle 1 on Reader Service card.

Amiga is a registered trademark of Commodore-Amiga, Inc.





# HELP KEY

*Gazing into his crystal ball with the saltshaker handy, Lou fields rumors of new chips and the A600.*

By Louis R. Wallace

**Q:** *I was reading the other day that Commodore is working on a new set of custom chips for the Amiga. The message (it was a rumor on a BBS) said that it would have more colors and higher resolutions, plus a lot of other undisclosed features. Is this true? When are they coming out? Will this be an easy upgrade like AmigaDOS 2.0? And will I be able to make use of them in my A500?*

**J. Andries**  
New Orleans, Louisiana

**A:** Well, the first thing I have to say is that one should always take rumors with a large grain of salt, especially when they are found on BBSs. Sometimes people write such "new product" announcements as a joke, but then they are taken as truth by somebody else, get downloaded and then uploaded again on some other board where no one realizes they were just someone's pipe dream.

With that said, I can tell you it is true that Commodore has been working on a new version of the Amiga's custom chips for several years now. Official details are not yet available, but it is safe to assume that they will support higher color resolution as well as other enhancements (hopefully very significant ones).

At the time I write this (early June), there have been no announcements from CBM on the specifications or release dates of the chips or the products they are designed to work with. I hope we do hear something this year, and you can be sure that we at *AmigaWorld* are just as curious as everyone else about exactly what will be announced and when. You can also count on us to bring that information to you as soon as we get it.

Will it be an easy upgrade like AmigaDOS 2.0 and will it work in the A500 (or other existing Amigas)? I can't yet say, as no details have been released, but if I were to go out on a limb and take a guess, I would say that I expect the first sign of any new chips

will be in some new model Amiga and not as an upgrade kit for existing machines. Upgrading our existing machines might be a bit difficult, although certainly not impossible. It's very likely that any new chips will not be pin compatible with the existing chips, so they wouldn't fit in the same sockets.

It's also possible, perhaps likely, that they will be entirely new chips, and not

of salt handy. To find out what will really happen, we will just have to sit back and relax, enjoy our existing machines and wait and see what the future brings.

**Q:** *OK—I'll bite! Just what the heck is this Amiga 600 I hear is shipping in Europe? Is it just a modified A500, or is it a new computer? And if it's new, why isn't it available here in the US?*

**M. Miller**  
Los Angeles, California

**A:** Boy, this is the month for questions about new and unreleased CBM products! Well, the A600 is a new model Amiga—not just a revamped A500. There are two versions. The entry-level model contains a single floppy drive, one meg of RAM, one of the memory-card slots such as is found on CDTV (and which is becoming a computer-industry standard), and AmigaDOS 2.1 in ROM. The A600HD is the same machine with an internal hard drive.

Why isn't it shipping here in the US? Basically because Commodore is an international corporation, with independent business units in each country. They all have to respond to their market forces and government regulations on new computer products, so sometimes one country can get a product out faster than another.

In addition, Europe is a bigger market for consumer computers than the US, where more people use high-end Amigas for vertical applications. So it makes sense to release a new low-end Amiga in Europe as soon as possible. However, while no announcement has yet been made about the A600 in the US, I do expect to hear something soon. Stay tuned. ■

*Need some help or advice about Amiga matters? Send your questions and problems to Help Key, c/o AmigaWorld Editorial, 80 Elm St., Peterborough, NH 03458.*

*You can be sure that  
we at AmigaWorld are  
just as curious as  
everyone else about  
exactly what will  
be announced  
and when.*

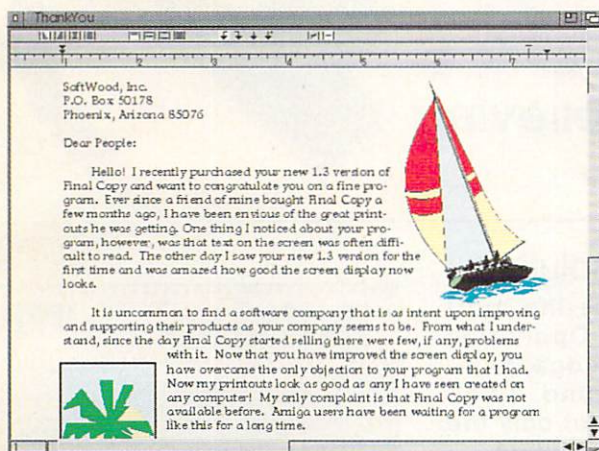
just enhanced versions of the older ones (as was the case with the Enhanced Chip Set upgrade). If that's the case, our existing motherboards won't be able to use any new chips, and we just might have to get new motherboards in order to take advantage of the new chip set and its features.

Finally, in order to use any new hardware that Commodore might develop, the Amiga will need some changes to its system software. The challenge to the OS programmers is to adapt Amiga operating software to take advantage of any new features, yet keep it backward compatible with the existing hardware and software. All of this will take some serious work, but I am confident it will happen.

Of course, all of this is pure speculation on my part, so keep those grains



# NO BRAG, JUST FACTS!



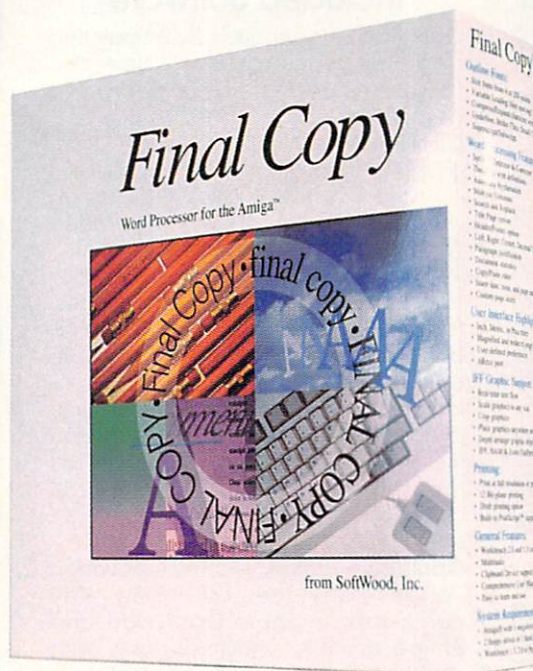
**Version 1.3's new screen display is easy to read!**



**Best output of any Amiga word processor!**

To be a winner you've got to be a whole lot better than the rest.

Final Copy is the first and only word processor for the Amiga that gives high-quality printing on any 1.3 or 2.0 Workbench supported printer. It comes with a 116,000 word spelling detector and corrector, 470,000 synonym thesaurus with definitions, 35 outline typefaces, multiple newspaper style



columns, IFF graphic support including 24 bit ILBMs, real-time text flow around graphics, 12 bit-plane color printing, typographic controls, ARexx port, and true WYSIWYG PostScript® printing.

As one of our customers said, "You don't have to be a rocket scientist to see Final Copy has the best printing of any Amiga word processor."

Comparison Chart	Outline Fonts Included	Crop Graphics	Load Simple HAM graphic	Thesaurus Synonyms	Speller Words	Snaking Columns	Graphic Text Flow	Automatic Hyphenation
Final Copy 1.3	35	Yes	3.5 sec.	470,000	116,000	1-6	Yes	Yes
ProWrite 3.2®	0	No	1 min 20 sec	300,000	100,000	1-5	No	No

Comparison Chart	Price	Frame Graphics	24 Bit ILBM Support	Thes. with Definitions	Page Views	Print 1 pg. Document	ARexx	Use Amiga Clipboard
Final Copy 1.3	\$99.95	Yes	Yes	Yes	25-400%	53 sec.	Yes	Yes
ProWrite 3.2®	\$174.95	No	No	No	No	2 min 5 sec	Yes	No

**\$99<sup>95</sup>**

VISA &  
MASTERCARD

**1-800-247-8314**

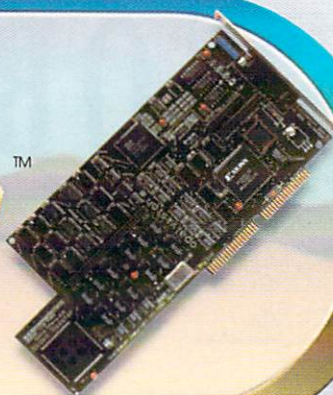
SoftWood, Inc.



Centaur Development presents the most brilliant new product line for the Amiga™ ...

# OpalVision™

Seeing is Believing



## The complete 24-Bit graphics and video solution.

OpalVision thrusts the Amiga back into first place as the most powerful video and graphics computer in the industry. OpalVision links the ultimate video painting software with cutting-edge, high-quality hardware providing magnificent graphic and video capabilities. OpalVision's modular design lets you select only the features you need while providing expandability for the future.

### OpalVision MotherBoard

- The core of the OpalVision system. It is a true 24-Bit frame buffer and display device with 16.8 million colors available for every pixel.
- Uncompromised, 24-Bit higher-than-broadcast-quality, crystal-clear images which far surpass any composite video or HAM system.
- Amiga graphics and animations can appear in front of or behind OpalVision images on a pixel-by-pixel basis.
- Operates in all standard Amiga resolutions up to a maximum of 768 x 480 pixels (580 in PAL).
- Double buffered 24-Bit and 15-Bit animation can be performed in medium and low resolution modes while 8-Bit double-buffered animation is available in all resolutions.
- VLSI Microcode Graphics Co-processor enables resolution changes, stencil modes, a host of transition effects and smooth scrolling between screens.
- "Palette-Mapped" design updates screen colors in real-time. Fade pictures in and out and change their palettes on the fly.
- Available in an internal version which occupies the video slot of the Amiga 2000 and 3000 series computers. The external version connects to the RGB port of any Amiga, including the Amiga 500 and 600 series computers.
- Equipped with 1.5 MB of display RAM
- Automatically self-configures for NTSC or PAL operation.

### Included Software

**Opal Paint:** Unequalled 24-Bit painting and image processing. See the following pages for a complete description.

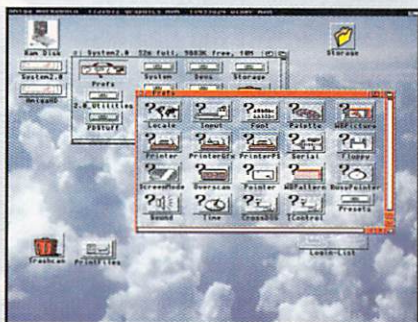
**Opal Presents:** A comprehensive, icon-driven presentation program offering complete control over OpalVision images, Amiga graphics and live video (when the Frame Grabber/Genlock is installed). Includes numerous built-in transitions and effects including wipes, fades and scrolling effects. Takes full advantage of OpalVision's double buffering and intelligent image pre-loading to minimize delays. Utilizes 24-Bit image thumbnails in both editor and file requester. Trigger transitions by mouse button, timer or AREXX commands. Initiates CLI and AREXX scripts. Fully multitasking.

**OpalVision HotKey:** Display OpalVision images anytime by using key combinations. Show OpalVision and Amiga graphics simultaneously, with single keystrokes to control two different OpalVision screens, priority masks, genlocking and other OpalVision features. Multitasks with all Amiga software to provide 24-Bit backdrops for Amiga graphics. AREXX compatibility integrates all OpalVision features into Amiga environment.

**King of Karate:** The world's first 24-Bit personal computer game! An exciting karate competition which is lots of fun and an excellent demonstration of OpalVision's capabilities.



*Includes OPAL PRESENTS — a feature-packed, 24-Bit presentation program.*



*Freely combine 24-Bit and Amiga graphics. Run Workbench over an OpalVision screen.*



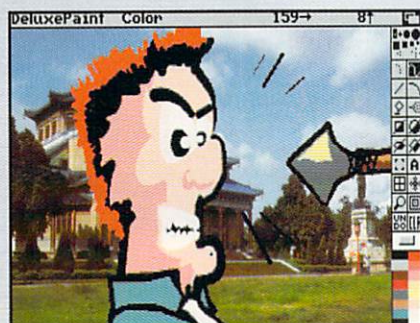
*Includes KING OF KARATE — The world's first 24-Bit personal computer game.*



## OpalVision Enhancement Modules



Add Genlock and Framegrabbing for unlimited video capabilities.



Multitasking HOTKEY software lets you show 24-Bit pics any time. Run DPaint™ ANIMS on a 24-Bit background.



OpalVision Scan-Rate Converter for non-flickering, rock-solid output.



Revolutionary "Roaster" chip provides unlimited video digital effects.

A complete range of enhancement modules will be available soon. Add framegrabbing and genlocking, de-interlacing, Digital Video Effects and input switching capabilities. OpalVision's modular design circumvents the usual problems with incompatibility and loss of signal integrity associated with the external components available from third parties and the "Rat's Nest" required to connect them. The expansion modules connect directly to the OpalVision Mother Board without tying up Amiga slots. Adding all of the modules creates a complete 24-Bit Amiga desktop video system.

### OpalVision Frame Grabber/ Genlock Module:

- A true 24-Bit frame grabber, genlock, composite decoder (color splitter), composite encoder, 256-level linear keyer with alpha channel output and live video effects processor.
- Broadcast-quality S-Video (S-VHS or Hi-8) or composite input and output.
- No external splitter required. Uses the Sony broadcast camera chipset for quality in excess of broadcast standards.
- Instantly freeze and save multiple video frames or a sequence of frames as 24-Bit images. No still frame or signal preparation required for image grabbing.
- High-quality integration of 24-Bit OpalVision and Amiga images with video. Define a 256-level transparency overlay (alpha channel) for OpalVision or Amiga images so live video can be displayed through transparent and semi-transparent portions of the image.
- All features are software controlled for fading, source switching, keying, etc.
- Uses external video or internal Amiga sync.
- Installs directly on the OpalVision Mother Board. No external wiring or power supply required.

### OpalVision Scan-Rate Converter

- Display Amiga Graphics, OpalVision 24-Bit images and live video as rock-solid, non-interlaced, flicker-free images on any multi-scan or multi-sync monitor.
- Acts as an independent 24-Bit frame buffer for two-screen multimedia applications.
- Perfect for high-resolution applications such as desktop publishing and word processing, paint and ray tracing software, etc.
- Requires and plugs into the OpalVision Mother Board. No external wiring or power supply needed.

### OpalVision Quad-input Production Switcher

- An external unit which plugs into the OpalVision Frame Grabber/Genlock for software-controlled switching between two video sources.
- Incorporates four video input signals each with its own color splitter. These four inputs can be assigned to A and B sources for switching in any combination.
- Perform cuts, dissolves, wipes and all the transitions made possible by the OpalVision Roaster Chip between two different sources.
- Each input includes both S-Video (S-VHS or Hi-8) and composite jacks. Output is provided in both S-Video and composite format.
- Includes a jack for input of house sync, and output of the alpha (transparency) channel as a 1V p-p signal for production mixing desks.
- Requires and plugs into the OpalVision Frame Grabber/Genlock board. No external power supply needed.

### OpalVision Roaster Chip

- Real-time processing and morphing of live video, OpalVision images or standard Amiga output. Take any live video signal. Flip it. Scale it. Wrap it on a sphere. Wave it like a flag. Do page turns to reveal a second source image. Provides an infinite variety of amazing, real-time Digital Video Effects.
- "Picture-in-Picture" capability allows the display of full 24-Bit live or frozen video in a scalable window on the Workbench. Zoom in on a portion of the image and pan around for a close-up look.
- Includes software to design and accurately sequence custom video effects and transitions. Includes an expandable library of useful wipes, dissolves, wraps, etc.
- Plugs into the OpalVision Mother Board. The Roaster Chip is a fully integrated part of the OpalVision system and is fully compatible with all other modules. For effective use, the Roaster Chip and software requires the Frame Grabber/Genlock Module.





An unequalled painting and image manipulation program. Fast. Real-time. Full 24-Bit. OpalPaint gives you complete control over OpalVision's 16.8 million color palette. Includes a full-range of drawing tools and image-processing modes.

## Tools

- Includes all standard painting tools: Sketch (Dotted & Freehand); Line; Filled/Unfilled Outline; Arc; Filled/Unfilled Ellipses/Circles/Rectangles; Text; Brush Cut.
- "Rip and Replace" repeats last drawing action after moving one pixel in any direction. Very useful for precise placement of brushes and objects.
- Definable level of anti-aliasing in any mode and with any tool.
- Definable level of global transparency for all operations, or set transparency levels of individual RGB or HSV components.
- Texture mapping with 32-Bit brushes, using any Drawing Tool, Drawing Mode and Transparency Gradient.
- Transparency overlays "painted" using Alpha Work Mode can be attached to cutout for 32-Bit brush.
- Magnify tool with complete zoom in/out control.

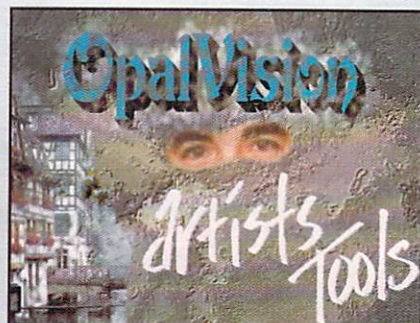
## Modes

- 18 built-in Drawing Modes, including Paint, Tint, Colorize, Brilliance (Brightness), Contrast, Gamma, Additive, Subtractive, Mosaic, Smear, Smooth, Shade, Sharpen, Negative, and many others. Most modes have independently adjustable parameters via an on-screen slider; for example, you can adjust the Smear amount from 1% to 100%. All Drawing Modes are used in conjunction with the drawing tools; apply effects to either limited areas or the entire image.
- Additional Drawing Modes on disk for unlimited image processing power and expandability. Includes such Drawing Modes as Add Noise, Convert to Grey, Median Filter, Emboss, High-pass Filter and Logical Operations.
- True 24-Bit multiple color gradients, with adjustable radial, linear, horizontal, vertical, border, and point gradient fill choices; gradient colors can be either RGB or HSV color spreads.

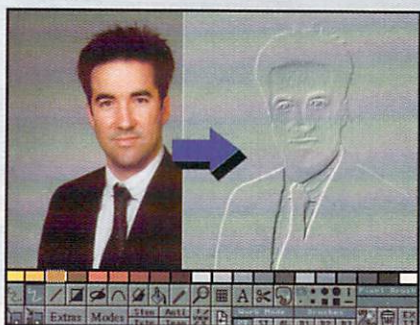
- Transparency gradients. Define multiple levels of transparency for a fill, similar to color gradients. Can be used alone or in combination with color gradients.

## Resolutions / File Formats

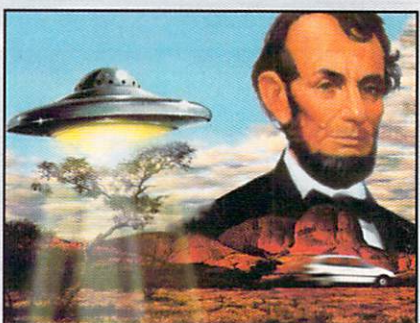
- Loads IFF (any resolution, including HAM), IFF-24, JPEG, OV\_FAST. Saves IFF-24, JPEG and OV\_FAST.
- Define unlimited spare pages. Spare pages can be any resolution and page size.
- Rubthrough from any one spare page to the same or another spare page.
- Supports all resolutions of the OpalVision card.
- Page size in any resolution is definable up to the limits of available memory, or hard-drive space if the virtual memory option is utilized up to 32,768 x 32,768 pixels. Large images can be scaled for viewing on standard screen.
- Two different stencil types: Keep-out stencils (like artist's friskets) which can be drawn with the painting tools over any area of the image, and color stencils, which can include or exclude ranges of color based on HSV tolerances.
- With one mouse click switch between three different Work Modes that all use the same Drawing Tools: Paint mode, for normal painting and image processing; Stencil Mode for drawing keep-out stencils, and Alpha mode to paint with grey scales representing transparency. This transparency mask is used with 32-Bit cutout brushes and is supported by the OpalVision Frame Grabber/Genlock for semi-transparent live video overlays.
- OpalVision Frame Grabber/Genlock can grab images or cutout brushes directly into spare pages and the work area.
- Combine Drawing Tools, Drawing Modes, Texture mapping, Transparency and effects for incredible image manipulation power.



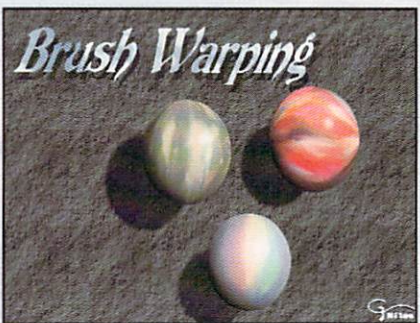
Create real-world artistic effects with exclusive Artist's Tools and Paper Types.



Utilize full Image Processing capabilities for desktop publishing and photo enhancements.

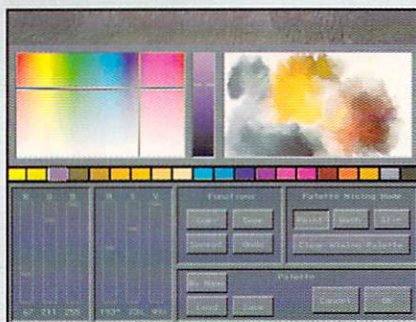


Composite multiple images quickly and easily with seamless, 24-Bit color accuracy.



Use "Brush Warping" for dynamic surface-mapped effects.





*Make quick and precise color selections using the versatile 24-Bit Palette Requester.*



*Generate and manipulate Video Titles with complete Amiga font support (including Colorfonts).*



*Easily create versatile, multiple-level color and transparency gradients.*



*"Thumbnails" give you miniature images of all graphic files.*

## Palette Control

- Supports several methods of real-time 24-Bit color selection. Choose colors from RGB & HSV sliders, use the 16.8 million "color picker," choose from a list of named colors, or use OpalPaint's color mixing area to create your own.
- A working palette of 260 selected colors is available at all times. Load and Save custom color palettes. This palette can be changed at any time without changing colors already in the image. Colors in gradients, smoothing, etc... are not limited to colors in the working palette.
- Includes pre-defined palettes, such as Pastels, Metals, Ocean, Skintones, Camouflage, Fluorescents, etc. Each has its own pre-mixed mixing area for easy color selection.

## Unique Features

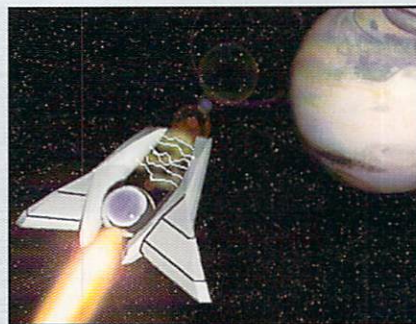
- Easy, intuitive icon-based interface. No cluttered screens of buttons or layers of menus.
- Fast, real-time operation. No waiting for buffer updates or working on a second screen.
- Virtual memory support. Store unused portions of the image, spare pages, or spare cutout brushes on hard disk to save memory. This allows you pages much larger than memory would typically allow.
- Unique nozzle brushes can be independently used with adjustable "Artist's Tools" such as a perfectly smooth airbrushes, pencils, charcoals, texta, oil paints, etc. In addition, the "paper type" can be adjusted, such as smooth, rough, watercolor paper, etc. for realistic, real-world effects.
- "Magic Wand" allows automatic filling or cutting of irregular objects using edge detection.
- Supports pressure-sensitive Wacom™ drawing tablet in conjunction with Artist's Tools for incredible real-life effects. (Requires Workbench 2.0)

## General Characteristics

- Load/Save file requesters show an "Art Gallery" of 24-Bit "thumbnails" or miniature representations of Images, Cutout Brushes and Palette sets on disk for visual location of files. Create Art Gallery thumbnails for existing IFF images.
- "Undo" button for any operation.
- "Dynamic Undo" Use the right mouse button as an eraser to paint from the undo buffer with any tool.
- Keyboard equivalents follow DPAINT™ standard where possible.
- Full AREXX support and fully compatible with Workbench version 2.0.



*Frame Grabber/Genlock allows real-time color processing of live video: glows, shines, posterizations, nuclear effects and more.*



*Retouch, enhance and modify rendered 3D images.*

Created by:

**opal tech**<sup>TM</sup>  
sydney, australia



Manufactured and Distributed by:

**Centaur Development**<sup>TM</sup>  
4451-B Redondo Beach Blvd.,  
Lawndale, CA 90260  
Phone: (310) 542-2226  
Fax: (310) 542-9998

For information call  
**1-800-621-2202**



# REVIEW

**Publishing  
flyers,  
newsletters,  
or booklets.**

## PROFESSIONAL PAGE 3.0

*Gold Disk*, \$295.  
Hard-drive installable.  
Not copy protected.  
2.0 compatible.

Accelerator compatible.  
Minimum system: 2MB RAM, hard disk, ARexx v. 1.15.  
Recommended system: 4+MB, hard drive, ARexx,  
68030 accelerator.

For a long time, whenever I looked at Mac and PC desktop-publishing products, I wondered if I was wasting my time with the Amiga—but I wonder no longer. Professional Page 3.0 is the first release in which Gold Disk appears to be not just selling a desktop-publishing program, but competing with the big guns.

Previous versions had quite a few holes, but this edition fills most of them. For example, page sizes up to 48x48-inches (and larger for output) are now possible, and the long-overdue undo button is included. Auto-tiling is supported, and the color-separation routines have been improved.

Two new hot links, one to Pro Draw 3.0 (not released as of this writing) and the other to Art Department Professional, let you edit drawings from Pro Page. (A third links you to Professional Calc.) Even better, a new text-wrap feature lets you irregularly wrap text around a structured-drawing object. Wrapping bitmapped graphics isn't directly supported yet, however, so while you can flow text around the outline of a vector-based graphic of a boat, you can do so only around the rectangular bounding box of a boat that's bitmap-based.

### PROFESSIONAL IS THE WORD

To simplify your installation efforts, Pro Page 3.0 provides its own Install utilities and several support and configuration files. Use them. They are the best improvements of the new version.

All Amiga programs should be as configurable as Pro Page. PPage.ini, for example, substitutes itself for numerous Assign statements. The only Assign command now required is to the CGFonts directory.

PPage.DFLT is a configuration file that tells Pro Page where to look for your project files. Upon exiting, the program updates PPage.DFLT to your last project's directory. The next time you use Pro Page,

the file requesters automatically display those same directories. This causes a problem if you decide to work on another project where the location of your files differs from your previous project, or if more than one person uses the same computer. I've worked around this by starting Pro Page from a script file that copies a master PPage.DFLT file before executing Pro Page.

The most powerful configuration file is PPage.config, which lets you customize how Pro Page starts. You can specify the initial text-greeking sizes, font size and type, page magnification, grid size, whether to start in wireframe mode, and so on. This useful file is also easy to customize.

After all these years, Pro Page *finally* supports Adobe Type 1 fonts. The supplied FontManager program converts Type 1 fonts into Compugraphic format. To convert a font, you need both the printer font and the Adobe metric file. (The program provides additional save modes for accelerated Amigas.) Once you transform them, you can permanently download your PostScript fonts to your printer with the Download program. Font support is further improved by letting you specify font sizes to an eighth of an inch and by adding five more Compugraphic fonts: Caslon 540, CG Omega, Garth Graphic, Shannon Book, and Unical.

Pro Page's Information requester now acts as a check list for service bureaus. It lists all PostScript fonts and EPS files used in your document, as well as all bitmap files. Unfortunately, there's no way to print this information to a text file.

Importing text files has been improved by creating text-import filters. New additions include Kindwords, excellence!, and ProWrite. I just wish other nonAmiga formats were supported in addition to WordPerfect (PC) and ASCII (PC). (How about some Mac formats, too?)

### RUB THE LAMP

The most noticeable new feature is the collection of Genies (analogous to Microsoft Publisher's Page-

To locate the vendors of the products reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 106.



# WS

Wizards). Pro Page now has an ARExx interface, and each Genie is an ARExx script. Currently, there are six types of Page Genies and over 50 Function Genies, and Gold Disk is encouraging third parties to write more. Most Genies work alike: Select it, respond to the questions, and the Genie does all the work.

You use Page Genies in the same manner you create any other page—from the Page/Create menu option. You can create various Avery labels, business reports, envelopes, full-page ads, newsletters, and twofold brochures.

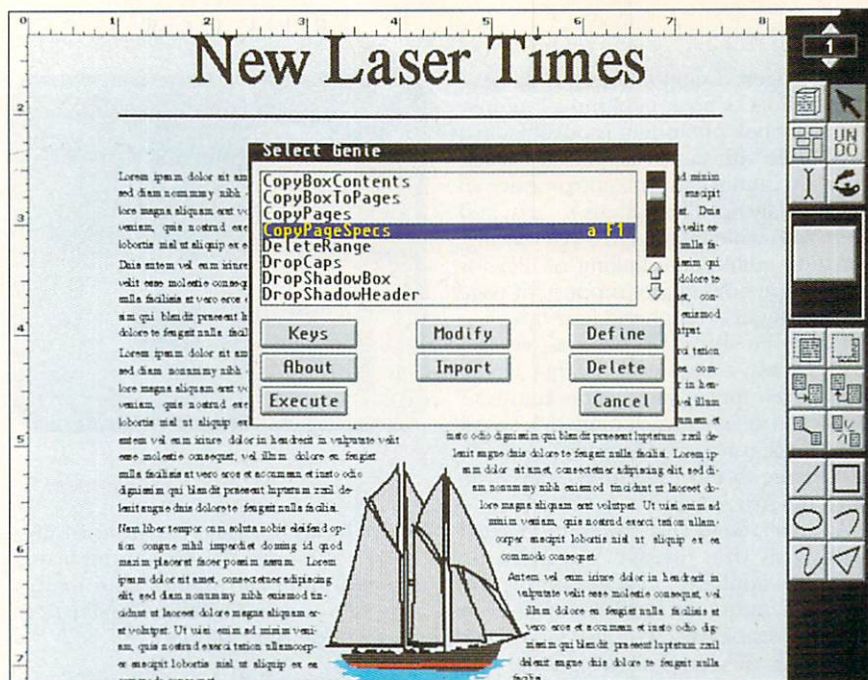
Function Genies are plentiful (although I could wish for dozens more). Modifying your text, for example, is as easy as clicking a mouse button. You can change all letters to upper case, create superscripts and subscripts, create drop caps and small caps, globally change fonts, or capitalize the first letter of selected words. You can delete, move, or copy a range of pages or modify their attributes. You can insert another Pro Page document within your current one. You can convert boxes into columns, change box attributes throughout the document, copy a box's contents to a range of boxes, or perform a global search-and-replace.

There's a Genie that creates as many pages as needed while importing text, and another creates timed backup files. Still another finds all occurrences of a style tag and returns a list of text using that tag. Two separate Genies create tables (limited to drawing boxes around imported data). Other tidbits include entering and retrieving personal information, creating drop shadows, copying box attributes, aligning boxes, changing and saving configuration preferences, performing math calculations, converting typesetting units, and invoking ARExx commands from a command line.

## DON'T STOP NOW...

Although I'm pleased with all the new features, I'm frustrated by what wasn't included. For example, there is no way to print only odd or even pages or to provide print spooling. I'm also surprised that there's still no support for decimal tabs, dot leaders, paragraph numbering, or creating fractions, and you still can't produce several standard typesetting characters, such as an em-dash, true quotation marks, or ligatures.

These missing characters also create holes in spe-



cialized typefaces, such as Zapf Dingbats or Symbol, and the Pro Page manual shows many unused spots in the keyboard mapping. There must be a solution to this problem somewhere. Dual-page and full-page monitors are ignored, as well, as are AmigaDOS 2.0's virtual screens. In addition, you're still stuck working with one document at a time. Work-group publishing and special networking tools aren't supported, either. Gold Disk and all other Amiga developers must consider this if the Amiga is ever to be accepted as a business tool. While on-line help is still not included (except for Genies), you do receive a separate help-book program.

Few improvements were made to the Article Editor (AE). Unlike Pro Page 3.0, the AE doesn't have that crisp 3-D look of Workbench 2.0. It still uses the Sort button in the File Requester, which Pro Page mercifully discarded in version 2.0. I wish the AE knew where I store text files; PPage.DFLT provides this information, but the AE doesn't use the new configuration files. Clipboard and ARExx support are missing, and the macro language, although useful, ignores file requesters. ▶

**Professional Page 3.0's Genies make layout a snap.**



## YOUR TURN!

The ARExx interface in Professional Page 3.0 is as extensive as any I've seen, and the ARExx Genies open up amazing possibilities. The Page Genies give novice users a quick way to make a variety of standard formats. The Function Genies take much of the drudgery out of page creation. I want more, however. I'd like to be able to get information from Pro Page about the width of a string in a chosen font and size. It's a bit too difficult now to find the right size for a box when the size of the box is not known when a function is written.

**Robin Evans**  
Seattle, Washington

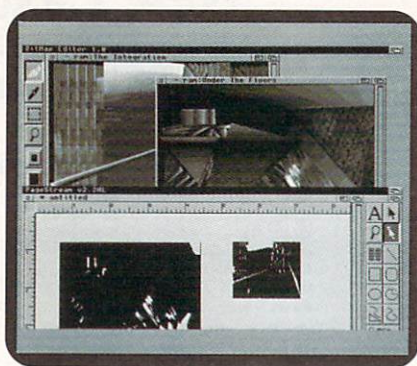


My biggest disappointment is that Pro Page still lacks book-publishing features. I'm sure book publishing is possible on a small scale with some customized Genies. Still, you cannot conveniently produce an index or anchor illustrations to text, and there's no table editor, cross-referencing, equation editor, auto-linking of files for multichapter designs, or support for page numbering of two-ups and four-ups.

Unlike Pro Page 2.0, I haven't yet run into any major bugs with 3.0, but I have found a few minor quirks. The Auto-Save Genie and default page settings don't work from PPage.config, and I couldn't send text back home to Pro Page from TransWrite when the Article Editor was loaded.

All in all, Gold Disk can hold its head high with this release. An attitude change is apparent, and I hope the developers continue to add features. Even though I still have a wish list, Gold Disk has finally delivered a professional version of Pro Page that's competitive with other packages, including those on the Mac and PC. It's still confined in practice and nature to page publishing, but at that level it now performs well.

—Daryell Sipper



**PageStream 2.2 lets you subscribe to bitmaps from HotLinks Editions' BME.**

known for its fluid and easy-to-use interface, its extensive file-format importing and exporting capabilities, and its vast array of features. The latest version (2.2) improves on this tradition.

### PAGESTREAM 2.2: NEW LOOKS, NEW HOOKS

The first thing you will notice are the changes to the windows, requesters, and tools. All now sport the AmigaDOS 2.0 3-D look. Under 2.0, PageStream 2.2 uses the standard file requester and opens on the Workbench screen if so directed by the Tool Types in its icon (or the command line options if run from the Shell). Even under 1.3, PageStream 2.2 retains 2.0's dimensional appearance.

From the functionality side, requesters now allow double-clicking on list entries (such as file names) to select and dismiss requesters. In addition, many keyboard/menu combinations now exist to handle such situations as creating and printing documents with previously established settings. In the toolbox, some tools were merged and a couple of minor new ones added, including a zoom control.

Soft-Logik has also added or improved modules for import, export, and control of output devices (including plotters and sign cutters). For example, PageStream now controls HPGL-compatible plotters and sign cutters, the Roland CAMM1 sign cutter, and color PostScript printers. Moreover, the PostScript driver is improved. On the import side, 2.2 offers modules for PCS (PC Paintbrush format), EPS (Encapsulated PostScript) for ASCII, Mac, and IBM formats, as well as Adobe Illustrator EPS.

By far the most important improvement in PageStream is the addition of HotLinks, Soft-Logik's contender for an interprocess communication standard. Whereas ARExx is primarily intended for passing commands between programs, HotLinks is intended to pass data. Also unlike ARExx, HotLinks can communi-

cate between two programs that may not even be running. It can even communicate between more than two programs; one program's update to its data can be seen by all the others that subscribe to the data, whenever they reference it. If one or more HotLinks subscribers are running when an update takes place, they are notified of the change and can automatically update themselves with the changed data.

For example, consider a common PageStream scenario: You create a document in a text editor, set up a layout in PageStream, pour the text into the layout's columns—and then find an error in the text. If the necessary change is small, you might make it in PageStream and then export the new text to the document. For an extensive correction, you'd change the text in the text editor, save it to disk, clear the columns in PageStream, and re-import the text—not much fun.

With HotLinks, it's much simpler: In PageStream 2.2, you "subscribe" to an "edition" of text, rather than importing it. If the edition is updated by a HotLinks-compatible text editor, the text in



### YOUR TURN!

PageStream 2.2 is a major advance. The screen refreshes are faster, and printed output looks great on both dot-matrix and PostScript printers. The inclusion of magnification in the toolbox as well as the menu is very handy. PageStream 2.2 is one program that can demonstrate the Amiga's viability in a professional environment.

Myron Lieberman  
Tempe, Arizona

the column is automatically updated. The same is true for images, and will shortly be true for structured drawings.

### HOTLINKS EDITIONS: READY FOR HOOKUP

To give PageStream something to link to, Soft-Logik produced HotLinks Editions, which includes HotLinks, the PageLiner text editor, and the BME bitmap editor. Soft-Logik has made the HotLinks standard available to developers, as well, so we may see other releases.

PageLiner is a straightforward text editor, with the ability to preserve PageStream formatting information such as styles, point sizes, and tags. Because the text used for editions is stored in the IFF DTXT format (an Interchange File Format standard for desktop-published

*Continued on p. 58.*

## PAGESTREAM 2.2

Soft-Logik, \$299.95.

Hard-drive installable.  
Not copy protected.  
2.0 compatible.  
Accelerator compatible.  
Minimum system: 1MB RAM, two floppy drives.  
Recommended system: 2MB RAM, hard drive, accelerator.

All-level desktop publishing  
and sign making.

## HOTLINKS EDITIONS

Soft-Logik, \$99.95.

Hard-drive installable.  
Not copy protected.  
2.0 compatible.  
Accelerator compatible.  
Minimum system: 1MB RAM, two floppy drives.  
Recommended system: 2MB RAM, hard drive, accelerator.

Text and image editing, interprocess  
communications.

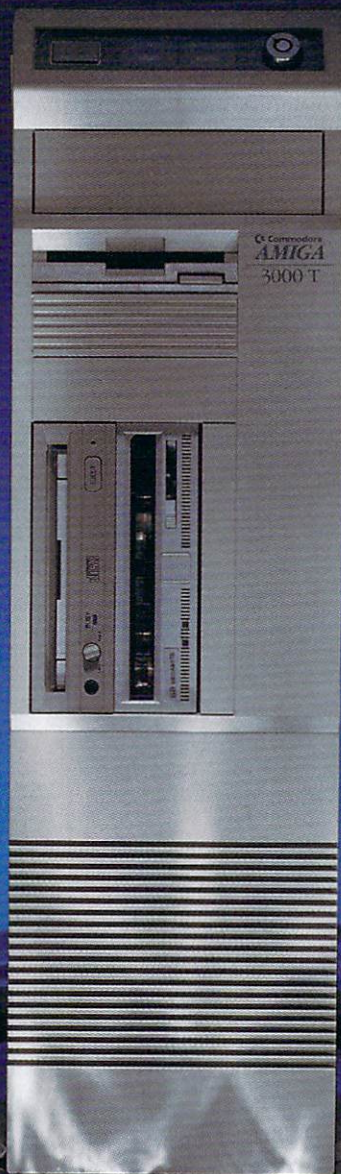
As one of the Amiga's top two desktop-publishing programs, PageStream is



# *The* ULTIMATE

BY LOU WALLACE

*Amiga*



PHOTOGRAPHED BY EDWARD JUDICE

AmigaWorld 25



*Just how much expansion power and add-on capability can you cram into one Amiga? AW's Senior Editor of Technology had a go at it recently and here's what he came up with.*

ONE OF THE strong points of the Amiga has always been its ease of expandability. With features like auto-config hardware and an enormous linear address space that is the equal of many mainframe systems, we have always known that it is one computer system that you can expand to suit almost any need.

But late one night recently, in the room in my home that houses my own Amiga system, I heard a small voice taunting me in a kind of mocking whisper: "Yea, Lou, while you and many others have *talked* about this

tion again, so I replaced the CPU board once more, going with the fastest 68040 product.

Next I needed memory. My Tower already has 18 megs on the motherboard (16MB of 32-bit RAM and 2MB of chip RAM), plus I now had the 32 megs from the Mercury card, bringing the total to 50MB. Most people would have said that was enough, but by this time power-user syndrome had overtaken my body, and strange voices in my head were chanting: "More RAM! We need more RAM!"

Never one to ignore disembodied voices, I began to search for a suitable RAM card. There was really only one choice: **Progressive's Pro-RAM 64MB Zorro III RAM card** for the A3000/3000T. Plugging in one of those babies, I turned on the system and was pleased to see that I now had 114 megs of RAM. That seemed enough to play my favorite game of Stellar Space Asteroids, so I moved on to storage.

Starting off with just the standard 200MB Quantum, I quickly realized I needed more hard-disk capacity. While I could simply have gone for one of the large, full-height 5 1/4-inch gigabyte drives,

I decided that I would rather spread the storage out over several drives. I opted for a 520MB 3 1/2-inch **Fujitsu SCSI hard drive** and an 88MB **SyQuest removable-media drive**.

I gave a lot of thought to which removable media to use, and almost decided on one of the new flopticals; because they currently come only in 20MB formats, however, I went instead with the 88MB SyQuest. The SyQuest offers good disk performance, and I can just pop in a new cartridge when I need more storage.

While all this writable storage was impressive, I wanted access to the ever-increasing library of software and data found on CD-ROM. To gain this, I needed a drive and a CD-ROM file system. I opted for a **Chinon internal CD-ROM drive** and **Canadian Prototype Replicas' CDROM-FS** as the driver software. (And since no Amiga CD-ROM system is complete without the entire Fred Fish collection, I added **HyperMedia Concepts' Fred Fish CD-ROM**, which gives me more than 600 floppy-disks' worth of PD programs on a single disc.)

#### ON TO THE EXTRAS

Next on my agenda was the display card. While I like the Amiga's standard graphics, those darn voices kept screaming: "24 bit! 24 bit!" I took a long look at all the 24-bit cards for the Amiga (there are a lot of options) and settled on **Great Valley Products' IV24**. This multifunction card offers a full 24-bit display, RGB and composite genlock, a flicker-free display,

highly touted expansion potential, has anyone ever really tried to push the Amiga to the limit?" I decided to give it a try, and with the help of several Amiga third-party vendors, I came up with one reasonably powerful computer system.

To begin with, I chose the **A3000T** as the base for my expansion because it has lots of drive bays, a slew of expansion slots, and a large power supply. Of course, some of what went into the Tower could also have been used in the A3000 or A2000, but I would eventually have run into space and power limitations.

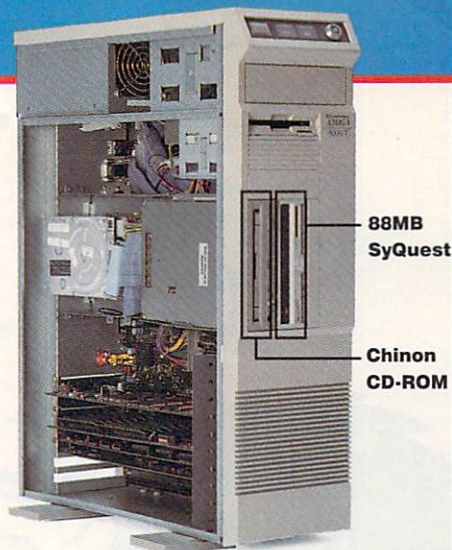
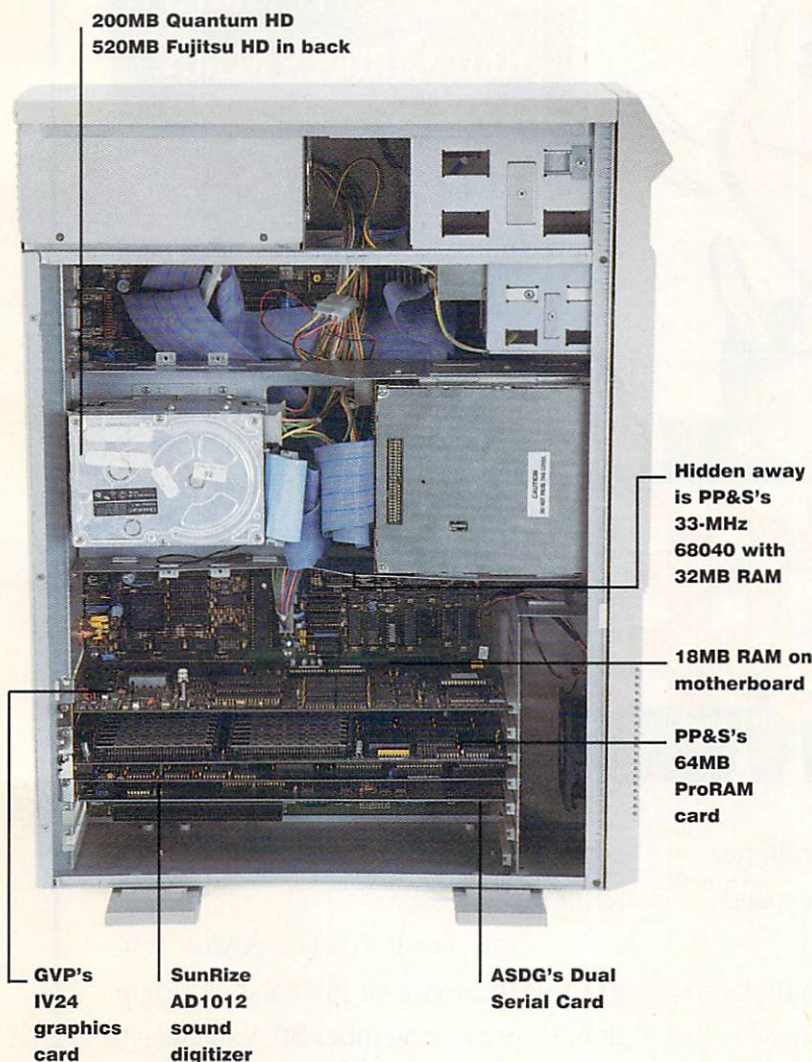
#### MORE SPEED, MORE MEMORY, MORE STORAGE!

The first thing I wanted to do was add a faster processor. While the 25-MHz 68030 in the A3000T was nice, it didn't have the raw computing power I wanted. The obvious choice was a 68040, but which one? I started out with **Progressive Peripherals' 28-MHz Mercury '040 card** (which has 32 megabytes of 32-bit RAM on board). This is one impressive accelerator; but soon after I installed it, I received GVP's G-Force '040 card. This baby also operates at 28 MHz, but it has only 8MB of RAM. The RAM, however, is very high-speed 40-ns RAM.

Having to choose between slightly faster processing and more memory, I opted for the G-Force because speed was my primary concern. But then I received **Progressive Peripherals' new 33-MHz Mercury card** (it actually clocks in at 35 MHz), which was also equipped with 32 megs of 32-bit RAM. That changed the equa-







## Ultimate Amiga: Vital Statistics

A3000T (18MB RAM, 200MB drive, 1960 Multisync)	\$5255
PP&S 35-MHz/32MB Mercury 68040	5000
PP&S ProRAM with 64MB	4450
Fujitsu 520MB HD	1100
SyQuest 88MB removable	500
Chinon CD-ROM drive	350
CD-ROM-FS	50
HyperMedia Fred Fish CD-ROM	70
SunRize AD1012	595
ASDG Dual Serial Board	299
Supra FAXModem V.32bis	350
GVP IV24	2199
<b>TOTAL</b>	<b>\$20,218</b>

picture in a picture, and a variety of support software.

The voices started chattering about sound, so to shut them up I quickly installed *SunRize Industries' AD1012* 12-bit digitizer. Currently, the AD1012 is the best audio digitizer available for the Amiga, and it is able to digitize sound at rates of 80,000 sps (samples per second). It can also digitize audio directly to hard disk, so sample size is limited only by the available storage space.

One of the things I always find I need more of is serial ports—one is never enough. I narrowed my choices to Commodore's A2232 multiport card and *ASDG's Dual Serial Board*. I decided on ASDG's card because it supports up to 115K baud and seems to be a bit more reliable than the CBM product.

Finally, for a modem I wanted a fast internal card, but currently the fastest internal Amiga modem is the Supra Modem 2400zi Plus—which just isn't fast enough. So I opted for *Supra's* external *FAXModem V.32bis* (not pictured), which offers transfer rates of 14,400 baud.

So is this really the *ultimate* Amiga? I like it pretty

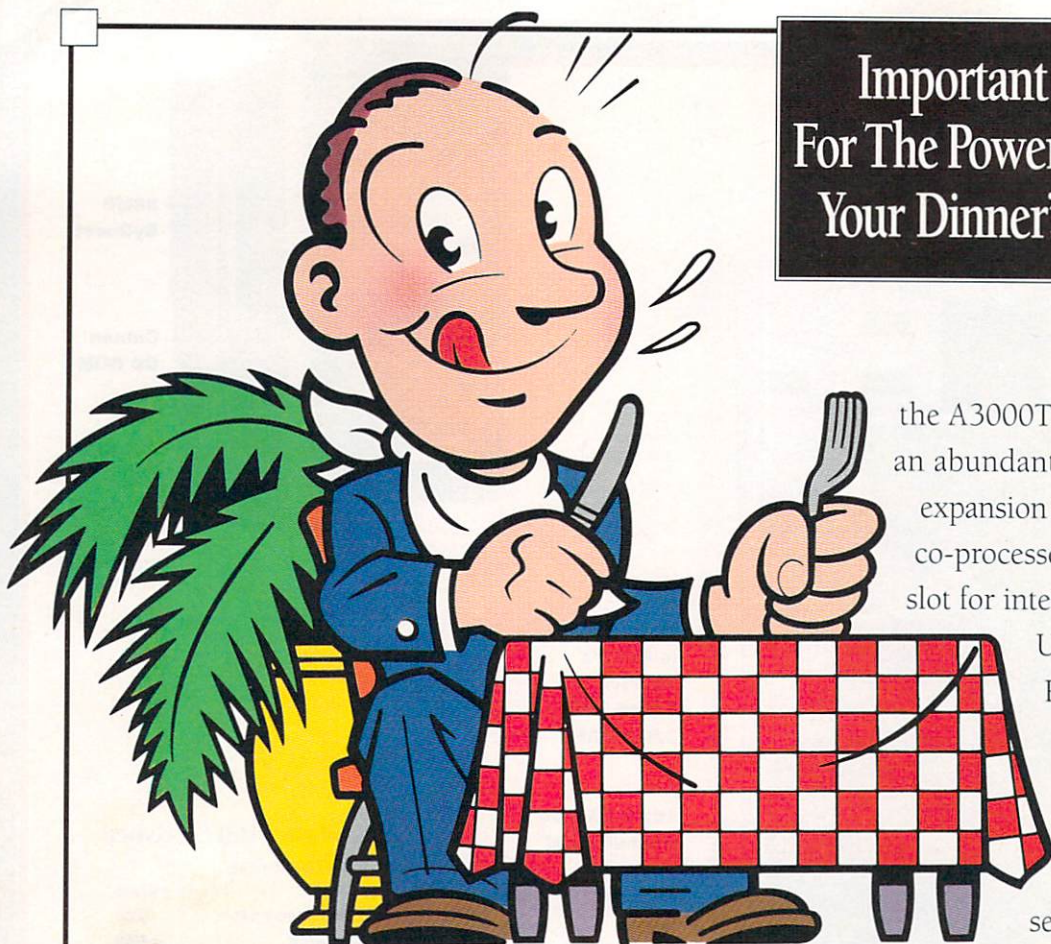
well, but those voices keep saying: "C'mon, Lou, you can do better than that! You've still got two drive bays, one Amiga slot, and two PC slots that are empty." Well, I could still add another 64-meg RAM card, a Bridgeboard or Mac card, and maybe even throw in a TBC card or two. Perhaps a streaming tape for backup could occupy that 5 1/4-inch bay, and, darn it, I really did want one of those neat flopticals!

Okay, enough; maybe I'll do this again next year and see what the Ultimate Amiga looks like then. But at the present time I want to put this mega-Amiga to work. Let's see now; what I have really always wanted to know was the answer to the ultimate question: What is the meaning of life, the universe, and everything? "Oh, Deep Thought..." ■





## Important News For The Power Hungry: Your Dinner's Ready.



the A3000T is stuffed with an abundant selection of expansion slots. There's a co-processor slot. A video slot for internal devices.

Up to four PC slots. And up to five Zorro III slots. Every Amiga 3000 series computer

**C**ome and get it.

The new Amiga® 3000T multimedia workstation tower—the most expandable, flexible Amiga ever built.

Powered by a 25 MHZ Motorola 68030 CPU, with a 68882 math co-



Now buy a A3000T for \$4,499 and get a free monitor.\*\*

processor, the A3000T features a 200MB hard disk drive. A 3.5" floppy disk drive. 5MB of RAM, expandable to 18MB.

And 32 bit bus architecture to transfer mammoth amounts of information at breakneck speed. The truly power famished will be happy to know that

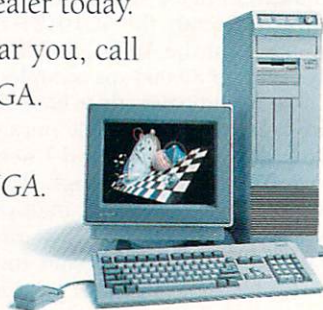
comes with CommodoreExpress™ Gold Service options.\* And convenient leasing terms are available.

Now, you'd expect a power feast like this to carry a fat price tag. But right now, through September 30, you can sit down to an Amiga 3000T with a monitor for just \$4,499.\*\* Which in itself is a powerful reason for seeing your Commodore dealer today.

For a dealer near you, call 1-800-66-AMIGA.

In Canada, call 1-800-661-AMIGA.

Bon appetit.



**Commodore**  
**AMIGA**

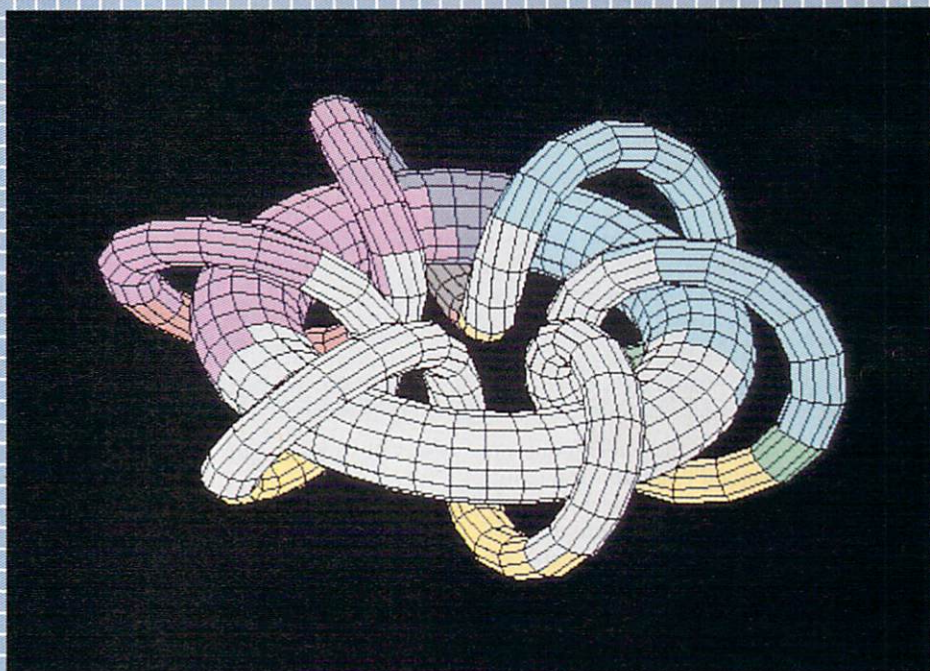
© 1992 Commodore Business Machines Inc. Commodore and the Commodore logo are registered trademarks of Commodore Electronics Ltd. Amiga is a registered trademark of Commodore-Amiga, Inc. Products available on GSA schedule GS-00K-91-AGS-5069. \* Available only on systems purchased in the U.S. through an authorized Commodore-Amiga dealer. Customer activation required. Some optional programs include a charge. \*\*MSRP

Circle 9 on Reader Service card.



# Math Spoken Here

*Professional and  
would-be scientists:  
Maple V speaks  
your language. It's  
an algebra program  
that calculates,  
graphs, and opens  
many doors to  
Amiga users.*



W

BY MARVIN WEINSTEIN

hile the Amiga has always been an ideal platform for preparing scientific papers, until recently it lacked software designed for serious computation. Now **Maple V**, a premier symbolic-math program (\$450, *Waterloo Maple Software*), goes a long way towards filling this void.

As a theoretical physicist, I find that a combination of Maple V, *Radical Eye Software's* **AmigaTeX** text-formatting program (\$200), and a good, ARexx-capable drawing program such as **ProVector** (\$299.95, *Stylus*) provides everything I need in order to do a computation, write a ►



paper, and submit it for publication. A must for Amiga-using physicists, mathematicians, and engineers, Maple V can also be of value to teachers and students. In fact, the State University of New York at Albany offers an innovative math course built around Maple V running on Amiga 2000s and 2500s.

Symbolic-math software takes the drudgery out of doing analytic calculations, much as the hand calculator takes the drudgery out of numerical computations. With it, even the average person can command the

and, in general, make life simpler for someone doing lengthy analytic calculations. Ideally, it should also be user-friendly and fail-safe.

Throughout this article, I'll detail how Maple V approaches the ideal, but let me start by pointing out that its predecessors (all on nonAmiga platforms) had only a subset of these characteristics. When Maple V and its competitor Mathematica emerged in the 1980s, they added much more power, a better user interface, modern syntax for the programming language, and powerful graphing capabilities.

A revolution came when the creator of Mathematica realized that an algebra program of this caliber was not simply a computer-science curiosity, but had commercial value. Since then, the symbolic-computation group at the University of Waterloo has dug furiously for the "gold in them thar hills," and a healthy competition has developed between the two programs. Maple is the first to tap the Amiga market.

### FOR THE SAKE OF COMPARISON...

Although Mathematica does not exist for the Amiga (versions of both programs exist for MS-DOS, Mac, NeXT, Sparc, and other RISC stations), it is Maple V's nearest competitor. My own and many of my colleagues' experience is that out of the box, Maple V is more powerful. Also, on a given platform, it runs faster and is more sparing of memory.

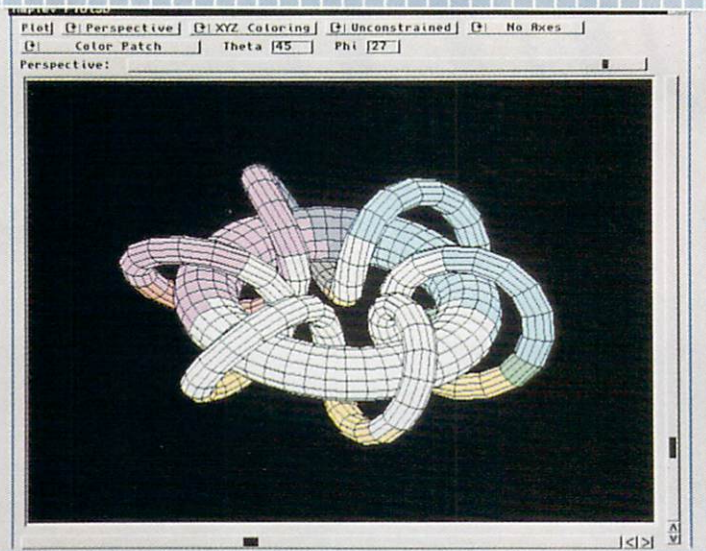
A cursory inspection of the *Maple V Library Reference Manual* (New York: Springer-Verlag) gives a feeling for the enormous repertoire of functions that are part of the standard Maple V distribution. This book, which reproduces the help files available on line, describes approximately 2000 functions. Besides all of the special functions, there are packages for linear algebra, statistical analysis, student calculus, combinatorics, differential forms, group theory, logic, simplex-linear optimization, groebner bases, number theory, Lie symmetries, Newman-Penrose formalism, Euclidean, analytic, and projective geometry, and so on.

The only difficulty with such an embarrassment of riches is that it is sometimes hard to know what you must use to solve a problem. I frequently begin writing a program only to find, hidden away under some unfamiliar name, a built-in function that can do the job.

This brings me to documentation, a place where Mathematica tops Maple V. There is no question that more varied documentation exists for Mathematica, especially at the introductory level. Besides the *Library Reference Manual*, the only Maple V books I am familiar with are *The Maple V Language Reference Manual* and *First Leaves, A Tutorial Introduction to Maple* (New York: Springer-Verlag). These books are helpful, but do not give a complete introduction to what Maple V can do.

While it is simple to get started with Maple V, learning to exploit all of its power can take a while. Fortunately, the program provides on-line help, and perhaps more important, most Maple functions are written in Maple's own programming language. This means that you can print the source code for these functions and study them to learn programming technique.

Although I maintain that Maple V is more powerful ►



Maple V's 3-D graphics screen provides sliders at the right and bottom for rotating the object in three dimensions. The various gadgets are used to change the plot's characteristics.

mathematical technique once reserved to the highly trained engineer or scientist.

Maple V does what is called algebraic manipulation, mathematical manipulation, or computer algebra. It computes equations and graphs them in two or three dimensions. Like other algebra software, Maple V is in part a language. Yet it is distinct from languages like C or Fortran in that it can manipulate expressions, parts of which are implicitly or explicitly left unevaluated. Thus, Maple V allows such expressions as

```
x := (a+b)^2
```

```
x := x + 11;
```

even if the variables a and b have not been assigned a value.

Good algebra software provides tools for expanding, simplifying, factoring, differentiating, integrating, and otherwise massaging user-defined expressions of this type. A sophisticated symbolic-math language must know about trigonometric functions, special functions like Bessel functions, linear algebra, and matrices. It should also be able to do known definite and indefinite integrals, arbitrary precision arithmetic, infinite sums,

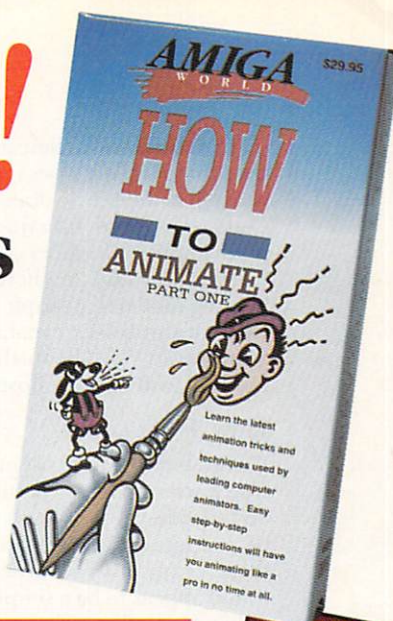


# Get Animated!

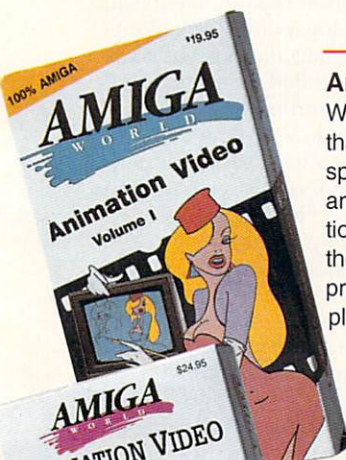
## Learn From the Experts

Now you can learn all about the latest in animation software! With **HOW TO ANIMATE, PART 1**, you'll discover the amazing software programs available to help you animate just like the Pros!

60 min. \$29.95. Order your copy today! AWTMHTA1



### ALSO AVAILABLE



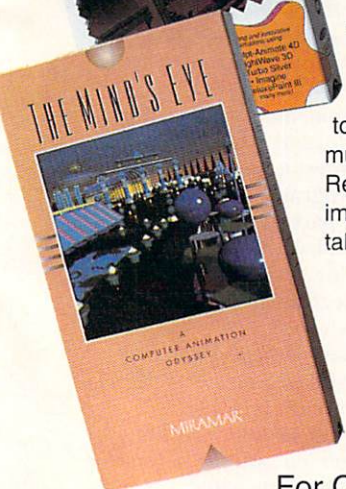
**ANIMATION I** The original AmigaWorld Animation Video. 48 minutes that will fascinate, entertain and inspire viewers as it demonstrates the amazing capabilities of Amiga animation. Each animation is prefaced by the artist's name and the animation products used. Experiment and explore the possibilities yourself. \$19.95

AWTMV1



**ANIMATION II** AmigaWorld editors do it again! 90 minutes of exciting, innovative animations using programs such as Sculpt-Animate 4D, LightWave 3D, TurboSilver, Imagine and DeluxePaint III. You'll be thoroughly entertained as you absorb new animation techniques and ideas. \$24.95

AWTMV2



**THE MIND'S EYE** A compelling look at the creation of the universe utilizing the talents of the world's top computer animation artists with music composed by James Reynolds. 40 minutes of powerful imagery from over 300 of the leading talents in the field. \$19.95

AWTMME

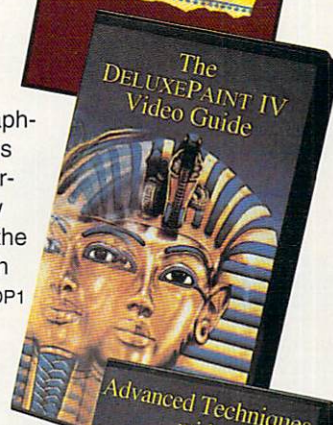
**HISTORY OF THE AMIGA** An intriguing, fun-filled look at the history of the Amiga computer. Meet the people, view the products and visit the places that helped to make the Commodore Amiga and Amiga user unique in the history of computing and animation. \$19.95

AWTMHA



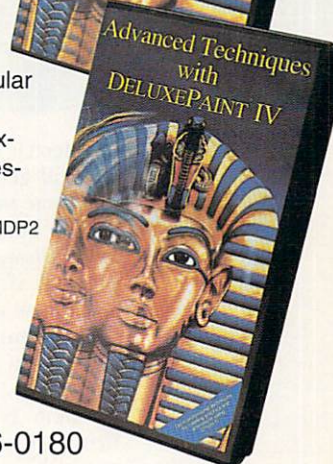
**DELUXEPAINT IV VIDEO GUIDE** In easy to follow, step by step fashion you'll explore many of DPaint's features to fulfill your graphics and animation needs. Includes the new Menu Structure, Metamorphosis, HAM color mode, the new Gradients and Cycle requesters, the advanced palette mixer and much more! \$24.95

AWTMDP1



**ADVANCED TECHNIQUES WITH DELUXEPAINT IV** Learn tips and tricks for combining DPaint's different tools to achieve spectacular effects with professional results. Create 3D text, drop shadows, textures, cycle color animation, professional titling technique and more. \$24.95

AWTMDP2



Call toll free

# 1-800-824-5499

or see your local Amiga dealer for these videos.

For Customer Service or Foreign Orders please call 410-546-0180  
between 8 AM - 6 PM EDT.

Add \$2.95 per video for shipping and handling. Canadian orders add 7% GST. California & Maryland orders add appropriate tax.

Make check or money order payable to: **TechMedia Video, PO Box 2151, Salisbury, MD 21802**

Available in VHS. Some titles available in PAL. Allow 3-4 weeks for delivery. TechMedia is the licensed North American distributor of AmigaWorld Videos. Amiga is a registered trademark of Commodore-Amiga Inc.

DeluxePaint IV is a registered trademark of Electronic Arts. DeluxePaint IV Video Guide and Advanced Techniques with DeluxePaint IV are products of Saddleback Graphics. The Mind's Eye is a registered trademark of Miramar.

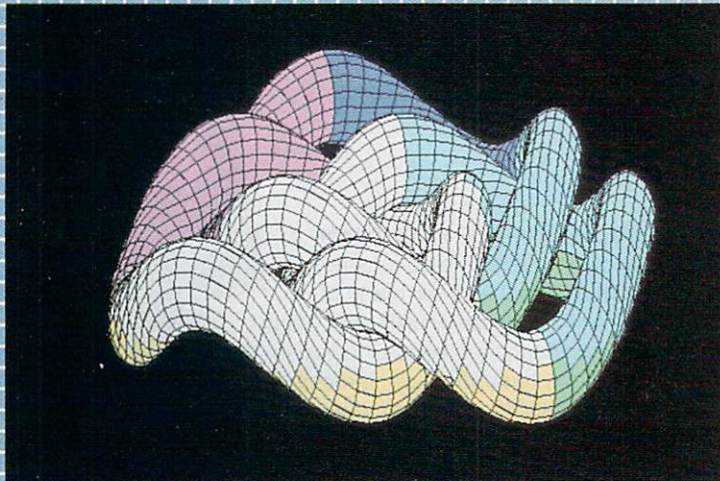
# TECHMEDIA VIDEO



than Mathematica, there are some things Mathematica does that Maple V does not. For example: The current version of Maple V does not, as Mathematica does, evaluate special functions for complex argument; Mathematica produces contour plots, whereas Maple V does not; and Mathematica's 3-D graphics use a lighting model that Maple V lacks. Furthermore, Mathematica's graphics capabilities are generally glitzier than Maple V's. The forthcoming Maple V Release 2, however, will correct most of these shortcomings.

### HOW TO SUCCEED

Understanding a problem and knowing how to recognize a wrong answer is still a prerequisite for success, because all symbolic math programs make mistakes. To be precise, there are circumstances in which each of these programs will give the wrong answer to what would appear to be a simple problem. For example, ask either Maple V or Mathematica to do the integral for



**These Borromean rings were distorted because they were plotted without the Constrained option. If any one ring is removed, the remaining two rings are not linked.**

the electric field inside a spherical shell of charge, and you will get the wrong answer. One reason for this is that these programs do not consistently choose branch-cuts for analytic functions. Another is that neither program allows you to specify if a variable is real or complex, or if one variable is always to be considered greater or smaller than another.

Surprisingly, an older, less sophisticated program called MACSYMA does provide such a calculus of assumptions, and it does give the correct result for this problem. While this shows there is no insuperable difficulty in providing such a facility, a major rewrite would be necessary to incorporate it into Maple V. I have been told that Waterloo Maple plans to introduce such a facility when it releases Maple V.2 later this year; however, it may not be possible to hook all of Maple's routines into it by that time.

This by no means indicates that symbolic math programs are useless. Far from it! It just means that you must use them with the same degree of caution you would in doing a calculation by hand. There is no substitute for common sense and careful checking of limiting cases.

### INTERFACES

Maple V's algebra engine is separate from its user interface. This means the engine can be the same from platform to platform, while the user interface can change to utilize the facilities available. The Amiga version of Maple V runs in one of three ways: through its standard window interface (referred to as IRIS), from the command line of a shell (its CLI interface), or as an ARexx server.

Maple V's IRIS interface consists of an input and an output window. The input window has one menu with a few options and rudimentary line-editing capabilities. The output window has a scroll bar, allowing you to examine a result that has scrolled off-screen. Both windows support cutting and pasting.

Unfortunately, the Maple V program controls both the input and output windows directly, rather than spinning them off as separate handlers. Thus, if Maple V is chewing on a big expression, the input and output windows are dead, and you cannot scroll back to study a previous result until computation has ceased. There is no reason for this kind of behavior on a multitasking machine such as the Amiga. Fortunately, you can get around these limitations by exploiting Maple V's CLI interface.

You can launch Maple V from a shell using the `-cli` option. In this case, the program uses the CLI for all input and output, much as it does on a mainframe. While this might not seem like a virtue, it allows you to totally reconfigure the way Maple V works. For example, by combining WShell 2.0, ARexx, rexxarplib, TurboText and fifo-pipes, I have a version of Maple V with powers and abilities far beyond those provided by the IRIS interface. When I launch Maple V, I get something that looks similar to the IRIS interface except that by the grace of WShell, it offers programmable menus, a scroll bar (which stays active while Maple V computes), the ability to cut and paste part or all of a session, automatic saving of all output to a history file, and so on.

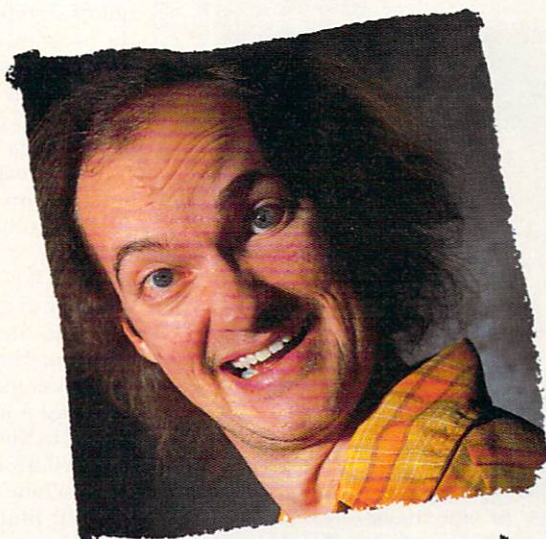
I can also load a file from a menu, or open a TurboText session, write a program, and—at a keystroke—send all or a selected part of the program to Maple V for processing. Obviously, I don't have the room in this article to explain how to do this, but if you would like a disk containing the relevant ARexx macros and a doc file that explains how everything works, send a floppy disk and a self-addressed, stamped disk mailer to: Maple V Program, c/o Barbara Gefvert, *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458.

Unfortunately, a bug can bite when you launch Maple V from a shell using the `-cli` option: If you do not use the correct case, your machine will crash. Waterloo Maple Software claims that a fix for this is in the works. A more serious problem is that the CLI mode loses track of the screen used to display two-dimensional plots. This means that when you quit Maple V after having called the `plot()` function, the graphics screen ►





THIS OPPONENT IS PROGRAMMED  
TO BE CHALLENGING.



this one wants to rip your  
lungs out.

If you think you're good at games, then let's have some real fun. When you're online with GENie® Multi-Player Games, you're playing real people, in real time. Some of the best players around the world. ☐ Splash a bandit in Air Warrior®, and you've just taken out eight other guys, who'll be back gunning for you. Blast a MechWarrior® in MultiPlayer BattleTech™, and who knows? Could be that jerk from the coast. Could be a mercenary who's looking for a few good friends. ☐ With GENie, the possibilities are endless, the

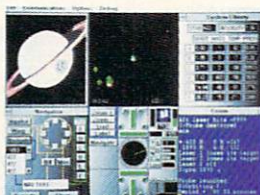
people are terrific, and even the prices are competitive. So put some new life into your joystick, and sign on. We'll see just how good you are. ☐ Sign up now: 1. Set your modem for half duplex (local echo) at 300, 1200 or 2400 baud. 2. Dial toll free — 1-800-638-8369. Upon connection, enter HHH 3. At the U # = prompt, enter XTX99313, Amiga92 then press RETURN 4. Have a major credit card or your checking account number ready. ☐ For more information in the U.S. or Canada, call 1-800-638-9636.



AIR WARRIOR®



MULTIPLAYER BATTLETECH™



STELLAR EMPEROR™

GENie®  
multi-player games

100% ORGANIC OPPONENTS

Air Warrior is a registered trademark and Stellar Emperor is a trademark of Kesmai Corporation. MultiPlayer BattleTech is a trademark and MechWarrior and BattleTech are registered trademarks of FASA Corporation. MultiPlayer BattleTech available only for IBM PC's and compatibles.

Circle 18 on Reader Service card.



will not close, and your machine crashes. Because the IRIS interface does not suffer from the problem, this has proven only a minor annoyance for me, but it is a bug that needs eradicating. Because two-dimensional plotting is being completely redone for Maple V Release 2, the problem should disappear in the next version. A similar problem arises with the `plot3d()` function, but it is neither as severe nor as reproducible.

Maple V also has an ARexx interface, but it is minimal. It is active only when Maple V runs in background mode without a user interface. Maple V does have a `system()` command to let you work around these limi-

wireframe, hidden-line removal, and color patch (colored in several ways), and reset the perspective without retyping any commands.

After you have the display just the way you want it, you can save the plot as an IFF or PostScript file. Currently, Maple V's Postscript plots, unlike IFF plots, do not contain color or shading information. The accompanying figures show some of the plots you can easily produce using Maple V's Plots module.

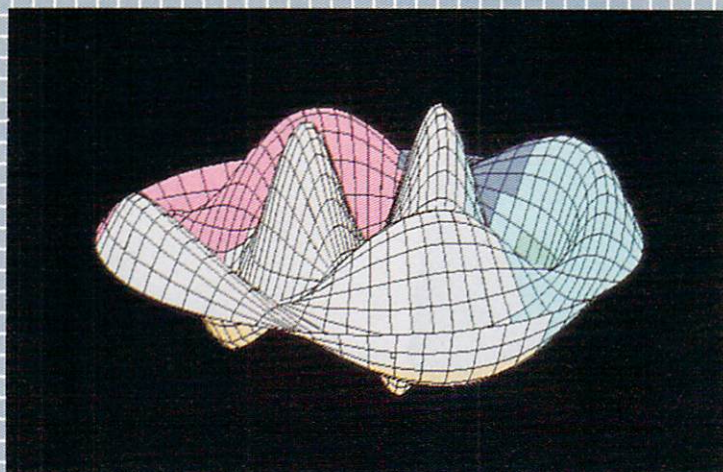
While I have run complex Maple V programs on a 3MB machine with little or no difficulty, big jobs and three-dimensional graphs that plot numerous points eat up a lot of memory. Although Maple V needs only 150K of stack and loads successfully on an A500 with 1MB of RAM, serious use of the program requires significantly more memory. Also, because the program takes up about 9MB of storage space, those without a hard disk will not be able to use it effectively. Scientists and engineers who plan to use Maple V for complex problems should consider an Amiga 3000 with extra RAM.

And, speaking of problems, Waterloo Maple Software provides extraordinary support. Not only can you get help with trouble encountered installing or running the program, but you can even get advice about a program you are having difficulty writing. All you have to do is call or send e-mail to the addresses listed in the manual. In addition, whenever someone reports a bug in the algebra engine that Waterloo can fix simply by rewriting a library routine, the fix is made and posted to the anonymous ftp site, [daisy.waterloo.edu](mailto:daisy.waterloo.edu)(129.97.140.58) over Internet. Connect to this machine and look in the Maple directory, and you will find not only library upgrades but all sorts of user-supplied packages that are ready for downloading.

You are not likely to find Maple V on your Amiga dealer's shelves; you should contact the company directly to buy it (e-mail: [info@maplesoft.on.ca](mailto:info@maplesoft.on.ca)). Waterloo Maple Software provides educational discounts and site licenses at attractive rates. The single-unit academic price of \$395 is not much of a discount from \$450, but for sites with 25 machines, the price comes down to about \$79 each, including a total of five manuals. In my opinion, you get more than you pay for.

Despite the bugs in the current release, Maple V is an extremely powerful and valuable new tool that positions the Amiga as a low-end scientific workstation. Beyond that, I see many opportunities for using Maple V with other Amiga programs in interesting ways. For example, by using Maple V to drive 3-D rendering and animation software, you could produce a scientific-presentation package of tremendous flexibility and might. Maple V opens more than just the obvious doors. ■

*Marvin Weinstein, a theoretical physicist at the Stanford Linear Accelerator Center, works on nonperturbative methods for analyzing lattice field theories and spin systems. Dr. Weinstein has used Amigas since the early days of the A1000 and became involved with ARexx when it was just a gleam in Bill Hawes' eye. He has written extensively on using ARexx to customize work environments. Write to him c/o AmigaWorld Editorial, 80 Elm St., Peterborough, NH 03458.*



Here is a plot of a vibrating drum surface. As with the Borromean rings plot, it was displayed on the 3-D graphics screen and then saved to an IFF file. The equation:

```
with(plots);
```

```
k := 11.61984117;
```

```
plot3d([r*cos(t), r*sin(t), BesselJ(2, k*r)*cos(2*t)], r=0..1, t=0..2*Pi,
  grid=[30,60], orientation=[68,54]);
```

tations. Future releases should provide a continually active ARexx port that obviates the need to play with FIFOs in order to perform the magic discussed in the previous section.

#### PLOTTING AND SCHEMING

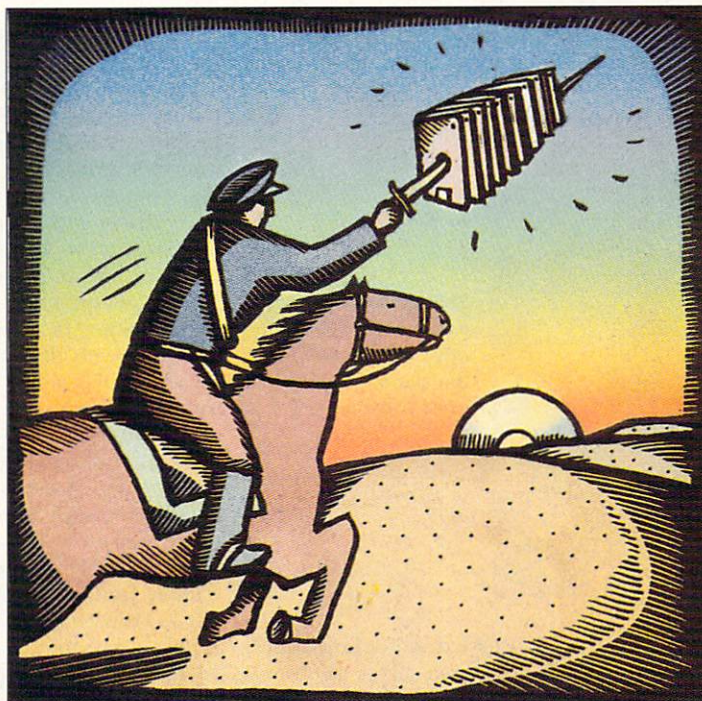
Maple V's graphics capabilities are impressive, and its user interface sports many Workbench 2.0 features. (Maple V runs only under AmigaDOS 2.0—not under earlier versions.) In particular, three-dimensional plots are displayed on a screen endowed with horizontal and vertical scroll bars and a gadget that lets you adjust the amount of perspective in the display. This allows you to plot a function and then interactively rotate the plot, change the plotting mode between



# The CHARGE of the

# CD Brigade

*With 600 floppies' worth of storage capacity per disc, CD-ROM is gal-*



*loping full speed ahead into the*

BY JOHN FOUST

*data breach. So take a forward observation post here as we show you how to mount a CD-ROM system on your Amiga: What you'll need, how to do it, and some of the benefits you'll reap.*

NOT SO LONG ago, the data-storage dilemma for many people was this: Do you really have enough data to make full use of the double-digit-megabyte capacity of your new hard drive? Now, the problem is quite the opposite, and more relevant questions are likely to be: Does your hard disk always seem too small? Does your Fred Fish disk collection consume half the space surrounding your Amiga? Is your addiction to data threatening your pocketbook?

Well, the next time you're about to go charging off into the vast Valley of Data armed only with a measly 40MB hard disk, consider adding a CD-ROM drive to your system. With more than 600 megabytes of storage capacity on each CD-ROM disc, you can field an army of Light Brigades to make sure you'll never again be outgunned or overmatched in battling your data.

CD-ROM easily allows you to store thousands of megabytes of files in compact, convenient fashion. With mega-collections like the Fish library on CD-ROM, your biggest problem might be in misplacing such a set under a single sheet of paper. Also ►





not to be neglected is the fact that CD-ROMs deliver a lot of data for just a little cash.

So, what does it take to add CD-ROM capability to your system? The solution involves answering the following three questions: Where can you install the CD-ROM drive? Is your hard-disk controller compatible with CD-ROM? And finally (in terms of the type of system you choose), do you need a Ferrari or a Yugo? (To locate vendors of products mentioned in this article, consult the "Manufacturers'/Distributors' Addresses" list on p. 106.)

### MANY PORTS IN A STORM

If you have an unexpanded Amiga 500 with at least one megabyte of chip RAM, the solution is fairly easy. **Commodore** plans to release the **A570 CDTV Adapter**, which installs directly into the A500's expansion port.



**This CDX-431 Chinon external CD-ROM drive is included in the system bundle from Vertical.**

It provides you with a CD-ROM drive—compatible with Commodore's CDTV—and also serves as an expansion chassis through which you can add up to 2MB of chip RAM and a 2.5-inch SCSI hard drive. If your A500's expansion port is already in use, however, you will have to remove your existing external expansion chassis in order to use the A570. (For more information on the A570, see "O Say Can You CD?," Jul. '92, p. 24.)

If that option is not attractive, consider an external CD-ROM drive from a third-party manufacturer. If you have a SCSI-compatible hard-disk controller, then use it to connect your drive. (All SCSI adapter cards include a connector for adding external devices.) This method works, of course, with any Amiga model.

If you have an Amiga 2000, you can install an internal CD-ROM drive in the 5 $\frac{1}{4}$ -inch drive bay. If another device occupies that bay, choose an external CD-ROM drive. All Amiga 3000 systems use SCSI hard disks, but they do not have the 5 $\frac{1}{4}$ -inch drive bay, so an external drive is the only solution.

### FILE-SYSTEM DRIVER SOFTWARE

Most critical in adding a CD-ROM drive is the driver software that links it to the operating system. CD-ROM compatibility is not built into AmigaDOS. CD-ROM file-system drivers are currently available from **Xetec**, **Canadian Prototype Replicas** (CDROM-FS), and **Asimware Innovations** (AsimCDFS). This "file-system" driver software fosters cooperation among AmigaDOS,

your hard-disk adapter, and the CD-ROM drive—making the drive act like any other hard-disk drive.

Commodore has defined a protocol called "SCSI direct" for sending the special commands to devices such as tape drives and CD-ROM drives. If your hard-disk adapter supports "SCSI direct," then it is probably compatible with CD-ROM driver software. If you're not sure, check with the manufacturer: You may need an upgrade in software or in ROM.

If you have an Amiga 1000, the chances of such support could be slim. You may have a SCSI hard disk, but it may not be compatible with any CD-ROM driver software. Newer SCSI adapters for the A1000 can solve the problem.

A CD-ROM disc contains files and directories just like a hard disk, except that the files are stored using a standard called ISO-9660. The CD-ROM driver software translates the ISO-9660 file system so that it appears to be an AmigaDOS file system. (You may be wondering about the High Sierra CD-ROM format. Yes, it was an early version of the ISO-9660 format, and every driver supports it.)

Almost every CD-ROM in the world uses the ISO-9660 format. In the case of discs that you wish to be IBM PC-compatible, you must restrict filenames to eight characters, a dot, and a three-character extension, but such discs are still readable on all systems. ISO-9660 also allows longer, Amiga-like filenames, although they must be uppercase. Such discs work fine on the Amiga, Mac, and Unix-based machines. CDTV discs also use extended filenames.

Some Macintosh-oriented discs use minimal ISO-9660 formatting, but store the bulk of the data in little more than a copy of a Mac hard disk, using the Mac's Hierarchical File System (HFS). These discs are not accessible from a PC. When used with some of the latest CD-ROM drivers, however, they are accessible from the Amiga. Of course, the files must contain data that can be understood by an Amiga program, and no Mac program can execute directly on the Amiga without an emulator such as **A-Max II** (\$249.95, **ReadySoft**).

### SELECTING A DRIVE

While answering the third of our three questions can be a bit more involved, remember that choosing a CD-ROM drive is very much like selecting another hard drive. All CD-ROM drives have the same data capacity, but vary in speed and price. If you balance features against what you can afford, you should do just fine.

Like choosing a hard disk, you can buy a packaged system that is ready to go right out of the box, or you can personalize your system with individual components and a custom arrangement. **Xetec** offers several CD-ROM bundles, including both internal and external, and ranging from individual components to complete systems. The company provides an external Chinon CD-ROM drive, driver software, and two CD-ROMs containing the Fish collection for \$599. At the opposite extreme, for the do-it-yourself enthusiast, it sells its driver software and the two CD-ROMs for \$50.

Xetec's CD-ROM software works with any "SCSI-direct" adapter, including its own adapters that are available for every model of Amiga. Beyond support for ISO-9660 discs, the Xetec software also understands Macintosh HFS discs and emulates Commodore's CDTV to a great extent. ►





**33MHZ  
VERSION  
NOW  
SHIPPING!**

**040** ACCELERATOR FOR  
THE AMIGA 2000

## **FAST SCSI-2 DMA HARD DRIVE CONTROLLER**

**+ 28MHz or 33MHz 68040  
ACCELERATOR**

**+ 64MB HIGH-SPEED 32-bit  
RAM EXPANSION**

**= THE ULTIMATE AMIGA 2000  
POWER PERIPHERAL!**

### **FAST SCSI-2 DMA HARD DRIVE CONTROLLER**

for synchronous data transfer speeds of up to 10 megabytes per second with fast SCSI-2 drives...up to 10 times the speed of many Amiga hard drive controllers! Autoboosting with full DMA access to Zeus's onboard 32-bit RAM. Zeus supports Synchronous AND Asynchronous SCSI-2 drives, and standard SCSI drives on the same SCSI chain!

**28MHZ 68040 CPU** with built-in floating point processor for lightning-fast acceleration. Zeus is over 23 times the speed of a standard Amiga 2000, and 3 to five times the speed of 25MHz Amiga 3000 systems! Easily upgradeable to 33MHz CPU when available from Motorola.

**64MB HIGH-SPEED 32-bit RAM** expansion using standard 1MBx8 or 4MBx8 80ns, 60ns, or 40ns fast page or static column SIMM modules (faster performance with faster RAM). Add RAM easily for contiguous configurations of 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 48, 52 or 64MB.

**IMPROVED PERFORMANCE** with many standard SCSI hard drives. Supports "Rigid Disk Block" standard - just move your existing drive over and you're up and running - no reformatting necessary! Zeus supports full DMA from standard SCSI drives.

**FAST and COMPATIBLE** with AmigaDOS 1.3, AmigaDOS 2.0, the Video Toaster & Lightwave, Imagine, PageStream, Professional Page, ASDG's ADPro, genlocks, video peripherals, and a wide variety of other Amiga hardware & software products.

All trademarks acknowledged. Product Specifications subject to change without notice.

**ADVANCED HARD DRIVE SOFTWARE** for easily installation, partitioning and formatting of nearly all SCSI and SCSI-2 hard drives. Use the easy "automatic" mode, or set up FFS, old file system, or custom system configurations.

**68040 SOFTWARE UTILITIES** included for optimization and full control of the 040's unique cache modes and high-speed floating-point software library.

**FULL 1-YEAR WARRANTY** backed by PP&S's commitment to service and customer satisfaction.

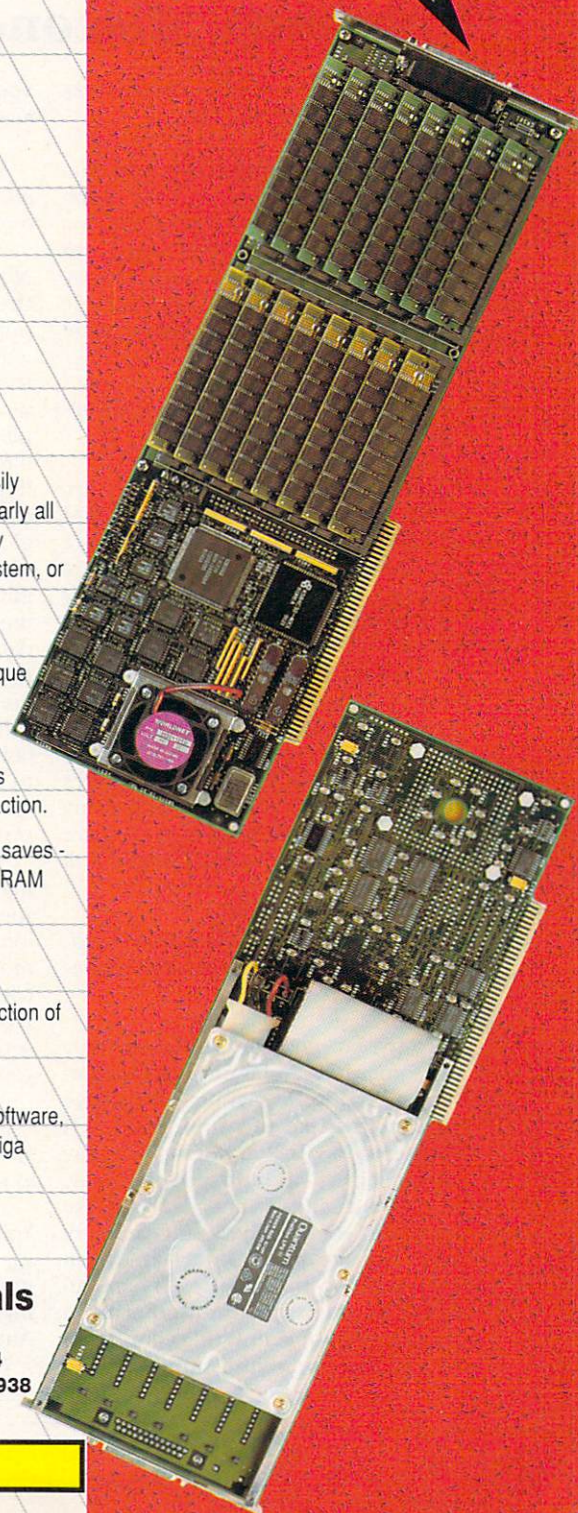
**NO MORE WAITING** for hard drive loads and saves - Zeus reads and writes data with super-fast "RAM disk" speed!

**FOR 3-D, "TOASTER", ANIMATION, VIDEO, DESKTOP PUBLISHING** and countless other applications, Zeus gets the job done in a fraction of the time. Zeus is the ultimate productivity workhorse!

**Zeus.** From Progressive Peripherals & Software, world leader in the fastest, most reliable Amiga accelerator technology.

## **Progressive Peripherals & Software**

464 Kalamath St. • Denver, CO 80204  
Phone (303) 825-4144 • Fax (303) 893-6938



**SPECIAL RAM OFFER! SEE PAGE 39 FOR DETAILS!**

Circle 150 on Reader Service card.



A US distributor, *Vertical*, offers a similar bundle that's based on Canadian Prototype Replica's file-system driver. It includes a Chinon CD-ROM drive, the CD-ROM-FS driver software, and HyperMedia Concept's Fred Fish collection on one CD-ROM (\$799 for an external unit, or \$699 for an internal drive). The CD-ROM-FS software is available separately for \$49.95.

If you have an A2000 and your 5¼-inch drive bay is empty, you can fill it with an internal CD-ROM drive.

Like an add-on SCSI hard disk, an internal CD-ROM drive needs two internal connections: a four-pin power supply connection and a 50-pin ribbon cable for the SCSI data. If you have already used all the power connections in your A2000, purchase a "Y" power adapter to gain an extra connector. Like an extension cord, it turns one plug into two. If your Amiga dealer does not carry it, you can buy this adapter at any PC computer store.

Internal CD-ROM drives are typically less expensive than external drives. The price of an external drive nec-

## Common Misconceptions About CD-ROM

*1. You can add to or otherwise change the contents of a CD-ROM disc.*

Unfortunately, you can only read data from CD-ROMs, not write to them. They hold megabytes of data, but you can change none of it. You cannot add your own files to any of the directories. If the publisher of the CD-ROM made a mistake in the data, it will be there permanently.

*2. CD-ROM drives are like magneto-optical (MO) drives, right?*

Wrong. Magneto-optical drives are much more expensive than CD-ROM drives. They hold comparable amounts of data, but they can be changed again and again, like a floppy or a hard disk. Typical configurations are the 128-megabyte format on 3½-inch media and the 600-megabyte format on 5¼-inch discs. The 128-megabyte MO drives cost about \$1900 for the drive alone, and new discs are \$70 each. The good news is that MO drives use the SCSI interface and act like any other Amiga hard drive. They require no special software—just a big chunk of cash.

*3. You can use a CD-ROM drive to capture perfect digital samples from your compact-disc music collection.*

Nice try, but no again. Although they use somewhat similar mechanisms, audio and CD-ROM manufacturers have agreed to make this impossible. Of course, most CD-ROM drives can play compact discs. You can feed the music to a sound sampler and record it like any other sound. The results are very good because of the direct link from the player to the sampler. These results, however, are no different from those you get by connecting your stereo to the sampler; you've simply turned

your CD-ROM drive into a very expensive boom box.

*4. If CD-ROM drives are so similar to audio compact-disc players, then they must cost about the same.*

No; CD-ROM drives cost more, and the misconception is related to the point made above.

First, the mechanisms and electronics of CD-ROM drives must be much more precise than audio compact-disc players. Both audio and data discs store data in purely digital form, just as a floppy disk does. All compact discs include forms of error correction to help gloss over the inevitable errors from nicks, scratches, and manufacturing glitches. By storing mathematically redundant copies along with the original data, the circuitry can restore a limited number of lost bits. If the error is too great, data is lost. An audio disc can suffer a tremendous number of errors before the problem becomes apparent to your ears, but these same sorts of errors are unacceptable for the perfect reproductions required by computers.

Second, audio-disc players do nothing but endlessly transmit data to the speakers of your stereo in a linear fashion. A CD-ROM drive involves much more complex logic in fetching and retrieving only the data you need. A CD-ROM drive can seek from "song to song" or "file to file" much faster than your home deck.

*5. CD-ROM drives for the IBM PC (or the Macintosh) should cost about the same as those for the Amiga.*

You may be confused by the low prices for drives in the IBM PC market. Some manufacturers offer complete systems for less than \$400, but a system for the Amiga might cost twice that.

On the PC, SCSI is not very popular.

Instead of SCSI, these CD-ROM drives use proprietary interfaces that transfer data to a custom PC card. Not needing full SCSI implementation, these manufacturers can offer a lower price.

If you do find a drive that uses a SCSI interface, keep in mind that you still need to buy Amiga-specific CD-ROM file-system software. Many PC-specific CD-ROM bundles (and Mac ones, too) include sample CD-ROM discs. Unless the data is in a format that is usable on the Amiga, these discs will be useless to you. Very often these discs require running a program to access the data on the disc, and the program can execute only on the PC or the Mac, not on the Amiga.

If you enjoy the challenges of emulation, you can run a PC-specific CD-ROM drive on your Bridgeboard. Most likely, the custom card will work when connected to the Bridgeboard. You can save pictures or files to the PC disk and then move them to the Amiga side.

In the Macintosh arena, you can use your CD-ROM drive under Macintosh emulation via ReadySoft's A-Max II. Remember, however, that you will also need to run any special CD-ROM driver software for the Macintosh. If you bought a CD-ROM drive from a Macintosh vendor, the software is probably included without charge.

Finally, although the PC generally does not use SCSI to control disk drives, you can purchase a PC SCSI adapter card for between \$150 and \$250. Be sure to get the necessary driver software, which might be an additional charge. While this may save you money, be careful, because the software could include as many as three layers, each a separate program: a SCSI driver, a CD-ROM driver, and the Microsoft CD-ROM Extensions, a standard way of adding CD-ROMs to MS-DOS. In short, installation could be an adventure. —JF □



## PROGRESSIVE PERIPHERALS & SOFTWARE

# 04!0

### 68040 ACCELERATORS FOR AMIGA 2000 AND 3000 SERIES COMPUTERS

- Motorola 68040 with built-in math coprocessor for speed and power
- Easy to install - plugs into Amiga 2000 or 3000 processor slot
- 19.2 MIPS (Million Instructions Per Second) performance at 25 MHz
- Processor cooled by whisper-quiet micro-fan for reliable performance
- Software compatible with all 68000 family processors
- 3.5 MFLOPS Double-Precision Floating Point Performance
- Separate 4K Data and 4K Instruction Caches
- Full support of 68040 "Copyback" mode for increased speed
- Relocates system vectors to 32-bit RAM for faster performance
- 040 Utilities and Floating Point Software Included
- Compatible with AmigaDOS 2.0, NTSC and PAL systems
- One Year Warranty

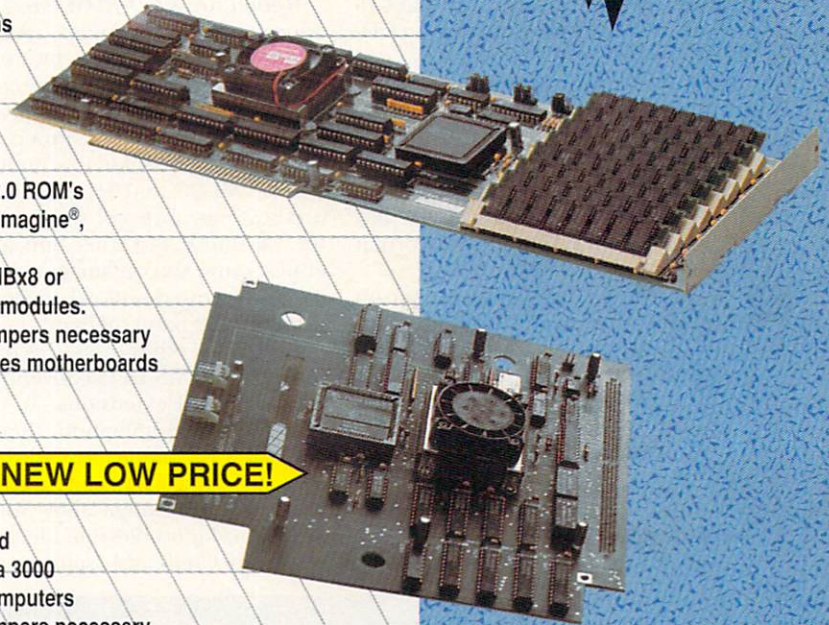
#### PROGRESSIVE 040/2000

- 28MHz Asynchronous Operation
- Over 23 times the speed of a standard Amiga 2000
- AmigaDOS 1.3 and 2.0 Compatible - works with 1.3 or 2.0 ROM's
- Compatible with 3-D Professional, the Video Toaster®, Imagine®, and many other hardware peripherals and software
- Expandable to 4, 8, 16 or 32 MB of 32-bit RAM using 1MBx8 or 4MBx8 page, static column or nibble mode 80ns SIMM modules.
- Software switchable from 68040 to 68000 mode - no jumpers necessary
- Compatible with 16-bit memory cards and 'A' or 'B' series motherboards
- Designed for Upgradability to 33 MHz 68040 version

#### PROGRESSIVE 040/3000

- 25MHz Synchronous Operation
- Full 25MHz performance on 16MHz A3000 systems!
- Directly accesses 32-bit memory on A3000 motherboard
- Over Four Times the Speed of a Standard 25MHz Amiga 3000
- Compatible with 16MHz, 25MHz, and "Tower" series computers
- Software switchable from 68040 to 68030 mode - no jumpers necessary
- Compatible with nearly all 2.0-compatible software and hardware
- Requires ROM-Resident AmigaDOS 2.0

**NEW LOW PRICE!**



**33MHz  
040/2000  
Now  
Shipping!**

**Buy The Progressive  
040/2000 Now And Get  
16MB Of RAM For  
Only \$350!\***

Send me the ☐ 16MB for my 040/2000 (\$350)

☐ I have enclosed a check or money order payable in U.S. funds. For orders outside of the USA, please enclose an additional \$15 to cover the costs of international shipping.

☐ Bill my Visa, MasterCard, or American Express.

Card Number \_\_\_\_\_ Exp. Date \_\_\_\_\_ Cardholder Signature \_\_\_\_\_

Issuing Bank Name \_\_\_\_\_ City, State \_\_\_\_\_

Shipping Address (must agree with your charge card billing address if paying by charge card):

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State/Province \_\_\_\_\_ Zip/Postal Code \_\_\_\_\_ Country \_\_\_\_\_

Daytime Phone # (\_\_\_\_\_) \_\_\_\_\_ Other Phone # (\_\_\_\_\_) \_\_\_\_\_

\*Progressive 040 RAM offer: Just fill out and attach this coupon (no reproductions) and original sales receipt to your warranty card, we'll send you four (4) 4MBx8 SIMM modules, which will expand your 0 MB board to 16MB, or your 16 MB board to 32 MB.

Act now! Coupon and warranty card must be received by Dec. 31, 1992. Offer valid only while current SIMM module supplies last. Coupon has no cash value. Void where prohibited by law and subject to applicable federal, state, and local taxes and regulations.

Video Toaster is a trademark of NewTek, Inc., Imagine is a trademark of Impulse, Inc., Amiga is a trademark of Commodore-Amiga, Inc.

Progressive Peripherals & Software • 464 Kalamath St. • Denver, CO 80204 • Phone (303) 825-4144 • Fax (303) 893-6938

Circle 17 on Reader Service card.



essarily includes the cost of the case, a separate power supply, internal and external cables, lights, switches, and all the extra connectors. An external, self-powered CD-ROM system does not burden your Amiga's power supply or exacerbate internal heat problems. (If you're wondering about the difference in price between Amiga CD-ROM drives and IBM-PC drives, see the sidebar "Common Misconceptions About CD-ROM.")

One last thing you ought to keep in mind here is

that whether the drive is internal or external, it had better be reasonably fast. In general, CD-ROM drives are much slower than hard disks. While a hard disk might take as little as 10 to 30 milliseconds to access data, a CD-ROM might take 350 milliseconds to find a certain spot on a disc. But 350 milliseconds is still a comfortable speed, and as long as you stay away from drives with access times of more than 500 milliseconds, you should be okay. Some drives are as slow as ►

## CD-ROM Titles: An Update

ONCE YOU HAVE your new drive installed, disc publishers stand ready to assist you, eager to shovel more data into your Amiga. In a previous article on CD-ROM titles ("Plunging into CD-ROM," Mar. '92, p. 49), I covered a wide array of discs available. This sidebar describes some titles that have appeared over the last five or six months.

**HyperMedia Concepts** continues to update its **Fred Fish Collection** on CD-ROM, priced at \$74.95. Every four months, the company publishes a new edition that encompasses the entire Fish collection. The new disc is an inexpensive upgrade (\$29.95; subscriptions available) for registered owners. Besides the standard version, HyperMedia puts out another in a compressed format suitable for use on BBSs.

According to company spokesperson Chris Henry, HyperMedia's next CD-ROM project will be a collection of Amiga art and animations. Henry calls it "an open gallery with 630 square megabytes of open space. You can cut it up and display your art any way you want." He is seeking submissions of the large, disk-consuming animations that rarely circulate on floppies or BBSs.

**Texture City** has recently released its

**Pro-100** collection of texture maps and scanned backdrop images on CD-ROM. Each 24-bit color image is stored in four formats, including IFF, at 752 by 480 pixels (not-so-coincidentally the resolution of NewTek's Video Toaster). Priced at \$199.95, the disc comprises 100 images, including colored marble tiles, metals, landscapes, and textiles.

**Walnut Creek CD-ROM** offers several appealing discs for Amiga users at less than \$40. Much of its software comes from archive sites on Internet. Its **Source Code** disc features archives from the "comp.sources" news group, including 36 megabytes for the Amiga (volumes 2, 89, 90, and 91), as well as hundreds of megabytes of source code for the Macintosh, PC, Unix, Sun, and other platforms. You can imagine how long it would take to download 36 megabytes using a 2400-baud modem!

Like many other discs, this one conforms to the MS-DOS conventions for filenames and extensions. To circumvent this inane limitation, there is on each directory of the disc a file containing true Unix-style names. Unix, the Mac, and the Amiga allow for much longer and more flexible filenames.

Walnut Creek also sells an Amiga-

specific disc. In April 1992, one of the largest Amiga-related archive sites on Internet closed its doors. Before the NASA computer known as ab20 slammed shut, Walnut Creek took a "snapshot" and stored it on a CD-ROM. You can own these 2400 files for \$24.95.

Walnut Creek's **X11R5** disc contains the entire X Window Release 5 source code, as well as a snapshot of the entire GNU "Gnu's Not Unix" source library, including a C++ compiler, a software PostScript interpreter, editors, and much more—all for \$39.95.

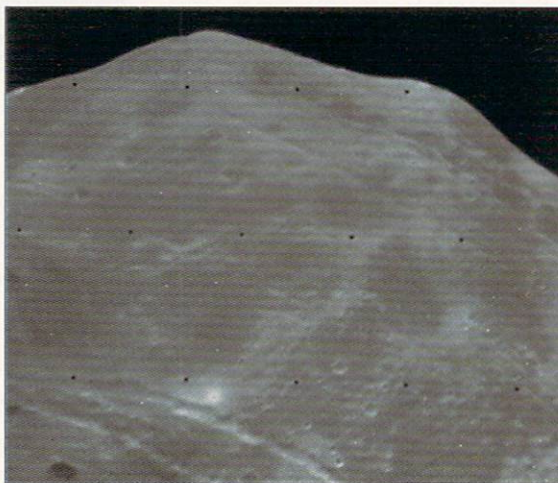
Also for \$39.95 you can get Walnut Creek's **Desktop Library** disc, which includes over 1000 books in ASCII format. It provides you with the complete works of Shakespeare, ancient Greek tragedies, the works of Virgil, Milton, Mark Twain, Jules Verne, and much more.

The US Government continues to release more data on CD-ROM, mostly of an astrophysical nature. The **National Space Science Data Center** at the Goddard Space Flight Center in Maryland is the clearinghouse for these discs. You can write for a complete catalog or obtain a list in electronic form by sending a message to 'request@nssdc.gsfc.nasa.gov' on Internet. (You can also send Internet mail through CompuServe Easypex mail. Just prefix that address with ">INTERNET:").

NSSDC discs include most of the space-related discs mentioned in my previous article, as well as new ones that have appeared since then, such as the Viking Orbiter images of Mars. The charge for the first disc in a data set is \$20. Subsequent discs are \$6, plus \$2.50 shipping and handling.

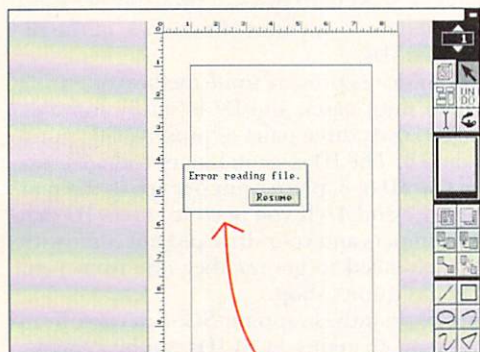
Both **ASDG's Art Department Professional** and **Black Belt Systems' ImageMaster** now support the FITS image format used on these discs. In addition, the latest versions of CD-ROM driver software support the non-standard 512-byte block sizes on some early NASA discs. —JF □

**Martian moon Phobos—from the new NSSAC CD-ROM featuring the Viking Orbiter images of Mars.**





# ProPage: "Error Reading File"



Professional Page 3.0

*No GIF or TIFF support!*

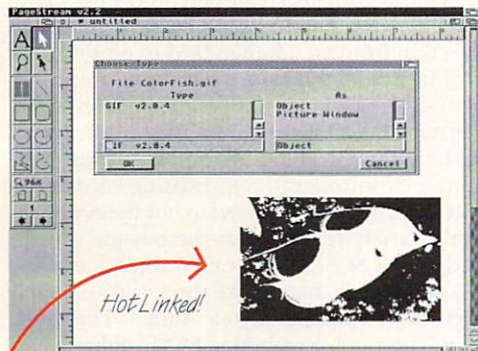
## There's more to graphics than just IFF

Professional Page 3.0 and PageStream 2.2 both can import IFF bitmap pictures. But let's face it—in the real world, IFF pictures are not that readily available. Unless your desktop publisher can read GIF, TIFF, PCX, IMG and MacPaint pictures, you are missing out on the vast selection of commercial and public domain graphics.

When you try to import a GIF or TIFF picture into ProPage, you are faced with the "Error Reading File" message. To use other graphic formats with ProPage, you must acquire an array of conversion utilities.

File formats are something you shouldn't have to worry about. Your desktop publisher should do the work for you.

# PageStream: No Problem!



PageStream 2.2 HL

*HotLinked!*

## PageStream 2.2: More formats, More flexibility

PageStream 2.2 is not limited to IFF pictures like ProPage 3.0. IFF, GIF, TIFF, PCX, IMG, IFF, NEO, STAD, CVG and MacPaint are no problem for PageStream. From black and white to 16 million colors, no other desktop publisher comes close to PageStream in flexibility and power.

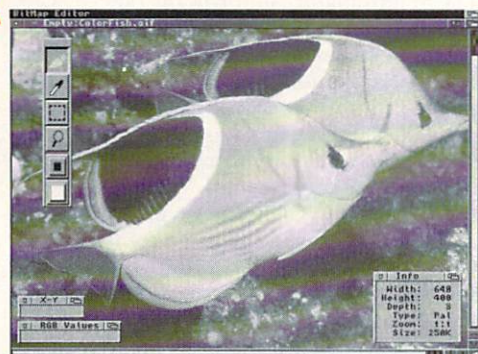
Of course, PageStream also supports more vector graphic, PostScript and text import options than any other Amiga desktop publisher.

PageStream 2.2 has it all: more power and more flexibility. At \$299.95, PageStream is your best DTP value.



# Add HotLinks for More Power

*HotLinked!*



BME - The Amiga BitMap Editor

## HotLinks Editions: Connecting the Future

The Amiga's multitasking operating system revolutionized computers by allowing multiple programs to run simultaneously. HotLinks continues the Amiga revolution, permitting programs to exchange data in real time to make you more productive.

With HotLinks, you can import pictures into PageStream and touch them up at any time in BME. Or edit and format text from PageStream in PageLiner. Or vice versa. The possibilities are endless.

The best news is that all of this power is affordable. HotLinks Editions combines HotLinks, BME and PageLiner for only \$99.95. More HotLinks programs are on the way from several Amiga developers.

*Look for this logo when buying powerful Amiga software!*

**HotLinks** >>

Soft-Logik Publishing Corporation  We give you the tools to dream. 800-829-8608

PageStream, BME and PageLiner are registered trademarks or trademarks of Soft-Logik Publishing Corp. The HotLinks name is reserved for software compatible with the HotLinks standard set by Soft-Logik Publishing. The HotLinks logo can only be used with the permission of Soft-Logik Publishing. Professional Page is a registered trademark of Gold Disk Inc. Amiga is a registered trademark of Commodore Business Machines. PageStream 2.2 HL is available free of charge to registered owners of PageStream 2.0, 2.1 and 2.2. Please pay \$10 in US funds for the disk and shipping. A 2.2 to 2.2 HL patch program is available on GEnie, CompuServe and our BBS. Customers outside the USA and Canada should phone 314-894-8608.

Circle 46 on Reader Service card.



1500 milliseconds—a full one and one-half seconds of access time.

### CUSTOM SYSTEMS AND EXTRAS

For a variety of reasons, you may want to consider assembling the system yourself. No more difficult than adding a hard disk, a custom CD-ROM system can be pieced together fairly easily. Because CD-ROM drives are now commodity computer parts, it is not hard to find equipment that works with an Amiga. By buying individual components from different manufacturers, you may be able to assemble a superior system—and save some money in the bargain.

Although in some cases you may not save any money by going the custom route, your custom setup will not limit you to adding only one SCSI device to the box. Cases are available that hold one, two, or four 5 $\frac{1}{4}$ -inch devices. In addition to the CD-ROM drive, you could then install other SCSI devices, such as a hard drive, a removable-media drive like a SyQuest, a tape drive for backups, or a magneto-optical drive for holding frame stores.

To buy the pieces via mail order, you should look first in one of the Macintosh magazines. All CD-ROM drives sold in the Mac market use the SCSI interface. Publications such as *MacWorld* or *MacWeek* contain the most up-to-date ads from companies that offer both internal and external CD-ROM drives.

One final point to consider about buying a CD-ROM drive is this: Whether you choose an internal or external drive, a packaged bundle, or the components for a custom system, do a little comparison shopping when it comes to the extra features offered in today's drives.

For instance, does the drive include the cables you will need? Some companies charge extra; others do not. Also, if you have no interest in Mac CD-ROM driver software, be sure it's not a hidden charge. Does the drive have a power indicator or an LED that blinks when reading data? Does the drive have a self-cleaning lens for the laser beam that scans the disc?

Most drives use "caddies," a case that holds each disc before it slides into the drive. When you order a drive, consider picking up a few extra caddies. It's very convenient to keep frequently-used CDs in a caddy.

Most CD-ROM drives also play audio compact discs, and some "data" discs include musical tracks that you can play under computer control. Many driver-software packages include a Workbench tool that acts like the front panel of your CD player, and many drives include a front-panel volume control, a headphone jack, or even rear-panel RCA phono plugs.

Many CD-ROM drive owners discover that they spend more time playing audio discs than reading data discs. Some drive manufacturers recognize this, and they include more prominent audio and track controls and even infrared remote controls with their equipment.

### WORKING WITH SCSI

Using a SCSI adapter card to connect a CD-ROM drive to your system can involve you in some tricky operations. Here are some pointers to keep in mind that relate specifically to SCSI ID and to using SCSI cables.

When installing a CD-ROM drive, you must set the SCSI ID of the drive. Every SCSI device has an ID, a number from 0 to 7. (The SCSI bus can support only up to eight devices.) The controller card in your Amiga

occupies one of those IDs, usually ID 7. If you have already installed a SCSI hard drive, it probably occupies SCSI ID 0. Therefore, you must choose one of the remaining unused IDs.

All CD-ROM drives provide some method of setting a SCSI ID. In most cases, the ID is set by movable jumpers placed over three pairs of pins, usually numbered 1, 2, and 4. The ID is set in binary code. For example, to set an ID of 5, place a jumper across the pair of pins labeled 1 and 4. (If you need to set an ID that requires two jumpers and your drive did not come with spares, you may need to get another one from your dealer or an electronics shop.)

If you are constantly swapping SCSI devices from system to system, changing SCSI IDs can be a hassle. Make sure you know the method used by your prospective drive. The most painful procedure involves swapping jumpers inside the case of the drive. The next most complicated way involves manipulating an exposed row of DIP switches. Using a rotary switch is far easier, but the simplest method of all is the push-button, where a tiny digit is displayed in a window as each finger-press advances the ID.

Working with SCSI cables can be confusing. They come in three flavors. The first is the inside-the-computer connection from an adapter card to an internal SCSI device. It uses a 50-conductor ribbon cable with a wide, flat 50-hole header at both ends. If you plan to add an internal CD-ROM drive, you may need a new header for the ribbon. If the cable is not long enough to reach from the controller to your existing hard drive to the CD-ROM drive, you will need to buy a new cable.

The second variety reaches into the outside world. The back edge of a SCSI adapter card often has a female DB-25 connector, shaped like the serial and parallel connectors on the back of your Amiga. This connection is pin-compatible with Mac SCSI cables.

The third type is a 50-pin Centronics connector, a large D-shaped connector much like the one found on the back of some dot-matrix printers. Most external CD-ROM drives have two 50-pin Centronics connectors on the back for the SCSI cable. To add a second external SCSI device, you need a Centronics-to-Centronics cable.

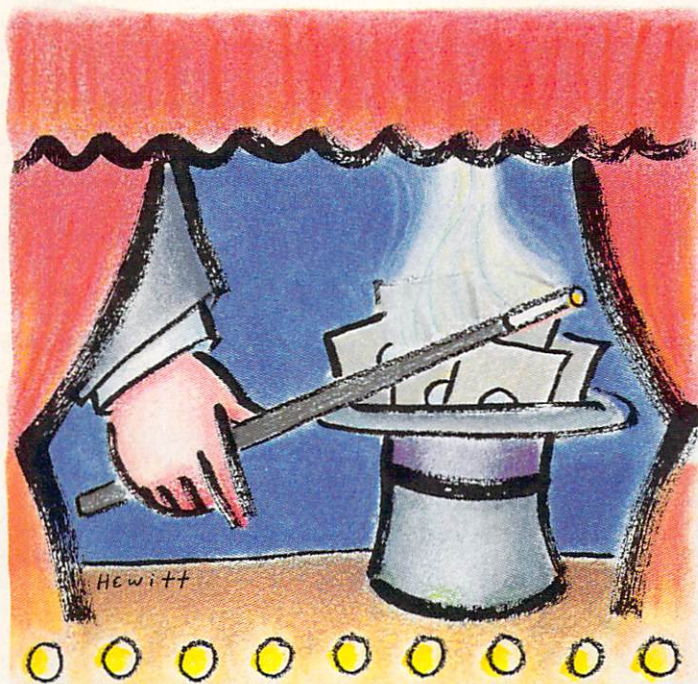
Depending on your SCSI adapter, you may or may not need a SCSI terminator. Although the official SCSI spec recommends a terminating resistor pack on the last device in the SCSI chain, you may discover that you need to remove termination from the last device. Termination normally improves the electrical characteristics of the SCSI bus, but termination on the Amiga is more of an art than a science. Contact the maker of your SCSI adapter for the last word.

For external drives with Centronics-type connectors, you can get a terminator with the same connector for about \$15. For internal drives, the terminator resistors are often slim electronic packs with many pins, usually located not far from the 50-pin ribbon cable. The documentation for the drive should confirm their location. Although they may look soldered to the circuit board, they can be pulled out without damage. ■

*John Foust, president of Syndesis Corp., writes for a number of computer publications. His CD-ROM drive serves his PC and Mac, as well as his Amiga. Write to him c/o Amiga-World Editorial, 80 Elm St., Peterborough, NH 03458.*



# Hard Acts to Follow



A couple of years ago, a hard drive was a luxury that few Amiga owners could afford. A combination of decreasing prices and increasing file sizes, however, has made hard-drive ownership a much more practical—and necessary—proposition. People who used to think that a second floppy drive was the ultimate in convenience have lately been wondering whether 50 megabytes is large enough, whether 100MB might be a better place to start, or whether more advanced mass-storage technologies might be a wiser investment.

An increased demand for hard drives has resulted in a wider selection of mass-storage products than ever before. Not only that, but today's shopper must make choices based on a number of other considerations: Is it desirable to have an internal or external unit? A SCSI or an IDE controller? Fixed or removable media? A plain old hard drive or a combination product that also offers memory expansion and maybe even accelerated processing?

This profusion of choices, however, need not result in confusion. Armed with some basic information about the different types of drives available, you should be able to select the one that's right for your needs. (For information on contacting the vendors of products mentioned in this article, consult the "Manufacturers'/Distributors' Addresses" list on p. 106.)

A hard-drive system consists of three components: the drive mechanism, the hardware interface that connects the drive to the Amiga, and the device-driver software that allows the Amiga to use the drive for storage. Two of these components, the hardware interface and the driver software, are Amiga-specific and are usually supplied together by a single manufacturer. The third component, the drive mechanism itself, is more generic because the same physical units can be adapted for use on several types of computers.

## DRIVE MECHANISMS

The most common type of hard-drive mechanism is the fixed-platter Winchester variety. These airtight units contain one or more platters of plated magnetic me- ▶

*In Part III  
of his "essential  
upgrades" series,  
our hardware  
Houdini outlines  
hard-drive and  
other mass-storage  
strategies—along  
with recommendations  
and purchasing  
advice—to make  
your data-  
storage dilemma  
disappear.*



By  
Sheldon Leemon



dia, with read/write heads for each platter. Older drives used the same bulky 5 $\frac{1}{4}$ -inch case as the original IBM PC disk drives, but most current drives use the same size case as the Amiga's 3 $\frac{1}{2}$ -inch disk drive. Capacities of 50–100MB are currently the most common, but newer drives pack up to one gigabyte (1024 megabytes) in a single 3 $\frac{1}{2}$ -inch package.

Smaller 2 $\frac{1}{2}$ -inch drives, originally designed for laptop computers, have also become more common (Commodore reportedly plans to put one inside its tiny A600HD computer), and some companies have announced hard drives as small as 1.3 inches in size. Bare drive mechanisms can be mounted internally, using the same drive bays as 3 $\frac{1}{2}$ -inch or 5 $\frac{1}{4}$ -inch floppies, or attached directly to the interface card. An external drive is simply an internal drive that is housed in a separate case, with its own power supply. Although an internal drive offers a neater solution, an external one is more portable and can be shared between systems.

Smaller drives are not only easier to install internally, but as a general rule they are also faster because the heads have a shorter distance to travel. The measurement most often used to calibrate hard-drive speeds is

the "average seek time," which is measured in milliseconds (the lower the number, the better). Older drives have seek times as high as 80 milliseconds, while most current drives have a rating of 20 or less.

Using a faster drive mechanism usually results in faster load and save times, but raw drive speed is not the only factor in overall performance. The interface hardware and software is crucial—the same drive mechanism can deliver up to ten times faster performance with a fast interface than with a slow one.

In addition to size, capacity, and speed, hard drives are identified by the type of hardware interface they use. We'll examine interfaces more closely further on, but there are a few points that deserve mention here.

The common interface standards are ST-506, IDE, and SCSI. ST-506 drives, the type first used on the IBM PC, are "dumb" devices controlled by external cards that need to be configured for a particular drive type (number of heads, number of sectors per track, and number of tracks). Because these drives are relatively slow and need a fairly complex controller that can handle only two drives, few Amiga interfaces support ST-506 drives (they are even becoming rare in the IBM world). ►

## Hard Drive Checklist

WHEN SHOPPING FOR a hard drive, there are a number of different factors you should consider. Performance may be important, but don't forget about reliability, compatibility, expandability, and so on. Here are some questions to keep in mind:

- ✓ *How easy is the hard drive to install?* The best models are simple to attach and are ready to operate as soon as you plug them in. You may save some money by buying the drive mechanism separately (or using one you already have) and hooking it up to an interface, but you'll pay for these savings through greater time, trouble, and worry about compatibility and warranties. Remember that ease of installation includes software as well as hardware. Look for a system with easy-to-use partitioning and formatting software.
- ✓ *What mounting options does this system provide?* For A2000 interfaces, the option to mount the drive directly to the interface card provides the most flexibility because it leaves the internal drive bays free for additional drives. The most popular A500 systems are small plug-in boxes that extend the width of the computer and whose styling matches that of the A500 itself.
- ✓ *Is the device driver software Rigid Disk Block compatible?* Adherence to this standard makes it easy to read data from a

drive formatted with one type of interface when you are using an interface from a different manufacturer. This is particularly handy for external or portable drives.

- ✓ *Does the device-driver support a wide assortment of devices?* A SCSI interface that supports Commodore's SCSI Direct command set should be able to communicate with such devices as tape drives, CD-ROMs, and even optical scanners that use a SCSI interface. Inquire as to what kinds of devices have been used successfully with a particular interface, particularly tape-backup and removable-media drives. If a manufacturer claims to support multiple hosts for SCSI networking, ask what software support is available for such networking.
- ✓ *How often is the driver software updated?* Most interfaces will exhibit compatibility problems from time to time as new software and hardware packages are released. A responsive manufacturer will issue periodic updates to the driver software, both to address such compatibility issues and to increase performance.
- ✓ *What other functions are included with the interface hardware?* Many hard-drive interfaces also include functions such as memory expansion. Try to determine if the interface is expandable to a full 8MB, and what the memory for such ex-

pansion will cost. Memory expansion is especially important for A500 interfaces because most RAM cards take up the machine's only available expansion port.

- ✓ *How expandable is the system?* SCSI interfaces will support up to seven drives, and most include an external connector for hooking up external drives. IDE interfaces support only two drives, but if you do not need the expansion capabilities, you may find them less expensive.
- ✓ *What is the best size drive to buy?* Older 20MB drives have become somewhat scarce; currently, entry-level systems with 50MB are the most affordable. You will find, however, that the incremental cost for a 100MB drive is small enough that you can double your storage without coming close to doubling your cost. Although large (300–1200MB) drives can get pretty expensive, the cost per megabyte is actually much less than with smaller drives.
- ✓ *How serviceable is the unit?* Can your local dealer fix the drive if something goes wrong, or will he replace it under warranty? Ask questions about how well the manufacturer responds to customer complaints, how long the company has been in business, and so forth. The last thing you want is to buy the cheapest system you can find and then have problems getting service or updates.

—SL □



# AMIGA BASICS...

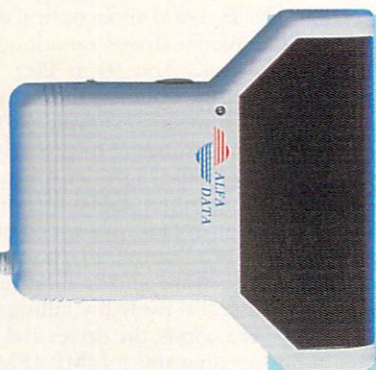
## Ergonomic Design Trackball Series

- Compatible with all Amiga® computers
- Ergonomic design for comfortable operation
- Top quality construction with micro-switch buttons



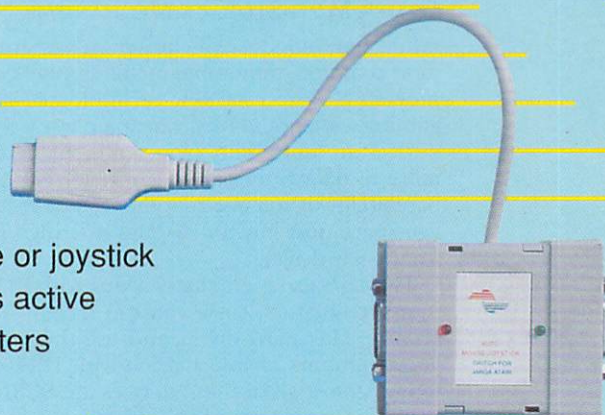
## Hand Scanner Series (400DPI)

- Total solution for scanning A4 size images
- Supports MS-DOS/Macintosh file formats
- Selectable 100/200/300/400 dpi resolution
- Supports Migraph's OCR & Touch-up software



## Auto Mouse/Joystick Switch

- Automatically selects either mouse or joystick
- LED displays indicate which port is active
- Compatible with all Amiga® computers



## Cordless Infrared Mouse Series

- High power infrared transmitter with a 4-foot range
- LED indicators on receiver reflect every mouse action
- Includes long-life maintenance free rechargeable battery
- Precise cursor control - 280 dpi resolution



602 North Country Fair Drive • Champaign, IL 61821  
Tel: (217) 356-1962 • Fax: (217) 356-4312

For more information, contact your nearest Amiga® dealer.  
**Dealer inquiries welcome.**

Amiga is a registered trademark of  
Commodore-Amiga, Inc.

Circle 191 on Reader Service card.



The second standard, SCSI (Small Computer Systems Interface), is far faster and more flexible. A SCSI drive has its own intelligent controller, and you can control up to seven devices with a single SCSI computer interface. These devices do not necessarily have to be hard drives; there are tape-backup units, CD-ROM drives, scanners, and even printers that use SCSI interfaces.

The SCSI standard is the one most often used for Amiga and Macintosh computers, and it is gaining popularity with owners of high-performance IBM-compatible systems, as well. Some SCSI devices also support SCSI-2, an updated version of the standard that provides for much faster data-transfer rates.

The third standard, IDE (Integral Drive Electronics), is a sort of hybrid. As with SCSI, IDE drives include an intelligent controller, so that a minimum of interface hardware is needed to hook one up to the computer. The IDE controller, however, is simpler and slower than its SCSI counterpart. This makes it less flexible (it allows you to connect only two drives, and it cannot handle such devices as CD-ROM drives), but it is also cheaper. IDE has become the interface of choice for low-priced PC-compatible systems, and it also has been gaining popularity on the Amiga.

#### OTHER MASS-STORAGE MECHANISMS

While fixed-media Winchester drives are by far the most common, removable-media storage devices—employing a variety of new technologies—are rapidly gaining wide popularity. The main attractions of these devices are portability (you can easily carry 80MB or more of data from one machine to another) and expandability (if you need another 80MB or more of storage space, just buy a new data cartridge instead of a whole new drive).

They are also useful for working with IBM and Macintosh emulators, since you can format cartridges as IBM or Mac hard drives and use them to exchange large amounts of information with IBM or Mac systems. Almost all of these devices are SCSI controlled, so you need an Amiga SCSI interface to connect them.

Removable Winchester drives consist of a fixed unit containing the read/write heads and motor, and the removable cartridges containing the magnetic media. Manufacturers like Ricoh and SyQuest make 5¼-inch units that store from 44 to 88 megabytes of data per cartridge. Costs run about \$400 to \$600 for the drive (including one cartridge) and about \$125 for each additional cartridge. **Great Valley Products** (GVP) sells a Ricoh-based drive for the Amiga, the **Series II RH-5500**, while SyQuest-based offerings include the **Infinit 40** from **Interactive Video Systems** (IVS), the **SupraDrive 44R** (*Supra*), and the **HardPack 44** (*Advanced Storage Systems*).

Omega's Bernoulli drives are similar, but their mechanism eliminates the possibility of the read/write heads colliding with the media (a disaster known as a "head crash"), making them more reliable than normal hard drives. You used to pay a large premium for this reliability, but Omega recently dropped the price of its new 90MB drives to the same \$600 level as the SyQuest 88MB units. Both removable Winchester and Bernoulli drives operate at normal (fast) hard-drive speeds.

A more recent storage innovation is the optical drive.

It comes in both WORM (Write Once, Read Many) and read/write varieties. The key advantage to optical drives is vast storage space. Each 5¼-inch double-sided cartridge can store from 300 to 500 megabytes of data. Unfortunately, these drives are also slow (about one-fifth the speed of a normal hard drive) and expensive (costing upwards of \$3000).

Newer versions of these drives use 3½-inch cartridges that are about the same size as a floppy disk but hold 128MB of data. They are less expensive (about \$1700) and faster than the larger drives. Optical drives are available from a number of manufacturers, including **GVP**, **XYXIS**, **Xetec**, and **Active Circuits**. (If you would like more technical background about optical drives and the other removable-media drives mentioned above, consult "Bottomless Disks," Apr. '91, p. 20.)

The newest mass-storage option is the high-capacity floppy, and the most promising example of this genre is Insite's Floptical drive. Ranging in price from \$500 to \$600, these drives combine high-density media with optical head positioning to get 20MB of storage on a single floppy. While they operate at a speed only about halfway between those of a floppy and a hard drive, the media is convenient to store and is relatively cheap (currently \$20 per disk and probably falling to under \$10 later this year). As a bonus, the drives also read and write normal floppies using the 1.44MB IBM format.

While it's great to have a removable-media drive for backup and additional storage, it is not very practical to use one as your only mass-storage device. If you are booting from removable cartridges, each one must have the same Workbench setup. Switching cartridges is not as simple as changing floppies, either. Some Amiga hard-drive interfaces have trouble with removable-media drives, particularly if the cartridges are not all partitioned and formatted the same. It makes sense to have at least one small conventional hard drive for the essential programs you use all the time (like the Workbench programs) in addition to the removable-media drive.

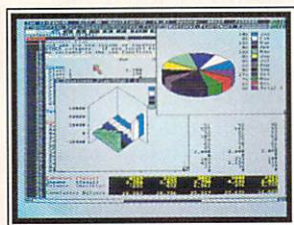
#### HARD-DRIVE INTERFACES

The A3000 and A2000HD are the only Amiga models that come with a hard-drive interface (and hard drive). If you own any other model, you need interface hardware and software as well as the hard-drive mechanism. A wide variety of Amiga interface hardware is available from several manufacturers. They vary in the way they transfer data from the drive, in how they connect to the computer, in the locations they use to mount the drives, in the additional functions they perform (such as memory expansion and acceleration), and in the drive formats they support (ST-506, SCSI, or IDE). (*Note: No prices are given for the products mentioned in this section or in the next one (combination boards). These items come in many varieties and prices, depending on system model, configuration, additional expansion options, and so forth. If you find items that suit your system needs, contact the manufacturers or your dealer to find out specific prices relevant to your setup.*)

The vast majority of Amiga hard-drive interfaces support the SCSI interface standard. SCSI is the interface of choice because it is fast, flexible, and can support up to seven different devices. If you have access to an inexpensive supply of ST-506 or IDE drives, how-



# Upgrades of such huge proportions deserve a coupon just as big.



MaxiPlan4 and KindWords3 are the newest, most powerful spreadsheet and word processor for your Amiga.

And this is your chance to upgrade to either or both of them at a special offer price, *whether you're a current user or not.*

## Upgrade from any Amiga software you use.

It doesn't matter which Amiga spreadsheet or word-processor you upgrade from. Just send *any* original disk from *any* Amiga spreadsheet or word-processing program with your order and you're eligible for this low price offer.

Or if you happen to have the front cover of any old MaxiPlan (or PlanIt) and KindWords documentation, just rip out the appropriate one and send it in with your order.

## MaxiPlan4 is Big News for Spreadsheets.

Being compatible with Workbench 1.3 and 2.0, MaxiPlan4 can create new spreadsheets and improve your old ones much more quickly and far more professionally than any Amiga product ever before.

There's Arexx support for macros. User-defineable page-breaks. Lots of colors and a faster, friendlier environment.



MaxiPlan4 has over 22 major improvements. Like more charts, graphs and presentations. And a variety of data-viewing modes.

You can create up to 50 charts per spreadsheet. And zip through data with built-in macros.



## Words alone can't describe KindWords3.

The new Human Interface Protocol™ in KindWords3 boosts your productivity and comfort with over 25 improvements, like automatic text-wrap around imported color IFF graphics and use of up to 255 fonts per document, including new, high density printing fonts.

There's an improved dictionary. A stronger thesaurus. Faster typing speed. Word, page, paragraph and line counts. Even, believe it or not, a digital clock.

## Tear out this page.

Normally, MaxiPlan4 costs \$159 and KindWords3 goes for \$125. But now you can upgrade to either or both at these special prices with this special coupon.

So rip out this page. Quick, before the guy you borrowed this magazine from finds out.

# MaxiPlan4 KindWords3

SPREADSHEET WORDPROCESSOR



THE DISC COMPANY

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Daytime Phone \_\_\_\_\_

Send me \_\_\_\_\_ MaxiPlan4 at \$US 75 each  
Send me \_\_\_\_\_ KindWords3 at \$US 50 each  
(CA residents add applicable sales tax)

\$ \_\_\_\_\_  
\$ \_\_\_\_\_  
\$ \_\_\_\_\_

Total Enclosed: \_\_\_\_\_

Personal and company checks only. DO NOT SEND CASH. No COD's. Make check payable to:  
THE DISC COMPANY, P.O. Box 67713, Los Angeles, CA 90049. Allow 3 weeks for delivery.  
For information call 1-310-207-1600; Europe: 33-1-49-10-99-95; Australia: 02-809-4444

Both upgrades require Amiga 500, 500+, 1000, 2000 or 3000, Workbench 1.3 or 2.0, 1 MB RAM (additional memory recommended). Two Disk Drives or Hard Disk recommended.



ever, you can probably find an interface that will suit your needs.

*Pre'spect Technics* in Quebec makes ST-506 interfaces for the A2000, A500 and A1000 computers. You may also be able to find an old *Commodore A2090* controller (the predecessor to the current A2091 model), which supports both ST-506 and SCSI drives. *ICD's AdIDE* interfaces work with any 68000-based Amiga model in allowing you to connect either a 2½-inch or 3½-inch IDE hard drive. *IVS's Trumpcard 500 AT* hard-drive expansion box for the A500 interfaces with IDE drives, and *Roctec's RocHard* and *Expansion Systems' new DataFlyer Express* offer support for IDE drives, as well as a SCSI option.

The two main schemes for transferring data to the drive are DMA (Direct Memory Access) and Processor I/O. Processor-controlled interfaces use the computer's main processor to move data between the I/O port and the computer's memory. This method generally uses inexpensive hardware, and you can obtain good transfer speeds with well-written device-driver software.

DMA interfaces, on the other hand, move their data to and from memory directly, independent of the main processor. DMA interfaces are generally faster and multitask better because they allow the processor to continue running programs while the data transfer takes place.

On the other hand, they generally require more complex (and more expensive) hardware, and it is harder to design good device drivers for them. In particular, some DMA interfaces have problems with advanced processors that use data caching. Manufacturers that use DMA designs include *Commodore*, *MicroBotics*, and *GVP*. Other manufacturers such as *ICD*, *Supra*, *Comspec*, *IVS*, and *Pre'spect Technics* use processor-controlled designs.

Some other factors to consider here are the way in which the hardware interface connects to the computer and the locations in which you can mount the drive. Almost all interfaces designed for the A2000 are boards that plug into one of the 100-pin Zorro II expansion slots. Most cards—including *Commodore's A2091*, *GVP's A2000 HC8+*, *Supra's WordSync*, *MicroBotics' HardFrame/2000*, *IVS's Trumpcards* and *GrandSlam*, *ICD's AdSCSI 2000*, *Expansion Systems' DataFlyer*, and *Comspec's SA 2000*—can be used in a "hard-card" configuration, in which a 3½-inch hard-drive mechanism is mounted directly to the card.

Some of these cards offer a metal frame or rails to which the drive may be attached, while others require you to mount the drive directly to the circuit board. A metal frame is preferable when mounting one of the larger and heavier drives, but this is probably not necessary for the current generation of thin, lightweight drives. These boards allow you to mount additional 3½-inch (or 5¼-inch) drives in one of the Amiga 2000's open drive bays. Some boards have an internal connection for additional drives, while others require a "Y" cable to connect two drives to one interface.

Units designed for the A500 or A1000 usually connect to the expansion port on the side of the computer. Some of the older models use a two-part design, where an interface card that plugs into the expansion port is connected by a cable to a box that houses the hard

drive and power supply. Most recent A500 units—such as *Commodore's A590*, *GVP's A500 HD8+* and *A530*, *Supra's SupraDrive 500XP*, *IVS's Trumpcards*, (500, Professional 500, and 500 AT) and *GrandSlam 500*, *Expansion Systems' DataFlyer 500*, and *Roctec's RocHard* drives—house the drive and interface in a single, low-profile unit that plugs right into the side of the computer.

Some of these units provide their own power supplies, either internal or external, while others provide a connector for an optional external supply. While it may be possible to run the hard drive from the A500's own meager power supply, you should look for a drive that offers at least an external power option, in case you decide to add more memory, another floppy, or an accelerator that might overburden the system supply.

While the A1000 has been out of production for years, several manufacturers still offer hard-drive adapters for the original Amiga. These include *Xetec's FastTrak Q52 A1000*, *Expansion Systems' DataFlyer*, *Comspec's SA 1000*, and *Pre'spect Technics' ALF* models. *ICD's AdIDE* interfaces, which connect to either a 2½-inch or a 3½-inch IDE drive, are the only ones that plug directly into the 68000 processor socket; they can be used with the A2000, A500, or A1000.

Different AdIDE models allow you to mount a 3½-inch drive in place of the internal floppy (in which case a hardware option allows you to use an external floppy as DF0), or to mount a tiny 2½-inch drive directly to the motherboard, using stick-on feet.

#### MULTIPURPOSE COMBINATION BOARDS

Many hard-drive interfaces offer such additional functions as memory expansion and processor acceleration. These combination boards are so popular, in fact, that they outnumber those offering merely hard-drive capabilities. Built-in memory-expansion capabilities are found in many A2000 interface cards such as *Commodore's A2091*, *GVP's A2000 HC8+*, *IVS's GrandSlam 2000*, *ICD's AdSCSI 2080*, and *Advanced Storage Systems' Nexus*. Other boards, such as *Expansion Systems' DataFlyer*, offer memory expansion as an optional extra.

Although most people buy accelerator boards to get a faster processor and 32-bit memory expansion, some of these boards also include a hard-drive interface. *GVP's 68030* and *68040 Combo* accelerators both include a SCSI hard-drive controller, as do some of the newer 68040 boards, such as *Progressive Peripherals' Zeus* and *CSA's 40/4 Magnum*.

Combination boards are just as popular for the A500 as for the A2000. Many A500 hard-drive boxes provide memory-expansion interfaces. Among these are *Commodore's A590*, *GVP's A500 HD8+*, *Supra's SupraDrive 500XP*, *IVS's GrandSlam* and *Trumpcard 500 AT*, *Expansion Systems' DataFlyer 500*, and *Roctec's RocHard*. *GVP* even offers a combination accelerator, memory-expansion, and hard-drive unit: the *A530*. *ICD* offers the *AdSpeedIDE* board, which combines an AdIDE interface with an AdSpeed accelerator.

#### DEVICE-DRIVER SOFTWARE

The final element of an Amiga hard-drive system is the driver software. Most interfaces store this software ▶



**SHARP  
THINKING**



**WE'RE ONLY  
GOING TO GO OVER  
THIS ONCE.**

## One Pass, 600 dpi Scanning At An Incredible Price. The New Sharp JX-320.

The company that wrote the book on desktop color scanning sets the standard again.

Introducing the JX-320. With Sharp's patented award winning technology, it captures the entire image in one pass instead of three — insuring precise image registration.

But that's not the only thing that makes the JX-320 superior. Sharp gave it versatility with an optional transparency unit that lets you work with more than just reflective art. Sharp also included a SCSI, GPIB or parallel interface to ensure a perfect fit with your system.

The JX-320 also features variable



The JX-320's transparency option gives it a clear advantage.

resolution up to true 600 dpi. And it has a built-in command set, including downloadable gamma tables and edge emphasis, for greater image quality, as well as increased control over brightness and contrast.

It's even OCR compatible. And is bundled with some of the most sophisticated scanning software around.

All this technology comes from the most experienced name in desktop color scanners — at a price you won't have to think twice about.

For more information, call  
**1-800-BE-SHARP.**



**SHARP**  
FROM SHARP MINDS  
COME SHARP PRODUCTS™

© 1991 Sharp Electronics Corporation

BANKING SYSTEMS • CALCULATORS • COLOR SCANNERS • COMPUTERS • COPIERS • ELECTRONIC CASH REGISTERS & TYPEWRITERS • ELECTRONIC ORGANIZERS • FACSIMILE • LASER PRINTERS

Circle 21 on Reader Service card.



on an EPROM chip right on the board, thus allowing you to boot directly from your hard drive. Driver software is fine-tuned from time to time, both to make the controller work with new devices and new system software (such as Kickstart 2.0), and to increase data-transfer speeds. If you bought a hard-drive interface a while ago, or if you are thinking of buying a used interface, you'd do well to ascertain that it has the latest version of the driver. Although system software is something that you cannot see or feel directly, it has an important impact on your interface's compatibility and performance.

One thing to check is whether the driver adheres to Commodore's Rigid Disk Block (RDB) standard, which dictates how drive-layout information is stored on the disk and makes it possible to plug a drive formatted on one manufacturer's interface into that of another manufacturer so that it is able to read the data. This interchangeability is particularly important when dealing with external drives or removable media. RDB adherence also enables you to use Commodore's HDTool-Box program to partition the drive.

Another question to ask about driver software for SCSI interfaces is whether it supports the SCSI Direct commands defined by Commodore that allow communication with SCSI devices other than hard drives. This is particularly important when dealing with devices like tape-backup and CD-ROM drives.

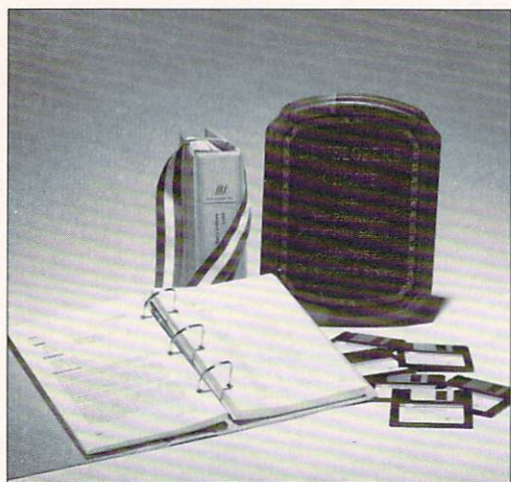
In addition to driver software, most hard drives come with set-up software that lets you partition and format the drive. Most use simple point-and-click interfaces, so you can divide the disk into two or more logical devices of different sizes. Some also perform AmigaDOS formatting. Most Amiga hard-drive systems are a "plug-and-play" proposition. As long as you have Kickstart 1.3 or higher, just attach them to your computer, and you can boot directly from the hard drive. Most even come with Workbench software already installed.

A hard drive can really help you get more use and enjoyment from your computer system. It is much faster than a floppy and often provides essential increased storage capacity (some of the files created by today's 24-bit graphics programs are too large to store on a single disk). Moreover, many complex application programs, and even some games, require a hard drive to run. Current models are much easier to use and much less expensive than those of even a couple of years ago. About the only problem you can expect when you buy a hard drive today is figuring out how you got along without one in the past. ■

*Sheldon Leemon is an authority on virtually every aspect of the Amiga. When he's not writing books or articles, he works at Slipped Disk, a Michigan Amiga dealership. Write to him c/o AmigaWorld Editorial, 80 Elm St., Peterborough, NH 03458.*

## And the Winner Is. . .

### The SAS/C® Development System



Selected as the best professional productivity software at the 1991 North American Amiga Developers' Conference, no other C compiler delivers more powerful or efficient programs for the Amiga® than the SAS/C Development System from SAS Institute Inc.—one of the world's largest independent software companies.

The SAS/C Development System offers a host of impressive features for Release 5.10:

- A workbench environment
- Release 2.0 support
- Improved code generation
- Additional library functions
- Point-and-click program to set project options
- Automated utility to set up new projects
- Source-level debugger
- Integrated editor
- Global optimizer.

Run with the SAS/C Development System!  
You'll come out a winner too. To order or for more information, call SAS Institute at 919-677-8000, extension 5042.

SAS and SAS/C are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries.  
® indicates USA registration.  
Other brand and product names are trademarks and registered trademarks of their respective holders.



SAS Institute Inc.  
SAS Campus Drive  
Cary, NC 27513

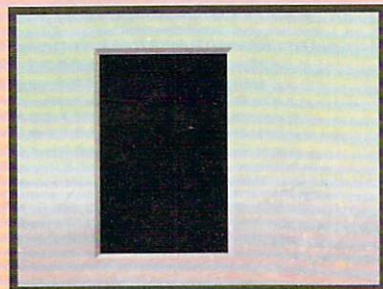
Circle 40 on Reader Service card.



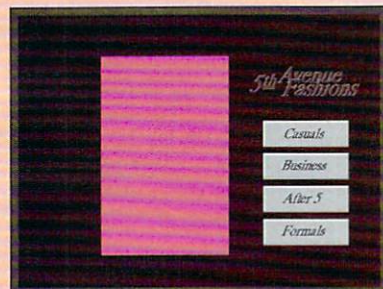
# Multi-Media 24-bit Video!



Live Video  
(From LaserDisc or Videotape)

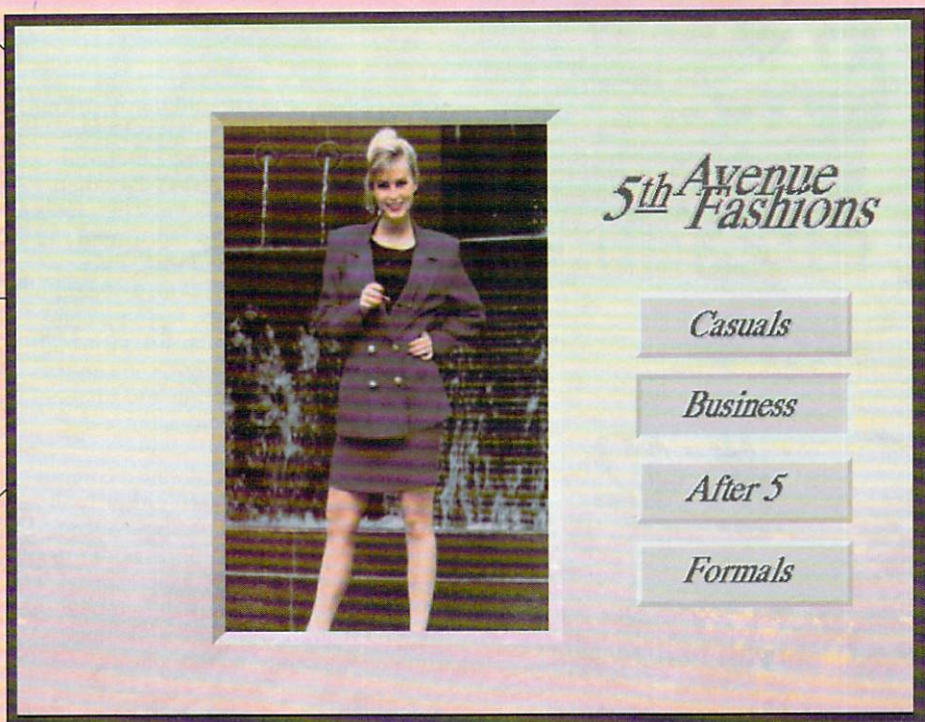


AVideo 24-bit image



Amiga Application Screen

## AVideo 24



Multi-layer Composite Screens On Your Amiga's Monitor



TVPaint: 24-bit Pro Paint Package

**AVideo24 and TVPaint: \$999.95!**

**AVideo12 (12-bit) and AVPaint: \$499.95!**

Call Now To Order by VISA, MC, AmEx:

**1-800-875-8499**

AVideo24 is a top-quality 24-bit graphic display and creation system for the Amiga, but what makes AVideo unique is its built-in Multi-Media capabilities. The key is AVideo's ability to superimpose an Amiga screen over your 24-bit graphic display. With AVideo, you can have an Amiga screen in front, AVideo 24-bit imagery behind, and *genlocked live video* behind it all, using the colors of the Amiga screen to key transparency. Add to this picture perfect RGB output and a state-of-the-art 24-bit paint program and you'll see why *AVideo is the answer!*

"As a general purpose 24-bit card, AVideo literally blows the competition out of the water" - *Amiga Computing*

- Over 16 million colors in overscan HIRES (752 x 566)
- Shows 12-bit double buffered *anims*, up to 25 frames/sec.
- Installs inside your Amiga - leaves video slot free
- Supports any software that generates ILBM's (up to 24 bits): ADPro, LightWave 3D, Imagine, Pixel 3D, DPaint IV, etc.
- ARexx controllable: great for use with CanDo, AmigaVision

## INOVAtronicS

**Be More Productive.**

INOVAtronicS, Inc. • Suite 209B, 8499 Greenville Ave, Dallas, TX, USA 75231-2499 • Phone 214-340-4991 • FAX 214-340-8514

AVideo, AVideo24, and AVideo12 copyright Archos S.A. INOVAtronicS is a trademark of Inovatrionics, Inc. TVPaint copyright TECISOFT. All other products mentioned are trademarks and copyrights of their respective owners.  
Special thanks to top Dallas model Tracy Hageman

Circle 168 on Reader Service card.





## # 42

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

By Joel Hagen

# Electronic Batik

BATIK IS A centuries-old fabric-dyeing technique developed in Java. Designs are applied to cloth using a material such as beeswax that resists dye when the cloth is dipped in color. The wax is removed from the dyed fabric, and the process is then repeated with a new color. During the procedure, dye seeps along cracks in the wax, forming complex patterns of irregular lines through the design. On the Amiga, you can use a combination of painting and image-processing techniques to achieve a similar effect.

There are a number of ways a computer artist could approach this idea. I will focus on methods that use DeluxePaint (Electronic Arts), Art Department Professional (ASDC), and PIXmate (Progressive Peripherals). Let's try the simplest method first, then explore some more complex variations on the concept.

### BASIC BATIK

Look through your old HAM images for a colorful picture with which to experiment. Load it into PIXmate and use the HAM>32 menu selection to convert it to 32 colors. This reduction of colors simplifies the forms and shapes of the image while retaining its character. Save this 32-color image and press the i key to bring up PIXmate's image-processing tools. Click on MF2, a median filter, to further simplify the image by reducing the dithering.

Next, select Extract from the Color menu and reduce the image to either its red, green, or blue color plane. Return to the image-processing tools and select EDG to perform an edge detection. When that is complete, you should be looking at a monochromatic version of your image consisting of red, green, or blue outlines. Save this image and quit PIXmate.

Load the outline version of the image into DPaint. Next, load the 32-color version of your picture to the spare screen. Return to the outline screen, be sure the background color behind the lines is transparent, and

pick up the lines of the entire screen as a brush. Switching to the main image, select Color mode, F2, and choose the darkest palette color. Align the outline brush precisely with the image, but don't stamp it down. You should see shape areas within the image neatly outlined in a dark color. To bring some interesting irregularity to the outlines, hit the Shift-O key combination to thin the brush. Stamp the brush down on the image and save it.

There is an interesting challenge involved in using this technique: How to get irregular outlines around some, but not all, of the image elements. Part of the solution lies in extracting a single color plane from the image before performing edge detection. The extraction eliminates some shapes from the image. Resulting outlines fit the full-color image, but highlight only some of its shapes. The other part of the solution is the Brush Trim operation, Shift-O.

You can also try some variations on this method. Experiment with multiple passes of the Median Filter or the AVG averaging operation in PIXmate prior to doing an edge detection. This will increase the simplification of the shapes. Try edge detection on the full-color image and on other extracted color planes. Each will have its own character. If most of your lines disappear when you press Shift-O in DPaint, perform an AVG averaging operation on the outlines in PIXmate before bringing them into the paint program. This will thicken the lines enough to preserve them when you trim.

Try laying the outlines over the original HAM image, either at full opacity or at some level of translucency. Also, select different colors for the lines. There is an easy way to do this in DPaint before you stamp the lines over a 32-color image. Position the brush, press F2 for the Color mode, and then press one of the bracket keys ([ or ]) to cycle the lines through all the palette colors.

### ADVANCED ART AND CRAFT

You might try more complex experiments to simulate the look of batik. One of my favorite ways to create an



## By combining painting and image-processing techniques, you can create subtly complex batik patterns with rich, beautiful colors.

image is to build it in translucent layers in AD Pro. Simply set the Load method to Composite and the Mix to 50% (or whatever percentage seems appropriate). Work with images having the same dimensions, say, 320×400, and keep layering new images into the composition. Execute a HAM rendering to view the results.

The illustration accompanying this column shows a HAM image resulting from ten or twelve composited layers. Several HAM floral paintings were combined with abstract color screens and a portrait. As images overlap each other, unforeseen patterns form as though dye were seeping into cracks in the wax of a batik.

As the image grows in complexity, it may be desirable to emphasize certain elements. This is easy to do if you plan ahead. Create separate elements against a pure black or pure white screen. In AD Pro, the R, G, and B Mix controls let you specify any color as transparent. Zero in all three boxes makes black transparent; 255 in all boxes makes white transparent; and -1 in all boxes leaves nothing transparent in a Mix. If you want to reemphasize an image element that has been lost under too many layers, merely reload that element from a transparent background at a 20% Mix. If it is still indistinct, repeat the load.

In the illustration, edge-detection outlines were added at three stages in the growing composition. This yields a more subtle effect than doing a single, final line layer. Early lines are reduced by successive image layers, blending them with other shapes. Experiment with AD Pro's Line Art operator for outlines. Thin each set of lines in DPaint as described, then stamp them in place as black lines on a white screen. In AD Pro, set Mix to 60% and R, G, and B values to 255 when loading the lines into the composition.

In the illustration, I edited the final set of lines in DPaint, erasing everything but the lines around floral patterns. When these were added to the

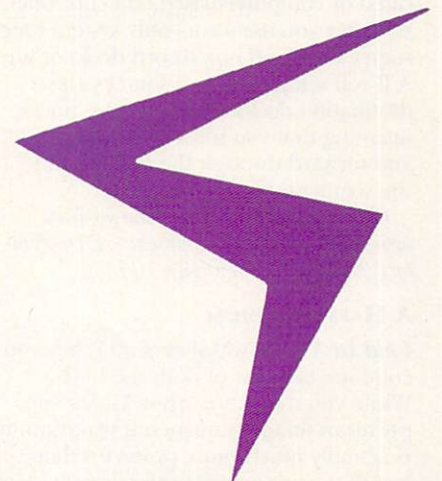


image, the result was that those areas were emphasized without adding distracting lines to the face.

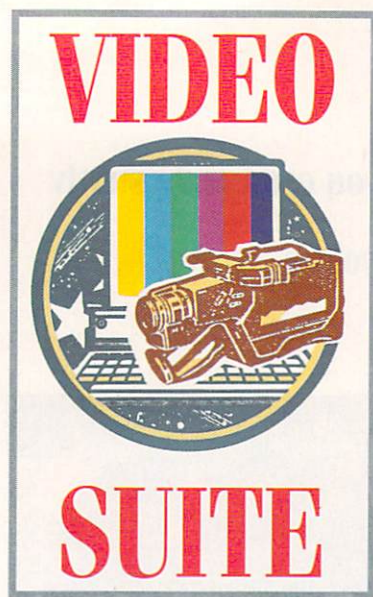
You can do all the layering directly in a paint program, but you will find that HAM artifacts begin to foul the picture. By doing its work in a 24-bit color space, AD Pro avoids cumulative artifacts. The HAM image (or any format you prefer) is calculated at the final stage. You can use the 24-bit image if you have a 24-bit display board or a film recorder such as the Polaroid CI-3000, which is directly supported by AD Pro modules. I often convert my 24-bit images for viewing with DCTV (Digital Creations). The results are beautiful. ■

*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.*

**In the "Batik" illustration above, multiple images were layered in Art Department Professional using translucent Mix levels. Image-processing techniques produced outlines that were added to the picture at three stages.**







# Nonlinear Editing

*Add ShowMaker to your video-editing setup to get the capabilities of digital nonlinear editing systems at much less cost.*

*Add an optical-disc recorder, too, and you've got nirvana.*

By Martin Ricketts

A DIGITAL, NONLINEAR presentation composition. It sounds complicated, but it is not. Nonlinear composition is a means by which you can create elaborate productions in a fraction of the time it would take with conventional video-editing techniques.

A true nonlinear editing system lets you digitize all your stock footage to high-capacity, phase-change optical discs. Finding and accessing video segments on the mass-storage discs is extremely fast compared to tape, and you do not have to contend with pre-rolls as in traditional editing. Thus, you can build an edit decision list and review your edits in real time as they will appear in the finished production. As you can imagine, such a system is far more expensive than a traditional edit system, running from about \$25,000 to \$80,000.

The less expensive traditional method involves two or more VTRs and a dedicated or computer-based edit controller. Whether you use a cuts-only system (one source deck and one record deck) or an A/B roll setup (with two sources and a destination deck), the method is linear, meaning that you must roll backward and forward through the tape to find the segments you need.

*(To contact the vendors of the products mentioned, see the "Manufacturers/Distributors' Addresses" list on page 106.)*

## A HAPPY MEDIUM

**Gold Disk's ShowMaker** (\$395) lets you combine benefits of both methods. While you may know ShowMaker simply as an image-sequencing program, it is actually much more powerful than just that, supporting professional video

equipment and giving you real-time control over it. It was not designed for video editing, but it can augment traditional edit systems to approach the effects of nonlinear systems. With ShowMaker, you compose your entire presentation—including video segments, digital graphics, and sound—within the Amiga, and record the results to tape as you work.

Preparing a videotaped presentation with ShowMaker offers many benefits, the best of which is that you get to see your results right away. The downside of this is that it requires immediate access to all source material you plan to include. Immediate access is not a problem for animation, genlocking, Toaster commands, MIDI music, or sound samples, because these elements are either loaded into memory or performed digitally. With videotape footage, however, access time is an issue. In fact, video-access time is the only thing separating a ShowMaker/VTR setup from systems such as the nonlinear, Mac-based Avid 200.

Because of this, ShowMaker is not the right tool to use for a project that involves cuts from clip to clip in rapid succession. On the other hand, it is perfect if you want to create a tape that incorporates lots of graphics keyed over video, or if you wish to shift in and out between the source VCR and still images with DVEs. It's also helpful for synchronizing all of this to a MIDI soundtrack (no SMPTE time code needed!) and adding sampled sound effects.

## EDITING AND BEYOND

To turn ShowMaker into a video-editing tool, you need a device such as *Sele-*

*tra's VuPort* (\$750), which doubles as an interface to **Panasonic's AG-1960 SVHS VCR** and an edit controller.

Using VuPort, you can simply cut segments of video and arrange them onto another tape in the order you wish to use them. Then you can use ShowMaker's time line to add transitional effects, graphics, and sound, and finally to record the results in real time to a master tape. Under this setup, a VCR's linear approach is not necessarily a limitation because seek time is reduced.

Any system that involves more than one video source requires a method for switching between them. A ShowMaker video system is no exception. **NewTek's Video Toaster** is just the switcher for such a setup, because ShowMaker supports it directly. In fact, ShowMaker's elegant and easy-to-use Toaster control is a very powerful part of the program.

Although you can run ShowMaker from the same machine that the Toaster occupies, for advanced applications you will want a second Amiga to house the Toaster. The reason for this is that the Toaster takes complete control of the computer when it runs, leaving few system resources for ShowMaker. The Toaster thus slows down such ShowMaker functions as MIDI timing, animation playback, and digital audio.

A good setup for professional work, then, is two A2000s, one of them containing the Toaster, a hard drive, 6-8MB of RAM, and either one dual-channel or two single-channel TBC(s). The other A2000 would house a 50-100MB hard drive, 6-8MB of RAM, an accelerator, a multiport serial board hooked to an edit controller, and—for adding sound—a sampler and a MIDI ▶





# A Cure For The Colorblind Toaster.



It's the new  
DPS PERSONAL  
V-SCOPE™ card.

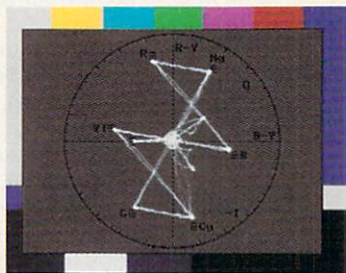
The world's  
first waveform

monitor and vectorscope for desktop video. A  
perfect companion for your Video Toaster® our

PERSONAL V-SCOPE lets  
you superimpose a digitally  
synthesized waveform  
monitor and vectorscope on  
any video signal. So now  
you can precisely measure  
video levels and test for  
true colors. We even  
include PERSONAL

TSG Software with more than 30 industry stan-  
dard test signals for display with your Video  
Toaster. Buffered video  
output. Dedicated full-time  
output and superimpose  
output. Hardware rasterizer  
with electronically generated  
graticule scales. And more.  
All compatible with AMIGA®  
and IBM PC®. Use the DPS  
PERSONAL V-SCOPE by

itself or combine with our PERSONAL TBC II  
card for a fully integrated video processing,  
manipulating and monitoring system. Best of  
all, it shows your true colors just for a little  
green. Only \$995.



## DIGITAL

PROCESSING SYSTEMS INC.

*If you want to look your best*

55 Nugget Avenue, Unit 10 • Scarborough, Ontario M1S L31 Canada • (416) 754-8090 Fax: (416) 754-7046  
11 Spiral Drive • Florence, Kentucky 41042 • (606) 371-5533 Fax: (606) 371-3729

Video Toaster® is a registered trademark of NewTek Incorporated. PC® is a registered trademark of IBM Corp. AMIGA® is a registered trademark of Commodore-Amiga, Inc.  
DPS PERSONAL V-SCOPE™ is a trademark of Digital Processing Systems, Inc. DPS PERSONAL TBC® is a registered trademark of Digital Processing Systems, Inc.  
Circle 23 on Reader Service card.

Actual Monitor Photos



interface connected to a MIDI module. Then, to combine your video with Amiga graphics, you need a genlock/encoder. And finally, you need two or three SVHS VCRs connected to an edit controller.

While this system may seem elaborate, I recommend it. It allows you to use footage from a VCR or from the Toaster's framebuffers, and to synch that video with a computer-controlled sound track via MIDI or internal sound samples.

The more memory you have, the happier ShowMaker will be; 8MB is not unreasonable with memory prices dropping. An accelerator is really not an option, because ShowMaker does not work well without one. Developers such as Great Valley Products (GVP) and Progressive Peripherals offer memory and acceleration on one board for a reasonable price. The size of the hard drives you choose will depend on the amount and type of animation you use, but I recommend at least 50MB.

A MIDI audio source, one of the most important production tools to consider, is the best means of incorporating sound in a nonlinear environment. Because MIDI modules are computer controllable, they can instantly access sounds and play them at any specified point on a time line. **Roland's SC-55 Sound Canvas** is a proven sound module that conforms to the increasingly-popular General MIDI music standard. To connect it with your Amiga, you need a MIDI interface. **Dr. T's Phantom** is a good choice, because it also supports SMPTE time code. (Gold Disk promises support for The Phantom in an upcoming version of ShowMaker.)

Another source for sound is a digital sound sampler (such as **SunRize's AD1012 12-bit digitizer**), which lets you record any effect and use it in a ShowMaker production under MIDI control. **Digital Creations** makes the only software-controllable genlocks, and ShowMaker supports them directly. The **SuperGen 2000S** internal model has an excellent SVHS encoder and easily synchronizes to a master edit system.

Your edit controller may work with such units as **NEC's PC-VCR** or the lower-priced **Panasonic AG-1960**. NEC has the advantage of a built-in RS-232C serial interface, so you need not buy an external interface or a retrofit VCR. (Reportedly, though, Panasonic will soon incorporate an interface into its system.) Also, NEC lets you stripe any tape with its proprietary address-

ing system and then access individual frames using ShowMaker or other control software.

While Panasonic's proprietary addressing system lets you access only tapes recorded on that machine, you can choose the alternate BOT (Beginning-of-Tape) method. BOT is not frame-accurate, but it works much faster than the PC-VCR's system, thus making the AG-1960 more conducive to real-time systems.

Some software tools make great complements to the ShowMaker setup.

With ShowMaker,  
you compose your  
entire presentation—  
including video  
segments, digital  
graphics, and  
sound—within the  
Amiga, and record  
the results to tape  
as you work.

These include **ASDC's FRED** (Frame Editor), which calculates such effects as moving an object across the screen over a specified time, and **The Blue Ribbon SoundWorks' Bars&Pipes Professional**, which lets you control the Toaster, SuperGen, and SunRize's AD1012 from its own time line.

#### HELP YOURSELF

Whatever type of setup you have, you can make your job easier by following a few suggestions to work around the inherent limitations in a real-time system using VTR technology.

First, avoid using overscan, high resolution, and four bitplanes simultaneously for your images. Using two of these elements is fine, but all three together will bog down your system. Another tip to help make your productions play faster is to keep all your animation files together in a single drawer on your hard drive so that they are easy to access.

Because ShowMaker supports MIDI Song File One format, you should save any music files you use in that format. Also, to make certain ShowMaker starts the music at the precise moment you wish, add an empty bar to the beginning of each song when you save it.

When possible, use MIDI instead of internal sound samples. While the Amiga's internal eight-bit sampling is good, it cannot compare to the quality dedicated samplers turn out. And keep in mind that ShowMaker cannot play sound that is sampled at rates higher than 256K. While other programs can play at higher rates by overtaking the Amiga's hardware and shutting down other resources, ShowMaker cannot do so, because it controls much more than sound alone.

#### A GREATER ADVANTAGE

If video-access time is the only real advantage expensive nonlinear systems have over a ShowMaker setup, then you could overcome this by adding an optical-disc recorder to your Amiga, right? Sure you could. But before you start celebrating, be aware that even write-once optical recorders start at \$15,000. **Panasonic's LQ-4000**, which runs to \$28,000, can be rewritten a million times (try that with a tape!).

If you intend to use a fair amount of 24-bit animation, however, or wish to produce commercials, music videos, or other dynamic productions with tight synching and lots of graphics, then an optical system is worth it. It is also more cost-effective than traditional editing if you're considering such videotape formats as MII,  $\frac{3}{4}$ -inch SP, BetaCam, or BetaCam SP.

It is important to note that optical-disc recorders are not digital, as are the Avid and comparable devices. They record in an analog format, using amplitude modulation similar to videotape. Thus, there is loss of picture quality over subsequent generations. Despite this, the picture quality far exceeds all but the very best formats such as BetaCam SP, D2, and one-inch.

While the the luxury of optical-disc-based editing is not so affordable, the luxury of ShowMaker is. And its nonlinear approach embodies the future of video editing. ■

*Martin Ricketts is president of MEDIA Innovations, a Canadian company specializing in Amiga-based multimedia presentation and production systems. Write to him c/o AmigaWorld Editorial, 80 Elm St., Peterborough, NH 03458.*





# world of commodore AMIGA<sup>®</sup>

**IN PASADENA  
CALIFORNIA**

See all the exciting new products  
and get the most up-to-date information!



**FREE SEMINARS**  
Valuable tips and demos  
on CDTV in Education  
Desktop Video  
AmigaDOS<sup>™</sup>  
Video Toaster<sup>™</sup>  
Animation and more!

**NEW  
HARDWARE  
RELEASES**

Hands-on  
Browsing!

**THE LATEST  
SOFTWARE**  
Thousands  
of Titles!



MARK THESE  
**3 DAYS**  
ON YOUR CALENDAR

- ◆ FRIDAY, SEPT. 11, 1992, 10 am - 5 pm
- ◆ SATURDAY, SEPT. 12, 1992, 10 am - 5 pm
- ◆ SUNDAY, SEPT. 13, 1992, Noon - 5 pm

The Pasadena Center, 300 East Green Street, Pasadena, California

**REGISTRATION:**

\$15 for one day, \$30 for a three-day pass

**COMING FROM OUT OF TOWN?**

**SHOW HOTEL:** The Pasadena Hilton Hotel  
150 South Los Robles Ave.  
Pasadena, CA 91101

**SHOW RATE:** \$79, single or double/twin  
**TO RESERVE:** Call 1-800-HILTON.  
Request the group rate for  
World of Commodore Amiga.

**DEADLINE:** August 8, 1992

For information, call Ramige Management Group: (416) 285-5950, fax 285-6630.  
© 1992 World of Commodore Amiga is a registered trademark of Commodore Electronics  
Ltd.; AmigaDOS is a registered trademark of Commodore-Amiga Inc.; Video Toaster is  
a trademark of NewTek, Inc.

**PRE-REGISTER AND**

**SAVE**

Please pre-register me for  
World of Commodore Amiga in Pasadena  
☐ one day (\$10), ☐ three-day pass (\$25)

Name \_\_\_\_\_

Company (if applicable) \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Send form with your check, payable to Ramige Management Group, to  
World of Commodore Amiga  
3380 Sheridan Drive, Suite 120, Amherst NY 14226  
Pre-registration deadline: August 21, 1992.



From p.24.

text), other publishing programs that communicate with HotLinks should be able to make use of edition text and the associated styles and tags.

PageLiner has some convenient editing features, including the ability to set styles and tags, to select text through double-clicking (words) and triple-clicking (paragraphs), and to extend selections through shift-dragging. It also includes a speedy and fairly accurate spelling checker that has an improved version of the PageStream dictionary and allows for additions during the checking process.

BME, a very simple bitmap editor intended only for extremely minor touch-up jobs, displays any bitmap as a gray-scale image. Its most important function right now is probably to stage images from regular files into editions.

While much improved, PageStream 2.2 isn't perfect. One incompatibility between 2.2 and previous versions lies in the surprising behavior of multiline text objects, which suddenly spread out (margin justify) the text within them. Another problem is that the fonts intended to speed up text display are of startlingly poor quality. They take over from the previously set Times and Trivium fonts, but I removed them.

Be wary of a few HotLinks areas as well. While the installation process went fine, when I attempted to set up password access, I had two complete crashes

around, however, and version 2.2 is a necessary and important upgrade for current PageStream users. HotLinks Editions is worth the price to PageStream users, as well. You'll find HotLinks and PageLiner most helpful, but while BME is vital for importing graphics into HotLinks, it is very limited for manipulating images. In all, I am an even happier PageStream user than I was before.

—Mark Cashman

## G-FORCE COMBO

Great Valley Products, \$749 or \$1799.

A2000.

Internal, CPU slot connection.

Installation: Easy

25- or 50-MHz 68030 accelerator with  
32-bit memory  
and hard-drive controller.

Available in both 25-MHz and 50-MHz versions, the G-Force Combo boards (which replace GVP's discontinued Series II cards) provide a 68030 processor, a SCSI hard-drive controller (and an external SCSI connector), a hardcard, and 32-bit RAM—four expansion cards in a single slot.

The 25-MHz card comes with one megabyte of 32-bit RAM and can be expanded in four-meg increments to a total of 13, while the 50-MHz card has a standard four megs and can be increased by four-meg jumps to 16.

The A2000 can address only nine megabytes of memory, so you must designate the G-Force RAM to reside only in extended RAM addresses or split it between the standard RAM auto-config space and extended address space. With a full 16MB, 50-MHz card, eight megs are usually placed in auto-config and eight in extended space.

Hardware installation is quite simple. To add RAM or use the G-Force as a hardcard, however, you'll have to write another check for accessories: GVP's four-meg SIMM modules (\$299) and hard-drive mounting kit (\$49).

Software installation is equally easy. You get such 68030 utilities as MemTest (checks on-board RAM) and FPU\_Test (tests the math coprocessor). For significant speed increases, use the GVPCpuCtrl command to map your Kickstart ROM into 32-bit RAM space. The FaaastPrep software walks you through partitioning and formatting a hard drive, and the manual documents all installation procedures well, including even a section for Bridgeboard users.

To put the systems through a real-world environment, I tested the 25-MHz G-Force in the Video-Toaster-equipped A2000 in *AmigaWorld's* video studio, and the 50-MHz card in my A2000. Both systems are equipped with AmigaDOS 2.0, although the video-suite system occasionally uses the 1.3 OS. The cards worked fine with both OS versions.

Compared to the standard A2000 performance, the 25-MHz Video-Toaster system was fast, with all aspects working fine. In addition, when we used the built-in SCSI controller to handle a SyQuest removable-media drive and a Quantum hard drive, disk access seemed faster.

Replacing Commodore's 2630 25-MHz accelerator, the 50-MHz G-Force significantly improved performance. Software compatibility was never a problem, and the time required for image rendering and processing was cut in half.

Finally, I used Lamont Koop's AIBB4 software to benchmark the accelerators and compare them to the performance of a 25-MHz A3000. (See Table 1 for results.) The 25-MHz G-Force card is the virtual equal of the A3000, while the 50-MHz version is about twice as fast. If you're doing floating-point-intensive work, you should note that the G-Force's

Table 1. Benchmark tests comparing G-Force to the A3000.

	A3000	G-Force 25 MHz	G-Force 50 MHz
WritePixel	1.00	1.03	1.50
Sieve	1.00	0.99	1.96
Dhrystone	1.00	1.04	1.73
Sort	1.00	0.99	1.88
Matrix	1.00	1.01	1.90
IMath	1.00	0.99	1.88
MemTest	1.00	0.94	1.47
TGTest	1.00	1.04	1.12
Savage	1.00	1.00	1.99
FMATH	1.00	1.00	1.99
FMatrix	1.00	1.04	1.96
BeachBall	1.00	1.08	1.77
SWhetstone	1.00	1.19	2.33
DWhetstone	1.00	1.01	1.93
FTrace	1.00	1.01	1.94
CplxTest	1.00	1.03	1.83

50-MHz 68882 FPU is in many ways faster than the FPU built into the more advanced 68040 processor.

All in all, both cards are very reliable, high-performance, multifunction additions. If you need an accelerator, you would do well to consider them. If you need RAM, a hard-drive controller, and a faster processor, look no further.

—Lou Wallace ▶



## YOUR TURN!

I'm very impressed by the simplicity of HotLinks Editions' Publish/Subscribe/Update features. Being able to zap graphics into BME for touch-up and cropping is great, as is the ability to convert graphics. PageLiner is the most problematic link in the chain. While editing text from PageStream is a great concept, it's usually faster to do it in PageStream proper. PageLiner is slower than the slowest turtle!

J.R. Bookwalter  
Mogadore, Ohio

because the program couldn't find the password file. Also, the requesters aren't good at handling the large, virtual-screen Workbench displays (mine is 1280x800, displaying 640x400); they always appear in the center of the virtual screen. At least if you move the display, it remembers its new location. This problem is also present in PageLiner.

The minor annoyances all have work-



# STUDIO 16™ IS DESKTOP AUDIO

Professional Digital Sound For Your Video, Music, and Radio Productions



The Video Toaster goes a long way towards solving your video problems. But what about sound? Do you need to synchronize background music with your productions? How do you add footsteps, door knocks, and other sound effects to your video or animation? Do you need to fade, cross fade, or eliminate sections of audio? Can you edit your audio, or are you stuck with the first take?

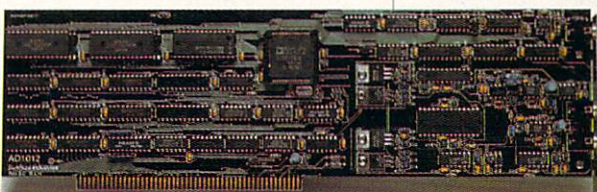
Studio 16 solves all these problems by turning your Amiga into a complete sound studio. With Studio 16's SMPTE support you can lock sounds frame accurately with your video. Audio triggers reliably, at the same spot, every time. Or you can quickly slip your audio effects, trying them at different spots. And since Studio 16 plays directly off

hard disk, the number of sounds you can trigger is unlimited.

Each of Studio 16's four tracks can be metered and mixed. Unlike two track systems, Studio 16 can combine multiple tracks with

no generation loss. And it can record while playing.

The Studio 16 sound editor graphs the audio waveform and



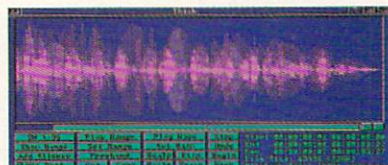
allows you to cut, copy, and paste audio. Zoom, scale, fade, reverse, and many other functions are available. Edits can be non-destructive or permanent.

The included AD1012 hardware provides audio in, SMPTE in, and audio out connectors. Just plug your VTR, CD player, radio, tape deck, or other source directly in.

Then record with 12 bits at sampling rates up to 80,000 samples per second. The AD1012 can synchronize and chase SMPTE time code at 24, 25, 29.97, and 30 fps.

*how does the 12-bit AD1012 sound? Absolutely great!*

— Amiga World, 4/92, p.29



Designed to exceptional audio standards, the AD1012 offers CD frequency response and 70dB

signal-to-noise ratio.

The AD1012 includes a special sound

coprocessor—the advanced 2105 DSP. The DSP allows Studio 16 to perform real time mixing and high quality 16 bit effects. These include echo, flange, delay, and chorus.

Call today for a free Studio 16 information packet, (408) 374-4962.

Fax: (408)

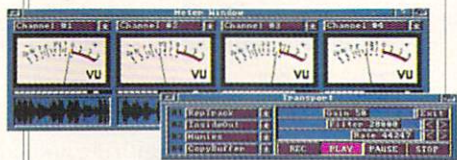
374-4963. Dealers:

call for promotional

package. Salespeople: call to join our commission program.

**SunRize Industries**

2959 S. Winchester Blvd., Suite 204  
Campbell, CA 95008 USA





## THE COMPLETE COLOUR SOLUTION

Rombo Productions, \$179.95

All Amiga models.  
External, parallel-port connection (Vidi-Amiga).  
Installation: Moderate.  
Compatibility notes: Vidi-Amiga: A1000 requires Rombo's gender changer; A2000s and A3000 require parallel-port extender.  
Hard-drive-installable software.  
Not copy protected.  
2.0 compatible.  
Minimum system: 512K RAM.  
Recommended system: 1+MB RAM.

Real-time framegrabber, electronic color splitter, and image-processing and paint software.

The lineup of video digitizers in the US has a new challenger from Scotland. A respectable digitizing package, The Complete Colour Solution is composed of Vidi-Amiga (a real-time framegrabber), Vidi-RGB (an electronic color splitter), VidiChrome-Amiga (image-processing software), and Photon Paint (a HAM paint program).

### VIDI-AMIGA

Vidi-Amiga is capable of grabbing one or more frames from either a live video signal or a VCR in a 16-shade grayscale. (The manual promises one frame capture in 20 milliseconds.) You can later colorize the frames individually with one of the nine preset color palettes or one of your own.

Operation of the program is relatively simple. Specify the number of frames you want grabbed, and start your video source. The video is displayed directly on your Amiga's monitor (no other is required), and you click the left mouse button when you want the grab to commence. Vidi-Amiga grabs the number of frames you specified (up to the limit of your memory; each megabyte holds about 25 frames).

A second mouse click stops the grab, or you can define a frame stop point to end the cycle automatically. I recommend the latter method, as Vidi-Amiga continues grabbing frames—overwriting previous ones—until you click. For example, if you ask it to grab six frames, it will do so; but then it grabs a second set of six, replacing the old frame 1 with a new frame 1 and continuing the cycle until you halt the grab.

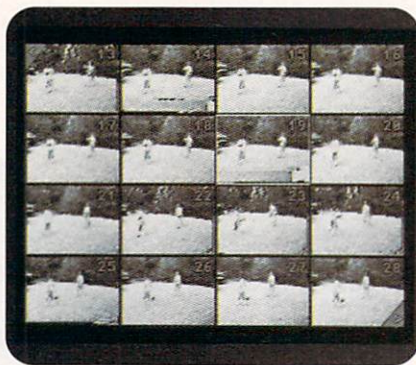
When finished, you can display all the grabbed frames in a miniature story-

board, and you can clip, copy, move, or erase them. Vidi-Amiga also provides an animation facility that plays the grabbed sequence.

One unique feature is the ability to define windows within frames. This allows you, for example, to have multiple frames of video (such as a wide shot and a closeup) within one frame. Alternatively, you could run multiple animations at the same time. (Remember those 1960's films that had the screen divided into a grid, with something different happening in each square?) You can move the windows around, snap them to a grid, and resize them at will.

While its image quality is reasonably good right out of the box, Vidi-Amiga has both hardware and software controls to improve the images. On the digitizer itself are rough adjustments for brightness and contrast; you can tweak these with your actual video on the screen (before starting the grab). Of course, this requires you to perform quite a feat of contortion, because the digitizer is behind your computer. You shouldn't have to mess with these controls very often, however; once set, they'll work for most of your grabs. Most adjustments are handled by the fine-tuning control for brightness within the software.

The manual boasts that Vidi-Amiga is ideal for professional video and presentation applications. Good image quality? Yes. Professional video standard? No, the



Vidi-Amiga displays your captured frames in a storyboard.

16-color grayscale knocks it out of the running for professional work. Presentation tool? Absolutely, it's great for creating rough storyboards for clients.

### SUPPORTING CAST

Vidi-RGB is an electronic color splitter that connects to Vidi-Amiga (or NewTek's Digi-View) via an included RCA cable. (You'll have to invest about \$15 for a US-standard power supply.) Under the supplied VidiChrome-Amiga software's

control, Vidi-RGB separates an image from a color-video source (camera or VCR) into its red, green, and blue components and presents an on-screen HAM picture, all in less than one second. Because Vidi-RGB handles only stationary images, however, your VCR must have a



The Complete Colour Solution lets you save a color window (the engine) within a color frame (the Triumph TR-6).

rock-steady pause/still frame control and your color camera must be tripod or copystand mounted.

Using the VidiChrome color-processing software, the color-separation process is automatic and very quick, and it produces a good basic image. Unfortunately, Vidi-RGB provides you with only two hardware controls—brightness (black-and-white level) and saturation (chroma)—and one software control for brightness. Maybe 50 percent of the time it isn't a problem, but the rest of the time you'll wish you had more tweaking controls.

One solution is to buy a separate image processor, such as ASDG's Art Department Professional or Black Belt's Image-Master. The other is to use Vidi-RGB with Digi-View, manually stepping through the electronic RGB filtering process via the button on the Vidi's case. Between the NewTek software and the manual filtering, the process is much slower. The upside is that Digi-View 4.0 gives you many more image-processing controls.

There is one other Vidi-RGB feature that's of interest to video experimenters: The hardware package includes an Input/Output 25-pin connector that provides access to all output signals of the unit as well as providing input pins for S-type signals.

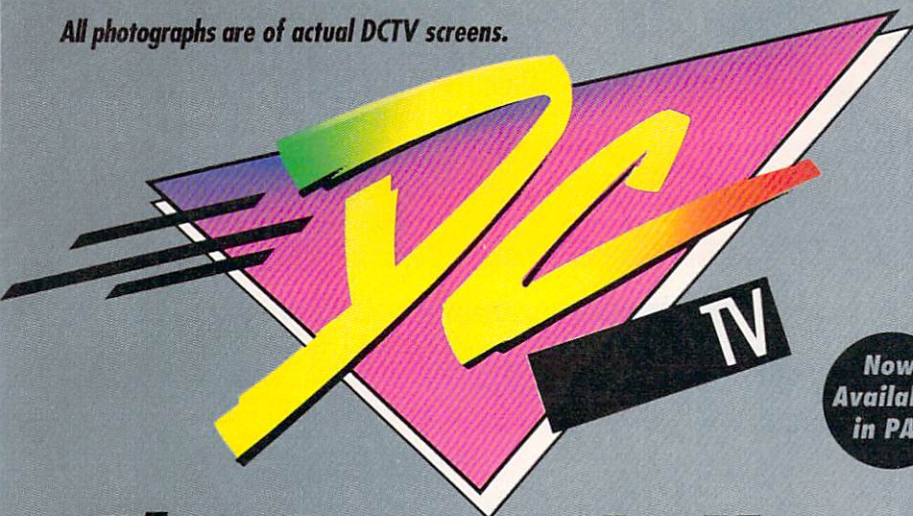
### THE BIG PICTURE

If you like the idea of digitizing animated sequences into your Amiga in real-time (even if they are 16-shade black-and-white), then Vidi-Amiga is about

*Continued on p. 70.*



All photographs are of actual DCTV screens.



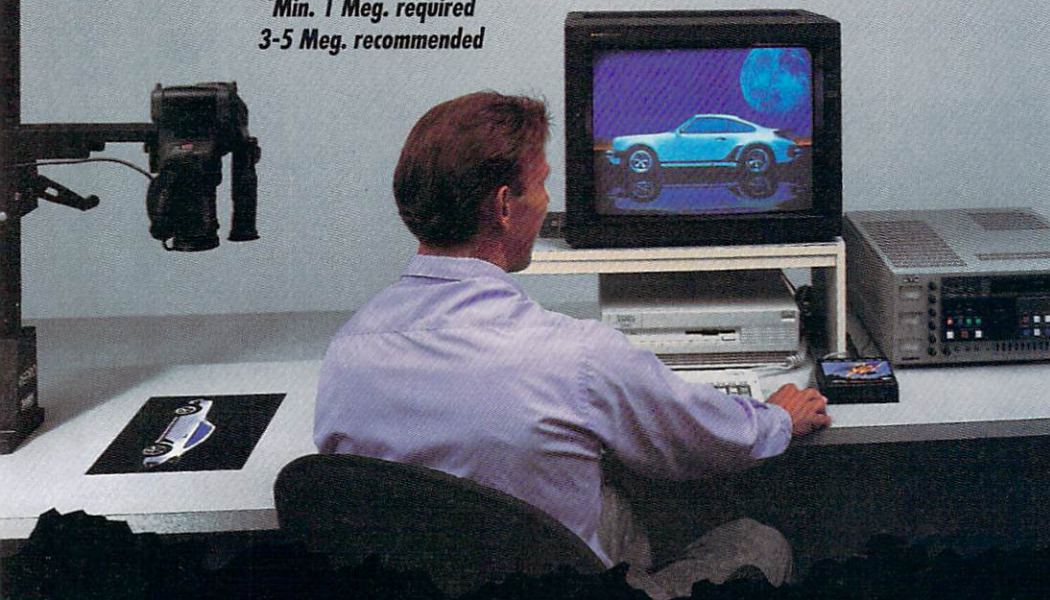
Now  
Available  
in PAL

# The Future Is Here!

- ▲ Paint, digitize and display beautiful full color composite video images on any Amiga.\*
- ▲ Capture an image in 10 seconds from any color video camera. (Also works with still video cameras, video disk and still frame capable VCR's.)
- ▲ Convert DCTV™ images to or from any IFF display format (including HAM and 24 bit).
- ▲ Full-featured paint, digitize and conversion software are included. DCTV™ is a complete system, right out of the box!
- ▲ Create spectacular 3D images and animations. Compatible with all popular 3D programs.

**\$495**

\*Min. 1 Meg. required  
3-5 Meg. recommended



Digitize and process full color composite video images in millions of colors.



Sophisticated true color video paint, digitizing and image processing software are all combined into one easy to use package.



Create beautiful full color video images with all popular Amiga 3D programs.



Animate video quality DCTV images in real time using popular Amiga animation creation tools.

DCTV (Digital Composite Television) is a revolutionary new compressed video display and digitizing system for the Amiga. Using the Amiga as a compressed video buffer, DCTV creates a full color composite video display with all the color and resolution of television.

**DIGITAL**

CREATIONS

Telephone 916/344-4825 FAX 916/635-0475

©1992 Digital Creations. Amiga is a registered trademark of Commodore Business Machines. Patents applied for.

Circle 16 on Reader Service card.





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

CANADA: 1-800-548-2512

4453 Redondo Beach Blvd.,  
Lawndale, CA 90260

CUSTOMER SERVICE OR  
**310-214-0000**

ORDER STATUS

Mon-Sat 8-6 PST  
FAX: 310-214-0932

DRIVES, HARD DRIVES	
AND CONTROLLERS	
AT DRIVES & CONTR	
TRUMPCARD 500 AT .....	179.00
SCSI CONTROLLERS	
ADVANTAGE 2000 SCSI .....	99.95
IVS GRANDSLAM 2000 .....	239.00
IVS GRANDSLAM 500 .....	289.00
IVS TRUMPCARD A2000 PROF .....	159.00
IVS TRUMPCARD A500 PROF .....	229.00
FLOPPY DRIVES	
A2000 INT. DISK DRIVE .....	99.95
A3000 INT DISK DRIVE .....	99.95
ROCLITE FLOPPY WHITE .....	94.95
ROCLITE FLOPPY BLACK .....	99.95
ROCTEC FLOPPY DRIVE .....	84.95
HARD DRIVES	
PRIMA 52i .....	399.00
PRIMA 105i .....	569.00
QUANTUM 52MB LPS SCSI HD .....	239.00
QUANTUM 105MB LPS SCSI HD .....	369.00
QUANTUM 120MB LPS SCSI HD .....	399.00
QUANTUM PRODRIVE 170MB .....	559.00
QUANTUM 210MB SCSI HARD DRIVE .....	689.00
QUANTUM 240MB LPS SCSI HD .....	699.00
QUANTUM 425MB SCSI HD .....	1299.00
REMOVABLE MEDIA	
SYQUEST 44MB DRV.+ 44MB CART.	
INTERNAL .....	399.00

EXTERNAL KIT W/CABLES .....	499.00
SYQUEST 88MB DRV.+ 88MB CART.	
INTERNAL .....	569.00
EXTERNAL KIT W/CABLES .....	679.00
SYQUEST CARTRIDGE 45MB .....	80.00
SYQUEST CARTRIDGE 88MB .....	109.00

CBM PRODUCTS	
COMMODORE SOFTWARE	
AMIGA LOGO .....	58.95
AMIGA VISION .....	99.95
TCP/IP NETWORKING SOFTWARE .....	139.00

COMMODORE	
REPLACEMENT PARTS	
A2000 KEYBOARD .....	129.00
A3000 POWER SUPPLY .....	199.00
A500 DRIVE REPLACEMENT .....	159.00

COMMODORE	
ACCESSORIES	
A1011 EXTERNAL FLOPPY 3.5" FDD .....	139.00
A1680 1200 BAUD MODEM .....	49.95
A2232 MULTI-SERIAL BRD .....	299.00
A2285 AT BRIDGECARD .....	429.00
A2320 DISPLAY ENHANCER	
FOR A2000 .....	239.00
A520 COMPOSITE ADAPTOR .....	41.95

ACCELERATORS	
FOR GVP'S	
ACCELERATORS SEE OUR	
GVP FULL PAGE AD	
A2630 ROCKET LAUNCHER .....	619.00
ADSPED .....	179.00
CSA MAGNUM 040 25MHZ	
A2000 CONSUMER VER. ....	2595.00
MEGA MIDGET RACER	
25MHZ W/MMU .....	349.00
MEGA MIDGET RACER	
25MHZ W/MMU/FPU .....	409.00
MEGA MIDGET RAM 2MB .....	279.00
MEGA MIDGET RAM 4MB .....	509.00
MERCURY A3000	
W/FREE IMAGINE 2.0 .....	2299.00
PROGRESSIVE A2000 28MHZ '040 .....	1695.00
ZEUS 68040 28MHZ	
A2000 ACCELERATOR .....	2349.00

PRINTERS AND	
PRINTER ACCESSORIES	
PRINTERS	
DESKJET 500 .....	409.00
DESKJET 500C .....	709.00
LASERJET IIP+ .....	899.00
LASERJET IIP WITH EP-L TONER .....	1199.00
NEWGEN PS/300P .....	1399.00
PAINTJET PARALLEL PRINTER .....	699.00
QMS PS-410 LASER	
POSTSCRIPT PRINTER .....	1599.00

PRINT CARTRIDGES	
DESKJET BLACK CARTRIDGE .....	16.95
DESKJET INK COLOR KIT STARTER .....	34.95
EP-L TONER CARTRIDGE	
LASER PRINTER TONER .....	76.95
EP-S TONER CARTRIDGE	
LASER PRINTER TONER .....	99.95
OKIMATE BLACK RIBBON .....	4.99
OKIMATE COLOR RIBBON .....	5.99
PAINJET BLACK	
CARTRIDGE FOR XL .....	25.95
PAINJET COLOR CARTRIDGE .....	29.95
LASERJET PRINTER	
CARTRIDGES	
PACIFIC PAGE P E	
POSTSCRIPT - IIP .....	369.00
PACIFIC 4 MEM. 2MB L-JET IIP/III .....	179.00
PRINTER ACCESSORIES	
DESKJET INK CLEANING INKMU .....	3.95
PAINJET CUT PAPER .....	17.95
PAINJET PAPER CATCH .....	22.95
PAINJET TRANS FILM .....	54.95
PAINJET Z-FOLD PAPER .....	17.95

MONITORS AND	
MONITOR ACCESSORIES	
MULTISYNC MONITORS	
IDEK DR-3114 .....	359.00
IDEK MF-5017 .....	899.00
IDEK MF-5317 (RESOLVER) .....	999.00
IDEK MF-5421A (RESOLVER) .....	2349.00

## PROGRESSIVE PERIPHERALS & SOFTWARE

**A2000 28mhz '040 ... \$1695<sup>00</sup>**

- 28mhz 68040
- Up to 32megs RAM
- FREE Imagine 2.0

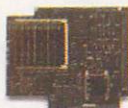


**Zeus 040**

**Accelerator for the A2000 .... \$2349<sup>00</sup>**

- SCSI-2 DMA HD Controller
- 28Mhz or 33Mhz 68040 Accelerator
- 64Mb High-speed 32-Bit RAM Expansion

**Mercury A3000 with  
FREE Imagine 2.0 \$2149<sup>00</sup>**



**The  
Progressive  
040/500**

...brings the speed and performance of 28Mhz 68040 acceleration, fully populated with 4MB of 32-Bit RAM, to Amiga 500 users. Running at up to 25 times the speed of a standard Amiga 500, and up to 5 times the speed of Amiga 500 68030-based accelerators.

**The CSA Rocket Launcher  
attaches to your A2630  
card to give you a 50mhz  
68030 ..... \$619<sup>00</sup>**

**CSA**

**Cut your rendering  
time in half!**

**CALIGARI 2**

- Real time response in full perspective
- Photo-realistic Rendering
- User friendly
- HAM, HAM-E & DCTV Support
- Free Videotape included!

**\$279<sup>00</sup>**



**Sharp JX-100**

**A Creative  
Computers  
Exclusive!**

A portable 200 dpi / 18-Bit color scanner.  
Includes Scanlab software from ASDG ..... Was \$699<sup>00</sup>  
24-Bit scanning software included

**Now at the Unbelievable price of . \$369<sup>00</sup>**



**NEW!**  
**Lower Rates!**



# DHL Overnight Shipping to Canada as low as \$15

Most rates cheaper than Express Mail at the Post Office!

SEIKO 1440 MULTISYNC .....	519.00
SONY 1302A .....	699.00
SONY 1304S MULTISYNC .....	625.00

## INPUT HARDWARE

GENIUS GENITIZER 12X12 .....	349.00
MIRACLE KEYBOARD .....	359.00
SKETCH MASTER 12X12 .....	439.00
SKETCH MASTER 12X18 .....	619.00
WIZ DRAWING TABLET 9 X 11 .....	239.00
X-SPECS 3D .....	109.95

## SCANNERS/DIGITIZERS

EPSON ES300C SCANNER .....	
COLOR/256 GRAY .....	999.00
HAND SCANNER, GOLDEN IMAGE .....	199.00
SHARP JX100 SCANNER .....	369.00

## AUDIO/MIDI

ECE MIDI A1000 .....	49.95
ECE MIDI PLUS A500/	
A2000/A3000 .....	49.95
EUREKA MIDI 500/2000 .....	32.95
MIDI GOLD INSIDER .....	64.95
PERFECT SOUND 3.1 A500/A2000 .....	69.95
PHANTOM MIDI INTERFACE .....	239.00

## EXPANSION/PORTS

BOMAC TOWER .....	289.00
DENISE EXTENDER BUS .....	85.00
DUAL SERIAL BOARD .....	269.00

## EMULATORS

A MAX II EMULATOR .....	
MAC EMULATOR SYSTEM .....	135.00

A MAX II PLUS .....	349.00
AT BRIDGEBOARD .....	(SEE CBM LISTING)

## POWER SUPPLIES

BIGFOOT 200 POWER SUPPLY .....	97.95
IVS POWER SUPPLY .....	89.95

## CHIPS (VARIOUS)

68882/25 MATH COPROC .....	189.00
68882/33 MATH COPROC .....	289.00
IC AGNUS: FATTER 1MB CBM 8372 .....	69.00
IC AGNUS: SUPER FAT .....	
2MB A3000 AGNUS CHIP .....	99.00
KICKSTART 1.3 ROM .....	39.00
MEGACHIP 2000/500 .....	
W/O AGNUS .....	209.00
WITH AGNUS .....	279.00
MULTISTART II .....	29.95

## MODEMS

SUPRA 2400 BAUD MODEM .....	79.95
SUPRA 2400 MNP PLUS .....	115.00
SUPRAFAX MODEM 2400ZI PLUS .....	119.00
SUPRAFAX MODEM .....	
2400/9600FAX .....	174.00
SUPRAFAX MODEM 9600 V.32 .....	259.00
SUPRA MODEM 9600 V.32 BIS .....	309.00

## PAL SPECIFIC

## HARDWARE

DCTV PAL .....	559.00
DIGI VIEW MEDIASTATION PAL .....	159.00
FLICKER FIXER PAL .....	300.00
FRAMEGRABBER 256 GREY PAL .....	499.00

FRAMEGRABBER PAL VERS .....	449.00
MINIGEN PAL GENLOCK .....	239.00

## MEMORY EXPANSION

### RAM CHIPS

MOST RAM CHIP SIZES AVAIL AT  
ECONOMICAL PRICES (CALL)

### A500 INTERNAL RAM

#### BOARDS

ADRAM 540 W/O/K .....	89.95
ADRAM 560 W/2MB .....	CALL
ALFA DATA 501 CLONE .....	36.95
BASEBOARD A500 0/4 MB .....	89.00
SUPRAM 500 1/2 MEG .....	47.00

### A500 EXTERNAL RAM

#### BOARDS

SUPRAM 500RX 1MB .....	135.00
SUPRAM 500RX 2MB .....	199.00
SUPRAM 500RX 8MB .....	429.00

### A2000 RAM BOARDS

DKB 2632 RAM EXPANSN BRD	
FOR A2500 .....	509.00
SUPRAM 2000 2MB RAM .....	179.00
SUPRAM 2000 4MB RAM .....	240.00
SUPRAM 2000 6MB RAM .....	299.00
SUPRAM 2000 8MB RAM .....	379.00

## VIDEO SOLUTIONS

### (SOFTWARE AND

### HARDWARE)

## IMAGE PROCESSING

### SOFTWARE

ART DEPARTMENT .....	52.95
ART DEPARTMENT PRO. V 2.0 .....	159.00
ART DEPARTMENT	
CONVERSION PAK .....	52.95
IMAGEMASTER .....	149.00
IMAGEMASTER FIRECRACKER VER. ....	139.00
RASTER LINK .....	99.95

### 3D RENDERING

### ANIMATION SOFTWARE

ANIMATION STATION .....	39.95
BROADCAST 3D FONTS - IMAGINE .....	84.95
BROADCAST 3D FONTS - LIGHTWAVE ..	84.95
CALIGARI 2 .....	279.00
CYCLEMEN FOR IMAGINE .....	39.95
DRAW 4D PROFESSIONAL .....	179.00
IMAGINE 1.1W/FREE VIDEO .....	89.95
IMAGINE 2.0 .....	269.00
MAP MASTER FOR IMAGINE .....	45.95
MAP MASTER FOR LIGHTWAVE .....	64.95
PIXEL 3D 2.0 .....	69.95
REAL 3D V1.4 .....	199.00
SCULPT ANIMATE 4-D .....	199.00

### DESKTOP VIDEO

BROADCAST TITLER II .....	229.00
---------------------------	--------

## DPS Personal TBC II

Now with proc amp control and color balancing

**\$799<sup>00</sup>**

## DPS Personal Vector Scope

The Perfect Companion for the TBC II

**\$789<sup>00</sup>**

## Hard Drive Deal of the Year!

A2000 owners: Choose an ICD AdSCSI 2000  
or Trumpcard Classic, then we'll mount a  
new Quantum 40mb drive on ..... only \$259.

A500 owners: Take a Trumpcard 500 with  
an installed 40mb Quantum ..... only \$299.  
(This is a limited time offer, no backorders)

## Newtek Video Toaster



Factory Refurbished  
Version 2.0  
Full Warranty!

**\$2099<sup>00</sup>**

**\$1799<sup>00</sup>**

## Trumpcard 500 AT



Low cost, high  
speed hard disk  
controller/RAM  
expansion for the  
Amiga 500

**\$179<sup>00</sup>**

INTERACTIVE VIDEO SYSTEMS

## DCTV

From Digital Creations  
Full NTSC Color Display  
**\$399<sup>00</sup>** and Digitizer.

PAL Version Now  
Available!

DCTV: A guided tour  
This easy-to-follow, comprehensive  
VHS tutorial will tell you all you need  
to know about DCTV. **\$26<sup>95</sup>**



Prices Effective July 1, 1992

Circle 13 on Reader Service card.





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

CANADA: 1-800-548-2512

4453 Redondo Beach Blvd.,  
Lawndale, CA 90260

CUSTOMER SERVICE OR  
**310-214-0000**

ORDER STATUS

Mon-Sat 8-6 PST

FAX: 310-214-0932

PRO VIDEO CG II ..... 129.00  
SCREEN MAKER 24-BIT ..... 62.95

#### VIDEO ENHANCEMENT

##### HARDWARE

AVIDEO 12 ..... 479.00  
AVIDEO 24 ..... 949.00  
CHROMA KEY PLUS ..... 359.00  
COLOR SPLITTER ..... 109.00  
DMI RESOLVER BOARDS ..... CALL  
FIRECRACKER 24/2 MEG  
FREE IMAGINE & PRO TEXTURE ..... 799.00  
FLICKER FIXER ..... 249.00  
FLICKER FREE VIDEO 2 ..... 239.00  
RAMBRANDT 24-BIT VID. BRD. .... 3595.00

##### FRAMEGRABBER

##### HARDWARE

FRAMEGRABBER ..... 399.00  
FRAMEGRABBER/256 GRAY ..... 499.00

##### GENLOCKS

MINIGEN GENLOCK ..... 189.00  
SUPERGEN 2000S ..... 1350.00  
SUPERGEN GENLOCK ..... 629.00

##### EDITING HARDWARE

BCD 2000A ..... 799.00  
BCD 5000 ..... 1995.00  
NUCLEUS SINGLE FRAME  
CONTROLLER ..... 369.00

#### HOT INTEGRATED VIDEO

##### HARDWARE

DCTV ..... 399.00  
KITCHEN SYNC ..... 1599.00  
PERSONAL VECTRASCOPE ..... 789.00  
PERSONAL TBC I ..... 479.00  
PERSONAL TBC TIME/BASE  
CORRECTOR II ..... 799.00  
SONY DIGITAL VIDEO PROCESSOR ..... 289.00  
VIDEO BLENDER ..... 899.00  
VIDEO TOASTER 2.0 ..... 2099.00  
VIDEO TOASTER 2.0  
FACTORY REFURBISHED ..... 1799.00

##### BUSINESS SOFTWARE

##### ACCOUNTING

BEST BUSINESS MGMT ..... 142.00  
DESKTOP BUDGET ..... 40.95  
HOME FRONT 2.0 ..... 54.95  
MICROLAWYER ..... 37.95  
PHASAR 4.0 ..... 59.95  
SERVICE INDUSTRY ACCTNG ..... 159.00

##### DESKTOP PUBLISHING

HOT LINKS FOR PAGESTREAM ..... 64.95  
PAGESTREAM 2.2 ..... 189.00  
PROF. PAGE TEMPLATES ..... 35.95  
PROF. PAGE STRUCTURED CLIP ART ..... 38.95  
PROFESSIONAL PAGE 3.0 ..... 169.00  
SAXONSCRIPT PROFESSIONAL ..... 74.95

##### SPREADSHEET

CHARTS AND GRAPHS ..... 49.95

MAXIPLAN 4.0 ..... 99.95  
PROFESSIONAL CALC ..... 189.00

##### DATABASES

FAMILY TREE VERSION 2 ..... 46.95  
SUPERBASE PERSONAL 2 ..... 59.95  
SUPERBASE PROFESSIONAL 4 ..... 199.00

##### WORD PROCESSING

FLOW 3.0 ..... 57.95  
FINAL COPY ..... 59.95  
PROPER GRAMMAR ..... 57.95  
PROSCRIPT ..... 32.95  
PROWRITE 3.2 ..... 59.95  
QUICK WRITE WORD PROCESSOR ..... 44.95  
TRANSWRITE ..... 39.95

##### HOME/PRODUCTIVITY

CONTACT 2.0 ..... 44.95  
NOTEBOOK ..... 26.95  
TOP FORM ..... 52.95  
WHO WHAT WHERE WHEN ..... 51.95

##### EDUCATIONAL

##### SOFTWARE

##### GENERAL EDUCATIONAL

CASTLE OF DR. BRAIN ..... 34.95  
CROSSWORD CONST SET ..... 22.95  
DISTANT SUNS VERSION 4.1 ..... 49.95  
MAPLE V ..... CALL  
MARK'S MATHLAB ..... 34.95  
MATH-AMATION ..... 49.95  
MAVIS BEACON TYPING ..... 34.95  
PELICAN PRESS ..... 64.95

WHERE IN EUROPE  
IS CARMEN SAN DIEGO ..... 34.95  
WHERE IN THE U.S.A.  
IS CARMEN SAN DIEGO ..... 34.95  
WHERE IN THE WORLD  
IS CARMEN SAN DIEGO ..... 34.95  
WHERE IN TIME  
IS CARMEN SANDIEGO ..... 34.95  
WORLD ATLAS 2.5 ..... 29.95

##### ELEMENTARY

##### EDUCATIONAL

BARNEY BEAR GOES TO SCHOOL ..... 20.95  
BARNEY BEAR GOES CAMPING ..... 20.95  
BARNEY BEAR GOES FARM ..... 20.95  
BARNEY BEAR MET SANTA ..... 20.95  
BARNEY BEAR TO SPACE ..... 20.95  
KATIES FARM ..... 25.95  
KINDERAMA ..... 19.95  
LAND OF THE UNICORN ..... 32.95  
LETTERS FOR YOU ..... 13.95  
MATH A MAGICIAN ..... 25.95  
MATH BLASTER PLUS ..... 32.95  
MATH WIZARD ..... 19.95  
MCGEE ..... 25.95  
NUMBERS COUNT ..... 13.95  
OPPOSITES ATTRACT ..... 13.95  
READ-A-RAMA ..... 19.95  
SPELLAFARI ..... 23.95

##### LANGUAGE INSTRUCTION

AUDIO GALLERY SPANISH ..... 54.95  
AUDIO GALLERY JAPANESE ..... 74.95  
AUDIO GALLERY FRENCH ..... 52.95

Toastmaster

**\$84<sup>95</sup>**



Personal Time Base Corrector

Factory Refurbished with  
Full Warranty only .... \$479<sup>00</sup>



**Beetle  
Mouse**  
**\$34<sup>95</sup>**



**Supra Corporation**

#### Modems

Supra 2400 Baud Modem ..... 79.95  
Supra 2400 MNP Plus ..... 115.00  
Supra 2400ZI-Plus ..... 119.00



**Supra FAX  
Modem 9600**  
**\$259<sup>00</sup>**

This new 9600bps modem has MNP5, V.42bis and  
V.32 error correction and data compression.

SupraRam RX  
1MB ..... 135.00  
SupraRam RX  
2MB ..... 199.00  
SupraRam 500  
512k ..... 47.00

Due to industry fluctuation, RAM prices are subject to change without notice



**The Kitchen  
Sync**

**\$1599<sup>00</sup>**

Two Complete TBC's on one card  
Works with any video source  
S-VHS and Hi-8 compatible  
Optional Y/C output  
Great for use with the  
Video Toaster

**DIGITAL**

CREATIONS

AdSpeed™ ..... \$179<sup>00</sup>  
No accelerator in its price range comes closer

**NEW** Flicker Free Video™ 2 ..... \$239<sup>00</sup>  
Eliminates interlace flicker for any Amiga computer.

Novia™ 60i ..... \$379<sup>00</sup>  
Complete 2 1/2" 60meg internal hard drive system for the Amiga 500 and 500 Plus.

Novia™ 85i ..... CALL  
Complete 2 1/2" 85meg internal hard drive system for the Amiga 500 and 500 Plus.

AdRAM 640 ..... \$89<sup>00</sup>  
Memory expansion for the Amiga 500. Expansion up to 4 megabytes.

AdIDE™ 40 Kit ..... \$149<sup>00</sup>  
You supply the drive, AdIDE/40 supplies the rest for an internal hard drive in your 500 or 500 Plus.

**NEW** Kickback™ ..... \$42<sup>95</sup>  
Multi-featured ROM switcher for Amiga computers.

The ICD Advantage





# Educational, Corporate and Aerospace purchase orders accepted. Call (310) 542-2292 for details.

USE OUR TOLL-FREE INTERNATIONAL PHONE LINES

Australia 0014-800-125-712; Canada 1-800-548-2512; Denmark 0434-0297; France 19-0590-1099; Italy 1678-74086; Japan 0031-11-1351; Netherlands 06-022-8613; Norway 050-12029; Switzerland 046-05-3420; United Kingdom 0800-89-1178.

AUDIO GALLERY CHINESE	74.95
AUDIO GALLERY GERMAN	54.95
AUDIO GALLERY RUSSIAN	79.95
JAPANESE I	27.95
LINKWORD FRENCH	19.95
LINKWORD GERMAN	19.95
LINKWORD ITALIAN	19.95
LINKWORD RUSSIAN	19.95
LINKWORD SPANISH	19.95

## Fonts

### General Fonts

ALL AGFA FONTS AVAILABLE	CALL
KARA ANIMFONTS 1	29.95
KARA ANIMFONTS 2	29.95
KARA ANIMFONTS 3	29.95
KARA ANIMFONTS 4	35.95
KARA FONTS HEADLINES	44.95
KARA FONTS HEADLINES2	39.95
KARA FONTS HEADLINES3	46.95
KARA FONTS STARFIELDS	34.95
KARA FONTS SUBHEADS	39.95
MASTERPIECE FONTS	159.95
PROF. FONT LIBRARY	48.95
600 AMIGA FONTS	19.95
SOFTFACES FOR FINAL COPY VOL1	59.95

### DTP/PAGESTREAM FONTS

PAGESTREAM FONT PACK 1	46.95
PAGESTREAM PLUS PACK	46.95
PAGESTREAM NEWSLETTER FONTS	64.95
PAGESTREAM STARTER FONTS	64.95
PAGESTREAM DESIGNER FONTS	129.00

PAGESTREAM CLASSIC FONTS	129.00
PRO STREAM FONTS	42.95

### DTP/PROFESSIONAL PAGE

#### Fonts

PROF. PAGE OUTLINE CG	129.00
GOLD DISK DECORATOR	34.95
GOLD DISK DESIGNER	34.95
GOLD DISK PUBLISHER	34.95

### VIDEO/TOASTER FONTS

1ST PRIZE TOASTED FONTS SET 1	40.95
CINNAMON TOAST FONTS VOL I	64.95
CINNAMON TOAST FONTS VOL II	64.95
KARA TOASTER FONTS VOL II	59.95
MASTERPIECE TOASTER FONTS	89.95

### Graphics Software

#### And Hardware

### Animation Software

DISNEY ANIMATION STUDIO	79.95
THE DIRECTOR V2.0	74.95
FRACTAL PRO 5.0	CALL
SCENERY ANIMATOR 2.0	64.95
SCENERY ANIMATOR DATA GRAND CANYON	18.95
SCENERY ANIMATOR DATA YOSEMITE	18.95
SCENERY ANIMATOR DATA OAHU	18.95
SURFACE MASTER FOR IMAGINE	25.95
VISTA PROFESSIONAL 2.0	59.95
VISTA CALIFORNIA DATA DISK	29.95
VISTA FLAMING GORGE-DATA 2	29.95
VISTA GRAND CANYON-DATA 1	29.95

VISTA GRAND CANYON-DATA 2	29.95
VISTA JACKSON HOLE-DATA 1	29.95
VISTA MARS SCAPES	29.95
VISTA WESTERN U.S. DATA DISK	29.95

### CLIP ART DISKS

MATERIALS TEXTURE	
STONE SURFACES	23.95
PRO FILLS 2	34.95
SOFTCLIPS VOLUME I CLASSIC	44.95
SOFTCLIPS VOLUME II PEOPLE	44.95
SOFTCLIPS VOLUME III COLLECTORS	44.95
SOFTCLIPS VOLUME IV ANIMALS	44.95

### CAD

BOARD MASTER	64.95
DYNA CADD	699.00
INTROCAD	34.95
INTROCAD PLUS	64.95
PRO BOARD/NET PACKAGE	289.00
ULTRA DESIGN	129.95

### PAINT/DRAW SOFTWARE

DELUXE PAINT IV V4.1	119.00
DESIGN WORKS	79.95
DIGI PAINT 3	54.95
IMAGE FINDER	32.95
PROFESSIONAL DRAW	129.00
SPECTRA COLOR	54.95

### PAL SPECIFIC VIDEO

#### Software

3D PROFESSIONAL PAL	199.00
DIGIPAIN 3 PAL	58.95
IMAGINE 2.0 PAL	299.00

IMAGINE 1.1 PAL	209.00
PRO VIDEO POST PAL	199.00
VISTA PROFESSIONAL 2.0 PAL	64.95
XCAD PROFESSIONAL PAL VERSION	79.00

### UTILITY/MISC.

#### Backup/Copy Software

RAW COPY 1.3K	36.95
X-COPY PROFESSIONAL	45.95

### TELECOMMUNICATIONS

#### Software

BAUD BANDIT	27.95
MINDLINK TELECOM	28.95
ONLINE PLATINUM	39.95

### DOS TOOLS/UTILITIES

AMI ALIGNMENT SYSTEM	29.95
AMI BACK 2.0	44.95
BAD DISK OPTIMIZER 4.0	24.95
CROSS DOS	25.95
DIRECTORY OPUS	36.95
DISKMASTER	29.95
DISKMASTER II	42.95
DJ HELPER	29.95
DOS TO DOS	32.49
HYPER HELPERS	35.95
MAC 2 DOS	90.95
MAVERICK 4.0	27.95
QUARTERBACK 5.0	44.95
QUARTERBACK TOOLS	52.95
SUPER DJ 5000	32.95

**HP DeskJet 500**  
**\$409<sup>00</sup>**

**HP DeskJet 500C (Color)**  
**\$709<sup>00</sup>**

**Professional Page 3.0**  
**\$169<sup>00</sup>**

**NEW VERSION!**

The Latest Upgrade for the Professionals Choice in DTP

- Page & Function Genies give total ease of use
- Irregular text wrap
- Adobe type 1 font support
- Mail merge and hot link to spreadsheet
- 7 New Compugraphic Fonts
- New Undo feature

**SOUND MINDS**

**August Bundle**

**Bars&Pipes & Internal Sounds Kit** ..... \$99<sup>95</sup>

**Patchmeister**  
**\$49<sup>95</sup>**

The Patchmeister Universal Patch librarian.

**SyncPro**  
**\$179<sup>00</sup>**

SMPT Time Code Reader/Generator

**SuperJAM!** \$89<sup>95</sup>

The easy way to play. Write music without ever touching an instrument!

**Triple Play Plus**  
**\$165<sup>00</sup>**

48 MIDI channels via one interface!

**Bars & Pipes Pro**  
**\$209<sup>00</sup>**

State of the art MIDI sequencing

**DeluxePaint IV**  
**\$119<sup>00</sup>**

**Version 4.1**

The King of Paint and Animation

- Full-screen metamorphosis
- Optimized HAM painting modes
- Scalable fonts
- Improved support for AmigaDos 2.04
- Still easy to use!

**ELECTRONIC ARTS**

**Quarterback 5.0**  
**\$44<sup>95</sup>**

The Next Generation In Backup Software





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

CANADA: 1-800-548-2512

4453 Redondo Beach Blvd.,  
Lawndale, CA 90260

CUSTOMER SERVICE OR  
**310-214-0000**

ORDER STATUS

Mon-Sat 9-6 PST  
FAX: 310-214-0932

MUSIC	
GENERAL MUSIC	
SOFTWARE	
BARS AND PIPES PROFESSIONAL .....	209.00
BARS AND PIPES .....	99.95
CREATIVITY KIT .....	32.95
INTERNAL SOUNDS KIT .....	32.95
MULTI MEDIA KIT .....	32.95
MUSIC BOX A .....	32.95
MUSIC BOX B .....	32.95
PRO STUDIO KIT .....	32.95
RULES FOR TOOLS .....	32.95
C-ZAR .....	59.95
DR. T'S COPYIST DTP .....	190.00
DR. T'S KCS LEVEL II V3.5 .....	229.00
PATCHMEISTER .....	49.95
PIXOUND .....	56.95
SONIX .....	51.95
SOUND QUEST/MIDIQUEST .....	148.00
SOUNDTRAX VOL 1 .....	14.95
SOUNDTRAX VOL 2 .....	14.95
SUPER JAM! .....	89.95
TIGER CUB .....	79.95
TRAX MIDI STUDIO .....	58.95
SAMPLING SOLUTIONS	
AMAS 2.0 .....	CALL
GVP DIGITAL SOUND SAMPLER .....	95.00
PERFECT SOUND .....	70.95
SOUNDMASTER/	
AUDIOMST. BUNDL. ....	129.00
STEREO MASTER .....	59.95

SUNRISE INDUSTRIES AD1012	
12-BIT SAMPLER .....	529.00
SYNC PRO .....	179.00
TRIPLE PLAY PLUS .....	165.00

#### PROGRAMMING

#### SOFTWARE

AC FORTRAN 77 .....	399.00
AMIGA VISION .....	99.00
AMOS THE COMPILER .....	45.95
AMOS THE CREATOR .....	64.95
AMOS 3D PAL .....	42.95
AZTEC C DEV. SYSTEM PLUS SDB .....	195.00
AZTEC C PROFESSIONAL .....	129.00
CANDO 1.6 .....	89.95
CANDO PROPAK 1 .....	23.95
CAPE 68K ASSEM 2.5 .....	52.95
CYGNUS PROF. REL. 2 .....	58.95
EASY AMOS .....	39.95
HISOFT DEVPACK 3 .....	79.95
HISOFT BASIC PROF. ....	104.00
HISPEED PASCAL .....	99.95
HYPERBOOK GOLD DISK .....	64.95
INNOVATOOLS II .....	59.95
JFORTH PROFESSIONAL 3.0 .....	135.00
LATTICE C SAS/C .....	199.00
POWER WINDOWS 2.5 .....	52.95
RX TOOLS AREXX EXTENSION .....	39.95
SCALA .....	249.00
TURBOTEXT .....	64.95

#### TAPES/TUTORIAL

ANIMATION 101 .....	24.95
---------------------	-------

DCTV... A GUIDED TOUR .....	26.95
DCTV... A GUIDED TOUR PAL .....	26.95
HELPFUL LIGHTWAVE HINTS VOL I .....	33.95
HELPFUL LIGHTWAVE HINTS VOL II .....	39.95
IMAGINE: A GUIDED TOUR PAL .....	26.95
IMAGINE: A GUIDED TOUR .....	26.95
AMIGAWORLD VIDEO TOASTER	
TUTORIAL TAPE .....	19.95

#### TAPES/GENERAL

#### AMIGA WORLD VIDEO

AMIGA GRAPHICS VOL I .....	24.95
AMIGA PRIMER VIDEO .....	24.95
AMIGA WORLD VIDEO	
ANIMATION VOL II .....	19.95
AMIGA WORLD VIDEO	
ANIMATION VOLUME ONE .....	19.95
AMIGA WORLD VIDEO	
DESKTOP VIDEO VOL I .....	24.95
MUSICAL AMIGA VIDEO .....	23.95

#### GAMES

#### ARCADE GAMES

ARMOUR GEDDON .....	29.95
AWESOME .....	34.95
DRAGON'S LAIR TIME WARP .....	34.95
DRAGON'S LAIR SINGE CSTL .....	43.95
FANTASTIC VOYAGE .....	29.95
GODS .....	26.95
IMMORTAL .....	30.95
KILLING GAME SHOW .....	26.95
LEMMINGS .....	32.95
LEMMINGS DATA DISK .....	22.95

MAGIC POCKETS PAL .....	32.95
OBITUS .....	34.95
PINBALL DREAMS .....	27.95
PIT FIGHTER .....	24.95
PRINCE OF PERSIA .....	25.95
SHADOW OF THE BEAST .....	25.95
SHADOW OF THE BEAST II .....	34.95
SPACE ACE II .....	38.95
SPEEDBALL 2 .....	29.95
SWORD OF SODAN .....	15.95
UTOPIA PAL .....	39.95

#### ACTION/STRATEGY

BATTLE CHESS .....	31.95
CASTLES .....	39.95
CHECKMATE .....	35.95
M1 TANK PLATOON .....	35.95
RAILROAD TYCOON .....	39.95
SIM ANT .....	39.95
SIMCITY .....	32.95
SIMCITY GRAPHICS #1	
ANCIENT CITIES .....	23.95
SIMCITY GRAPHICS #2	
FUTURE CITIES .....	23.95
STAR CONTROL .....	29.95
TETRIS .....	24.95

#### ADULT GAMES

CENTERFOLD SQUARES .....	19.95
LEISURE SUIT LARRY .....	25.95
LEISURE SUIT LARRY II .....	35.95
LEISURE SUIT LARRY III .....	35.95
LEISURE SUIT LARRY V .....	39.95
SEX OLYMPICS .....	24.95



### MegAChip 2000/500

\$209.00 w/o Agnus  
\$289.00 with Agnus



### D K B Multistart II ..... \$29.95

Provides for Amiga 500's & 2000's to  
operate under Workbench 1.3 & 2.0!

### DKB 2632 Ram Expansion



Now expand your Amiga up to 112 megs of 32 Bit  
memory if you own the CBM A2632 Accelerator  
board. With 4megs ..... \$509.95

New Lower  
Price!

### ProWrite 3.2

Now the all-time best-  
selling word processor  
supports Postscript output

- Audio/Video Scriptwriting.
- Arexx support.
- 100,000 word Spell Checker.
- Thesaurus with 300,000 word cross reference.
- Supports columns.
- Wraps text around graphics.
- Mail Merge

**\$59.95**

(Limited time offer)

### SyQuest Drives

These packages include the  
SyQuest drive, 1 cartridge &  
all necessary cables.  
External models include a  
case

**44mb for Amiga 2000**

\$399 Internal/ \$499 external kit

**88mb for Amiga 2000**

\$569 Internal/ \$669 external kit

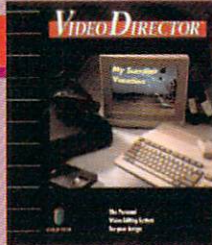
### Real 3D V1.4

**\$199.00**

- Fastest Renderer on the Amiga
- 24 Bit support
- Render up to 32k x 32k

Gold Disk

### VIDEO DIRECTOR



- Complete Video Editing System for everyone with a camcorder, VCR and an Amiga!
- Quickly and easily catalog and edit the best moments from your video tapes!
- Includes hardware to control most camcorders and VCR's!

only \$169.00!

Introducing an exciting new product from IVS...

### VECTOR

THIRD GENERATION 68030  
PROCESSOR ACCELERATOR

BY INTERACTIVE VIDEO SYSTEMS

- 32-Bit RAM Expansion to 32 MB
- On-Board SCSI
- 2630 Compatible Expansion port
- The first and only '030 accelerator with Pro-Plex allowing on-board SCSI and RAM to be accessed in the 68000 mode.





# Visit our Amiga Superstores!

South Bay: 4453 Redondo Beach Blvd. - Lawndale, CA 90260 - Mon-Sat 11-7 PST - Phone: (310) 542-2292  
Westside: 318 Wilshire Blvd. - Santa Monica, CA 90401 - Tues-Sat 11-7 Sun 11-5 PST-Phone: (310) 394-7779

STRIP POKER III .....	29.95
STRIP III DATA 1 .....	16.95
STRIP III DATA 2 .....	16.95
STRIP III DATA 3 .....	16.95
STRIP III DATA 4 .....	16.95
STRIP III DATA 5 .....	16.95

## WAR/STRATEGY

CARDINAL OF THE KREMLIN .....	32.95
CENTURION DEFENDER OF ROME .....	34.95
HARPOON .....	41.95
HARPOON BATTLESET #3 .....	

MEDITERRANEAN CONFLICT .....	20.95
HARPOON SCENARIO EDITOR .....	27.95
HARPOON CHALLENGER PACK .....	62.95
OVERLORD .....	32.95
PACIFIC ISLANDS .....	29.95
POPULOUS .....	29.95
POPULOUS II .....	38.95
POWERMONGER .....	33.95
POWERMONGER WWI DATA .....	19.95
THE THIRD REICH .....	28.95
WORLDS AT WAR .....	29.95

## ROLE PLAYING

BANE OF THE COSMIC FORGE .....	38.95
BARD'S TALE III THIEF OF FATE .....	34.95
BLACK CRYPT .....	34.95
CHAOS HINTDISK DUNGEON .....	
MASTER II .....	14.95
DARK QUEEN OF KRYNN .....	34.95
DUNGEON MASTER .....	19.95
DUNGEON MASTER HINTDISK .....	11.95
DUNGEON MASTER II CHAOS .....	

STRIKES BACK .....	19.95
EYE OF THE BEHOLDER .....	38.95
EYE OF THE BEHOLDER II .....	38.95
KING'S QUEST IV .....	38.95
KING'S QUEST V .....	38.95
LOST TREASURES OF INFOCOM .....	45.95
MEGATRAVELLER .....	38.95
ROMANCE OF THE 3 KINGDOMS II .....	44.95
ULTIMA V WARRIORS OF DESTINY .....	35.95
ULTIMA VI: THE FALSE PROPHET .....	44.95

## FLIGHT SIMULATORS

A-10 TANK KILLER 1.5 .....	39.95
AIRBUS 320 PAL .....	CALL
BIRDS OF PREY .....	34.95
F15 STRIKE EAGLE II .....	39.95
F19 STEALTH FIGHTER .....	34.95
FALCON .....	32.95
FALCON MISSION DISK 2 .....	19.95
FIGHTER DUEL .....	29.95
FLIGHT SIMULATOR II .....	32.49
GUNSHIP .....	35.95
KNIGHTS OF THE SKY .....	39.95
MIG 29: ACCOLADE .....	36.95
PRO FLIGHT: TORNADO SIM. PAL .....	44.95
RED BARON .....	39.95
SCENERY DISK STARTER .....	37.95
THUNDERHAWK .....	34.95

## GRAPHIC/ADVENTURE

ELVIRA THE FANTASY ADVENTURE .....	38.95
ELVIRA II .....	45.95
FOUR CRYSTALS OF TRAZERE .....	34.95
HEART OF CHINA .....	39.95

LIFE AND DEATH .....	32.95
OUT OF THIS WORLD .....	39.95
POLICE QUEST III .....	39.95
RISE OF THE DRAGON .....	39.95
SECRET OF MONKEY ISLAND .....	38.95
SECRET OF MONKEY ISLAND 2 .....	38.95
SINGE'S CASTLE DRAGON'S LAIR .....	34.95
SPACE QUEST IV .....	39.95
SPIRIT OF EXCALIBUR .....	32.49
STARFLIGHT II .....	34.95
TIME WARP DRAGON'S LAIR II .....	34.95
VENGEANCE OF EXCALIBUR .....	32.95
WILLY BEMISH .....	39.95

## SPORTS ENTERTAINMENT

4D SPORTS BOXING .....	34.95
ABC MAIN EVENT BOXING .....	34.95
BRIDGE 6.0 .....	25.95
FAST EDDIE'S POOL .....	22.95
GRETZKY HOCKEY 2 .....	42.95
HOCKEY LEAGUE SIM .....	22.95
HOYLE BOOK OF GAMES 3 .....	29.95
INDIANAPOLIS 500 .....	34.95
ISHIDO .....	29.95
JACK NICKLAUS COURSE 5 .....	14.95
JACK NICKLAUS GUIDE BOOK .....	9.95
JACK NICKLAUS UNLIM. GOLF & DES. .....	38.95
LINKS GOLF .....	39.95
MICROPROSE "GREENS" .....	38.95
PGA TOUR GOLF .....	34.95
TESTDRIVE II THE DUEL .....	32.49
WORLD CIRCUIT GRAND PRIX .....	39.95

## CDTV TITLES

AMERICAN HERITAGE DICTIONARY .....	49.95
ALL DOGS GO TO HEAVEN .....	35.95
BARNEY BEAR GOES TO SCHOOL .....	27.95
BATTLE CHESS .....	39.95
CASE OF THE CAUTIOUS CONDOR .....	35.95
CASE OF THE MISSING BLANKET .....	34.95
CLASSIC BOARD GAMES .....	35.95
ELECTRONIC COOKBOOK .....	43.95
FRED FISH COLLECTION .....	48.95
FRED FISH ONLINE CD .....	48.95
MY PAINT .....	29.95
NASA: THE 25TH YEAR .....	19.95
TIME TABLE BUSINESS & POLITICS .....	44.95
TIME TABLE SCIENCE & INNOVATION .....	44.95
WORLD VISTA .....	64.95

## ACCESSORIES/MISC

FLICKER MASTER .....	12.95
DUST COVERS AND KEYBOARD SKINS AVAILABLE .....	CALL
CABLES FOR MOST NEEDS/USES AVAILABLE .....	CALL
KEYBOARD TEMPLATES FOR TOASTER CG, TOASTER SWITCHER, DCTV & DPAINT IV FOR AMIGA 500/2000/3000 .....	CALL

## INPUT ACCESSORIES

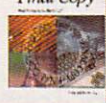
ALFA DATA CRYSTAL TRACKBALL .....	CALL
BEETLE MOUSE (ASSORTED COLORS) .....	34.95
GOLDEN IMAGE 2 BUTTON MOUSE .....	34.95
GOLDEN IMAGE CORDLESS MOUSE .....	74.95
GOLDEN IMAGE OPTICAL MOUSE .....	64.95
TRACKBALL AMTRAC .....	59.95

**DSS-8 ..... \$84<sup>00</sup>**

Record, edit, compose...with a high-quality, stereo sound sampler. Includes a fast, powerful, easy-to-use editor and a self-contained 4-track sequencer.



Final Copy



**Final Copy .... \$59<sup>95</sup>**

Outline fonts, 470,000 word Thesaurus, 116,000 word dictionary, Multiple columns, IFF graphic support, PostScript support, WorkBench 2.0 and Automatic hyphenation.



**Centaur Development**

**Summer Software Blowout!**

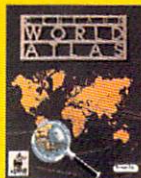
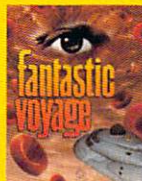
Limited-time offer on our best-selling Amiga titles  
These prices valid this month only.

**Fantastic Voyage:**

The Computer Game  
"Incredible!"

"\*\*\*\*\*" 5 Stars - Info Magazine

**\$29<sup>95</sup>**



**World Atlas**

3 Disks of info on over 170  
countries + 255 maps.

**\$29<sup>49</sup>**

**B.A.D. Ver.4.0**

Best selling disk optimizer for all Amigas.  
Speeds floppy and hard drives by up to 5 times!

**\$24<sup>95</sup>**



**Firecracker Bundle**



+ High-resolution • 16.8 Million Colors • 24-Bit graphics display card  
+ Works on the Amiga 2000 and 2500



**= \$799<sup>00</sup>**  
2 Meg Version

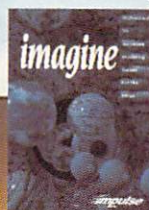
Buy the Firecracker and get Image 2.0 + Prototextures FREE!

**Imagine Bundle!**

Imagine plus  
Imagine: A Guided  
Tour video

**\$89<sup>95</sup>**

Includes free object disk  
and you can upgrade  
to 2.0 for \$100!

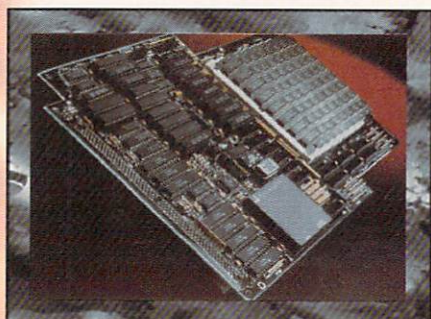


Prices Effective July 1, 1992

Circle 13 on Reader Service card.

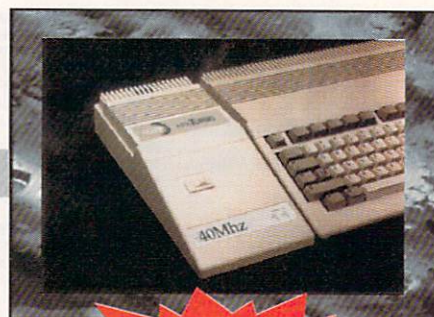


# GVP Super Blowout!



## G-Force 030 Combo 40/4 .. \$999<sup>00</sup>

- 68030 running at 40mhz
  - 68882 running at 40mhz
  - 4mb of 32-Bit RAM (16mb max.)
  - Onboard Series II SCSI Controller
  - Hard Drive mountable
  - All on one board
- (while supplies last)



**NEW Hardware  
from GVP**

## A530 Turbo

- A500 HD8 with 40mhz 68030
  - 1mb of 32-Bit RAM expandable to 8mb
  - Socket for 68882 Math chip "Mini Slot" for PC emulator & more!
  - Turbo switch for compatibility.
  - Includes SCSI pass thru.
  - Dedicated power supply included!
- A530 w/52mb drive ..... \$969<sup>00</sup>  
A530 w/120mb drive ..... \$1099<sup>00</sup>

# Get it tomorrow at no extra charge!\*

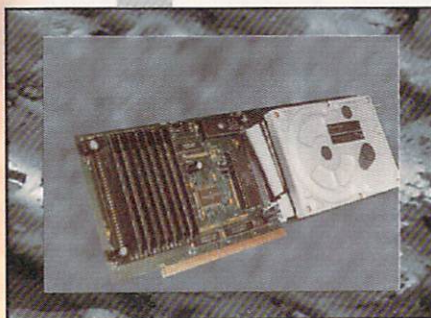


## More G-force Accelerators:

G-force 25MHz/1MB/68882 .....	\$669.00
G-force 40MHz/4MB/68882/120MB HD .....	\$1399.00
G-force 50MHz/4MB/68882 .....	\$1558.00
G-force 50MHz/4MB/68882/240Q .....	\$2048.00
G-force A3000 68040 w/4MB .....	\$1969.00

Ask about special RAM pricing when ordered with an accelerator board!

\*Must order by 11:00am PST



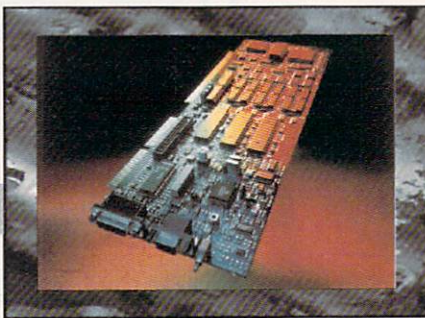
## Hard Cards

Series II A2000 SCSI Hard Disk and RAM Card:

A2000-HC8+0/52Q-LPS (Quantum 52Mb Hard disk) .....	\$379 <sup>00</sup>
A2000-HC8+0/120Q-LPS (Quantum 120Mb Hard disk) .....	\$508 <sup>00</sup>
A2000-HC8+0/240Q (Quantum 240Mb Hard disk) .....	\$818 <sup>00</sup>

## GVP OPTICAL/REMOVABLE MEDIA

GVP WT-150 Tape Drive .....	\$639 <sup>00</sup>
SQ555 SyQuest 40mb Removable with cartridge and HC8 Controller .....	\$599 <sup>00</sup>
SQ800 SyQuest 80mb Removable with cartridge and HC8 Controller .....	\$719 <sup>00</sup>



## Impact Vision 24

16 Million colors, 24-Bit Frame Buffer +  
Genlock + Framegrabber + Flicker-  
Eliminator + PIP + Video Titler +  
3D Modelling System and  
**now includes a Video Transcoder Unit!**

A3000-IV24 .....	\$1879 <sup>00</sup>
A2000-IV24 Adapter .....	\$49 <sup>00</sup>

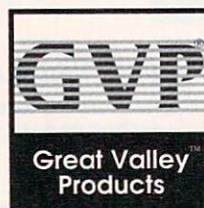
## A500 HD+

The Series A500 HD8+ uses the same technologies of it's powerful A2000 cousins and additional features like: Exclusive Game Switch, Fast RAM Expansion up to 8MB, External SCSI Port, Free dedicated universal power supply!

### New PC286 Module

(Optional PC286 AT compatibility. 16Mhz 286 board which plugs inside hard disk unit) ..... \$319<sup>00</sup>

A500-HD+/52Q (Quantum 52Mb Hard disk) .....	\$488 <sup>00</sup>
A500-HD+/120Q (Quantum 120Mb Hard disk) .....	\$638 <sup>00</sup>
A500-HD+/240Q (Quantum 240Mb Hard disk) .....	\$899 <sup>00</sup>









From p. 60.

your only low-priced choice. The IFF results are very acceptable, especially as fodder for further manipulation in other paint, animation, or presentation programs.

The color side is more problematic. Yes, Vidi-RGB's electronic color filtering is both quick and convenient, but Vidi-Chrome-Amiga is very limited. An older HAM paint program, Photon Paint is still quite capable (for a review, see Aug. '88, p. 20). Be warned, however, that Photon Paint's manual is abridged from the original, and the other manuals are crude and basic, offering no tutorials.

Until recently, the real stumbling block for The Complete Colour Solution in the US was the rate of exchange. The package was simply too expensive to compete. Now, however, Rombo has done a 180-degree turnabout, reducing the four-part package to \$179.95. For a real-time digitizer, color splitter, image processor, and paint program, \$180 is a helluva good price.

If you already own a camcorder, The Complete Colour Solution offers a truly bargain-basement entrance to both still and motion digitizing. Even considering its shortcomings and occasionally quirky operation, it is impossible not to recommend such a value.

—Gary Ludwick

## MR. ROBOT'S SPEAK 'N' SPELL

Brain Technologies, \$49.95.

Hard-drive installable.  
Not copy protected.  
2.0 compatible.  
Accelerator compatible.  
Minimum system: 512K RAM.  
Recommended system: 512K RAM.

Vocabulary tutor for ages six and up.

## AMY'S FUN-2-3 ADVENTURE

Devasoft, \$49.95.

Hard-drive installable.  
Not copy protected.  
2.0 compatible.  
Accelerator compatible.  
Minimum system: 1MB RAM.  
Recommended system: 1MB RAM, hard drive.

Counting games for ages 2-6.

## FLASHBLASTER

EasyScript! Software, \$49.95.

Hard-drive installable.  
Not copy protected.  
2.0 compatible.  
Accelerator compatible.  
Minimum system: 1MB RAM.  
Recommended system: 1MB RAM.

Math arcade game for grades K-6.

## MATHASAURS

CanCor, \$24.95.

Hard-drive installable.  
Not copy protected.  
2.0 compatible.  
Accelerator compatible.  
Minimum system: 512K RAM, joystick.  
Recommended system: 512K RAM, joystick.

Arcade game for ages three and up.

Purchasing educational software is often a highly chancy proposition. Some programs are the equivalent of junk food, providing empty calories with precious little educational value. Some potentially good games are marred by bad design decisions, resulting in frustrating experiences for young gamers. Worst of all, others lack the most important commodity—fun. The good educational games often get lost in the clutter. Mr. Robot's Speak 'n' Spell, Amy's Fun-2-3 Adventure, FlashBlaster, and Mathasaurs are good examples of each of these.

### MR. ROBOT'S SPEAK 'N' SPELL

Mr. Robot's Speak 'n' Spell is a vocabulary drill laid out like a crossword puzzle, with an illustration for each of the more than 1000 words. Word lists range from kindergarten to college level. Mr. Robot pronounces each word in the computer's voice, provides a definition, and displays a color picture to illustrate it. You then try to spell the word in the given time—not too difficult, as the computer allows you to type only the correct letter.

This good basic concept is hobbled by limited graphics and the computerized voice, which is often difficult to understand. It's frustrating to watch the time run out on a word you knew but that the computer's voice didn't pronounce clearly. Some of our players just typed letters until they accidentally hit the right ones, which the program dutifully accepted.

Because it needs to display a picture of the object, Mr. Robot's Speak 'n' Spell is limited almost exclusively to nouns. This is not a problem in the lower levels, but the higher grade levels quickly run out of useful words, and the program relies on definitions for such arcane or obscure words as pannier (one of a pair of baskets slung across the back of a beast of burden) and biretta (a square cap worn by Roman Catholic clergymen on certain occasions).

### AMY'S FUN-2-3 ADVENTURE

Outstanding among these four programs, Amy's Fun-2-3 Adventure is a set of well-designed counting games for children of ages two to six. It sports crisp animation, lively sounds, polished programming, and a female (although canine) title character, which is a refreshing change.

Three of Amy's minigames involve counting and number recognition, and the fourth is a computer xylophone that combines music and numbers. Let's Count introduces number concepts by presenting an animation that illustrates the number you select. When you click on 3, Amy might take three drinks of water, bark three times, or watch three birds fly by.

Matching with Marty helps develop number recognition by presenting a number and two sets of shapes. You must choose the shape set that matches the number.

In Cookie Castle, Amy the dog holds up her paws (complete with ten fingers) to display a number. You click the matching numeral on the castle wall to rebuild the wall.

Music Magic is a computerized, single-octave xylophone with numbered bars. You can use the mouse to play it like a regular xylophone, or learn to play a song from Amy's library. The song library shows you the number of the key to strike to play the next note in the song. For budding Mozarts, the screen also shows the note in standard musical notation.

This is a great introduction to written music. Tying number skills to music keeps the experience lively. Although Music Magic is the least elaborate of the four minigames, it is clearly one of the most satisfying.

The manual is well-written, patiently explaining a lot of technical material for beginning computer users—an important aspect that is too often overlooked. We don't like the part of the manual that says that Amy is only allowed to use computers that are old and obsolete, but this is just a minor quibble, as is our dislike



of the CLI-based hard-disk installation routine.

There's a lot going for Amy's Fun-2-3 Adventure. It's a well-executed program that is patient and forgiving of mistakes. The best part is that there are no time limits here. You are free to play any of the games for as long as you choose, without the pressure of failing if you spend too much time absorbed in your own explorations.

### FLASHBLASTER

Although FlashBlaster, a math drill program, looks almost as polished as Amy's Fun-2-3 Adventure, it comes up short because of a few flawed design decisions. The basic idea behind it is solid: You solve math problems and fire on numbers in a moving shooting gallery to enter the answers. In practice, however, the game falls apart.

FlashBlaster is a CanDo deck, reacting more slowly than fully optimized code. On nonaccelerated Amigas, the noticeable delay between the press of the mouse button and the sound-effect bang causes great confusion. You're likely to fire several more shots in trying to hit the

mark, thus wasting precious bullets and even more precious time.

If a shot misses its target, the problem is whisked away and replaced by a new one. Because the arrival of the new problem is not accompanied by any audio or major visual cues, you will often continue to concentrate on entering the answer for the old problem. Because bullets are snatched away as time passes, you tend to avoid glancing from the targets down to the problem. Even after you master all the quirks of the game, it is still confusing and frustrating to play.

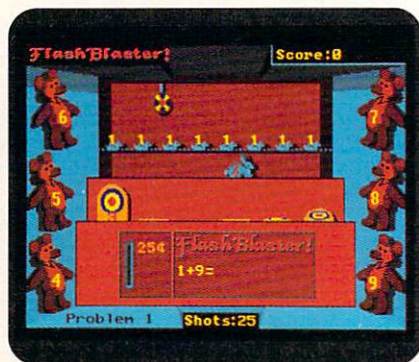
### MATHASAURS

Of these four games, only Mathasaurs fails to be even slightly educational. Featuring appealing sounds and exuberant digitized voices, it is a vertical-scrolling game that requires you to shoot endless hordes of alien monsters and run into baby dinosaurs, Babysaurs, to rescue them. You can shoot only forward, cannot go past the left or right sides of the screen, and cannot back up to collect stray Babysaurs. You must continue marching inexorably forward, as the enemies get thicker and more deadly. Some monsters are math problems, always a single numeral plus or minus 1 ( $7+1$ , for example). When you shoot an equation, it transforms into its answer, which is spoken by a digitized voice.

The problem is that you never have to calculate anything or even pay attention to the answer. Instead, the equations and their answers quickly dissolve into vague background noise, while your attention is riveted on running, blasting, and surviving. Not only is this not educational, it has a decidedly anti-educational bent. Numbers become enemies, and nothing that constitutes learning is required of a child in solving the problems. Although the answers flash briefly on the screen, it is unlikely that a child would waste precious time attending to the problem or its answer when doing so earns no reward and would very likely result in the player's "death."

The best advice we can give you about buying any educational software for your children is to let them test drive it in the store before purchase. The kids will be able to report very quickly on the merits and frustrations of the game, and this will help you reject programs with obvious problems. Of course, your judgment will have to carry the day, but as children become increasingly computer savvy, they can make valuable contributions to the process.

—Daniel Greenberg and  
Marliese Colantuno  
Continued on p. 74.



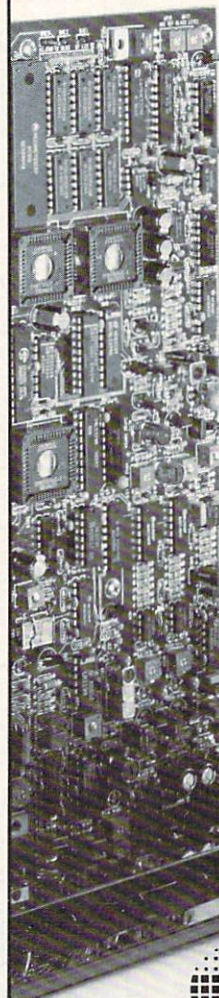
In FlashBlaster, you shoot the answers to the problems.



The Music Magic game in Amy's Fun-2-3 Adventure teaches number and music skills.

# Plug into your toaster for a lot less bread.

Now with software-controlled Proc Amp and Color Balance.



The new DPS PERSONAL TBC II links your Video Toaster® to any VCR, Camcorder or other video source for thousands less than conventional TBC hardware. With software-controlled Proc Amp and Color Balance for that professional edge. Now with ARexx support. So, plug the DPS PERSONAL TBC II into your toaster for only \$995. You'll love what pops out.

In the U.S. call  
606-371-5533

In Canada call  
416-754-8090



**DIGITAL**  
PROCESSING SYSTEMS INC.

DPS PERSONAL TBC II is a registered trademark of Digital Processing Systems, Inc. Video Toaster is a registered trademark of NewTek Incorporated.



**AMIGA 500  
UPGRADE KIT**

**Master 3A-1**  
Disk Drive with  
Golden Image Ram 500  
with Clock/Calendar  
**\$105**  
NEW LOW  
PRICE!

**THE MIRACLE**  
PIANO TEACHING SYSTEM

State-of-the-art electronic keyboard, Amiga software  
and artificial intelligence music technology work  
together to create the perfect teaching program!

**Price Too Low To Advertise!**



**CALL!**

**SYQUEST  
BARE DRIVES**

44MB 88MB **NEW LOW PRICE!**  
**\$299 \$409**

**AMIGA EXTRAS**

AD Speed (all Amiga Computers) .....	\$164	Personal VDA 1000 (IBM or Amiga slot - please specify) .....	\$129
Air Drive Int 3.5"-A3000 .....	\$89	Personal VDA (Video Distribut. Amp) .....	\$729
AMAXX II / AMAXX II PLUS .....	\$137/\$339	Perfect Sound .....	\$65
Amiga RF Modulator .....	\$29	Professional Video Chassis .....	\$269
Amiga 1680 Modem .....	\$39	Progressive 040 for A500 .....	Call
A VIDEO 13 .....	\$419	Rotect Internal 500 Drive .....	\$79
BCD Internal SFC - A2000 .....	\$649	Rommatic .....	\$22
Big Foot Power Supply .....	\$95	S-VHS Option Kit for Kitchen Sync .....	\$99
Blizzard Board OK .....	\$219	Sharp JX100 Scanner .....	\$489
Bodega Bay .....	\$279	Studio 16 .....	\$479
Breadboard Video Delay Line .....	\$309	Triple Play Plus .....	\$159
Chroma Key Plus (New) .....	\$339	Vidi Complete Color Solution .....	\$235
Colorburst .....	\$659		
Color Splitter .....	\$105		
Data Flyer RAM Card OK .....	\$89		
Digiview Media Station .....	\$152		
Digital Sound Studio .....	\$85		
DMI Floptical Disk Drive .....	Call		
ECE Midi Interface .....	\$48		
Flicker Fixer Genlock Options .....	\$35		
Flicker Fixer .....	\$235		
Flicker Free Video II .....	\$235		
Firecracker .....	\$825		
Frame Grabber / 256 Gray .....	\$429 / \$489		
Hi Q Tower .....	\$619		
Internal Drive 2000 .....	\$69		
K-Start Selector .....	\$35		
Kitchen Sync Genlock Option .....	\$159		
Light-24 .....	Call		
Mega Chip 2000 w/Super Agnus .....	\$285		
MIDI Gold A500 .....	\$55		
MIDI Gold Insider A2000 .....	\$59		
Mini Gen .....	\$185		
Miracle Keyboard .....	CALL		
Multistart II .....	\$42.95		
Personal SFC 2.0 (Nucleus) .....	\$339		

**GOLDEN IMAGE:**

Jin Mouse .....	\$23
Replacement Mouse .....	\$32
Optical Mouse .....	\$45
Cordless Mouse with Deluxe Paint II .....	\$69
Cordless TrackBall with Deluxe Paint II .....	\$79
1/2MB RAM Expansion for A500 .....	\$36

**Microbotics VXL-30-68030  
Accelerator Board  
for the A500/2000**

25MHz No Math Coprocessor .....	\$289
25MHz with 68882 Math Coprocessor .....	\$449
40MHz No Math Coprocessor .....	\$449
40MHz with 68882 Math Coprocessor .....	\$629

**Hi-Speed IDE Hard Drive  
Packages for the A500**

	52 IDE Quantum A500	105 IDE Quantum A500	120 IDE Maxtor A500
Internal ICD-AD IDE 40 Kit	<b>\$329</b>	<b>\$439</b>	<b>\$469</b>
Int. ICD-AD IDE 40 w/AD Speed	<b>\$519</b>	<b>\$629</b>	<b>\$649</b>
Trumpcard 500 AT External ØK expandable to 8 MB	<b>\$369</b>	<b>\$489</b>	<b>\$519</b>

**Includes: cables, Software, Drive, Mounting Hardware**

**GVP**

**NEW  
LOW PRICES!**

**Series II for A500 HD+  
OK Expandable to 8MB**

52 MB	120 MB
<b>\$485</b>	<b>\$635</b>

**Impact Series II for  
A2000 SCSI Hard Disk +  
RAM Expansion**

120LPS	240LPS
<b>\$505</b>	<b>\$815</b>

**SEE HARD DRIVE GRID BELOW  
FOR ADDITIONAL OPTIONS**

**A500 TURBO, 120MB**

A500 Subsystem w/68030/40MHz  
Mini Slot & Optional FPU  
**\$1,129 FREE DELIVERY**

**PC Snap-In Module  
AT Emulator for  
GVP A500 HD+ Series  
\$295 NEW LOW PRICE!**

**G-Force Combo 0-30  
Accelerators for A2000 Series  
Expandable to 16MB  
•• FREE DELIVERY ••  
(in the 48 Contiguous States)**

25MHz w/Math Coprocessor + 1MB .....	\$679
40MHz w/Math Coprocessor + 4MB .....	\$1,089
40MHz, 120MB w/Math Co + 4MB .....	\$1,399
50MHz w/Math Coprocessor + 4MB .....	\$1,559
50MHz, 240MB HD w/MathCo+4MB .....	\$2,049

**Digital Sound Studio \$85**

**CALL!**

**VIDEO TOASTER PERSONAL TBC II DC TV KITCHEN SYNC  
DPS 230 EXTERNAL TBC Rackmountable PERSONAL VSCOPE**

**Panasonic**

**Star**

**CITIZEN**

**PRINTERS**

KX-P 1123 .....	\$199	KX-P 2124 w/Color Kit ..	\$359
KX-P 2180 .....	\$169	KX-P 1624 .....	\$337
KX-P 2180 w/Color Kit ..	\$219	KX-P 2624 .....	\$359
KX-P 2123 .....	\$229	KX-P 4410 .....	\$645
KX-P 2123 w/Color Kit ..	\$279	KX-P 4430 .....	\$899
KX-P 1124i .....	\$275	KX-P 4450i .....	\$1,239
KX-P 2124 .....	\$315	KX-P 4455 .....	\$1,769

NX 1001 Multifont NEW .....	\$135
NX 1020 Rainbow NEW .....	\$179
NX 2420 Rainbow .....	\$285
NX 2430 Black .....	\$235
Star Jet 48 .....	\$285
Laser Printer 4 .....	\$799
Laser Printer 4 Star Script ..	\$1,159

200GX / with Color Kit .....	\$155 / \$199
200GX-15 / with Color Kit .....	\$295 / \$359
GSX-130 / with Color Kit .....	\$239 / \$279
GSX-140 PLUS .....	\$295
GSX-140 PLUS with Color Kit .....	\$339
GSX-145 Wide 24 pin .....	\$365
GSX-145 Wide 24 Pin with Color Kit ..	\$425

**AMIGA 500/2000 HARD DRIVE PACKAGES**

**Maxtor Quantum**

**LOWER  
PRICES!**

DRIVES	DRIVE ALONE as advertised	TRUMPCARD		TRUMPCARD		GRAND SLAM		GRAND SLAM		SUPRA WORD-		GVP HC8 series II		DATA FLYER	
		2000	PRO2000	500	PR 500	500 OK Exp to 8MB	2000 OK Exp to 8MB	2000 OK Exp to 8MB	2000 OK Exp to 8MB	SYNC 2000	OK - 8MB	OK - 8MB	OK - 8MB	2000	500
Quantum 52 LPS	\$205	\$285	\$345	\$349	\$439	\$509	\$445	\$305	\$369	\$289	\$349				
Quantum 105 LPS	\$329	\$409	\$465	\$459	\$559	\$619	\$569	\$429	\$489	\$419	\$469				
Quantum 240 LPS	\$655	\$749	\$809	\$779	\$909	\$979	\$915	\$755	\$799	\$755	\$815				
Maxtor 7120 SCSI	\$349	\$439	\$499	\$479	\$599	\$669	\$605	\$449	\$515	\$445	\$505				
Maxtor 7213 SCSI	\$519	\$599	\$659	\$629	\$749	\$819	\$755	\$629	\$695	\$599	\$739				



**NEW**  
**FaxModems**  
**Supra**  
**Corporation**

**Supra FaxModem V.32 bis**

Includes: SupraFax software, A-Talk III Telecom software, & Amiga Modem Cable ..... \$335  
Stand Alone Modem, no software or cable .... \$309

**Supra FaxModem 2400 Plus**

Includes same items as the above,  
call for specific features ..... \$165

**SupraDrive 500XP**

52MB with 1MB / 2MB RAM ..... \$465/\$545  
120MB with 1/2MB / 2MB RAM ..... \$579/\$665  
240MB drive w/2MB RAM ..... \$909

**SupraRAM 500RX**

1MB / 2MB / 8MB ..... \$125 / \$185 / \$395

**SupraRAM 2000**

2 / 4 / 6 / 8 MB ..... \$165 / \$225 / \$285 / \$349

**SupraModem 2400**

1/2 MB with Clock ..... \$39

**SupraModem 2400 Plus Ext. / 2400**

zi Plus Int. MNP5 & V.42 bis ..... \$119 / \$129

**Power PC Board** Run MS DOS

Software on your A500 ..... \$269

**For Hard Drive Package Featuring the  
SUPRA WORD SYNC CONTROLLER,  
see Grid on Opposite Page.**

**GOLDENIMAGE®**

**RAM  
Expansion  
4 MB RAM**  
for A500, comes  
with 2MB installed  
**\$159**

**Master 3A-1**  
3.5" Floppy  
Ext. Disk Drive  
for the  
500 / 1000 / 2000  
**\$79**

**NEW  
PowerPen**  
• pen shaped mouse  
• ideal for drawing,  
and illustrating  
**\$69**

**Hand  
Scanner**  
with  
• Migraph Touch-up  
• 64 halftone levels  
**\$169**

**Commodore®  
AMIGA® 500**

**STARTER KIT**

**Call for Low,  
Low Price!**

**Complete  
Video Toaster  
Work Stations**

for specific  
configurations -  
**CALL!**  
SEE PAGE 85

A-10 Tank Killer V.1.5 Upgrade	34.95	Dog Eat Dog	30.95
Aces of the Pacific	39.95	Dragon Wars	29.95
Action Stations	29.95	Dune	29.95
Adventures of Willie Beamish	34.95	ECO Phantoms	24.95
Agony	29.95	Ecoquest	34.95
Air Support	29.95	Elvira II - Jaws of Cerberus	39.95
American Gladiators	24.95	Eye of the Beholder I or II	37.95
Aqua-Venture	30.95	Eye of the Storm	29.95
ATAC	30.95	F-15 Strike Eagle II	34.95
B-17 Flying Fortress	41.95	Fables & Fiends: Legend of Kyrandia	34.95
Ball Game	24.95	Falcon	29.95
Bane/Cosmic Forge 1Meg	34.95	Fantastic Voyage	29.95
Barbarian II	29.95	Fighter Dual	29.95
Bard's Construction	29.95	Final Conflict	34.95
Barney Bear each	21.95	Flames of Freedom	29.95
Battle Chess II	29.95	Flight of the Intruder	34.95
Bill Elliot Nascar Challenge	29.95	Four Crystals of Trazere	31.95
Birds of Prey	31.95	Gateway to the Savage Frontier	31.95
Black Crypt	31.95	Global Effect	31.95
Blitzkrieg	29.95	Godfather	29.95
Campaign	34.95	Gods	24.95
Carmen San Diego/Each	30.95	Guy Spy	30.95
Carmen San Diego - America	36.95	Hardball II	29.95
Castles	34.95	Hard Nova	31.95
Campaign Disk	19.95	Harpoon	37.95
Castle of Dr. Brain	29.95	Battleset #4	25.95
Champions of Krynn	31.95	Harpoon Challenge Pak	54.95
Chaos- Dungeon Master 2	24.95	Harpoon Designers' Series Battleset	31.95
Chessmaster 2100	31.95	Heart of China	36.95
Civil War	37.95	Heimdal	24.95
Conan the Cimmerian	29.95	Hoi	24.95
Conflict: Korea	37.95	Home Alone	29.95
Conflict: Middle East	34.95	Hoyles Book of Games 3	29.95
Covert Action	36.95	Indy Jones 4: Fate of Atlantis	37.95
Crackdown	17.95	International Sports Challenge	30.95
Crime Does Not Pay	30.95	Jack Nicklaus Unlimited	34.95
Crusades of the Dark Savant	39.95	Keys To Maramon	31.95
Course of the Azure Bonds	15.95	King's Quest 4 or 5	34.95
Dark Queen of Krynn	31.95	Knight in the Sky	34.95
Death Knights of Krynn	31.95	Land, Air, Sea Comp 2	34.95
DeluxePaint IV (while supplies last)	97.95	Leander	29.95
Demoniak	30.95	Leisure Suit Larry I Enhanced	34.95
Disney Animation Studio	74.95	Leisure Suit Larry 5	34.95
		Lemmings	28.95
		Light Quest	31.95

**• RECREATION •**

**SUMMER  
SPECIAL!**

**MICRO PROSE™**

**Silent Service II  
Knights of the Sky  
Red Storm Rising  
M1 Tank Platoon**  
**only \$19.95 each!**

Links	29.95	Firestone, Bountiful Course Disks	17.95
Lord of the Rings 1, 2 or 3	34.95	Lost Treasures of Infocom	39.95
Madden Football	31.95	Manager's Challenge	29.95
Mantis	34.95	Matrix Cubed	31.95
Mega Fortress	37.95	Mavis Beacon Typing	31.95
Mission Disk #1	25.95	Mega Fortress	37.95
Mercenaries	37.95	Mission Disk #1	25.95
Merchant Colony	34.95	Mercenaries	37.95
Medieval Warrior	30.95	Merchant Colony	34.95
Megatraveller 2	34.95	Medieval Warrior	30.95
Mid-29	30.95	Megatraveller 2	34.95
Might & Magic III	37.95	Mid-29	30.95
Mike Ditka Football	34.95	Might & Magic III	37.95
Millennium	24.95	Mike Ditka Football	34.95
Mixed-Up Fairy Tales	29.95	Millennium	24.95

Monty Python	32.95	Sim Earth	41.95
Navy Seals	25.95	Sleeping Gods Lie	29.95
No Greater Glory	29.95	Sorcerian	36.95
Nova 9	22.95	Space Quest 3 or 4	34.95
Obitus	34.95	Spacewrecked	29.95
Oh No! More Lemmings	29.95	Star Control II	Call
Oh No! More Lemm. add-on	21.95	Starlight I or II	31.95
Ork	29.95	Stellar 7	21.95
Out of this World	46.95	Stratego	29.95
PGA Tour Golf	31.95	Strip Poker 3	29.95
Golf Tournament Course disk	17.95	Super Space Invaders	24.95
Pacific Islands	29.95	Tales of Magic: Prophecy Shadow	37.95
Paper Boy 2	25.95	Team Suzuki	24.95
Perfect General	34.95	Team Yankee	29.95
PWWII Edition	22.95	Teenage Mutant Ninja Turtles: Adventure	29.95
PWWII Scenario Disk	19.95	Teenage Mutant Ninja Turtles: Arcade	29.95
Pinball Dreams	24.95	Terrain Envoy	28.95
Pit-Fighter	21.95	Their Finest Hour	20.95
Police Quest 1 Enhanced	34.95	Thunderhawk	29.95
Police Quest 2 or 3	34.95	Thunderstrike	29.95
Pools of Darkness	37.95	Time Warp	34.95
Pools of Radiance	15.95	Tom Landry Football	29.95
Populous	31.95	Tracoon II	39.95
Populous II	37.95	Traders	29.95
Powermonger	31.95	Treasure of the Savage Frontier	31.95
Prehistoric	29.95	Twilight 2000	34.95
Prince of Persia	24.95	Ultima 6	39.95
Prophecy of the Shadow	37.95	Ultima II: Planets at War	36.95
Quest for Glory 1 or 2	34.95	Ultima IV: The Secret of the Drac	34.95
Railroad Tycoon	34.95	Viking Field of Conquest	36.95
Red Baron	34.95	Volfred	29.95
Red Zone	29.95	Warlord	29.95
Rise of the Dragon	34.95	Wild Wheels	31.95
Robin Hood: Conquest of the Long Bow	36.95	Willie Beamish	34.95
Robocop 3D	31.95	Where in the Carmen each	29.95
Roboport	34.95	Wide World of Boxing	34.95
Romance of 3 Kingdoms 1 or 2	39.95	Wonderland	34.95
Rules of Engagement	37.95	World Atlas 2.5	34.95
Secret of Monkey Island I or II	37.95	World Circuit	34.95
Secret of the Silver Blades	15.95	Worlds at War	29.95
Shadow of the Beast II or III	34.95	Yeager's Adv. Train 2.0	25.95
Shadow Sorcerer	31.95		
Shuttle	34.95		
Sim Ant	34.95		
Sim City	29.95		

**Call for More Titles!**

3D Professional	282.95	Desk Top Budget	44.95
Ami Back Moonlighter 2.0	44.95	Director 2.0	75.95
AMOS	57.95	Directory Opus	36.95
AMOS Compiler	34.95	Disk Labeler	24.95
AMOS 3D	44.95	Disk Master 2	39.95
Animation Station	29.95	Disney Animation Studio	74.95
Arxex	27.95	Distant Suns Version 4.1	54.95
Art Department Pro 2.1	147.95	Dos 2 Dos	30.95
Art Department Pro Conversion Kit	49.95	Draw 4D Professional	184.95
Audio Master 4	57.95	Dynacadd V.2.0	669.95
Audition 4	57.95	Excellence 3.0	107.95
Aztec C Developer V.5.0	157.95	EZ AMOS	29.95
Aztec C Pro V.5.0	104.95	Final Copy	56.95
BAD 4.0	29.95	Font Pack 1 for Broadcast Title	107.95
Bars & Pipes Pro	194.95	Font Enhancer for Broadcast Title	107.95
Internal Sound Kit	36.95	Fractal Pro	87.95
Baud Bandit	28.95	Gold Disk Office	154.95
Broadcast 3D Fonts for Imagine	82.95	Hot Links	62.95
Broadcast Fonts 3D	67.95	Hyper Book	59.95
Broadcast Title 2.0	194.95	Image Finder	41.95
Caligari 2	249.95	Image Master Pro	132.95
Can Do	79.95	Imagine V2.0 NEW	244.95
Comic Setter	44.95	Kara Headline Fonts 1	41.95
Copyright	28.95	Kara Headline Fonts 2	36.95
Cross DOS 2.0	24.95	Kara Headline Fonts 1 or 2	51.95
Deluxe Music Construction	61.95	Lattice C DEV 5.01	187.95
Deluxe Paint 4.1	97.95	Macro Paint	77.95
Deluxe Print II	51.95	Map Master for Lightwave 3D	57.95
Design Works	72.95	Math Blaster Plus	30.95

**• PRODUCTIVITY •**

Maverick	24.95	Alternate Font Sets	34.95
Movie Setter	44.95	Video Fonts II	57.95
Multistart II	42.95	Pro Write 3.2	94.95
OCR by Migraph	264.95	Professional Calc	184.95
On Line Platinum	39.95	Professional Draw 3.0	129.95
Our Wedding	52.95	Professional Page 3.0	179.95
Page Randerer 3.0	34.95	Structured Clip Art	36.95
Page Setter 2	82.95	ProGrammar	57.95
Page Stream V.2.2	159.95	ProTextures	35.95
Buddy System	29.95	ProVector	187.95
Classic Font Set	114.95	Quarter Back	49.95
Designer Font Set	114.95	Quarter Back Tools	57.95
Newsletter Fonts	59.95	Raw Copy	34.95
Starter Fonts	59.95	Real 3D Beginner	112.95
Pen Pal	85.95	Real 3D Professional	269.95
Personal Write	30.95	RX Tools	35.95
Personal Fonts Maker	62.95	Saxon Script Pro	74.95
Phantom SMPTE Interface	209.95	Scala	172.95
Phasar	49.95	Scala 500	84.95
Pix Mate	49.95	ScapeMaker	29.95
Pix Sound 2.5	52.95	Scene Generator	29.95
Pix 3D	67.95	Scenery Animator	57.95
Power Windows 2.5	54.95	ScreenMaker 2.2	57.95
Presentation Master	177.95	Screen Maker Syquest Cartridge	269.95
Pro Textures	35.95	ShovMaker	229.95
Pro Video CGI	112.95	Soft Clips Vol. 1, 2, 3 or 4	44.95
Pro Video Gold	97.95	Soft Fonts	54.95
Pro Video Post	154.95	Sound Master	134.95
		Spectracolor	57.95

Super JAM!	84.95
Superbase 4	244.95
T-Rexx Pro	72.95
Take 2	112.95
Tiger Cub	74.95
Title Page	104.95
Toast Master	84.95
Toasted Fonts V.1-5 each	41.95
Transwrite	44.95
Turbo Text	57.95
T.V. Show V2.0	64.95
TV Text	56.95
TV Text Professional	99.95
Type: Decorative, Designer	
Publisher, Videographer, each	35.95
Video Effects 3-D	106.95
Video Titrer V1.5	92.95
Video Tools	172.95
VideoDirector	137.95
VideoScape 3D V2.0	119.95
VIP Video Interface	104.95
Virtual Reality Studio	57.95
Visionary	57.95
Vista Professional V.2.0	57.95
Works, Platinum	99.95
World Atlas 2.0	36.95
W.Shell 2.0	54.95
X Copy Professional	47.95
Your Family Tree	39.95

**VISA**  
**MasterCard**  
**NO CREDIT CARD  
SURCHARGE**

**INFORMATION**  
414-357-8181 FAX 414-357-7814  
P.O. BOX 17882  
Milwaukee, WI 53217  
**HOURS-CST**  
MON-FRI 9am-9pm  
SAT 11am-5pm

**ORDERING INFO: Specify system.** For fast delivery send cashier's check or money order. Personal & company checks allow 14 business days to clear. P.O.'s welcome. **C.O.D. charges are \$5.00.** In Continental U.S.A. include \$5.00 for software orders 5% shipping for hardware, minimum \$5.00. MasterCard & Visa orders please include card #, expiration date and signature. WI residents please include 5% sales tax. HI, AK, FPO, APO, Puerto Rico and Canadian orders, please add 6% shipping, minimum \$6.00. All other foreign orders add 15% shipping, min \$15.00. All orders shipped outside the Continental U.S.A. are shipped first class insured U.S. mail, where available. If foreign shipping charges exceed the minimum amount, you will be charged the additional amount. All goods are new and include factory warranty. We do not guarantee compatibility & version #s. Due to our low prices all sales are final. All Defective returns must have a return authorization number. Call (414) 357-8181 to obtain an R.A. # or your return will not be accepted. Prices and availability subject to change without notice. Shipping & handling are non-refundable. We ship the latest versions available to us, updates must be handled by end user directly with the manufacturer. Not responsible for typographical errors. In an effort to be complete, some new products may not be available from the manufacturer at press time.



From p. 71.

## TAKE-2

Rombo, \$99.95

Hard-drive installable.  
Not copy protected.  
2.0 compatible.  
Accelerator compatible.  
Minimum system: 1MB RAM.  
Recommended system: 3MB,  
hard drive.

### Pencil-testing and animation presentation

Originally conceived as an animation pencil-test program, Take-2 has matured, allowing the use of any standard Amiga images, four concurrent levels of animation, and sound. You can sequence a series of images into an animation and control each frame's duration.

Take-2's main screen, the Exposure Sheet (X-Sheet) is divided into five columns, one for soundtracks, the rest for tracks (levels) of animation. The columns are divided into cells, each of which holds an image or a sound. A memory gauge on the right side gives you a rough idea of the space available, but the exact

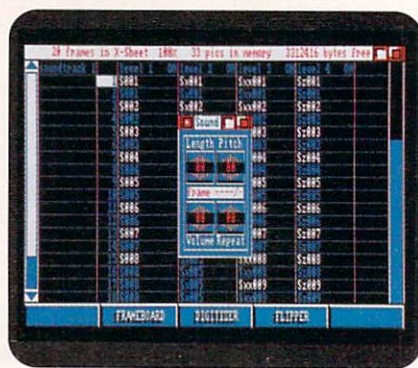
number of free bytes is also displayed.

### PANEL DISCUSSION

While the X-Sheet organizes your project, you must call one or more Panels (icon-filled windows) to do any work. The Picture Panel lists all the images currently in memory, and the Cell Panel manipulates cells in the X-Sheet. The Sound and Sample Panels control the use of sound in the program.

To start an animation, you load previously created images with the Picture Panel. You can load any standard IFF image or animation into Take-2. (When loading ANIMs, the program uncompresses the file into the single frames.) Next, you select the images you want to load into the X-Sheets, including blank frames. The program searches for needed images that are not currently being used. To save memory, use the Cell Panel's cell multiplier, which controls the number of times an image is repeated on the X-Sheet. With it, you can create animations in which each frame is shown more than once (for working on twos and such) or simulate a pause by repeating one image over more frames than the others.

The Cell Panel also controls most X-



Take-2's X-Sheet organizes your animation; the Sound Panel adds sound effects.

Sheet editing, such as cutting and pasting. To easily and economically create ping-pong-style animations, there's an option for pasting the cells in reverse order. The cell editor also contains powerful string-replacement functions, which will find all occurrences of a cell with a specified name or replace all similarly named cells with another selected image. If you make a mistake, undo it by clicking the Track header at the top of the affected column. The only exception to this is with pasting errors, where you must cut the erroneous frames. I found using the Track header as an undo button confusing; I would prefer a dedicated gadget.

Take-2 also supports adding sound to an animation. Soundtracks can have up to four levels, each using its own Amiga sound channel. Take-2 loads 8SVX-format sounds that are 130K or smaller via the Sample Panel. The Sound Panel lets you alter the pitch, length, volume, and number of repetitions of each sound. By varying these sound attributes (particularly pitch), you can often create several different sounds with the same sample. The manual also gives tips on simulating special sound effects, such as echo and flange.

### BUTTON BUSINESS

For help with some editing tasks, click the Frameboard button at the bottom of the X-Sheet. A four-frame, quarter-screen view of your animation appears for you to scroll through. The Frameboard is great for locating the exact image for starting an edit or for accurately placing sound effects. Be warned, however, that the Frameboard supports only low-resolution images.

Next door, the Digitizer button lets you import images directly from Rombo's Vidi-Amiga digitizer (see review on p. 60). Unfortunately, the options work only with the Vidi-Amiga. While you can certainly use another digitizing system to grab your images and load them into

# The most definitive video series on video!

Now you can learn from the experts at *Videomaker* magazine!

Learn all about:

- Bringing a documentary to life
- Professional lighting
- Camera moves, step by step
- and MUCH, MUCH MORE!

Only \$19.95\*

Order now! **1-800-824-5499** or mail to:

**TECHMEDIA**  
**V I D E O**

6H2VM

P.O. Box 2151, Salisbury, MD 21802  
410-543-1989  
California and Maryland residents  
add appropriate tax

\* Plus \$2.95 S&H; \$5/two or more.

Watch for Volume II!



Take-2, it would be nice if the program communicated with such hardware directly or at least through an AREXX port.

The Flipper button displays the animation and regulates its speed. A set of VCR-style controls lets you move either continuously or a frame at a time. You can run at 24 or 30 frames per second or in Turbo mode, which will play back the animation as fast as the machine possibly can. Take-2 plays its animations quite close to the settings, even on unaccelerated machines. As always, however, higher image complexity and resolutions can slow down the playback.

When you're satisfied with your work, you can either save each track of the animation individually or save the entire four-level scene. You can also save and print the X-Sheet for reference. The freely redistributable scene player lets you create stand-alone versions of your work.

While Take-2's ability to play up to four different levels of animation at the same time is unique, it is also limited. Each of the levels can have only two colors at most, and such scenes play only in grayscale mode. Multilevel animation is probably best used in pencil testing, where you could have a foreground in one level, a background in another, and two other levels of animation in between.

### CLUNKY CONTROLS

The weakest part of Take-2 is its interface. The various panels, menus and screens are sometimes confusing. Placing icons on one panel that interact with options on another, such as the cell multiplier that interacts with the Picture Panel, make many operations more difficult than they should be. (For example, why is the ability to cut and paste soundtracks located on the Flipper screen?)

The icons themselves are also confusing, often looking alike and usually not suggestive of the commands they execute. Fortunately, the manual offers a pictorial key to all the Panels and their controls.

The documentation for Take-2 is adequate, but could be better organized, as information seems to be scattered about. The tutorials, moreover, are very short and not much more than a listing of the steps necessary to complete the project.

Well suited for pencil testing animations or building simple presentations, Take-2 is quite reliable and did not crash once during my tests. The ability to create pauses and repeating frames without using additional memory is very useful, and the capacity for doing multilayer animations and soundtracks is impressive. There are some outstanding features here; however, the awkward user interface gets in the way of productivity too

often, especially when you're learning the program.

—Dave Thomas

## MULTITRACE 1.0

AltoFirma Software, \$89.

Hard-drive installable.

Not copy protected.

2.0 compatible.

Accelerator compatible.

Minimum system: Same as SAS/C.

Recommended system: Same as SAS/C.

Debugging library for SAS/C 5.1x.

Tired of scattering printf's throughout your code to track down an elusive bug? How many times have you printed "Now I'm in function xxxx" and "Now I'm leaving function xxxx?"

A solution for this tedium, MultiTrace is a debug link library for the SAS/C compiler. MultiTrace is not a debugger; it's a library of debugging functions accessible from your code, allowing you to output printf-style strings, do hex dumps, and pause your program. The output is displayed in a MultiTrace window you generate with another simple call.

The real fun begins when you use the included MakeTrace utility to generate a special macro file for your code files. MultiTrace uses the compiler's preprocessor to replace your function calls with macros that call the MultiTrace library and can track function entries, exits, parameters, return values, and nesting depth. Controls in the output windows let you change execution speed, pause and step through the functions manually, and adjust the range of nesting you want to see as functions are called. Unlike the printf method, MultiTrace has no problems debugging a program with one or more tasks. It uses its own windows, and each task within the program can have one.

Before you can make full use of MultiTrace, you must modify your source. To protect functions when the preprocessor does its macro substitutions, you must surround function names in declarations with parentheses. Fortunately, the MakeTrace utility does this automatically. It also generates function prototypes in this format.

Modifying a source to accommodate a debugging tool may sound extreme, but the process is relatively painless. To make your code aware of MultiTrace, simply add the MultiTrace output window initialization calls, include your MultiTrace macro header file and new prototypes, and define the TRON preprocessor symbol to enable function tracing. Then add

one of the MultiTrace link libraries (there are several provided for different math library and addressing setups), recompile your source, and build.

The documentation is a bit sparse, but by looking at the examples and tutorials, you should become familiar with the program in under an hour.

If you use printf's a lot in debugging, especially if you're working on projects that have subtasks, MultiTrace is well worth the money.

—Paul Miller

## WORLD ATLAS 2.5

Centaur Software, \$59.95.

Hard-drive installable.

Not copy protected.

2.0 compatible.

Accelerator compatible.

Minimum system: 512K RAM.

Recommended system: 512K, hard drive or two floppies.

Geography reference.

## WORLD TOUR SERIES

Designing Minds, \$39 each.

Hard-drive installable.

Not copy protected.

2.0 compatible.

Accelerator compatible.

Minimum system: 512K RAM.

Recommended system: 512K RAM.

Geography games for grades 6-10.

I've always loved maps. I like the things they tell me and the manner in which they lend shape to the world. Why, then, don't these two products interest me more? After all, World Atlas 2.5 and the World Tour series offer maps of varying detail, as well as much geographical information. They are clean and well-developed programs that should be valuable for primary and secondary school students alike. But they just don't excite me.

The World Tour series consists of several modules, each one offering facts and a game about a geographical region: Africa, Australia, Canada, Central America, Europe, India, the Middle East, Russia/Western Asia, South America, and the US. World Atlas 2.5, by contrast, packs the entire world into one program and offers only information, no games.

### PICK A COUNTRY, ANY COUNTRY

The point of World Tour is less the information than the game. While the pack-

*Continued on p. 78.*



# GO AMIGO VIDEO!

800-BE-AMIGA (800-232-6442)

## Newtek Video Toaster



\$2099<sup>00</sup>

## Video Toaster

Factory  
Refurbished v2.0  
With Full  
Warranty only

\$1799<sup>00</sup>

## Imagine 2.0



The Amiga's best modeler  
gets more powerful!  
Dozens of new features re-establish  
this as the best modeler available  
for the Amiga computer! Includes  
FREE Understanding Imagine 2.0  
book and ProtTextures 10 disk set!  
\$269<sup>00</sup>



## Sharp JX-100

JX-100

200 DPI, 18-Bit portable color scanner  
Includes ASDG's ScanLab ..... \$375<sup>00</sup>

## The Kitchen Sync ..... \$1595

•Two Complete TBC's on one card •Works with any video source •S-VHS and  
Hi-8 compatible •Optional Y/C output •Great for use with the Video Toaster™

DIGITAL

CREATIONS

## DPS Personal TBC II



Now with  
Proc amp  
control  
and color  
balancing

\$799<sup>00</sup>

### IMAGE PROCESSING SOFTWARE

ART DEPARTMENT .....	52.95
ART DEPARTMENT PRO. V 2.1 .....	159.00
ART DEPARTMENT CONVERSION PAK .....	52.95
ART DEPT LOADER TGA ASDG .....	36.95
ART DEPT LOADER TIFF 5.0 X .....	36.95
DCTV .....	399.00
DCTV: A GUIDED TOUR .....	26.95
IMAGEMASTER PROFESSIONAL .....	149.00
IMAGEMASTER FIRECRACKER .....	149.00
PIXMATE .....	40.95
RASTER LINK .....	119.00

### 3D RENDERING

### ANIMATION SOFTWARE

ANIMATION STATION .....	39.95
ANIMATRIX MODELER .....	59.95
BROADCAST 3D FONTS - CALIGARI .....	74.95
BROADCAST 3D FONTS - IMAGINE .....	74.95
BROADCAST 3D FONTS - LIGHTWAVE .....	74.95
CALIGARI II .....	289.00
CALIGARI BROADCAST .....	CALL
DIGIVIEW MEDIA STATION .....	169.00
DRAW 4D PROFESSIONAL .....	169.00
IMAGINE 1.1 W/FREE TUTORIAL VIDEO .....	89.95
IMAGINE: A GUIDED TOUR .....	26.95

IMAGINE 2.0 .....	269.00
UNDERSTANDING IMAGINE 2.0 .....	26.95
MAP MASTER - IMAGINE .....	45.95
MAP MASTER - LIGHTWAVE .....	64.95
MATERIAL TEXTURES STONE - TILES - WOOD .....	EACH 29.95
PIXEL 3D 2.0 .....	69.95
PRO TEXTURES .....	36.95
REAL 3D V1.4 .....	299.00
SCAPEMAKER 2.0 .....	29.95
SCENERY ANIMATOR 2.0 .....	59.95
SCENERY ANIMATOR DATA DISKS .....	18.95
SCULPT ANIMATE 4-D .....	199.00
SURFACE MASTER - IMAGINE .....	25.95
VISTA PROFESSIONAL 2.0 .....	59.95
VISTA PROFESSIONAL DATA DISKS FROM .....	29.95

### VIDEO UTILITIES

DISKMASTER II .....	42.95
DIRECTORY OPUS .....	36.95
PROMOTION .....	58.95
TOASTMASTER .....	89.95
TREXX PROFESSIONAL .....	79.95
VIDEO TOOLS .....	179.00

## Personal Time Base Corrector



Factory  
refurbished with  
full warranty  
\$479<sup>00</sup>

## DCTV From Digital Creations



Full NTSC Color Display  
\$399<sup>00</sup> and Digitizer.

## DCTV: A guided tour

This easy-to-follow, comprehensive  
VHS tutorial will tell you all you need  
to know about DCTV. \$26<sup>95</sup>



## FireCracker 24



2 Meg  
Version

•High-resolution  
•16.8 Million Colors  
•24-Bit graphics display card  
•Works on the Amiga 2000 and 2500  
\$799<sup>00</sup>



# Video Toaster Systems

'030

## Power User Workstation

'040

Includes:

- 25MHz '030
- Toaster 2.0
- 52mb HD
- 7mb RAM
- 14" monitor

Includes:

- Zeus 28MHz '040 w/ SCSI-II
- Toaster 2.0
- 120mb SCSI HD
- Internal Syquest 88mb drive w/ cart. (or at your request Kitchen Sync)
- 17mb 32-bit RAM
- 14" RGB/Composite monitor
- 2 Personal TBC II

Includes:

- 28MHz '040
- Toaster 2.0
- 120mb HD
- 9mb 32-bit RAM
- 14" monitor

**\$4399<sup>00</sup>**

**\$8999<sup>00</sup>**

**\$5989<sup>00</sup>**

## Entry Level Workstation

Includes:

- Toaster 2.0
- 52mb HD
- 7mb RAM
- 14" monitor

**\$3999<sup>00</sup>**

All systems are assembled and tested by factory authorized technicians.

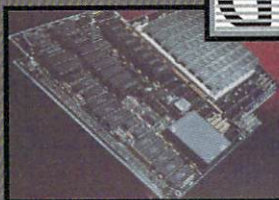
All systems use only Quantum high quality mechanisms and the NewTek Video Toaster 2.0

### PageStream 2.2



Files can be saved as IFF then converted into 3D format using Pixel 3D or Imagine 2.0 thus giving you access to Postscript fonts as 3D objects.

**\$189**



### G-Force 030-Combo 40/4 ..... \$999<sup>00</sup>

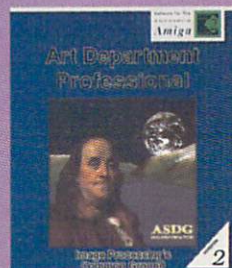
- 68030 running at 40mhz
- 68882 running at 40mhz
- 4mb of 32-Bit RAM (16mb max.)
- Onboard Series II SCSI Controller
- Hard drive mountable
- All on one board (while supplies last)



### A530 TURBO

- A500 HD8 with 40mhz 68030
- 1mb of 32-Bit RAM expandable to 8mb
- Socket for 68882 Math chip
- "Mini Slot" for PC emulator & more!
- Turbo switch for compatibility.
- Includes SCSI pass thru.
- Dedicated power supply included!
- A530 w/52mb drive ..... \$969<sup>00</sup>
- A530 w/120mb drive ..... \$1099<sup>00</sup>

### The Art Department Professional Ver. 2.0



Art Department Pro gives you the most powerful image processing system ever offered for the Amiga. Now with JPEG compression and 24-Bit printing ..... \$159<sup>00</sup>

### DESKTOP VIDEO

AMIGA VISION .....	99.00
BROADCAST TITLER II .....	229.00
CANDO 1.6 .....	89.95
DELUXE PAINT 4.1 .....	119.00
THE DIRECTOR 2.0 .....	74.95
OUR WEDDING - 24 BIT .....	55.95
OUR WEDDING - HAM .....	44.95
PRO VIDEO POST .....	199.95
PRO VIDEO CG II .....	129.00
SCALA .....	249.00
SCALA 500 .....	149.00
SCREEN MAKER - 24 BIT .....	59.95
SCREEN MAKER - HAM .....	44.95
SHOWMAKER .....	225.00
TRANSPORTER .....	149.00

TV SHOW 2.0 .....	58.95
TV TEXT PROFESSIONAL .....	99.95

### VIDEO ENHANCEMENT

#### HARDWARE

CHROMA KEY PLUS .....	359.00
COLOR SPLITTER .....	109.00
DMI RESOLVER BOARDS .....	CALL
FLICKER FIXER .....	249.00
FLICKER FREE VIDEO II .....	239.00
VIP VIDEO INTERFACE .....	111.95
GVP - VIU-S .....	CALL
GVP - VIU - CT .....	CALL

#### FRAMEGRABBER HARDWARE

FRAMEGRABBER .....	369.00
FRAMEGRABBER/256 GRAY .....	499.00
PERSONAL TBC .....	479.00

PERSONAL TBC II .....	799.00
SONY XV-D300 .....	289.00

#### GENLOCKS

ALTERIMAGE GENLOCK .....	189.00
MININGEN GENLOCK .....	189.00
ROCCEN PLUS .....	369.00
SUPERGEN 2000S .....	1359.00
SUPERGEN GENLOCK .....	629.00

#### EDITING HARDWARE

BCD 2000A (SONY/PANASONIC/JVC) .....	799.00
BCD 5000 .....	1995.00
DQ TACO .....	1795.00
MEDIAPHILE SYSTEMS .....	CALL
NUCLEUS SINGLE FRAME CONTROLLER .....	369.00

VIDEO DIRECTOR .....	169.00
----------------------	--------

#### HOT INTEGRATED VIDEO HARDWARE

DCTV .....	399.00
MEGACHIP 2000/500 .....	208.00
PERSONAL VECTORSCOPE .....	789.00
VIDEO BLENDER .....	895.00
VIDEO TOASTER 2.0 .....	2099.00

#### PAL SPECIFIC VIDEO

#### HARDWARE AND SOFTWARE

DIGIVIEW MEDIA STATION PAL .....	179.00
FLICKER FIXER PAL .....	300.00
FRAMEGRABBER 256 GRAY PAL .....	499.00
FRAMEGRABBER PAL VERS .....	449.00
PRO VIDEO POST PAL .....	199.95
VIDEO EFFECTS 3D PAL .....	139.95

**International orders call: (310) 370-9550**

**OFFER CODE: C29499MG.** Call for all other shipping information. Educational, corporate and aerospace purchase orders accepted. No surcharge for Visa/MasterCard; 4% surcharge for American Express; 1% surcharge for Discover. **RETURN POLICY:** Call Customer Service at (310) 214-0000 for return authorization. All returns without authorization number (RHMA#) will be refused. Returned products must be in original condition and packaging and must be sent back within 30 days of our invoice date. No refunds, please. Defective product exchanges only. We make no guarantees for product performance. Exchanges with unlike products are at our option and subject to a 20% re-stocking fee. **CONDITIONS:** Prices and availability of product are subject to change without notice. **MAIL-IN ORDERS:** Send money orders or cashiers check for fastest service. Personal checks - up to 10 days to clear. Include: Name, Address and telephone number (no P.O. Boxes, please). If ordering by credit card include expiration date and billing address. Call for exact shipping rates.



From p. 75.

age provides maps showing population density, vegetation, January and July average rainfall, and the topography of each module's region, these are simply static maps with good but limited details. Only when you play the game does World Tour really inform.

You can choose to identify countries, cities, the locations of major languages or religions, or the flags of the various countries, states, or provinces. You can play against a human opponent or the computer at nine levels. The spelling-checker option ensures that you spell the names of the places correctly, while the timer can be set to 15, 30, 45, or 60 seconds, or turned off. You can also select how many tries you get to type the right answer (up to three) and whether you must type the answers or click the correct map location. Finally, you can choose to listen to the Amiga's voice or just read the responses on the screen.

Basically, World Tour is a recognition game. After studying the maps to learn the locations of countries, cities, languages, and religions, you play the game to determine how much you've retained. One unfortunate aspect is that some extremely tiny countries (Vatican City and Liechtenstein, for instance) are relegated to insets beside the map, which makes them inordinately difficult to identify. For the most part, however, identification is easy enough, provided you know a little about the area in question.

Where the game shines is in associating facts. In the languages game, for example, you might be asked to click on the country where Flemish is the official language. You have to know that the answer is Belgium and where it is located. If you've selected the bonus rounds option, you must answer a trivia question after each correct identification. These aren't difficult, but at five points a crack (half of the ten you get for a correct first-time identification), they certainly influence the game's outcome. When finished, you can print out certificates for players and quiz sheets for study.

## JUST THE FACTS

By contrast, World Atlas is about information only, so it concentrates on making the facts useful and accessible. Screens outline details about the world (size, mass, mineral components, and so on), the time zones, area and population percentages, and special locations, but only the special-locations screen is interactive. Here, click the left mouse button to see the location of the longest rivers, highest mountains, and other features of each continent.

The great bulk of the information to be gleaned from World Atlas resides in its Info Cards. From a listing or a map, you can select the country or state you wish to view. Doing so brings up its Info Card, which shows a small map, the flag, a scrolling history of the area, and a selection of information—the capital, population, area, cities, currency, religion, time zone difference, and unemployment statistics, for example. Such world organizations as OPEC, ASEAN, NATO, and the Commonwealth of Nations are also covered.

It's interesting that all of this information can be edited. For teachers, editing information could be a research project, forcing their students to check the existing statistics and update them.

To enhance the information given on the Info Cards, World Atlas includes several seek functions. You can find a country by knowing only the name of the capital. You can also ask for a list of countries whose population or area falls within a given range, or whose inhabitants speak a certain language. You eventually end up with the same Info Cards as before, but having different ways of getting there is worthwhile. For further customizing, World Atlas supports 110 AREXX commands.

World Tour and World Atlas are well done, can be extremely useful for educators, and do a good job of informing, but I'm not going to toss out my paper atlases just yet.

—Neil Randall

## HOME FRONT 2.0

Designing Minds, \$99.95.

Hard-drive installable.

Not copy protected.

2.0 compatible.

Accelerator compatible.

Minimum system: 512K RAM,  
two floppy drives.

Recommended system: 1MB, hard  
drive.

Entry-level financial manager and  
home organizer.

Home productivity packages should do mundane things efficiently. To that end, Home Front 2.0 offers a number of separate modules: Accounting Manager, Cost Forecaster, Inventory Manager, Recipe Manager, and Address/Phone Manager.

The heart of Home Front is the Accounting Manager, which tracks income and expenses. You can create up to 99 separate accounts (such as checking and

savings) and any number of categories (wages, tips, mortgage, petty cash, and so on). An on-screen check image guides you through data input and transactions. To monitor your finances, you can view and print a variety of reports and graphs. This module also enables you to print checks on your dot-matrix printer with the help of tractor-feed check rolls.

Very possibly the nicest module in the package, Cost Forecaster lets you see the outcome of future or existing loans. In just a few mouse clicks, it determines payment required, number of payments, interest rate, and more.

The Recipe and Inventory modules use an index-card metaphor to input and display data and let you devise categories for organizing your favorite dishes and personal property. The Recipe Manager also plans meals and grocery lists.

Finally, the Address Manager uses the idiom of a rolodex (what else?) to list a name, address, phone, and note for everyone you call frequently. Unfortunately, it provides room for only one phone number, so you can't add a work or fax number. The single line for notes is also a bit restrictive, although the two lines for important dates do add a bit of elbow room.

## USER HOSTILE

The bottom line when choosing this sort of product is the interface. A poor or ineffective interface discourages you from using the program, and if you don't use it faithfully, you're better off keeping records the old way. Home Front runs under Workbench 2.0, but it supports many a single 2.0-type feature or convenience. It can't even handle custom fonts on Workbench.

More serious is the interface's dreariness; MS-DOS CGA users from 1986 will feel at home. The main screen is a window that plasters itself on the Workbench screen—its drag bar can't be dragged, and you must use a menu item just to push the program to the back! Even when Workbench is set at 640X400, the program runs as a 640X200 application, ignoring space it could use to save you from flipping screens for more data. Worse still are the nonstandard text-entry gadgets. Objects in the program generally cannot be clicked on for activation; to select an item, you must enter a number that corresponds to it.

The most unAmigatized program I've seen in a long time, Home Front 2.0 is the sort of software that perpetuates the Amiga's bad reputation among PC users. In 1992, we should not be subjected to a program, particularly a commercial one, that looks and acts as poorly as this one.

—Dave Johnson ■



**MANTA WILL NOT BE UNDERSOLD! CALL OUR PRICE DIRECT HOTLINE TO PUT YOU IN DIRECT CONTACT WITH A SALES MANAGER AUTHORIZED TO BEAT ANY PRICE. \* 908-542-1491**

# MANTA

COMPUTERS & SOFTWARE

Order Toll Free • **1-800-477-7706**

For Customer Service Please Call (908) 542-8767

Call for current price quotes & latest releases!

Many more items in stock at the lowest prices!

**Commodore**  
**AMIGA**

500 DS



- Amiga 500 CPU
- 3.5" 880K internal floppy
- Mouse, Joystick, and power supply
- 9 Disks of software including F/A-18 Interceptor, Fusion Point, KindWords and lots more!

Call for the lowest prices on all Amiga 500's!

## EXPANSION SYSTEMS

THE BEST QUALITY AT THE BEST PRICE.

### DataFlyer

High performance low cost

A500 w/ chassis SCSI	\$139.00
A500 w/ chassis IDE	\$129.00
A500 IDE & SCSI	\$179.00
A2000 SCSI	\$85.00
A2000 IDE	\$75.00
A1000 SCSI	\$159.00

### DataFlyer RAM

8 MB A2000 RAM card also fits in DF500 chassis.

øK memory.....\$95.00

### BaseBoard

4MB internal memory for A500 with clock.

øK memory.....\$95.00

ENTERTAINMENT SOFTWARE AVAILABLE EUROPEAN IMPORTS & MAGAZINES

CALL FOR COMPLETE SOFTWARE & HARDWARE LISTING

INTERNATIONAL ORDERS WELCOME

**GVP**

GREAT VALLEY PRODUCTS, INC.

**LOWEST PRICES**

### Accelerators

G Force Combo 25/1	.....\$659
G Force Combo 40/4	.....1179
G Force Combo 50/4	.....1499
G Force 3000 040/28/2	.....1899
52MB, 120MB, 240MB packages available	
1 MB Simm.....CALL	
4 MB Simm.....CALL	

### Miscellaneous

A2000 Ram Board	
Ram-8 øk	.....\$90
Ram-8 2MG	.....149
Digital Sound Studio	.....83
At Once Plus	.....319
Impact Vision 24	.....Call

### Hard Drives

A2000 HC8 + 0/52Q	.....\$379
A2000 HC8 + 0/120Q	.....508
A2000 HC8 + 0/240Q	.....829
A500 HD + 52 MG	.....489
A500 HD + 120 MG	.....629

### PRODUCTIVITY

Buddy System DOS 2.0	.....\$35
Buddy System Pagesream	.....35
Can Do	.....84
Chiban DOS 3.0 Plus	.....84
Cygnus Ed Pro	.....61
Deluxe Print II	.....50.95
Design Works	.....75
Diskmaster 2	.....57
Image Master	.....112.95
NAG Plus 4.1	.....62
Pagesream	.....169
Prillian Press	.....64
Pro Page 2.2	.....169
Pro Write 3.2	.....59
Proper Grammar	.....57
Screenmaker	.....CALL
Vista Pro 2.0	.....59

### MISCELLANEOUS

Amix II Plus	.....CALL
Amix ROMS	.....CALL
Amix Action Replay A500	.....99
Amixarc	.....63
Arex	.....28.95
AudioMaster 8	.....64
Bars & Pipes Pro	.....190
Distant Suns 4.0	.....55
DCT Mid 500/2000	.....49
Keyboard 4.1	.....17.49
Miracle Piano	.....359
Patchmaster	.....CALL
Perfect Sound	.....64.95
Quarterback Tools	.....52
SAS Lattice C 5.1	.....199
Soundmaster	.....CALL
Super Jam	.....77.95
W. Shell 2.0	.....49.95

### GRAPHICS & VIDEO

Art Department 2.0	.....\$149.95
Broadcast Title II	.....219

Calligraphy 2	.....240.95
Color Splitter	.....99.95
Director 2.0	.....89.95
Draw 4.0 Pro	.....73
Image Finder	.....179
Mapmaster for Lightwave	.....40
Mark's Math Lab	.....59
Pixel 3D 2.0	.....67
Pro Conversion Pak	.....50
Pro-Video Gold	.....129.95
Pro-Video Post	.....169
Real 3D	.....CALL
Scene Generator	.....28
Scenery Animator	.....55
Turbo Silver	.....59
T.V. Show 2.0	.....58
T.V. Text Pro	.....749
Video Director	.....139.95
Vista Pro 2.0	.....59

### HARDWARE

Supra Corp	
ASOXP Hard Drives	
52MB, 1MB RAM	.....\$449
120 MB, 2 MB RAM	.....649
240 MB, 2 MB RAM	.....CALL
Supra Ram 500 RX	
1 MB	.....119
2 MB	.....279
Modems	
2400 B0 External/Cable	.....75
2400 T1/S/Cable	.....119
Fax Modem V32	.....239
PC Power Board	.....259
Misc. Hardware	
DCTV	.....379
Firacker 24/2 MG	.....749
Personal SFC	.....349
Progressive 040/2000	.....1549
Progressive 040/500	.....CALL
Zeus 040/2000/SCSI	.....CALL
VXL 30/25MHZ	.....299.95

VXL 30/40 MHZ	.....459.99
VXL Math Co	.....CALL
Sketch master	.....CALL
Blizzard	.....CALL
Big Foot Pwr	.....89
Desk Jet 500C	.....739
Bread Board	.....CALL
AT Bridge Board	.....CALL
209 I/52MG	.....259
209 I/40MG	.....229
Quantum 52, 105, 120, 240	.....CALL

Commodore 10845	.....CALL
Commodore 1960	.....CALL
NEC 386X	.....CALL
Memory/Chips	
144 Simms	.....CALL
256K 8 Dram	.....CALL
DOS 2.0	.....CALL
Super Denise	.....CALL
1 MB X 1 80 Ramos	.....CALL
GVP Simm 32	.....CALL
3000 1x4 Static column	.....CALL
148 Simms	.....CALL
CIA's	.....CALL

Syquest	
66 MB INT./CART	.....569
88 MB INT./CART	.....499
Fixed 20 MB INT	.....399
CD ROM INT	.....399

IS	
Grandlam A500 52MG	.....499
Grandlam A2000 52MG	.....439
Trumpcard Pro A500 52 MG	.....425
Trumpcard Pro A2000 52 MG	.....339
Trumpcard A500 52 MG	.....365
Trumpcard A2000 52 MG	.....279
Trumpcard 500 AT	.....CALL
Other Size Hard Drives	.....CALL
Genlocks	
Mini Gen	.....185
Supergen	.....599
Alter Image	.....CALL
Supergen 2000S	.....1299

**DKB**

### MegAChip 2000/500 • \$209

Two megabytes of Chip Ram. Doubles your graphic memory for desktop video, publishing, 3D rendering and multimedia. Compatible with Video Toaster!

Call for 2mg Agnus Price

### MultiStart II • \$52

Install 2.0 and 1.3 ROMS in your Amiga 500 or 2000. Switch between 2.0 and 1.3 ROMS with the keyboard.

Call for 2.0 operating system

### Insider II A1000 • øK \$159

Battery backed clock and calendar with up to 1.5 mg RAM.

Call for RAM prices

### KwikStart II • \$69

Puts Kickstart 2.0 and 1.3 in your Amiga 1000 Boots faster and auto boots most hard drives.

### 2632 32 Bit Expansion

112 Megabyte memory expansion for the Amiga 2500/030 and CBM A2630 accelerator.

### VIDEO TOASTER

Ami Link Packages	.....CALL
BCD 2000	.....CALL
Kitchen Sync	.....1599
Personal V Scope	.....CALL
TBC 2	.....789
Toaster 2.0 Upgrade	.....289
Video Toaster 2.0	.....CALL
Workstations	.....CALL

### SPECIALS

Art Dept 2.0	.....\$149.95
Cross Dos 5.0	.....34.99
DCTV	.....379.95
Deluxe Paint IV	.....99.99
Hot Links	.....55.00
Imagine 2.0/Vista Pro	
Combo	.....249.99
Pagesream 2.2	.....164.99
Quarterback 5.0	.....43.99
Superbase IV	.....169.95

**ICD**

### The ICD Advantage

#### AdSCSI 2000

Hard drive interface with unmatched speed and flexibility.

#### AdSCSI 2080

Hard drive interface with up to 8 megs of FAST RAM.

#### AdSpeed

Best overall performance of any accelerator in its price range.

#### Flicker Free Video

Eliminates interface flicker for any Amiga computer.

#### AdRAM 540

Add up to 4 meg of RAM internally in your Amiga 500

#### AdRAM 2080

8 meg internally in your 2000/2500.

### New From ICD

#### AdIDE

Smallest Amiga hard drive interface made. For IDE (AT) drives. IDE 44 for your 2.5 inch hard drives. IDE 40 for your 3.5 inch hard drive.

#### Novia 20i

The small hard drive and interface in the world for your Amiga 500. Fits internally.

#### Novia 60i

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

#### Prima 52i

Now mount a 3.5 inch IDE drive internally in your Amiga 500, 1000 or 2000.

#### Prima 105i

105 megs internally in your 500, 1000 or 2000.

#### Shuffle Board

Reroutes DFO to the external floppy connector. Boot from an external floppy. For an Amiga 500 or 1000.

### GOLDEN IMAGE™

#### CORDESS TRACKBALL & MOUSE



**NEW ITEM** Cordless Mouse \$69 Cordless Trackball \$79

#### SPECIAL MASTER 3AI FLOPPY \$74.99

AMIGA RC-500 512K RAM with clock for A500	.....\$36
HAND SCANNER with touchup, high resolution	.....179.99
OPTICAL MOUSE	.....49
OPTO MECHANICAL MOUSE	.....36
RC-2000 4MB Ram Board for A500 with 2MB	.....149
1 Year warranty on all Golden Image products.	

In NJ Call:  
(908) 542-1251  
FAX: (908) 542-3654

**ORDER TOLL FREE**  
**1-800-477-7706**

TECH SUPPORT CALL • 1-908-542-8767

Walk in Traffic Welcome

\* Terms VISA/MASTERCARD, Discover, certified checks and money orders welcome. School & Corporate Purchase accepted. Most items shipped 1-2 Business days. • Returns: all items returned must have RMA # before returning. Defective products exchanged for same item only. Hardware items will be replaced or repaired. All returned items subject to a restocking fee. Shipping non-refundable. Call for complete details. • Ad prices subject to change without notice. Prices may differ in retail location. Software Concepts, Eatontown. Not responsible for typographical errors. Customer Service and product information call (908) 542-8767. • "Beat any price" guaranty may not apply to certain items.

115 Route 35  
Eatontown, NJ 07724  
OPEN 7 DAYS

**AUTHORIZED AMIGA SALES & SERVICE CENTER**

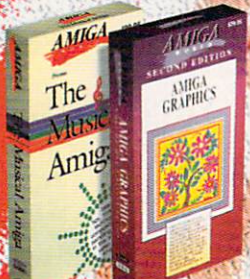


These are the educational videos for your Amiga computer. You will agree they've got what it takes for prime time. Get the latest information, graphics, interviews with experts, music, the hottest products and software — all at an affordable price.

Don't be caught with video re-runs of manufacturer's manuals. Get the videos that everyone is raving about — the most exciting and advanced videos in the Amiga market today.

*In a world of re-runs, these videos are ready for prime time*

# THE AMIGA VIDEO WORKSHOP



## PRODUCTIVITY

### The Amiga Primer

**\$24.95**

Get the facts on getting started: Setup, Workbench, Shell, CLI, expansion, AmigaVision. Includes AmigaDOS 2.0 and AmigaVision. A must for every Amiga owner.

### The Peripheral Guide for every Amiga Hot Rod Your Amiga

**NEW 1992 EDITION**

**\$19.95**

Go shopping for the most popular peripherals on the market today! Learn about accelerators, RAM, Video Toaster, Genlocks and more. Features GVP, NewTek, Digital Creations and others.

## MUSIC & GRAPHICS

### Amiga Graphics, Volume I

**NEW LOW PRICE**

**\$19.95**

Learn the ethics of style and how to use the Amiga for graphics. The best tape available for getting started. Includes interviews with experts. Features Deluxe Paint IV, NewTek, Kara fonts and others.

### The Informative Guide to Music and MIDI The Magic of Music and MIDI

**NEW UPDATED EDITION!  
NEW LOW PRICE!**

**\$19.95**

New edition brings you the most up-to-date and MIDI data, including using the Amiga as a music generator or MIDI device! Features SuperJAM!, Bars & Pipes Professional, Dr. T's, Sonix, Deluxe Music, AudioMaster and others.

## VIDEO

### The NewTek Video Toaster Video

**NEW 2.0 EDITION**

**\$24.95**



Winner of two Bronze Telly statues in 1991, this video provides a complete overview of the Video Toaster (Version 2) and shows how the Toaster can be used in the real world. Includes comparisons with broadcast equipment and hot Lightwave animations.

### Desktop Video, Volume I

**\$24.95**

The best source for getting started with DTV. Excellent advice from experts, including Academy Award winning director Terry Sanders. Features camcorders, editors, peripherals, techniques for top results, titling and more.

### Desktop Video, Volume II

**\$24.95**

Get the inside line on DTV with this new video. Includes direct comparisons of tape formats, including Hi8 and BetaCam, Lightwave, Virtual Reality, and 24-bit rendering. Features Deluxe Paint IV, Video Toaster, DCTV and others.

### Desktop Video, Master's Edition

**NEW**

**\$24.95**

The ultimate guide to desktop video takes you through the entire desktop video experience. Create a complete video from pre-production to finished master with this interactive and informative program. Includes specific exercises and effects. Become a master today! Includes background music, sound effects, and graphic backdrops.



**RAZZA**



VIDEO

**TECHMEDIA  
VIDEO**

An ICG Communications Company

**1-800-824-5499**

8:00 AM to 6:00 PM E.D.T.

For customer service, Canadian and foreign orders

Please call 410-546-0180

(California residents add appropriate sales tax)

Please add \$2.95 for each video ordered or \$5.00 for 2 or more.



# AMIGA WORLD TOOL CHEST

The AmigaWorld ToolChest is a line of quality, low-cost software that brings many uniquely powerful programs to your Amiga. By purchasing this software you receive unmatched versatility, usability, and best of all, you support the independent Amiga developer. The "TC" series disks are our potpourri series of disks that are available in our money-saving and convenient subscription offer. The "TSP" series are grouped together by theme for your convenience. *Keep your eyes on our new "RK" series*—these exciting programs are the hottest "commercial/userware" programs available, full featured and fully documented.

100% SATISFACTION GUARANTEED

**\$5.95**  
1-9 Disks  
**\$4.95**  
10-19 Disks  
**\$3.95**  
20+ Disks

**TSP42: 3D Master** Explore the world of 3D modelling with this high-powered software. Create realistic raytraced 3D images. 3D Master is perfect to get your feet wet in 3D. It will require some experimentation to get the most out of it. Req. 1 MB

**TSP43: Sealzone Go** on patrol in your nuclear Trident submarine and clear the seas of the vermin that pollute it. A complete simulation with all tactical weapons and defensive systems.

**TSP40AB: Star Trek Trivia** Test your knowledge of "The Next Generation"—identify scenes, sounds, characters and much more! Two disk set, counts as two.

**TSP39AB: Catacomb** A well done graphic adventure game. Discover the secrets & treasures of the underground maze and try to stay alive! 2 disks counts as 2.

**TSP38: Virus Utilities** *VirusKiller, KillVirus, VirusMemory Killer, YK360 and ZeroVirus!* will let you rest at night knowing your Amiga is 100% virus free.

**TSP37: CheckBook Accountant** This program has full budgeting/transaction recording capabilities. This program turns the chore of balancing your checkbook into a 2 minute treat!

**TSP36: Animation** Two beautiful animations, *Spigot* and *Watch*. Both of these were created with 3D animation programs and are truly beautiful and smooth.

**TSP35: HackLife** This is a dungeon-adventure game of the highest magnitude...an absolutely huge world to explore that will task even the most hardened dungeon explorer for weeks on end!

**TSP34: MechForce** Any number of players can control up to 24 giant robots with lasers, missiles, jump jets to get you airborne to do battle in teams against each other using the computer...highly addictive!

**TSP33ABCD: Complete Guide to Programming the Amiga in "C"** This four disk set features tutorials, sample programs and inside tips to the special programming needs of the Amiga. Four disks counts as three.

**TSP32: Classic Arcade Games** *Defender* and *Missile Command*—need we say more? *Descender* is a clone of the classic Tempest.

**TSP31: DataBase** Contains all flavors of databases. *Basez!* is a highly Amigaized database. *DataEasy* is another powerful database. *MagMan* is specially designed to help you reference articles in magazines.

**TSP30: Educational** This includes *WorldDataBase*, *DrawMan*—which draws detailed maps of countries, *WordGames*, *Matrix Converter*, *Drill*—an ingenious spelling challenger, *FastFacts*—everything you always wanted to know about our Solar System.

**TSP29ABC: King James Bible** The complete text of the bible is included on this 3 disk set (counts as 3) with printing and searching capabilities.

**TSP28: Bitmapped Fonts** This disk contains 67 fonts for the Amiga, all under 25 kbytes in size...a font for every occasion!

**TSP27: Octa-MED** This remarkable program doubles the sound capabilities of your Amiga from 4 channels of audio to 8! Almost completely identical to MED, this is a truly remarkable program.

**TSP26: Directory Utilities** Contains all of the best public domain and shareware file disk utilities available for the Amiga, including *UniMaster*, *FileMan*, *M2DU*, *Sid* and *Master*.

**TSP25: SpaceGames** Contains *MoonBase* a very graphically detailed lunar-lander game, *SpaceWar*—a two player (either in person or over the modem) space battle game, is a 3D world you must defend, definitely commercial quality.

**TSP24: Printing Utilities** This disk contains a very nice *Banner* maker that will use your AmigaDOS font with full-color printing. *BoboLabelCreator* will allow easy creating labels for your diskettes. *PrintStudio* allows easy printing of text/graphic images with all control over page numbering/tilting, etc.

**TSP23AB: Tobias Star Trek** A graphic space adventure where you're the captain of your own starship. Travel through the universe, stop the Romulans and Klingons and complete your missions. Two disks, counts as two.

**TSP22: 3D Objects** This disk contains 16 different vector-objects for use with Sculpt and Imagine. Some of the objects include: train engine, synthesizer keyboard, Amiga 1000, space station.

**TSP21: Disk Duplicators** This disk contains all the best utilities to backup diskettes, including *XCOPY* and *NIB* which will backup copy-protect programs. Also includes *SuperDuper* which is an incredibly fast AmigaDOS copier. *Erasecopy* will remove copy protection from many popular commercial programs.

**TSP20: Board Games** Includes *Checkers*, *Dominoes*, *Clue*, *Jeopardy* and *Monopoly*. Throw away your dice and let your Amiga take care of the details...hours and hours of family fun!

**TSP19: PacMan Classics** Contains *Mazeman*, *Zonix* and *PacMan87*—all great implementations of the original arcade classic.

**TSP18: MS-DOS Emulation** Contains *PC2Task* and *iBem*, two shareware IBM-MS emulators for your Amiga. Also includes are utilities to allow AmigaDOS to read/write 720K format MS-DOS disks—*Multidos* and *MSH*.

**TSP17: Printer Drivers** This disk contains over 70 printer drivers for many popular printers.

**TSP16: Telecommunication** This disk contains two first-class modem programs, *iComm* and *Access*. This disk is for the beginner or expert telecommunicator, featuring all the popular communication protocols, including X, Y and Z-Modem. iNComm is a very advanced script capabilities for performing automated log-ins, downloads and uploads.

**TSP15: MED** This disk contains the premier music package, *MED* (Musical Editor). It will allow you to use digitized sound samples as your instruments and use them in your own songs. Its tremendous editing power makes MED more of a musical word-processor. An extremely well-done program. Many commercial software companies use this package to create soundtracks for their entertainment programs.

**TSP14: Plotters** This disk contains several of the best mathematical plotting programs available for the Amiga. Includes *AmigaPlot*—a 3-dimensional mathematical function plotter (pictured), *Aplo2D*, and *PlotXyz*.

**TSP8: Clipart** Black & White and colorful clipart for a variety of needs including desktop publishing, holiday related, school items, scrolls, food, monsters, fish, lobsters, symbols and lots more.

**TSP7: 3D Vector Objects #2** Books, Early American telephone, barrels, gun, space-ships, lamps, trombone, bugle, skateboard, Lego-Rover, remote control, glider and airplane. All objects in Sculpt format.

**TSP6: 3D Vector Objects #1** Lamp, mirror, bed, chair, fire hydrant, lamp post, street lamp, street sign, traffic light, cannon, cannon supplies, rock, fork, spoon, knife and plate. All objects in Sculpt format.

**TSP5: Games 3** *CrossCircuit* is a one or two-player action/logic game that requires fast reflexes. *WordSearch* will allow you to generate your own word search puzzles. In *DrawBusters* you rid the streets of cigarettes, alcohol, pills and needles. In *Cinco* you try to get five X's in a row before your opponent. *ColorLogic* is an excellent MasterMind type game.

**TSP4: Games 2** *DynoWars*—a strategic checker-style game. *Kooties*—assemble a bug before the computer beats you to it. *BlockBuster* is a colorful, well done Tetris-type game. *Warrior* is a fun shoot-em-up adventure game. *MicroMan* is a graphic maze game played with a joystick. Battle the computer's armies to take over the planet in *Cinco*.

**TSP3: Games 1** *Crystal Caverns* is an adventure game with randomly generated worlds—you'll never travel the same world twice! *DozDot* is an adaptation of the classic 2-player connect-the-dot game. *PizzaDeliveryMan* has you running through the streets to get those pies to your customers. *TinyBall* is the world's smallest baseball game. *SurroundCycles* is a high-speed arcade game, based on the light cycle races from the Disney movie *Tron*.

**TSP2: Sounds** Animal sounds, musical instruments and many, many more—43 sound samples in all!

**TSP1: Maps of USA, Canada and Europe** Hi-Res IFF brushes of all 50 US States, 10 Canadian Provinces and countries in Europe. Each map has a 3D extrusion effect with cast shadow.

## SPECIAL EDITION TOOLCHEST

**RK1: MegaBall**—This disk contains the full-release version of *MegaBall*, complete with the level editor to create your own challenging worlds to conquer. This game is quite similar to *Arkanoïd* and allows two players with stereo sound and 5 soundtracks! Special RK price, \$14.95.

**RK2: MacMill**—This remarkable utility will allow you to record any mouse click or keypress and play it back as a macro at any time, inside any program. Also provides memory info/lock, alarm, screen blanker, mouse accelerator, mouse-to-menu, sunmouse and window cycling. Special RK price \$14.95.

## SAVE 39%!! SUBSCRIBE!

- A mixture of great utilities, application, games & more!
- Receive 6 bi-monthly double-disk issues for just \$54.95!
- Save \$34.45 off single-issue price!
- Convenient automatic home delivery
- Lowest possible prices!
- Receive your disks weeks before others do!
- Full Money-Back Guarantee: If you're not completely satisfied, we'll refund your money—no questions asked.

\*Based on single disk pricing including handling.  
Canadian subscriptions add \$5.00 shipping, all other Foreign add \$10.00 shipping

**TC34AB: Optimizer** will permanently speedup your hard drive or floppy disks. *LCD Calc* is a nice full-screen calculator. *Basez!* is a useful database program. *FixDisk* will correct many problems with disks. *BizCalc* is a loan analyzer. *Interfence* is a Tetris-type game. *Nubula* is a 3D space game. *PicBase* will allow you to track all the IFF images you have. *Hate* is a great Zaxxon clone.

**TC33AB: Measures 1.0** is an incredibly useful utility that will convert any type of measurement to another. *DiskLabeler* is a database designed for storing and printing 3.5" disk labels. *Jewels* is a Tetris-esque game of action and strategy. Switch is a fun board game. *DocBuster* will allow you to grab any screen and save it as an IFF picture. *Softball Manager* is a database for storing stats for softball—any number of leagues may be tracked. *WBExec* allows you to execute CLI commands from within the Workbench. Several Clipart images are also included.

**TC32AB: Computer Coloring Book** is a delightful program for children of all ages—comes with 15 pages of pictures to color again and again. *Listmaker* lets you make, edit, combine and print lists of words—great for those spelling tests! *Moresmooth!* scrolls text files smoothly on the screen and allows easy printing. *Pocket Billiards* lets you choose from several of the most popular pool games with realistic action. *Texture* allows you to create, manipulate and save (in standard IFF format) realistic fractal textured surfaces. *Plague* is a monster maze game. Also includes *Screen Fader*, *Screenwiper*, and *FixBeeper*.

**TC31AB: Calendar Publisher** is a professional-caliber calendar maker that is customizable. *CrossCircuit* is a 1 or 2 player action/logic game that calls for fast reflexes and thinking. *APR* is a much-needed printer utility. *Pizza Delivery Man* is a maze game where you deliver pies in your neighborhood. *Multiplexer* is a simple program that will let you see IFF pictures/brushes or playback IFF sound samples. Also includes *RAMscape*, 3-D vector objects and Hi-Res IFF brushes of maps and flags of European countries.

**TC28AB: Word Search Maker** lets you create word-search puzzles. *TimeCalc* is useful for anyone who has to calculate hours and minutes (great for adding up times of 20+ to make tapes!). *DrawBusters* is a fun game where you get rid of cigarettes, booze, pills and needles. *Wordfinder* lets you search binary or text files for a particular word or string (good for getting hints in your adventure games!). *KeyClick* will add a small audible click to your keys and *MouseClick* will do the same for the mouse buttons. *Sowar* is a game between the Allied Navy and the Empire Fleet. Plus Early American 3-D vector objects, digitized sound effects, and a directory program.

**TC25AB: ScreenToIFF** captures your screen to an IFF file. *PopCorners* lets you change the colors of your Workbench screen. *Warrior* is a fun shoot-em-up/adventure game for one or two players. *Kalidoscope* is a line drawing program. *Blockbusters* is a game where you get rid of blocks by pushing matching blocks into them. *Amidewind* will show-off your Amiga's ability to do solid-polygon animations. *Microscape* lets you examine memory at any location. Also includes Hi-Res IFF brushes of all 50 states and 10 Canadian provinces, nine digitized sounds and two small disk utilities and printer utility.

**TC24AB: TableMaker** is a tool for effortlessly building numerical tables. *Kooties* is a fun game where you have to assemble a bug before the computer beats you to it. *HyperText* lets you put links in a text file to other text, graphics, sound, animation, AReXX and other applications. *The Little Black Book* is a wonderfully useful telephone and address book. *Color Logic* is a MasterMind-type game. Also includes several disk and memory utilities—and some animal sound effects to top it off.

**TC23AB: Wherlax** lets you quickly and painlessly find a misplaced file on your drive. *Salsal* creates a window from which you can run your favorite programs. *MathAddict* lets you find the day of the week for any date in the century, also lets you enter statistical data to be analyzed, graphs data, and solves linear algebraic equations. *Pointer List Maker* lets you create your own pointers or import pointers from other programs and save them in a disk file. *DynoWars* requires more strategy and thought than your regular checker board game. Also includes *Mr. Monster* and *Trilion* games, 3-D objects, six sound effects and an animation of a prezel.

**TC22AB: Amiga Checkbook** is a fast checkbook manager with check printing ability, budget analysis, and a report writer. *AmiCrypt* is a file encryption/decryption tool to password-protect any file, a must for security. *WaveSyn* lets you design musical instruments and waveforms for use in other programs. It also lets you play your keyboard like a piano. *Cinco* is a game where you try to get five X's in a row before your opponent does. *AlterCLI* lets you change attributes of your CLI window (width, title, depth, height, location, colors) with a single command—very useful for scripts. Also includes an animation by renowned Amiga-artist Lou Markoya, as well as 3-D objects.



3D Master featured on TSP42

**TC21AB: Cinco** is a "risk-style" game where you battle the computer to take over the planet. *Batchman* allows you to execute CLI programs, batch files and AReXX scripts by simply clicking on a gadget. *Colors* prints color test sheets and assigns RGB values to printer and screen output...absolutely invaluable to achieve the best color printing results. *Easyfile* is a powerful database for home or a small business. *Sprite Editor* lets you easily create animated sprites. Plus 3-D fruit objects and five sampled sounds.

**TC16AB: Cyberscape** generates colorful, 3-D vector objects of terrain and saves your objects in Sculpt or Turbo-Sculpt format. *MathPlotter* graphs mathematical equations in both 2-D and 3-D. *Double Print* prints your text files on both sides of the paper. *Metamorph*, a graphic adventure game, *Tinyball*—the worlds smallest baseball arcade game and 6 digitized sound effects.

**TC15AB: Labelmaker** is a very easy to use label program. *SurroundCycles*, a high-speed arcade game. *DozDot*, an adaptation of the classical connect-the-dot game. A tutorial on animation techniques by Amiga-artist extraordinaire Brad Schenck complete with one of his animations. Also includes a collection of clip-art and more animal sounds.

**TC14AB: AmigoFile** is a database and address book. *Graph 3-D* lets you visualize complex data in a 3-D manner and save the results. *Spectrogram* analyzes and displays digitized sounds. *Pieronadonaball*—an animation by Lou Markoya. Also includes 3-D Tic Tac Toe, 3-D objects, food clip-art, and sampled sounds.

**TC13AB: StrucGen** lets you create gadget, text, bitmap, and window structures and writes the C source code for you. *LifeCycles* plots your biometrics. Create spectacular images with *Mandelbrot*. *Look*, a CLI utility that helps you find files on your disk quickly and easily. Plus 3-D objects, holiday clip-art, an Amiga Flight animation, *Draw head cleaning utility*, and technical discussion on how AmigaDOS stores information on disk.

**TC12: IFFFormat** formats disks that AmigaDOS normally won't. *ChartMaster* is a powerful graphing tool. *MoreSandy* generates an assortment of colorful graphic patterns and allows you to save them to disk. *Shark*, a game where you have to eat all the little perch you can catch to stay alive. Plus B&W clip-art, space ship 3-D vector objects, an animation, and *SpeakEasy* (C source code for the programmer to add speech to C programs).

**TC11: DiskSalvage** will fix corrupted disks and recover deleted files. *IconMaster* is an advanced icon editor. *AllenDuel* is a fast, shoot-em-up game. *Crystal Caverns* is a colorful, graphic adventure game like the arcade game. Also includes an animation, sound samples, 3-D dinner table objects, and Hi-Res monster clip-art.

## THE AMIGA WORLD TOOLCHEST

11835 Carmel Mtn. Rd #1304-T6  
San Diego, CA 92128

Please rush me these disks  
(Use product ID code—i.e. TC22)

#	#	#	#
#	#	#	#
#	#	#	#
#	#	#	#

NOTE: All "TC" disks count as TWO disks

Total disks	@ \$	each	...	\$
Total for special "RK" series disks	...			\$
Toolchest Subscription (\$54.95)	...			\$
CA Residents add 7.75% Tax	...			\$
Handling	...			\$ 3.00
Foreign Shipping	...			\$
Total enclosed	...			\$

Most orders shipped the following business day. No shipping charges within the USA. Canada add \$25 per disk, Foreign add \$50 per disk for air mail delivery. Payment in US funds only.

- ☐ Visa
- ☐ MasterCard
- ☐ Discover
- ☐ Check/Money Order

CC#: \_\_\_\_\_  
Expiration Date: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ St: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: ( ) \_\_\_\_\_

ORDERLINE (800) 677-0416  
TECHNICAL SUPPORT (619) 486-9538



# AMIGA MAN SUMMER

Orders Only  
USA & Canada  
1-800-258-0533

9AM - 9PM M-F, 10AM - 5PM SAT  
Open SUNDAY 12 - 5PM

## HiQ A500 Tower

TURN YOUR AMIGA 500 INTO A POWERFUL AMIGA TOWER.

Includes:  
Metal cabinet & speaker  
Keyboard Security, Speed LED,  
250W power supply  
10 drive bays

Daughter board with:  
4 A2000 Slots,  
3 PC Slots  
Accelerator Slot  
Video Slot

Keyboard Case w/cord

Install:  
Your 3.5" Drive  
Your Mother Board  
Your Keyboard

**\$629**

Toaster Compatible,  
All the power of the A2000 and More

## AMIGA 500 EXPANSION SET

512K RAM  
w/Clock/Calendar/Bat

& 880K Drive

**\$109**

## EXPANSION SYSTEMS

### DataFlyer 500

Hard drive controller  
Budget solution for your Amiga500  
Controller only

W/52MB HD **\$389**  
W/120MB HD **\$529**

DataFlyer RAM OK-\$99,  
2MB \$194, 4MB \$289

## Alpha Data

512K RAM Expander  
For A500

**\$34**

Commodore 501 Clone  
512K RAM w/Clock, Calendar, Bat.

## GVP SERIES II

### A500 HARD DRIVES

EXPAND UP TO 8MB RAM  
W/52MB Quantum

**\$495**

W/120MB Quantum **\$679**  
GVP/PC286 IBM Card **\$329**

## Alpha Data

### EXTERNAL 880K DRIVE

**\$79**

FULLY AMIGA COMPATIBLE

Other Amiga Compatible Drives  
A.I.R. Drive - \$89  
Roctec Ultraslim - \$95

## Grand Slam 500

Expand up to 8 MB Ram

**\$299**

**TRUMPCARD PRO 500** \$245  
The fastest SCSI controller

## SAVE ON THIS SPECIAL AMIGA 500 PACKAGE

INCLUDES: Free Bumper Sticker

512K RAM

880K 3.5 I

Mouse

Joystick

KindWords

Paint Program

F-40 Pursuit

I ♥ My AMIGA

With every order

BONUS:

Phasar 3.0

Ports of Call

Who, What, Where & When

Where in the World is Carmen San Diego

Hole in One Miniature Golf

Mastertype

Call

Commodore®  
**AMIGA®**

## SupraRAM RX

External RAM  
Expand your A500 to the MAX.

Pass-through design  
1MB up to 2MB

**\$129**

2MB up to 8MB **\$199**

## EXPANSION SYSTEMS

BASE BOARD

512K to 4MB  
RAM Expander  
For AMIGA 500

**\$95**

w/512K - \$120, w/1MB - \$145  
w/2MB - \$195, w/4MB - \$275

(100's of titles available)		Games	(Call for more titles)
A-10 Enhanced Tank Killer	\$37	Leisure Suit Larry 5	\$37
Agony	\$31	Lemmings	\$31
Battle Isle	\$37	Lemmings, Oh No! More...	\$32
Birds of Prey	\$37	Links	\$38
Black Crypt	\$37	Lord of the Rings	\$34
Castles	\$37	Mig 29 Super Fulcrum	\$31
Call	\$37	Murder	\$28
Drag, Laif 2, Time Warp	\$37	Ork	\$31
Dungeon Master 2	\$37	Out of This World	\$37
Elvira: Mistress of the Dark	\$37	Perfect General	\$37
Elvira 2: Jaws of Cerberus	\$47	Perfect General Data Disk	\$37
Eye of the Beholder	\$39	PGA Golf	\$34
Eye of the Beholder 2	\$43	Pnball dreams	\$39
F15 Strike Eagle II	\$37	Pools of Darkness	\$37
F19 Stealth Fighter	\$37	Populous II	\$37
Falcon	\$31	PowerMonger	\$41
Falcon Mission 1 or 2	\$19	PowerMonger WWI data disk	\$22
Fantastic Voyage	\$31	Railroad Tycoon	\$37
Fighter Duel (Corsair Vs Zero)	\$31	Secret of Monkey Island	\$39
Flight of the Intruder	\$37	Secret of Monkey Island II	\$39
Gateway Savage Frontier	\$34	Silent Service II	\$31
God Father	\$31	Sm City	\$31
Greens - (Microprose Golf)	\$37	Sm City Graphics 1 or 2	\$23
Guy Spy	\$37	Sm City Terrain	\$12
Heart of China	\$37	Space Quest IV	\$37
Hockey League Simulator	\$25	Speedball 2	\$25
H.O.I.	\$25	Strip Poker III	\$31
Jack Nicklaus Unlimited	\$25	Wayne Gretzky 2	\$34
Killing Game Snow	\$37	Wide World of Boxing	\$31
Kings Quest V	\$37	Willie Beamish	\$37
Knights of the Sky	\$37	World Circuit Grand Prix	\$37
Leander	\$31		

## EUROPE'S HOTTEST GAMES

A-320 Air Bus	\$41
Crime City	\$41
Cruise for a Corpse	\$41
Deuteros	\$40
Double Dragon 3	\$39
Defender of the Crown	\$33
Falcon	\$52
Fred Fish Collection	\$47
Gretzky Hockey	\$37
Guinness Disc of Records	\$39
Guinness Dictionary	\$47
Illustrated Holy Bible KJV	\$37
Illustrated Shakespeare	\$33
Lemmings	\$33
Mind Run	\$34
Murder Makes Strange.....	\$33
My Paint	\$33
Power Pinball	\$29
Sm City	\$39
Snoopy	\$33
Spirit of Excalibur	\$37
Team Yankee	\$33
Time Table Business	\$39
Time Table Science	\$39
Ultimate Basketball	\$33
Wrath of the Demon	\$33
Xenon II	\$39

I ♥ My  
AMIGA

CDTV	Education	SHIPPING - NORMALLY WITHIN 2 BUSINESS DAYS
American Vista	Adventures in Math	UPS GROUND (continental US)
Barney Bear School	Algebra	\$0 TO \$99
Barney Bear Goes Camping	Algebra II	\$100 TO \$199
Battle Storm	Amy's Fun-2-3 Adventure	\$200 TO \$499
Case of Cautious Condo	Barney Bear Camping	\$500 TO \$799
CD Remix	Barney Bear at the Farm	\$800 -
Classic Board Games	Barney Bear in School	2nd Day(Blue) add \$6 to UPS Ground
Defender of the Crown	Barney Bear in Space	Next Day(Red) add \$11 to UPS Ground
Falcon	Bible Scholar	APO/FPO add \$11 to Ground
Fred Fish Collection	Bible Reader (Internat.V.)	CANADA add \$11 to Ground
Gretzky Hockey	Bible Reader(King James)	PR, HI, AK add \$10 to Blue/Red
Guinness Disc of Records	Calculus	No surcharge for MASTERCARD, VISA and DISCOVER.
Guinness Dictionary	Carmen San Diego Time	3% surcharge for AMERICAN EXP.
Illustrated Holy Bible KJV	Carmen San Diego USA	Returns accepted for 10 days after date of purchase. Call for RA# before returning. Defectives replaced with same item. 15% Restocking fee for items returned and not exchanged for same.
Illustrated Shakespeare	Carmen San Diego World	International Orders (not APO, FPO.) send copy or FAX of front & back of Charge Card w/signature. Call or FAX for shipping quote.
Lemmings	Crossword Const. Kit	
Mind Run	Dinosaur Discovery Kit	
Murder Makes Strange.....	Discovery Math/Spelling	
My Paint	Distance Suns 3.0	
Power Pinball	Distance Suns 4.0	
Sm City	Distance Suns 4.0	
Snoopy	Distance Suns 4.0	
Spirit of Excalibur	Distance Suns 4.0	
Team Yankee	Distance Suns 4.0	
Time Table Business	Distance Suns 4.0	
Time Table Science	Distance Suns 4.0	
Ultimate Basketball	Distance Suns 4.0	
Wrath of the Demon	Distance Suns 4.0	
Xenon II	Distance Suns 4.0	

CDTV Keyboard,  
Infra-red Mouse & Disk Drive  
**\$199**  
Trackball Contrlr \$99

Mailing Address:  
Computer Basics, Inc.  
1490 N. Hermitage Rd.  
Hermitage, PA 16148



# SALE

Orders Only

USA & Canada 1-800-258-0533

9-9 M-F (West Coast customers call up to 6PM PST), 10-5 Sat. NOW open SUNDAYS 12-5PM  
24 Hour Fax line (412) 962-0279, Customer Service (412) 962-0533

No One will beat  
my Summer  
Specials..  
GUARANTEED!

Express your love  
for your Amiga  
T-Shirts, Caps  
and Mugs



## Complete Video Toaster Workstations

**BASIC  
WORKSTATION**  
\$4195

W/ 52MB HD, 7MB RAM, VIDEO  
TOASTER & MONITOR

**ENHANCED  
WORKSTATION**  
\$4895

W/ 52MB HD 25MHZ, 8MB RAM  
VIDEO TOASTER & MONITOR

**DELUXE  
WORKSTATION**  
\$5595

W/ 120MB HD, 40MHZ, 9MB  
RAM, VIDEO TOASTER,  
MONITOR

WORKSTATIONS FULLY  
ASSEMBLED AND TESTED  
New RACK MOUNT version  
Available - CALL

## Video Toaster \$2099 Enhancement Options

Personal TBC II	\$849
Personal V-Scope	\$62
Personal SFC	\$379
BCD 2000A VAC	\$849
DQ-TACO	\$1899
AmiLink C/I (cabs only)	\$995
AmiLink C/I (AB Roll)	\$1595
AmiLink/Toaster Software	\$150
Kitchen Sync	\$1599
<b>Toaster Fonts</b>	
1st Priz Toasted Fonts	\$159
Cinnamon I or II	\$62
Bread & Butter	\$69
Kara Toaster I or II	\$62
Masterpiece	\$89
Video Fonts 2	\$62
Screen Maker	\$62
Our Wedding	\$56

## ICD The ICD Advantage

**AdSpeed**  
68000 at 14.3 MHZ. Best Overall  
performance of any accelerator in  
its price range.

**Shuffle Board**  
Reroutes **df0:** to the external floppy  
connector. Boot from external  
floppy drive.

**AdIDE40** for 3.5" hard drives  
Smallest Amiga hard drive  
interface made for  
IDE(AT) drives

**AdRAM 540**  
Add up to 4 meg of  
RAM internally  
in your Amiga 500. **\$95!**

**Flicker Free Video 2 NEW**  
Eliminates interface flicker for  
any Amiga Computer. Use with  
VGA or  
Multisync Monitors **\$259**

**Novia 60i**  
60MB internal hard  
drive & interface  
for your Amiga 500.  
W/Built in AdSpeed **\$669**

**AdIDE Kits (Prima)**  
Now mount a 3.5 inch IDE hard  
drive internally in your Amiga  
500. Includes IDE 40,  
Shuffle Board  
and mountings **\$139**

**Prima 52**  
Above with  
52HD IDE  
Hard Drive **\$399**

**I ♥ My AMIGA**  
FREE Bumper Sticker  
with every order



Mug **\$6**  
T-shirts **\$8**  
Med, Lrg, X-Lrg  
Cap **\$8**

## Complete Digi-View System Mediastation

Includes:  
**Digi-View Gold 4.0**  
Digi-Print  
Elan Performer  
Copy Stand  
Panasonic  
1410 camera  
video switch  
and all cables.

**Only complete system offered**  
Digi-View Mediastation **\$165**  
1410 Camera w/lens **\$179**  
Copy Stand **\$62**



**Beetle Mice**  
**\$33**

**COLORS**  
MOUSE - BUTTONS  
Red - Black  
Yellow - Black  
Black - Black  
Blue - Black  
Black - Yellow  
Red - White - Blue  
Other colors on  
special order

## DKB MegAChip

Get 2 megabytes of chip  
RAM for your  
A2000 & A500  
w/Agnus \$295

**2632 MemoryBoard**  
for the Amiga 2500 and 2630 accel Up to 32MB RAM \$509

## Multi-Start II

Dual ROM Board assembly  
Run 1.3 or 2.0 on your Amiga  
500/2000 at the push of a key.

**\$55**  
w/2.0 ROM **\$139**

## A2000 Harddrive Controllers

**Grand Slam**  
add up to 8MB RAM  
& built-in printer port **\$239**

**TRUMPCARD PRO \$159**  
The fastest SCSI Controller for the Amiga

**TRUMPCARD A2000 \$89**

## EXPANSION SYSTEMS

**DataFlyer 2000**  
budget hard drive solution for  
your A2000  
SCSI  
Controller  
only **\$85**

W/52 MB Quantum HDS \$319  
W/120MB Quantum HDS \$479

**DataFlyer RAM**  
For DataFlyer 2000  
OK \$99, 2MB \$189, 4MB \$279

## GVP SERIES II



W/ 52MB HD  
Expand up to 8MB RAM  
W/120MB HD **\$549**  
W/240MB HD **\$849**

## MicroBotics VXL 30

68030 Acceleration  
for A500, A2000

25MHz **\$329**  
with 68882 **\$459**

40MHz **\$479**  
with 68882 **\$649**

Compatible with 1.3 & 2.04 ROMS  
**VXL RAM-32 2MB \$319**  
**VXL RAM-32 8MB Call**

## GVP #1 Name in AMIGA Accelerators

**G-Force 30 - NEW**  
68030 All in one board  
with SCSI interface

25MHz/25/1MB **\$699**  
40MHz/40/4MB **\$1199**

w/52MB Drive **\$1399**  
w/120MB Drive **\$1499**

**50MHz/50/4MB \$1579**  
w/52MB Drive **\$1779**  
w/120MB Drive **\$1879**  
Expandable to 64MB of 32-bit RAM  
4MB 32Bit extra RAM **\$299**

## Productivity Software Books Hardware

### Art & Animation

Art Department Pro 2.1	\$164
Deluxe Paint IV V4.1	\$122
Disney Anim. Studio	\$79
Draw 4D Pro	\$299
Imagine 2.0	\$159
Pixel 3-D 2.0	\$75
Prof. Draw 2.0	\$125
Spectrator	\$62
Turbo Silver 3.0	\$59
Vista Pro 2.0	\$59
<b>Databases</b>	
Microfile Filer	\$62
Microfile Filer PLUS	\$112
SuperBase Personal 2	\$94
SuperBase Pro 4	\$249
<b>Music</b>	
Bars and Pipes	\$99
Bars and Pipes Pro	\$219
Delix Music Const. Set	\$69
Super Jam	\$89
Multimedia Kit	\$38
Music Box A	\$38
Music Box B	\$38
<b>Tele-Communications</b>	
A-Talk III	\$37
Baud Bandit	\$30

### Spreadsheets

Advantage	\$125
Maxi Plan Plus 2.0	\$62
Professional Calc	\$189
<b>Utilities</b>	
Arex	\$31
Cross DOS	\$25
Directory Opus	\$37
DisksMaster II	\$44
Labeldix	\$47
Project D 2.0	\$37
RX Tools	\$35
Quarter Back 5.0	\$44
Quarter Back Tools	\$53
SAS/Latic C	\$199
Visionary	\$62
Workbench Management	\$35
<b>Video &amp; Presentation</b>	
AmigaVision	\$89
Broadcast Titrer II	\$229
Can Do 1.6	\$85
Pro Video CG	Call
Pro Video Post	\$209
Scala	\$275
Showmaker	\$229
TV Titr Professional	\$99
Video Director	\$169

### Word Processors & Desk Top Publishing

Final Copy	\$59
Page Stream 2.2	\$169
Pelican Press	\$62
ProWrite 3.2	\$56
Professional Page 3.0	\$179
Proper Grammar	\$59
<b>EUROPEAN MAGAZINES</b>	
AMIGA Format w/Disk	\$10
AMIGA Action w/Disk	\$10
C.U. AMIGA w/Disk	\$10
AMIGA Power w/Disk	\$10
1 for AMIGA w/Disk	\$10

### VIDEO TOASTER

**2.0  
UPGRADE  
\$329**

### Books

Amiga for Beginners	\$13
Amiga Dos Quick Ref. Guide	\$8
Amiga Dos Inside & Out	\$19
Amiga Basic Inside & Out	\$19
Machine Language	\$25
Graphics Inside & Out	\$16
Amiga C for Beginners	\$15
Amiga C for Advanced	\$26
Desktop Video Power	\$23
Best of AmigaTricks&Tips	\$23
Using Arex	\$26
Imagine Companion	\$24
ROM Kernel/Audios 3rd Ed.	\$34
ROM Kernel/Devices 3rd Ed.	\$26
ROM Kernel/Hardware 3rd Ed.	\$26
Visionary Handbook	\$22
<b>Video Tapes</b>	
Amiga Primer	\$25
Animation 101	\$29
DCTV: A Guided Tour	\$29
Deluxe IV Video Tape	\$24
Desktop Video Volume #1	\$25
Desktop Video Volume #2	\$25
Imagine: A Guided Tour	\$29
Pro Techniques w/ DPaint	\$25
Toaster Microwave	\$34
The Newtek Video Toaster	\$22

### Hardware

<b>Midi's</b>	
ECE Midi	\$49
Midi Gold 500	\$56
Midi Gold Insider	\$65
Midi Connector w/ cables	\$59
Phantom SMPTE MIDI	\$229
Midi cable 6ft	\$8
Miracle Keyboard	\$349
<b>Audio</b>	
Audiomaster 4	\$62
Audition 4	\$62
Digital Sound Studio	\$62
Perfect Sound 3.1	\$69
SoundMaster	\$139
Studio 16/AD1012	Call
<b>Video</b>	
Chroma Key	\$329
Alter ImageGenlock	\$199
DCTV	\$389
MiniGen	\$199
RocGen Plus	\$359
Supergen Genlock	\$649
Video Blender	Call
Video Master	\$999
<b>Misc.</b>	
Big Foot 200W powersup.	\$89
Flicker Fixer	\$249
A2000 Internal Drive	\$89
AMAX 2 PLUS	\$399
Power PC Board	Call

### Joysticks, Mouses & Trackballs

Silk Stik Joystick	\$7
Boss Joystick	\$15
Tac 50 Joystick	\$17
Bat Handle Joystick	\$25
Jin Mouse	\$25
Opto-Mechanical Mouse	\$35
Bong Optical Mouse	\$294
GI Cordless Mouse	\$75
GI Cordless Trackball	\$195
Amtrak Trackball	\$69
Kraft Trackball	\$69
Mouse Switch (manual)	\$69
Mouse Switch (automatic)	\$69
<b>Supra Modems</b>	
2400 External	\$89
2400Plus External	\$139
2400Plus 2 Internal	\$169
FAX Modem 4400	\$339
FAX Modem 9600	\$249
FAX Modem Software	Call
<b>Zoom Modems</b>	
2400 Ext.	\$75
2400w/MPFS v.42bis	\$145
9600 v.32 bis	\$399
Cable \$10 (\$5 w/modem)	

**FINAL COPY \$59** **PROF. PAGE 3.0 \$179** **PROWRITE 3.2 \$56**

FREE Bumper Sticker with every order

**I ♥ My AMIGA**

**2.04 ROM for  
AMIGA 500/2000  
includes books  
and work-  
bench disk**  
**\$85**



# The Game Preserve

## BLACK CRYPT EYE OF THE BEHOLDER II

By Peter Olafson

AMIGA DUNGEON CRAWLS aren't likely to get much better than this. *Electronic Art's Black Crypt* (\$49.95) offers relatively intelligent enemies, a form of auto-mapping, five saved-game positions, a clue book built into the manual, and four times the colors and twice the levels of *Dungeon Master*. What more could you ask for?

You must take a party of four—fighter, cleric, magic user, druid—into a vast three-dimensional dungeon to retrieve four magic weapons and send Estoroth Paingiver, your not-so-basic evil cleric, back into the void he's learned to call home. With a little experience, the you-click-on-it-you-bought-it heart of the game will become familiar to those who've graduated from (or died unpleasantly in) *DM* or *Eye of the Beholder*.

The graphics are something else: It's absolutely the best-looking game of its type around. BC's cool light comes from the 64-color Extra\_Halfbrite graphics. Each of the tiles from which the game was built—doors, gates, columns, niches—looks as if an artist had sweated blood over it, and you'll gawk at the splendor of your surroundings through the first few of the 28 levels.

The lushly appointed, jump-back-startling monsters are not the usual victory-or-death jokers. (They know enough to retreat.) The dusky corridors lead through levels as large as 33-by-35 to a maddening parade of puzzles involving the usual array of pressure plates, teleports, switches, and buttons. (Mer-



In *Black Crypt*, what you see is what you whomp.

cifully, long-lived and cumulatively constructed level maps are available from the Wizard Eye spell.)

What more could you want? Well, maybe a touch more atmosphere, eh? *Black Crypt* doesn't use sound nearly as effectively as *Dungeon Master*, and it sometimes seems almost too gorgeous for the task at hand—more like crossing Mrs. Paingiver's freshly shampooed living-room rug than her son's messy basement workshop.

*Eye of the Beholder II: The Legend of Darkmoon* (\$59.95, *Strategic Simulations*) isn't quite on the same Claudia Schiffer ►

The good news is that once you've weathered the Catacombs of *Studio 3 in Elvira II: The Jaws of Cerebus* (*Accolade*, \$59.95), it's all downhill from there. (Metaphorically, at least. It's uphill getting out of the Catacombs.) The bad news is that we're not out of the Catacombs yet.

The counter-clockwise trek through Level 6 is long and nasty. You'll know you're headed in the right direction if you keep hitting traps and, finally, a sorcerer. Six levels is an awful lot of territory to repeat, so I hope for your sake you have the right disguise on hand to fool him. (To look like the wizardish picture from one of the haunted house's bedrooms, you need the

## CRIB NOTES By Peter Olafson

wizard robe from the costume room and stuff from the makeup case.) When he asks where you've been, try the "food poisoning" excuse. It's even true. (Remember the piranha last time?)

That *Elvira*-like creature in the western reaches of the level isn't *Elvira*. It's an *Elvira* substitute—much like the silhouette spotted in that dark hallway off the kitchen—and it turns into something very nasty if you don't kill it pronto. Don't forget to get the Indian's war lance afterward.

Make sure you have a solid inventory of spells and save your game

before you hit the surface, for here you'll face the fight of your life from Death himself. (Cerberus knows him from Hell, I guess.) You'll need to launch an *Unholy Barrier* spell and then start bashing him with your combat spells and *only* spells: Holy Blasts, Fireballs—the works. Don't try to maneuver, however; your magical shield will dissolve.

The Spider Caves of *Studio One* are next. There's an elevator close to the entrance. Unfortunately, it doesn't work yet. You need a key, and the key is three floors away. While you're sulking, do be sure to turn the elevator on.

Actually, Level One is pretty simple—the main feature being the central lake. A rope vital to the game's final encounter can be found at the bottom, but you'll be there also unless you have two spells: *Breathe Underwater* and *Buoyancy*. The first you should have coming out of your ears, and if you don't, there are components all over the caves's many rooms. (You must defeat the inhabitants to collect them, however.) *Buoyancy*, on the other hand, is tricky; it requires herring bones that you can find only in a room in the east portion of Level Four of the Catacombs. (Reader starts cursing a blue streak.) Just as I thought. We'll wait up for you.

Back so soon? Okay, you'll run ►

To locate vendors of the games reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 106.



**Toaster Mania**  
from**The Multimedia Specialists!****40 MHz / '030  
TOASTER  
WORKSTATION**

- Toaster 2.0
- Quantum 105MB Hard Drive
- GVP GForce '030 combo 40/4 with Math Coprocessor
- 9MB RAM (8MB 32 Bit)
- 14" Stereo Monitor

**\*\$5,199****ENTRY LEVEL VIDEO  
TOASTER WORKSTATION**

- Toaster 2.0 • Quantum 52MB Hard Drive
- 7MB RAM • 14" Stereo Monitor

**\*\$3,899****25 MHz / '030  
TOASTER WORKSTATION**

- Toaster 2.0 • Quantum 52MB Hard Drive
- GVP 25 MHz 68030 Accelerator Card
- 10MB RAM (9MB, 32 Bit) • 14" Stereo Monitor

**\*\$4,699****ULTIMATE  
50 MHz TOASTER  
WORKSTATION**

- Toaster 2.0
- Maxtor 120MB SCSI Drive
- GVP GForce '030 Combo 50 with Math Coprocessor
- 9MB RAM (8MB, 32 Bit)
- (2) Personal TBC II or Kitchen Sync (your choice)
- 14" Stereo Monitor

**\*\$7,299****YOUR PRICE INCLUDES:**

- Installation by our trained technicians
- Knowledgeable support staff to assist you in designing the system YOU need
- All products sold carry full manufacturer's warranty and documentation
- No surcharge for credit cards

**\*FREE DELIVERY in the contiguous 48 states****Desktop Video & Studio**

AGFA Video Unlimited Type Pack 25T	122.95
Amiga World Toaster Video Tape	19.95
Animation Station	29.95
ASDG Art Department Pro 2.1	147.95
ASDG Art Department Pro Conv. Pack	57.95
Bread & Butter Fonts	57.95
Broadcast 3D Fonts for Light Wave	67.95
Broadcast 3D Fonts for Imagine	82.95
Caligari 2 (Reg. 2 MB)	249.95
Can Do	79.95
Cinnamon Toast Fonts 1 or 2	57.95
Deluxe Paint 4.1	97.95
Director 2.0	75.95
Directory Opus	36.95
Disney Animation Studio	74.95
Draw 4D Professional	184.95
Exotic Cars Volume 1 & 2 Imagine	29.95
Exotic Cars Volume 1 & 2 Lightwave	29.95
Fractal Pro 5.0	87.95
Kara Toaster Fonts 1 or 2	57.95

Image Master V.2.0	132.95
Imagine 2.0	244.95
Masterpiece Toaster Fonts	57.95
Masterpiece 3D Fonts for Lightwave	57.95
Our Wedding (24 Bit)	52.95
Pix Mate	37.95
Pixel 3D	67.95
Pro Fills Volume 1 2.0	29.95
Pro Textures Volume 1	39.95
Pro Toaster Fonts 1 - Foreign Language	54.95
Pro Toaster Fonts 2 - Serif Type	54.95
Pro Toaster Fonts 3 - Decorative Display	54.95
Pro Toaster Fonts 4 - Flags of the World	54.95
Pro Video CG II	112.95
Pro Video Post	154.95
Quarterback / Quarterback Tools	49.95 / 57.95
Raster Link	111.95
Real 3D Professional	269.95
Scene Maker	29.95
ScreenMaker 2.2	57.95
Scenery Animator	57.95

Sculpt Animate 4D	249.95
ShowMaker	229.95
T Rex Professional	72.95
Transporter Animation Controller Software	129.95
Toastermaster	87.95
TV Show V.2.0	56.95
TV Text Professional	97.95
Ultimate Guide to Toaster 1 or 2 (video tape)	32.95
VideoClips Toaster Font Volume II	29.95
Video Director	137.95
Vista Professional	57.95

**Genlock**

Video Master	Call
ChromaKey +	339
Supergen	619
Supergen 2000S	Call

**Storage**

Quantum SCSI 52 / 105 / 240	205 / 329 / 655
Maxtor SCSI 7120 / 7213	349 / 519
Syquest 44MB / 88 MB	299 / 409

**Single Frame Controller**

BCD 2000A	649
Personal SFC 20	339

**Time Base Correctors**

DPS 230	Call
IDEN TB Card / TR-7 Remote	849 / 129
Kitchen Sync	Call
Kitchen Sync Genlock Options	159
Personal TBC II	Call

**Other**

Bread Board Video Delay Line	309
DCTV	285
Firecracker 24	825
Flicker Free Video II	235
Mega Chip 2000 with Super Agnus	285
Multistart II	42.95
Personal VDA-1000 (IBM or Amiga slot - please specify)	129
Professional Video Chassis	269
Personal VScope	Call

**• • • Turn to Pages 72 & 73 for Accelerators & More Amiga Product Specials! • • •****CAMCORDERS • VCR'S • A-V MIXERS • VIDEO MONITORS • INDUSTRIAL CAMERAS • EDITING DECKS****CALL FOR LOW, LOW PRICES!****SUPER VHS • VHS • Hi-8 • 8mm****CALL FOR LOW, LOW PRICES!****Panasonic****Super VHS Video Cassette Player****AG-7650****AG-7750****Professional Editing VCR****CAMCORDERS / VCRs****Audio Video Mixers****WJ-MX50 NEW!****WJ-MX12****WJ-AVE5****WJ-AVE3****SONY****Vbox****Vdeck****Hi-8 Video Tape Case Price Sale!****AUTHORIZED DEALER OF:****Canon SONY****Panasonic JVC****PHILIPS MINOLTA****TOSHIBA RICOH****JVC** Super VHS VCRs  
"SPECIAL PURCHASE"**MINOLTA****NEW!** Hi-8, 2 Chip  
Camcorder**Panasonic****CT-1382 Y**  
Video Monitor**CT-1382 VY**  
Monitor/Receiver  
with Remote**To Order Call 800-558-0003, turn to page 72-73 for more specials & ordering information**



level of good looks as Black Crypt, but it's a sweet step up from the excellent original game, and has more of that heavy air in which BC is wanting. Its world is substantially larger (including a wolf-ridden forest), the graphics are good to stellar, and the sound is solid. I actually held my breath a few times as I heard footsteps approach in the temple's stoney corridors...and then exhaled as they receded. Whew!

There's no rest for the weary here. Fresh from purging the Waterdeep sewers in EOB, you and your lot have been enlisted to minister to the unwholesome inhabitants of the Temple Darkmoon, where people are disappearing like incumbent congressmen.

It's the usual monster mash—hack, slash, grab, heal, and save—but with many more of the neat touches than I recall from the first game. Lovely stills often crop up for key encounters. Looking at a new-found scroll may summon a graphic inset of a scorched fragment of map. Party members even comment on the lay of the land—be it a curious disarrangement in the bushes or a draft from a wall.

Both these games are superior examples of the genre, and devotees will be happy with either. However, neither feels quite fresh: What used to be something special has become a cottage industry—enough with these DM clones! We've been crawling in square-by-square dungeons long enough. Could I try on something that scrolls, please?

## PANZER BATTLES

By Jeff James

IN THE SUMMER of 1941, Operation Barbarossa—Nazi Germany's invasion of Russia—plunged both countries into nearly four years of armed conflict. In a series of battles that ranged from the outskirts of Moscow to the streets of Berlin, the war for the Russian Front helped seal the fate of Hitler's Third Reich. **Panzer Battles** (Strategic Studies Group, \$49.95) recreates six of these great tank battles.

Instead of moving each unit about the hex-grid map individually, you (and your computer or human opponent) act as a Corps Commander, giving orders to computer-controlled regimental commanders. These units then try to carry out your orders as closely as possible, directing the units under their command—a refreshing change from the norm. If you tire of the six included scenarios, you can create your own, as well as paint your own terrain and units with, respectively, the Warplan and Warpaint utilities.

### CRIB NOTES

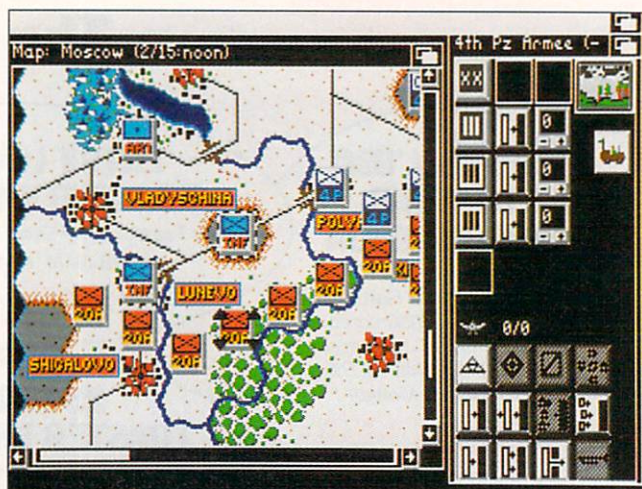
into a nymph in the lake. Bop it on the head to subdue it. In fact, you can pretty much bop all the routine under-a-large-rock-type creatures in the caves. (The exception is the ants, who have vulnerable tummies and an aversion to certain spells.)

The same hit-'em-in-the-head rule holds for a scorpion who occupies a niche off the western edge of the second level. This critter is guarding a scroll of binding—another essential ingredient for success in your run-in with the top dog. (Sounds as though we're getting close to the end, right?)

The only real trick on Level Three

is getting to the exit across that rather imposing empty space. You'll need to cut part of the web, and then use it to swing across. (While you're here, if you feel adventurous, save your game and try approaching the central web from the south.)

Level Four, and lots to do. In your wanderings, you'll eventually come upon a fellow stuck in the spider web. The key to the elevator is in his wallet, but you'll need a Telekenesis spell to loosen it. Yes, it's another one of those horrible one-shot spells whose components are invariably as far from you as possible at the moment you need them most. In this case, the component is



Following your orders, the Russian 20th Army tries to envelop an invading force of German infantry.

Although it offers pull-down menus and windows, Panzer Battle's interface and file requesters are eccentric—on my A3000, Panzer Battles obstinately refused to recognize my hard drive's WORK: partition. Another sore spot is the game's chunky, 32-color 320x200 screen resolution. Because of it, the program constantly zooms about the playfield to reveal the action on some other section of the map, which can be disorienting. The game also lacks a strategic map option, making it impossible to see the battlefield as a whole.

Panzer Battles isn't copy protected, and an included installation program easily copies it to a hard drive. Although the game was noticeably faster on an A3000, it performs nicely on a dual-floppy A500 (as long as it has one meg of RAM).

While casual gamers might find Panzer Battles too involved to enjoy, hard-core war-game and Russian-Front enthusiasts will find it well worth the effort.

## SIX FROM SIERRA ON-LINE

By Peter Olafson

THE EARLY GAMES from *Sierra-On-Line* were never known for taking advantage of the Amiga's special gifts. About the

*Continued on p. 90.*

the magnet in the radio in the typing pool back in the studio offices. (Reader does best Yosemite Sam imitation.)

Now you get to tango with the mother of all spiders, who you should be able to spot across the web. You can't kill it, but you can trap it rather nicely. Fire an Ice Dart at it to get its attention and, when the spider starts for you, lead it to the elevator and imprison it behind the doors.

By now, you're probably not too surprised to discover that the comely creature you find afterward isn't Elvira after all, but a wasp—a big damn wasp. You shouldn't have

much trouble stinging it back if you still have a decent supply of high-end combat spells. Take the chief's tomahawk, get back to Level Three and ride the elevator to civilization.

Smells like endgame spirit, eh? So where is Elvira, anyway? Well, think of the places where you haven't been able to do much, and it'll come to you. There's the monster in the basement of the haunted house, and the priest at the back of the church atop the catacombs.

Let's tackle the haunted house first. Take the barometer from the foyer, put the copper rod from the studio boiler room on the chimney

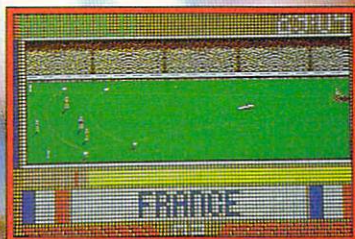
*Continued on p. 90.*



# THE Carl Lewis CHALLENGE



*Carl Lewis*



Take the *Carl Lewis Challenge* and select, manage, train and control a team of athletes in their all-out attempts to win gold in Javelin, 100m Sprint, 110m Hurdles, High Jump and Long Jump.

## GAME FEATURES

- Digitized animation of real world class athletes.
- Up to four player simultaneous action, each managing their own squad of athletes.
- 256 Color VGA
- Fully digitized action replays.
- Customized in-depth training systems and control options, with statistical analysis of athlete training profiles.
- Up to five different control options.
- Adlib, PC Speaker and Soundblaster sound support.

Follow in Carl Lewis' footsteps and go for gold!

**PSYGNOSIS**



## PSYGNOSIS

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



# TENEX

## Computer Express

# Your Amiga Source

Commodore®  
**AMIGA**

# 29995



**1995**  
**Save 80% on  
Deluxe Music  
Limited Supply!!**

### DELUXE MUSIC CONSTRUCTION KIT.

Deluxe Music Construction Kit

79419

19.95

## MIDI Interface

### Limited Supply!!

# 2995

### MIDI INTERFACE.

Want to connect your Amiga to MIDI instruments? Here's the lowest price we've ever offered on a full function MIDI interface. Plugs into the serial port of your Amiga 500 or 2000. Includes bypass port and switch so you won't have to disconnect your equipment to use your modem or other serial peripheral.

MIDI Interface

C10116

29.95

One-foot MIDI cable

A69085

4.95

Ten-foot MIDI cable

A69099

8.95



## Unheard of Low Price!!

### AMIGA 500 COMPUTER.

Includes A500 computer with built-in keyboard and floppy disk drive, power supply, mouse, documentation, and Workbench software.

Amiga 500

C10527

299.95

## Special Upgrade Bundles!!

### AMIGA 500 BONUS PACK.

Includes A500 computer PLUS TV adapter, Tetris, Carmen Sandiego, and Textcraft software.

Amiga 500 Bonus Pack

C10204

339.95

### AMIGA 500 POWER PACK.

Includes all A500 Bonus Pack items PLUS 512K memory expansion w/clock and calendar, WICO joystick and typing tutor, games, and productivity software.

Amiga 500 Bonus Pack

K10575

399.95

### AMIGA 500 SUPER GRAPHICS PACK.

Includes all A500 Power Pack items PLUS 1084S Stereo monitor.

Amiga 500 Super Graphics Pack

K10586

669.95

### AMIGA SYSTEM UPGRADES

#### GVP A500 IMPACT SERIES II HARD DRIVES

A500-HD6-OMB/520 II	93981	499.00
A500-HD6-OMB/1200 II	C10039	649.00
A500-HD6-OMB/2400 II	C10047	899.00

#### GVP A2000 IMPACT SERIES II HARD CARDS

A2000-HC8-OMB/520 II	93994	379.00
A2000-HC8-OMB/1200 II	C10059	508.00
A2000-HC8-OMB/2400 II	C10066	819.00

#### GVP IMPACT SERIES II HARD DRIVE/

#### HARD CARD MEMORY EXPANSION

1MBYTE SIMM	93993	44.95
-------------	-------	-------

#### TENEX INTERNAL A500 HARD DRIVES

TENEX 52MBYTE KIT	95719	CALL
TENEX 105MBYTE KIT	95724	CALL

#### AMIGA A500 EXTERNAL HARD DRIVE

A500 Hard Drive	84698	CALL
-----------------	-------	------

#### ROTEC 3.5" EXTERNAL FLOPPY DRIVE

3.5" External Drive	89276	94.95
---------------------	-------	-------

#### DATAFLYER 500

DATAFLYER 500	99062	139.95
---------------	-------	--------

#### DATAFLYER 2000

DATAFLYER 2000	99056	79.95
----------------	-------	-------

#### SCSI HARD DRIVES, 1" High

Quantum 240MB, 3.5", 16ms drive	98448	CALL
Quantum 105MB, 3.5", 17ms drive	97124	CALL

#### DATAFLYER RAM, 2MBYTE

DATAFLYER RAM, 2MBYTE	99080	179.95
-----------------------	-------	--------

#### DATAFLYER RAM, 4MBYTE

DATAFLYER RAM, 4MBYTE	99091	259.95
-----------------------	-------	--------

#### DATAFLYER RAM, 8MBYTE

DATAFLYER RAM, 8MBYTE	99109	399.95
-----------------------	-------	--------

#### 1MBYTE x 8 SIMMS

1MBYTE x 8 SIMMS	93993	44.95
------------------	-------	-------

#### BIGFOOT POWER SUPPLY

BIGFOOT POWER SUPPLY	92898	94.95
----------------------	-------	-------

#### SUPRADRIVE 500XP HARD DRIVES

52MBYTE with 1MB	96445	465.00
52MBYTE with 2MB	96455	545.00
120MBYTE with 2MB	96643	665.00
240MBYTE with 2MB	96653	909.00

#### SUPRADRIVE 500XP UPGRADES.

512KByte kit	97255	23.95
2MBYTE kit	97263	99.95

#### SUPRADRIVE A2000 HARD DRIVES.

52MBYTE	97241	319.95
120MBYTE	96694	489.00
240MBYTE	96704	809.00

#### IDE HARD DRIVE INTERFACE

AolIDE/44	94825	119.95
-----------	-------	--------

#### WORDSYNC SCSI INTERFACE

WordSync interface	88673	99.95
--------------------	-------	-------

### IDE & SCSI HARD DRIVES

Quantum Pro IDE 52MBYTE	96364	CALL
Western Dig. IDE 85MBYTE	A59542	CALL
Quantum Pro IDE 105MBYTE	A96380	CALL
Western Dig. IDE 212MBYTE	A57546	CALL
Quantum Pro SCSI 52MBYTE	97117	CALL
Quantum Pro SCSI 105MBYTE	97124	CALL
Quantum Pro SCSI 240MBYTE	98448	CALL

### SUPRA MODEMS

SUPRAMODEM 2400	96667	79.95
Modem Serial Cable	A42447	12.95
SUPRAMODEM 2400+	96678	116.95
SUPRAMODEM 2400Z+	96688	124.95
SUPRA FAX/MODEM EXTERNAL		
FAX/Modem, v.32	97149	239.95
FAX/Modem, v.32bis	97154	309.95
AMIGA 1680 MODEM	79237	29.95
PLATINUM ONLINE	88486	39.95

### AMIGA INPUT DEVICES

BEETLE MOUSE W/PAD	94074	34.95
BOING! MOUSE W/PAD	94089	99.95
ROTEC AMIGA MOUSE	95252	39.95
THE WIZ TABLET	96489	239.95
FLEXIDRAW 184-A LIGHT PEN	82037	89.95
SHARP COLOR SCANNER	94335	549.00
TRIPLETRACK TRACKBALL	96994	49.95

### GVP ACCELERATOR BOARDS

#### G-FORCE 030—25MHz 68030 ACCELERATORS

Combo030-25/25/1/0	99133	679.00
Combo030-25/25/1/52	99147	749.00
Combo030-25/25/1/120	99152	929.00
Combo030-25/25/1/240	99161	1075.00

#### G-FORCE 030—40MHz 68030 ACCELERATORS

Combo030-40/40/4/0	99175	1169.00
Combo030-40/40/4/52	97538	1399.00
Combo030-40/40/4/120	97545	1519.00
Combo030-40/40/4/240	97553	1749.00

#### G-FORCE 030—50MHz 68030 ACCELERATORS

Combo030-50/50/4/0	97568	1559.00
Combo030-50/50/4/52	97573	1769.00
Combo030-50/50/4/120	97589	1889.00
Combo030-50/50/4/240	97590	2049.00

#### G-FORCE 040—28MHz 68040 ACCELERATORS

G-Force040-28/28/2/0	99124	2099.00
----------------------	-------	---------

#### G-FORCE ACCELERATOR RAM UPGRADES

1MBYTE, 60ns SIMM	C10076	89.95
4MBYTE, 60ns SIMM	C10089	239.95
1MBYTE, 40ns SIMM	C10092	219.95

### SUPRA MEMORY & ACCELERATORS

SUPRAMEM 500	94794	49.95
SUPRAMEM 500 RX with 1MBYTE		
500 RX w/1MBYTE	94016	124.95
1MBYTE Upgrade Kit	97312	64.95
SUPRAMEM 500 RX with 2MBYTE		
500 RX w/2MBYTE	94029	185.95
2MBYTE Upgrade Kit	97278	99.95
SUPRAMEM 2000		
with 0MBYTE	89048	109.95
with 2MBYTE	89683	165.95
with 4MBYTE	88691	224.95

### AMIGA ENHANCED CHIP SETS

FAT AGNUS, 2MBYTE		
Fat Agnus 8372B, 2MBYTE	98564	79.95
Fat Agnus 8372B/MegaChip 2000	C10013	299.00
FAT AGNUS, 1MBYTE	98553	59.95
SUPER DENISE 8373	98572	44.95

### STANDARD CHIP SET REPLACEMENTS

DENISE 8362	98585	24.95
PAULA 8364	98597	24.95
GARY 5719	98600	12.95
CIA 8520A	98612	11.95
ROM 1.3	98624	29.95

### ADD IBM COMPATIBILITY

POWER PC BOARD	96620	269.95
PC286 MODULE FOR GVP	97713	399.00
ATonce PC/AT EMULATOR	A70756	329.00

### DATA STORAGE

#### WT-150 TAPE BACKUP

External Backup	94586	699.00
Internal Backup	94572	629.00

#### SYQUEST DRIVES FOR AMIGA & MAC

44MBYTE Drive	A63425	499.00
88MBYTE Drive	A62934	639.00
44MBYTE Cartridge	A60583	79.95
88MBYTE Cartridge	A62872	169.00

#### 20MBYTE FLOPPY DISK DRIVE

Internal Floppy Drive	98668	529.00
External Floppy Drive	98659	619.00
20MBYTE Floppy Diskette	98160	19.99

### GRAPHICS SOFTWARE

#### ANIMFONTS 1

96588	29.95
-------	-------

#### ANIMFONTS 2

96724	29.95
-------	-------

#### ANIMFONTS 3

96738	29.95
-------	-------

#### ART DEPT.

PROFESSIONAL	92135	159.95
--------------	-------	--------

#### Conversion Kit

92149	52.95
-------	-------

#### BUSINESS CARD MAKER

96039	39.95
-------	-------

#### CALIGARI 2

98047	259.95
-------	--------

#### COMIC SETTER

81815	41.95
-------	-------

#### DESIGN WORKS

94439	79.95
-------	-------

#### THE DIRECTOR

90147	44.95
-------	-------

#### GOLD DISK TYPE

90107	39.95
-------	-------

#### Publisher Pack

90067	34.95
-------	-------

#### Designer Pack

90072	39.95
-------	-------

#### Decorative Pack

90092	39.95
-------	-------

#### Video Pack

96554	44.95
-------	-------

#### HEADLINES 1

96568	42.95
-------	-------

#### HEADLINES 2

90166	244.95
-------	--------

#### IMAGINE 2.0

82109	29.95
-------	-------

#### INTROCAD

81824	41.95
-------	-------

#### MOVIE SETTER

94390	129.95
-------	--------

#### OUTLINE FONTS

81869	89.95
-------	-------

#### PAGE FLIPPER F/X

77970	79.95
-------	-------

#### PAGE SETTER II

C10679	159.95
--------	--------

#### PAGESTREAM 2.2

90476	99.95
-------	-------

#### PERFORMER 2.0

94267	69.95
-------	-------

#### PIXEL 3D

98154	CALL
-------	------



# 1-800-PROMPT-1

(1-800-776-6781)

Lowest Price Guarantee!!

## IBM Compatibility for only

# 19995

## WordPerfect 4.1

# Only 9995

- Includes:
- IBM-compatible Floppy Disk Drive
  - 512K RAM
  - MS-DOS software

### BRIDGEBOARD.

By popping the Bridgeboard into an A2000 expansion slot, you add IBM-compatible features to your Amiga—while retaining all of the Amiga's advanced abilities. The board features an 8088 microprocessor, 512KByte RAM, a PC-XT BIOS, a 5.25" 360KByte floppy drive, an external floppy drive connector, and a socket for a math coprocessor. These IBM-compatible features allow you to run thousands of MS-DOS software programs at the same time as you're running your Amiga applications.

Bridgeboard XT	84706	199.95
Bridgeboard AT	84719	399.95

### WORDPERFECT 4.1.

We made a special purchase of Word Perfect 4.1 for the Amiga, and can offer the world's #1 word processor to our customer at giant savings! This is the same package that usually sells for 50% to 100% more! In order to let as many of our customers take advantage of this limited quantity offer, we're limiting purchases to just one per customer.

WordPerfect 4.1	Sug. Retail 275.00	99.95
	93106	



<b>DISKMASTER</b>	82114	29.95
<b>DISKMASTER II</b>	95936	39.95
<b>DOS-2-DOS</b>	98403	31.95
<b>FLASHBACK</b>	92953	45.95
<b>HOTLINKS</b>	C10688	62.95
<b>IMAGEFINDER</b>	94257	41.95
<b>MAVERICK, V4</b>	89601	32.95
<b>MICROFICHE FILER +</b>	94095	119.95
<b>PRO DATA RETRIEVE</b>	83910	159.95
<b>QUARTERBACK</b>	C10964	49.95
<b>RAWCOPY V1.3k</b>	87466	34.95
<b>SAS/C COMPILER</b>	94408	199.95
<b>VIRTUAL REALITY STUDIO</b>	96193	59.95
<b>VIRUS PROTECTOR</b>	95270	39.95
<b>WORKBENCH MGMT. S. 2</b>	94049	39.95

<b>AMIGA PRODUCTIVITY</b>		
<b>ADVANTAGE</b>	94105	124.95
<b>DISTANT SUNS 4.0</b>	94599	49.95
<b>ELECTRIC THESAURUS</b>	92126	34.95
<b>EXCELLENCE 2.0</b>	89330	99.95
<b>GOLD DISK OFFICE</b>	90052	119.95
<b>THE KFS ACCOUNTANT 2.0</b>	82594	189.95
<b>PEN PAL</b>	84682	85.95
<b>PROFESSIONAL CALC</b>	96151	189.95
<b>PROPER GRAMMAR</b>	94440	57.95
<b>PROWRITER 3.2</b>	88222	CALL
<b>TEACHER'S TOOLKIT</b>	96536	34.95
<b>WORDPERFECT 4.1</b>	93106	159.95
<b>WORDPERFECT LIBRARY</b>	93115	79.95

<b>PRESENTATION SOFTWARE</b>		
<b>SCALA VIDEO STUDIO</b>	94033	249.95
<b>SCALA 500—HOME TITLER</b>	97001	CALL
<b>THE ANIMATION STUDIO</b>	90126	74.95
<b>SHOWMAKER</b>	94309	219.95
<b>AMIGA VISION</b>	89661	99.95
<b>AMIGA CLIPS, Vol. 1: Sound Effects</b>	91951	24.95

<b>AMIGA MUSIC AND SOUND</b>		
<b>MIRACLE PIANO TEACHING SYSTEM</b>		
Miracle System	99026	344.95
Gender changer, F/F	A33439	9.95
<b>AD1012</b>	94803	329.95
<b>AMAS V. 2.0</b>		
Includes MIDI interface.	86334	99.95
<b>CD SPEAKERS</b>	97290	34.95
<b>THE COPYIST: A PRENTICE VERSION</b>		
	90568	89.95
<b>DELUXE MUSIC</b>	79419	61.95
<b>DIGITAL SOUND STUDIO</b>	97302	89.95
<b>SOUNDSCAPE V.1.4</b>	86341	79.95
<b>PERFECT SOUND 3.0</b>	86370	69.95
<b>AUDIO MASTER III</b>	79529	62.95
<b>SONIX</b>	79580	51.95
<b>SOUNDMASTER DIGITIZER</b>	96376	134.95
<b>TIGER CUB</b>	89721	74.95

<b>ENTERTAINMENT SOFTWARE TOP ALL-STAR GAMES</b>		
<b>ATOMINO</b>	98786	32.95
<b>AWESOME</b>	91098	27.95
<b>B.A.T.</b>	98383	34.95
<b>ELVIRA</b>	91114	34.95
<b>EYE OF THE BEHOLDER</b>	93799	37.95
<b>THE KILLING GAME SHOW</b>	88054	26.95
<b>LEMMINGS</b>	92226	27.95
<b>OBITU</b>	93676	34.95
<b>OH NO! MORE LEMMINGS</b>	96818	29.95
Add-on disk	95686	24.95
<b>POWERMONGER</b>	90767	31.95
<b>POWERMONGER CLUBBOOK</b>	92557	10.95
<b>SPEEDBALL 2</b>	95524	24.95
<b>THUNDERSTRIKE</b>	99110	24.95
<b>WONDERLAND</b>	92375	34.95

<b>ENTERTAINMENT SOFTWARE SPORTS</b>		
<b>4-D BOXING</b>	98954	31.95
<b>ABC's W.W. of Sports BOXING</b>	95974	32.95
<b>BO JACKSON BASEBALL</b>	95989	29.95
<b>CALIFORNIA GAMES</b>	81841	13.95
<b>GREENS</b>	98066	41.95
<b>HOLE-IN-ONE MINI GOLF</b>	84489	24.95
<b>JACK NICKLAUS' UNLIMITED</b>		
<b>GOLF &amp; COURSE DESIGN</b>	90306	34.95
<b>JOHN MADDEN FOOTBALL</b>	98939	31.95
<b>LINKS</b>	97799	29.95
Pinehurst Country Club	97815	16.95
Freestone Country Club	97808	16.95
<b>MICROLEAGUE BASEBALL:</b>		
The Manager's Challenge	96016	24.95
OVER THE NET!	96016	24.95
<b>TEAM SUZUKI</b>	95505	24.95
<b>THE BREAK TENNIS</b>	95785	24.95
<b>WORLD CIRCUIT</b>	98058	36.95
<b>WORLD TOUR GOLF</b>	91741	9.95

<b>ENTERTAINMENT SOFTWARE ADVENTURE</b>		
<b>AD&amp;D CHAMPIONS OF KRYNN:</b>		
Dragonlance		
Fantasy Role-Playing V.1	88879	32.95
<b>AD&amp;D</b>		
Dark Queen of Krynn	C10751	32.95
<b>AGONY</b>	98968	29.95
<b>ALTERED DESTINY</b>	95755	39.95
<b>AMERICAN GLADIATORS</b>		
	C10780	24.95
<b>AMNIO</b>	94659	32.95
<b>ARMOUR-GEDDON</b>	98979	32.95
<b>BARBARIAN II</b>	94669	32.95
<b>BEAST II: SHADOW DEEPENS</b>	90435	34.95
<b>THE BIG DEAL</b>	93934	39.95
<b>BIRDS OF PREY</b>	95074	31.95
<b>BLACK CRYPT</b>	96283	31.95
<b>CADAVER</b>	95534	24.95
<b>CARTHAGE</b>	98985	29.95
<b>CASTLES</b>	94877	34.95
<b>CONAN THE CIMMERIAN</b>	95244	30.95
<b>CONTINUUM</b>	94887	29.95
<b>DAEMONSGATE</b>	99037	39.95
<b>DEATH KNIGHTS OF KRYNN</b>	94156	31.95
<b>DRAGONSCAPE</b>	89308	9.95
<b>ELF</b>	96266	34.95
<b>ELVIRA II: JAWS OF CERBERUS</b>	95847	41.95
<b>EYE OF THE BEHOLDER II</b>	96309	39.95
<b>FANTASTIC VOYAGE</b>	98366	27.95
<b>FLIGHT OF THE INTRUDER</b>	96146	34.95
<b>GATEWAY to the SAVAGE FRONTIER</b>		
	97787	32.95
<b>GLOBAL EFFECT</b>	C10760	32.95
<b>THE GODFATHER</b>	95648	30.95
<b>GUY SPY</b>	95427	34.95
<b>HARPOON CHALLENGE PAK</b>	95117	54.95
<b>HARPOON BATTLESET #4</b>	95102	27.95
<b>HOVERFORCE</b>	92830	30.95
<b>HUMANS</b>	C10770	26.95
<b>IMPOSSIBLE MISSION II</b>	81856	13.95
<b>KILLING CLOUD</b>	95543	31.95
<b>KINGS QUEST IV</b>	95461	34.95
<b>KINGS QUEST V</b>	95233	34.95
<b>KNIGHTS OF CRYSTALLION</b>	96187	36.95
<b>LEANDER</b>	95698	32.95
<b>LORD OF THE RINGS, VOL. I</b>	94921	34.95
<b>LURE OF THE TEMPTRESS</b>	99010	39.95
<b>MAGNETIC SCROLLS Collect.</b>	96127	32.95
<b>MANIAC MANSION</b>	87115	13.95
<b>MATRIX MARAUDERS</b>	88721	24.95
<b>MEGAFORTRESS: FLIGHT OF THE OLD DOG</b>		
	95096	37.95



<b>MIGHT &amp; MAGIC III</b>	96287	39.95
<b>MILLENNIUM</b>	96050	26.95
<b>MURDER</b>	95913	29.95
<b>MYTH</b>	C10005	18.95
<b>NINJA GAIDEN II</b>	95813	36.95
<b>ORK</b>	95701	32.95
<b>OVERLORD</b>	92381	30.95
<b>PAPERBOY II</b>	96253	25.95
<b>PIT-FIGHTER</b>	99001	23.95
<b>THE PERFECT GENERAL</b>	98779	36.95
<b>POPULOUS</b>	96407	31.95
<b>POPULOUS II</b>	96271	38.95
<b>POPULOUS WORLD EDITOR</b>	98948	15.95
<b>POWERMONGER: WWI</b>	95062	24.95
<b>PREHISTORIC</b>	96243	29.95
<b>PROPHECY (Viking Child)</b>	C10749	26.95
<b>RAILROAD TYCOON</b>	C10806	34.95
<b>REALMS</b>	C10810	30.95
<b>RISE OF THE DRAGON</b>	98768	36.95
<b>ROBOCOP 3-D</b>	C10739	34.95
<b>ROBOSPORT</b>	98036	37.95
<b>ROTOX</b>	95907	29.95
<b>SECRET OF MONKEY ISLAND</b>	92597	37.95
<b>SILENT SERVICE II</b>	98792	37.95
<b>SIMANT</b>	98029	41.95
<b>SLEEPING GODS LIE</b>	95763	32.95
<b>SPACE ACE II: Barf's Revenge</b>	95473	36.95
<b>SPACEWRECKED</b>	95596	31.95
<b>STAR CONTROL</b>	93314	30.95
<b>STARLIGHT</b>	89117	31.95
<b>STARLIGHT 2</b>	95056	31.95
<b>STARS FX</b>	C11015	39.95
<b>SUPER SPACE INVADERS</b>	98995	27.95
<b>SWAP</b>	92811	31.95
<b>THEME PARK MYSTERY</b>	91281	14.95
<b>THIRD REICH</b>	C10795	29.95
<b>THUNDERHAWK</b>	95100	30.95
<b>ULTIMA VI: False Prophet</b>	96042	42.95
<b>VENGEANCE OF EXCALIBUR</b>	96113	30.95
<b>VIKINGS</b>	C10700	24.95
<b>VOLFIED</b>	98641	24.95
<b>WIZARDRY: Crusaders of the Dark Savant</b>		
	97823	46.95
<b>WOLF PACK</b>	C10106	14.95

<b>ENTERTAINMENT SOFTWARE FAVORITE CHARACTERS</b>		
<b>THE AMAZING SPIDER-MAN</b>	91324	19.95
<b>ARACHNOPHOBIA</b>	93899	29.95
<b>BILL &amp; TED'S EXCELL. ADVT.</b>	90049	29.95
<b>DICK TRACY</b>	93907	29.95
<b>DUCKTALES: Quest for Gold</b>	91491	16.95
<b>HARE RAISING HAVOC</b>	96085	30.95
<b>HILL STREET BLUES</b>	C10717	24.95
<b>HOME ALONE</b>	95431	29.95
<b>LAST NINJA 3</b>	95390	22.95
<b>LEISURE SUIT LARRY 2: LOOKING FOR LOVE</b>		
	95447	36.95
<b>LEISURE SUIT LARRY 3: PASSIONATE PATTI</b>		
	95453	36.95
<b>MIGHT AND MAGIC III</b>	C10723	38.95
<b>Teenage Mutant Ninja Turtles</b>	87934	29.95
<b>T.M.N.T. ARCADE</b>	95604	31.95
<b>WHEEL OF FORTUNE</b>	99040	24.95

<b>ENTERTAINMENT SOFTWARE STRATEGY GAMES</b>		
<b>BATTLE CHESS</b>	87568	29.95
<b>BATTLE CHESS II: Chinese Chess</b>		
	94478	31.95
<b>BLACKJACK ACADEMY</b>	83027	16.95
<b>CHIP'S CHALLENGE</b>	92881	29.95
<b>CLUE MASTER DETECTIVE</b>	87413	17.95
<b>FACES...TRIS II</b>	94911	19.95
<b>MONOPOLY</b>	84552	29.95
<b>RISK</b>	85889	29.95
<b>SIMCITY</b>	82879	32.95
<b>SIMCITY TERRAIN EDITOR</b>	87877	9.95

<b>STRATEGO</b>	95650	30.95
<b>TETRIS</b>	83835	26.95
<b>TRUMP CASTLE</b>	84060	24.95
<b>TRUMP CASTLE II</b>	96020	29.95

<b>ENTERTAINMENT SOFTWARE SIMULATION GAMES</b>		
<b>F40 PURSUIT SIMULATOR</b>	85555	29.95
<b>FALCON</b>	84284	31.95
<b>Mission Disk I</b>	91356	15.95
<b>Mission Disk II</b>	91367	19.95
<b>FLIGHT SIMULATOR II</b>	83764	39.95
<b>SHUTTLE</b>	96138	37.95
<b>SUPER OFF ROAD</b>	92405	17.95
<b>THE DUEL: TEST DRIVE II</b>	87982	32.95
<b>EUROPEAN CHALLENGE: TEST DRIVE II</b>		
<b>SCENERY DISK</b>	92453	14.95
<b>CALIFORNIA CHALLENGE: TEST DRIVE II</b>		
<b>SCENERY DISK</b>	88003	14.95
<b>TRACON II</b>	92678	41.95

<b>EDUCATIONAL SOFTWARE</b>		
<b>ALGEBRA I</b>	C10948	34.95
<b>ARITHMETIC</b>	C10934	34.95
<b>BRIDGE</b>	96218	24.95
<b>DINOSAURS ARE FOREVER</b>	83134	14.95
<b>LINKWORD SPANISH</b>	96237	19.95
<b>MAVIS BEACON TEACHES TYPING</b>		
	79477	32.95
<b>SCRABBLE</b>	84567	17.95
<b>STUDYWARE FOR THE SAT</b>	C10952	34.95
<b>WHERE IN THE WORLD IS CARMEN SANDIEGO?</b>		
	85229	34.95
<b>WHERE IN EUROPE IS CARMEN SANDIEGO?</b>		
	89179	34.95
<b>WHERE IN TIME IS CARMEN SANDIEGO?</b>		
	91005	34.95
<b>WHERE IN THE USA IS CARMEN SANDIEGO?</b>		
	86677	34.95
<b>WORLD ATLAS</b>	C10925	44.95

<b>MULTIMEDIA SOFTWARE</b>		
<b>MIRAGE</b>	C10973	Call
<b>MULTIMEDIA fx</b>	C11024	39.95
<b>SPECTRUM fx/VOCODER fx</b>	C11002	39.95



### Shipping, Handling, Insurance

Order Amount	Charge
less than \$19.99	\$4.95
\$20.00-\$39.99	\$5.95
\$40.00-\$74.99	\$6.95
\$75.00-\$99.99	\$7.95
\$100.00-\$149.99	\$9.95
\$150.00-\$299.99	\$10.95
\$300.00-\$499.99	\$12.95
\$500.00-\$699.99	\$19.95
\$700.00-\$999.99	\$27.95
\$1000 & Over	2.8% of Order





In *King's Quest V*, you must find your missing family and castle.

From p. 86.

nice things you could say about them—besides that they were often fun to play—was that they multitasked.

Times have changed. There is a new generation of games: a speeded-up, bug-fix revision (1.1) of *King's Quest V* (\$59.95), *Leisure Suit Larry 5* (\$59.95), *Space Quest IV* (\$59.95), *Police Quest III* (\$59.95), *Castle of Dr. Brain* (\$49.95), and a re-release of the original *Space Quest* (\$49.95). They don't multitask, but all use 32 colors and a new graphical user interface.

The games themselves haven't changed. They're equal parts treasure hunts and pleasure cruises: Take in the sights, collect objects, and then use the objects to move on to other sights and objects. In *Police Quest III*, Sgt. Sonny Bonds tries to solve a string of murders. In *Space Quest IV*, intergalactic custodial engineer Roger Wilco is propelled into past and future SQs in pursuit of nemesis Sludge Vorhaul. *Leisure Suit Larry 5* opens with the dweeb in the white suit and Passionate Patty pursuing separate paths—Patty undercover, Larry under covers. And in *King's Quest V*, King Graham is missing a castle—the one with his family in it.

The games look better. KQ V is simply the prettiest Amiga game Sierra has ever done. Larry 5's out-of-kilter landscape and lively color scheme—like a hip shirt design—are positively jazzy. *Police Quest III* has fluid and life-like animation (although the characters' faces suffer from being battered down to 32 colors, looking as if they have a nasty rash). The sound's been good for some time now, but I was tickled to hear the dig-

itized voice of a computer near the start of the revamped *Space Quest*.

Unfortunately, these games are quite slow on 68000-based machines. All except KQ V and Larry V sport a "faster Amiga recommd" (sic) notation on their product-info stickers, and King Graham and Larry would probably benefit from an accelerator, too. This is something of a puzzle in itself, for it's not as though the Amiga is overtaxed by the tasks at hand.

In SQ IV, Wilco lands a job in a fast-food restaurant, and you have the opportunity to play a burger-assembly arcade sequence. This is the sort of thing at which the Amiga excels, and yet the sequence fairly crawls. When Bonds drives a car in *Police Quest III*, the car (viewed in overhead perspective in a little window) is the only thing moving on the screen—and the road still ticks by frame by slow frame.

Is play better under the new interface? Using the set of command icons is less frustrating than wrestling with the parser, but it is also less involving. Typing may have been a nuisance, but by the time you were done with a game, you knew every inch of the terrain by heart because you'd tried every verb in the book on every part of it. As long as it takes to play these games because of their first-gear speed, they feel shorter than their predecessors. I'm not saying throw out the interface, but give us more game or more depth to use it with.

I'm not saying you won't have some fun here, either. *Police Quest III* has more of a real-life edge to it. *Space Quest IV* is very like its predecessors in some appealingly dumb ways. (One of your first tasks is capturing the SQ equivalent of the Energizer bunny.) And *Castle of Dr. Brain* is a real departure—the standard adventure system with a first-person perspective, wholly driven by brain teasers. You'll need to win at the memory game Simon even to get in the front door.

Larry 5, regrettably, is a better conversion than it is a game. Larry's three seductions are a throwback to the original LSL, the puzzles are weak, and the game is heavy with automatic sequences. It's not even that sexy.

In all, while Sierra's effort is very admirable, most of these games don't really cut it in the Amiga market. The exception is the new version of *King's Quest V*. It's gorgeous, it's playable, it's fun, and it's ripe with the seeds of potential. This could be the beginning of a beautiful friendship.

## COMPUTER THIRD REICH

By Jeff James

LEAPING FROM TABLETOP to computer screen, *Avalon Hill's Computer Third Reich* (\$39.95) offers the same sump-

### CRIB NOTES

From p. 86.

(if you haven't already done so), and, while still up on the roof, use the barometer to launch a Summon Storm spell. Back down in the basement, a little obvious fiddling with the controls brings tall-dark-and-gruesome to life, but a snip or two with your wire cutters turns him off again. Take a close look at his head for useful spell ingredients and also at the room revealed behind him. Yup, that's Ellie herself—the genuine article, at last. Hubba-hubba.

Now get ye to the church on time, and run a little Resurrection number by the dead priest. Explain yourself, and he'll dash off to the parking lot and draw a nice pentacle. One last stop: Get back to the Indian in the studio cellar and have him bless the magic bag, war lance, and tomahawk. (If he's reluctant, you've either been impolitic with him—in which case you can just do everything in the last two Crib Notes all over again—or you forgot to turn over the peace pipe from the study safe.)

Actually, instructions for offing Cerberus are available in the

game—did you try the humor section of the library in the haunted house?—but they're a bit on the ornate side. Put the black candles from the hidden altar in the pentacle and light them (matches are in the haunted house's upstairs storage room), and be sure you have the chalice from the same altar on hand. While you're at it, get the magic bag, lance, and tomahawk side by side and visible in your inventory for easy reference.

Save the game, and use the bag to bring Cerberus in from the Void. Throw the Bind Demon spell from

Level 2 of the spider caves at him, and when it wears off, spear his middle eye with the lance and nail him in the heart with the tomahawk. Game over, man. Roll credits.

It looks as though *Interplay's* Out of This World is out of this column. We'll do it next time, and then start on *Origin's* Ultima VI. Meanwhile, if you're having trouble with a game, you can write me at 25 Belmont Ave., Madison, NJ 07940; on GENie and Portal at PETEROO; on CompuServe at 74160, 3053; and on Usenet at Peteroo@cnp.portal.com. ■



TO ORDER  
CALL 800-544-6599  
MON.-FRI. 9-6, SAT. 9-3 CST



#### Software

Ami-Back 2.0	47.99
Amy's Fun 2 3 Adventure	31.99
AquaVentura	35.99
Bountiful Golf Course	17.99
Caligari 2	253.99
Can Do 1.6	85.00
Charts and Graphs	59.00
Covert Action	37.99
Cross DOS 5.0+	37.00
Cruise for a Corpse	34.99
Deluxe Paint IV	109.00
Enlan DFS Network	199.00
Epic	32.99
Eye/Beholder II	39.99
Fighter Duel 1.1	31.99
Fractal Pro 5.0	87.99
Global Effect	35.99
Guy Spy	31.99
HomeFront 2.0	59.99
HotLinks	62.99
Imagine 2.0	256.99
Jaguar XJ220	32.99
Lost Treasures	45.99
Macro68 (Puzzle Factory)	135.00
Mathasaurus I or II	17.99
Matrix Cubed	33.99
Maxi Plan 4.0	115.00
Pacific Islands	31.99
PageStream 2.2	177.00
Panzer Battle	31.99
Paper Boy 2	26.99
PatchMeister	59.00
Pinball Dreams	24.98
Pixel 3D	64.00

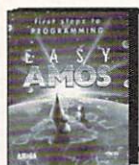
Professional Calc	168.99
Professional Page 3.0	169.00
ProStream Plus Fonts	38.00
ProWrite	59.99
ReSource (Puzzle Factory)	135.00
Rexx Plus Compiler	90.00
RoboSport	38.99
Soft Faces	59.99
Space Shuttle	36.99
Super Jam	87.99
Take 2	105.00

### Commodore® AMIGA® 500 DELUXE

- INCLUDES
- 3.5" Internal Floppy Drive
  - 1 MB RAM, RF Modulator
  - 94-Key Keyboard and Mouse
  - Appetizer Software
  - Amiga Basic
  - DOS 1.3
  - Ergo Joystick
  - Safe Harbor PD Disk

Call for Pricing!!!!

ToastMaster	89.99
Ultima VI	41.99
Virtual Reality Studio	53.99
Vista Pro 2.0	59.99
Wild Wheels	33.99



Easy  
AMOS  
from  
EuroPress  
\$41.99

New!!

#### Hardware

68030 Accelerators from GVP!	
25MHz/1MB/52Q	889.00
40MHz/40/4MB	1169.00
40MHz/40/4MB/120Q	1499.00
40MHz/40/4MB/240Q	1719.00
50MHz/50/4MB	1529.00
50MHz/50/4MB/120Q	1849.00
50MHz/50/4MB/240Q	2049.00
A Video 24	870.00
AD 1012 Digitizer	509.00
AMAX II +	345.00
Ad IDE/40	93.00



We carry  
ALL available  
CDTV titles!

Battle Chess	36.99
CDTV Prof Bundle	195.00
CD Caddy 2-Pack	14.99
CDTV Trackball	95.00
CD Rom File System	36.99
Defender of the Crown	31.99
Fred Fish Online	45.00
Guinness Disc of Records	37.99
NASA's 25th Year	19.99

AdFlicker Free Video	239.00
AdSpeed	175.00
ATonce + GVP	309.00
Blizzard Board	219.00
Floptical Drive, Int	399.00
Floptical Drive, Ext	509.00
Floppy Drive, Internal 500	89.00
Floppy Drive, Supra Ext	95.00
Genlock, CBM 2300	135.00



- SupraFAXModem 9600 BAUD V.32/V.42/V.42bis Send/Receive FAX capability

- SupraFAXModem 14.4 BAUD V.32bis/V.42bis Send/Receive FAX capability

\$305 / With Software \$359

Supra Corporation

Genlock, AlterImage	189.00
Harddrive, 120Q Bare	399.00
Harddrive, 105Q Bare	379.00
Harddrive, Impact 500/52Q	495.00
Harddrive, Impact 500/120Q	665.00
Harddrive, 500XP 52Q/1	489.00
Harddrive, 500XP 120Q/2	675.00
Hi-Q Tower	635.00
Joystick, Epyx Speedking	15.00
Joystick, Ergo	20.00
K-Start Selector	33.99



New!

Celebrate America with  
the US Flag Beetle Mouse.

Many assorted color  
combinations  
are also  
available.

\$34.98

For a complete product  
listing, information  
or support, call  
(414) 548-8125.



1 SupraFAXModem 14.4	305.00
2 DCTV	379.00
3 Final Copy	59.99
4 QuarterBack 5.0	46.00
5 Power Packer Pro	21.99
6 Notebook	27.99
7 Directory Opus	36.99
8 DSS Sound Digitizer	95.00
9 Secret of Monkey Island II	39.99
10 Black Crypt	33.99

Kickback ROM Switch	39.99
MIDI, Triple Play +	165.00
Modem, Supra 2400	85.00
Modem, SupraFAX 2400+	165.00
Mouse, CBM 3-Button	53.00
Mouse, Wang	24.99
MultiStart II Board (DKB)	41.99
PC 286 Emulator	306.00
Personal VDA	125.00
Power PC Board	275.00
Power Supply, Big Foot	99.00
SCSI Controller Supra 500XP	199.00
SCSI Controller Supra 2000	110.00
Scanner, Epson 300	925.00
Sony XVD 300	299.00
SupraRAM 2000/2	169.00
SupraRAM 2000/4	225.00
SupraRAM 2000/6	285.00
SupraRAM 2000/8	349.00
SupraRAM 500 RX/1	125.00
SupraRAM 500 RX/2	185.00
SupraRAM 500/512K	39.00
Video Director	139.00
Video Toaster 2.0	2025.00

### Syquest Drive Packages

	Int	Ext
44MB (2000)	\$399	\$499
88MB (2000)	\$559	\$659

Package includes drive,  
cartridge, manual, and a dual  
SCSI 50-pin cable; external  
models include case &  
molded cable.  
We support what we sell!!

#### BOOKS

Amiga Companion 2.0	20.99
AmigaDOS Manual 3rd Ed.	22.00
DOS Inside & Out 2.0	22.95
Hardware Ref Manual	24.00
Includes & Autodocs	35.95
Interface Style Guide	20.99
ROM Kernel: Devices	25.99
ROM Kernel: Libraries	29.99
Understanding Imagine 2.0	28.00
Using ARexx on the Amiga	27.99
1 year of Format, delivered	\$160
1 year of Amiga Computing	\$150





# The GRAPEVINE GROUP INC.

• WE ARE NORTH AMERICA'S LARGEST SUPPLIER OF AMIGA CUSTOM CHIPS •



## ONLY AT GRAPEVINE

### • NEW PRODUCT • ADVANCED AMIGA ANALYZER

by Wilcom Australia

Finally, a complete Amiga diagnostic analyzer composed of a hardware and software package that's sophisticated yet easy and quick to use. This new diagnostic analyzer will give the user: status of all data transmissions/signals, the ability to test integrity of any disk drive, check all ports (one at a time), check buffer chips, alignment & joystick/mouse. Also performs diagnostic status of any read/write errors from track 0 to track 79 and other important tests. The user is automatically told what errors are found and the chip(s) responsible. Works on all Amigas worldwide .....\$79.95

### DIAGNOSTICS

**The Final Test Diagnostic Program.** This diskette tests out keyboard, display, graphics, new Workbench, sound, timing, real time clock, RAM test (both chip & fast) 1/2 bright, HAM, blitter, sprites, double buff animation, mouse, disk read/write, DF1/DF0. \$15.95  
**Amiga Diagnostician.** Diagnose up to 28 common problems. Comes with diagnostic software and booklet. Save a lot of money by locating faulty chips yourself. This is the next best thing to an expensive service manual or your local Amiga repair center.....\$17.95

### 2.04 OPERATING SYSTEM

New operating system just released (NTSC/PAL). Complete 7 lb. box contains 1200 page manual, 4 diskettes and ROM. This upgrade is an absolute must for everybody. (Buy the 2.04 ROM Kit from us and get the new ECS Super Denise chip for \$31.50)...\$87.50  
2.04 ROM only (NTSC/PAL).....\$39.95

### LATEST ENHANCED CHIP SET

**SUPER DENISE 8373 UPGRADE**—Now utilize productivity and scan mode, etc. Super hi-res mode (1280 x 200 pixels). An absolute must with 2.0. Comes with Super Denise diagnostic test programs and installation software programs .....\$35.95

**1 MEG FATTER AGNUS CHIP (8372A)**—Comes with FREE Rockwell Agnus chip puller (a necessity). "Final Test" diskette (18 diagnostic programs), and complete step-by-step instructions.....\$44.95  
(We'll beat any competitor's price on this chip and still give you the diagnostics and puller.)

### AMIGA PC (MOTHER) BOARD

Now for the first time, and only at Grapevine, purchase a new A500 or A2000 PC motherboard at prices lower than an Amiga dealer pays! Each "board" is populated (all chips), tested and has a 90 day warranty. PAL format is also available.

**\*A500 PCB.** Brand new, just released from Commodore, tested and populated. Excellent for hobbyists or as a great back-up unit. Contains all custom chips including 8370 1/2 meg Agnus. This is a special limited time offer .....\$99.95

**\*A2000 PCB** includes the 1.3 ROM, 8372A 1 meg Agnus and Super Denise chip 8373 .....\$499.95

### EMERGENCY STARTUP KIT

(Revised April 1992)

Stop sending out your Amiga for repairs. Save a lot of time and money by repairing your own. Over 90% of broken Amigas are easily repaired by this kit. Kit corrects 28 symptoms and includes: Two 8520A CIA Chips, 8362, 8370, 8364, Chip Puller, Fuse, Schematic, Diagnostician Booklet and The Final Test Diskette. A \$224.00 value for .....\$99.50  
(Above kit with 8373 Super Denise .....\$109.95)

### MONTHLY SPECIALS

- **A500 240 volt power supply (U.K./Eur.)**  
Exact Amiga replacement.....\$82.50
- **A2000 110 volt power supply (200 watt/fan)**.....\$142.50
- **A2000 110/220 VAC power supply (U.S./U.K.)**.....\$199.95
- **A3000 110 volt power supply**.....\$169.95
- **A500 internal floppy drive**.....\$67.50
- **A2058 8 Mb Amiga RAM board**.....\$299.95
- **A2058 2 Mb Amiga RAM board**.....\$179.95
- **A501 Amiga 512K module/RAM (CBM)**.....\$29.95
- **A2088 XT Amiga add on board kit**.....\$191.50
- **A500 keyboard (312502-01).** Made by Commodore Exact replacement .....\$54.50
- **British A500 keyboard (312502-12)**.....\$59.95
- **A2000 keyboard**.....\$89.95
- **1403 (14") VGA CBM B/W monitor.** Just refurbished by Commodore. 90 day warranty ....\$46.95
- **6570-036 A500 Keyboard chip**.....\$9.95
- **2.04 ROM Chip only.** For those multi-Amiga users who do not need the full operating manual and diskettes, this is for you. We now sell the latest version of the 2.04 ROM chip at a fantastic price. Schools, businesses and multi-Amiga users should be pleased because of the big savings.....\$39.95
- **8520 CIA CHIP**.....\$9.95 (2 or more \$9.00 each)
- **1.3 Kickstart ROM**.....\$24.95
- **Panasonic 32K Printer Buffer Chip**.....\$15.95
- **Citizen 32K Printer Buffer Chip**.....\$22.50
- **GVP G Force Combo/4 Megas.**  
Comes with 68030/68882, SCSI controller and 4 megs. Limited quantity  
33MHz Combo/4 meg .....\$999.00  
40 MHz Combo/4 meg .....\$1079.00  
50 MHz Combo/4 meg .....\$1439.00
- **GVP-SIMM 32-4 Mb/60 for above**.....\$214.95
- **LASER PRINTER MEMORY:** All HP Series  
HP II, IIO, IIP, III, IIID, IIP and all Plus  
2 meg/4 meg .....\$104.50/\$159.95

### AMIGA UPGRADE CHIPS

- 8362 Denise 1/2 Bright .....\$21.95
- 8364 Paula .....\$21.95
- 8373 New Super Denise .....\$35.95
- 8375 (new 2 Mb Agnus) A500 Plus & /A600 only .....\$59.95
- 5719 Gary chip .....\$12.95
- 8520A CIA chip. Controls 12 major functions .....\$9.95
- 1.3 Kickstart ROM .....\$24.95
- 2.04 ROM only NTSC/PAL (does not include kit) .....\$39.95
- 2.04 Enhancer ROM Kit #AS213. Includes 4 floppy disks, 1000 page operation manual & ROM (NTSC/PAL) .....\$87.50
- 2.04 ROM Upgrade Kit #AS314 for A3000 only .....\$45.50
- 2.04 A2620/A2630 ROM Upgrade Kit .....\$34.95
- 6570-036 Keyboard chip (fixes most keyboard problems).....\$9.95
- GVP-SIMM 32-4 Mb/60 .....\$214.95
- 8371 1/2 meg Agnus (PAL only) .....\$14.95

### REJUVENATOR II A1000 UPGRADE

Second version allows 2MB of chip RAM. Surpasses A2000 specs. Contains 2MB Agnus, 8373 Super Denise, 2MB RAM, 1.3 ROM, "Final Test" diagnostic software and Amiga Diagnostician booklet. ....\$599.95

### MISCELLANEOUS PRODUCTS

- Printer Port Adapter (runs any CBM printer to PC).....\$29.95
- IBM 514" Alignment System (Free Spirit).....\$29.95
- Dr. Ami (Free Spirit). Memory & hard disk diagnostic program. Scans all system/expansion memory. Locates defective chips & bad memory location.....\$29.35
- AMI Alignment System (Free Spirit). Precision disk alignment/performance package.....\$28.50

### PHOENIX BOARD

A1000 upgrade just released from Australia. With minutes transform your A1000 into a powerful new Amiga that approaches the specs of the A3000. Eliminate compatibility problems. The Phoenix is a complete replacement motherboard. **FEATURES:** 2 MB RAM on board configured as 2MB chip RAM, SCSI controller built in; true A2000 video and expansion slot, easy solderless installation; uses all original A1000 peripherals (Send for specs).....\$850.00

**WE SELL TO AMIGA DEALERS, SUPPLIERS AND SERVICE CENTERS ON 5 CONTINENTS. DEALER PRICING AVAILABLE**

## DKB PRODUCTS

### MegAChip 2000™ With 2 Meg Agnus Chip Included

2 MB of Chip RAM for A500/2000 Sizable Rebate on 1 Meg Agnus

**STOP RUNNING OUT OF CHIP RAM.** If you use your Amiga for Desktop Video, 3D Rendering & Animation, Multimedia or Desktop Publishing, then you need the MegAChip 2000. Fully compatible with Workbench 2.0, the ECS Denise chip, GVP's and Commodore's 68030 accelerators. Why upgrade to 1 meg of RAM when you can have the same high tech 2 meg chip RAM as the A3000? Includes FREE Rockwell chip puller (a necessity), Final Test diagnostic Agnus diskette program (see Diagnostics section) and 2 meg Agnus chip installed and tested .....\$294.50  
MegAChip 2000 without 2 meg Agnus chip.....\$228.50

Buy the MegAChip from us and we'll give you the new 8373 Super Denise (ECS) for \$31.50

### The DKB 2632™ Memory Expander for A2630 Accelerator

This unique board was designed for the Amiga A2500/030 or A2630 accelerator card owner that currently has a powerful system but is limited by the amount of 32Bit RAM that can be installed. Any one that uses this Amiga system for video graphics, animation, rendering, publishing, or audio digitizing will benefit from the ability to install additional 32Bit Fast RAM. 4 Megas of 32Bit RAM installed on board and expandable to 112 megabytes .....\$539.50

### Insider II™ 1.5 Megas in Your A1000

Allows A1000 owners to add up to 1.5 meg of Fast RAM internally. User expandable in 512K increments using 256K x 4 Drams. Includes battery backed clock calendar. Simple installation. No soldering required. Compatible with the KwikStart II and most processor accelerators .....\$176.50  
With 1.5 meg .....\$237.95

### KwikStart II™ Utilize 1.3 and 2.0 ROMS

Allows A1000 owners to install 1.3 and 2.0 Kickstart ROMS and switch between them. Upgrade to the latest operating system and still be compatible with software that requires Kickstart 1.3 .....\$59.95

### MultiStart II™ Switch between ROMs

Allows A500/2000 owners to install Kickstart 1.3 and 2.0 and switch between them with the keyboard. Can also install a third ROM. A sizable percentage of present software will be incompatible with the new 2.0. This simple device allows you to be compatible with all your software. No external wires or switches required. **BONUS:** Buy the MultiStart from us and get the 1.3 ROM for \$22.95. ....\$42.50

## ALL COMMODORE CHIPS & PARTS AVAILABLE

9-6 ET Mon-Fri.  
PRICES SUBJECT TO CHANGE  
We Ship Worldwide  
15% restocking charge

3 Chestnut Street, Suffern, New York 10901 • Fax: (914) 357-6243

Customer Service Line: (914) 368-4242 International Order Line: (914) 357-2424

Order Line Only

1-800-292-7445

All trademarks and logos for ICD and DKB are from their respective companies and are solely used for identification purposes. Amiga is a registered trademark of Commodore Business Machines Corp.



## ICD THE ICD ADVANTAGE

<b>AdSCSI 2000.</b> Hard drive interface with unmatched speed and flexibility .....	<b>\$97.50</b>
<b>AdSCSI 2080.</b> Hard drive interface with up to 8 megs of FAST RAM .....	<b>\$164.50</b>
Each meg of memory add .....	<b>\$38.95</b>
<b>AdSpeed.</b> Best overall performance of any accelerator in its price range .....	<b>\$168.50</b>
<b>Flicker Free Video.</b> Eliminates interface flicker for any Amiga computer .....	<b>\$238.50</b>
<b>AdRAM 510.</b> Just released for the new A500 PLUS. Take your Amiga 500 PLUS up to 2MB of fast RAM. Includes RAM and battery .....	<b>\$77.50</b>
<b>AdRAM 510+</b> for A500 PLUS (no ram) .....	<b>\$43.95</b>
<b>AdRAM 540.</b> Add up to 4 megs of RAM internally in your Amiga 500 with 1 meg .....	<b>\$127.95</b>
with 2 meg .....	<b>\$159.95</b>
Each additional meg of memory add .....	<b>\$38.95</b>
<b>AdRAM 2080.</b> 8 meg internally in your 2000/2500 .....	<b>\$97.50</b>
Each meg of memory add .....	<b>\$35.00</b>
<b>AdIDE.</b> Smallest Amiga hard drive interface made. For IDE (AT) drives	
IDE 44 Kit (for 2.5" hard drive) .....	<b>\$117.50</b>
IDE 40 (for 3.5" hard drive) (includes controller & cable) .....	<b>\$92.50</b>
IDE 40 Kit (includes Shuffle Board) .....	<b>\$134.50</b>
<b>Novia 60i.</b> The smallest hard drive and interface in the world for your A500. Fits internally .....	<b>\$496.00</b>
Novia 85i .....	<b>\$599.00</b>
<b>Prima 52i.</b> 3.5" IDE drive internally in your 500, 1000, 2000 .....	<b>\$399.95</b>
Prima 105i .....	<b>\$577.00</b>

## MONTHLY SPECIALS



NOW WITH  
A ROM  
SPEAKER



### Unique 1.3-2.0 ROM Selector

Electronic ROM Selector Switch by Global Upgrades, Inc. allows for compatibility of ALL your software. Automatically switch between 1.3 or 2.04 ROM from your keyboard or mouse. Built-in speaker confirms 1.3 or 2.04 ROM. Does not overlap the 68000 chip, which means complete compatibility with AdSpeed or Mega Midget Racer, etc. Simple plug in, no soldering. Lowest priced keyboard switch available. Instructions included .....

**\$32.95**

### BONUS:

Buy the Switch-Itt from us and get the 2.04 ROM Kit for \$84.00, the 2.04 ROM only for \$29.95 and/or the 1.3 ROM for \$22.95.



## EXPENSIVE REPAIR COSTS

If your Amiga 500/1500/2000 shows the following symptoms, you may need a replacement of the most problematic (IC) chip in your Amiga, the **8520A**. Areas affected by either of the two 8520A chips are: centronics port, RS232 port, joy stick port, mouse port, drive LED, drive motor, blank screen, green screen, boot and external drive problems. (None of the above? See our Amiga Diagnostician.) The 8520A is a simple plug in and will save you a lot of repair costs and down time. 40% or all broken Amigas are caused by bad 8520s. No soldering. ....

**\$9.95**  
(2 for \$9.00 each)

## McCOY (PLCC) AGNUS CHIP PULLER

This is an exact copy of the Burndy chip extractor that Commodore sells for \$29.95 to its authorized service centers. It is essential for removing the Agnus chip. Our price for this top professional tool .....

**\$14.95**

## SUPER DENISE 8373 UPGRADE

New 8373 ECS Super Denise chip adds new screen modes: **productivity** mode for flicker free display and enhanced picture, **superhi-res** mode for ultrasharp video titling (1280x200 pixels), **scan** mode and new **genlock** mode allowing greater flexibility. (This is the same chip used in the A500+ & /A600/A3000.) Comes with **Super Denise diagnostic and installation software programs**. This chip is an absolute must with the 2.0 and is the latest of the Enhanced Chip Set (LOWEST PRICE ANYWHERE) .....

**\$35.95**

## SEND FOR OUR FREE CATALOG

3 Chestnut Street, Suffern, New York 10901

Customer Service: (914) 368-4242 International Order Line: (914) 357-2424 Fax: (914) 357-6243

Order Line Only 1-800-292-7445

Add UPS Charges to Above 15% restocking charge



## GAME PRESERVE

tuous detail that earned its board-game progenitor a loyal war-gamer following.

A cohesive union of military, economic, and political elements, Computer Third Reich (C3R) lets two computer or human players replay World War II in Europe. One player takes the Axis powers (Germany, Italy, and others), while the other hoists the flag of the Allies (Britain, Russia, France, and the US). C3R offers three historical scenarios (accurately recreating the strategic positions of Axis and Allied forces in 1939, 1941, and 1944) and a campaign game (re-creating World War II in its entirety).

To help you along the treacherous path to victory, C3R relies on an intuitive, mouse-controlled interface. The main screen offers a small view of the much larger eight-color, hex-based map of Europe, over which you can smoothly scroll with directional icons. True to its predecessor, C3R displays all military units as rectangular counters, with ratings for movement and offense printed on the front of each. Setting up, moving, and attacking with your units is as easy as clicking on them and then clicking on their destinations.

Not hard-drive installable and having look-up copy protection, C3R operated without any difficulty on both a one-megabyte Amiga 500 and an A3000 running AmigaDOS 2.04. The 19-page manual, however, is a little too brief. In it, Avalon Hill recommends that you purchase the original board game or the book *Gamer's Guide to the Third Reich* for more information.

What C3R lacks in graphics, sound and other amenities is adequately compensated for by a solid, uncluttered playing interface and a healthy dose of gameplay. C3R is definitely built upon a solid foundation, offering more steak than sizzle. If you're seeking a rich strategy game that plays well, consider Computer Third Reich.

## CASTLES

By Peter Olafson

THE FOUNDATION OF **Castles** (\$59.95) is sound, but after that, things begin to teeter a bit. This medieval fortress-building game from *Interplay* permits you, as king or queen, to design a castle from a construction kit of walls, towers, and gates. You then watch from a bank-camera perspective as your orders are carried out by up to seven types of animated castle-building folk. This part of the game is undeniably charming and well executed.

A set of toggleable menus permits you to hire and fire, add features (windows, arrow slits, and boiling oil), assign specific tasks, and control wages. You set taxes, buy food against the possibility of a siege, seek counsel from your advisers, and have your troops dig a moat. The one real lapse in this portion of the game is the absence of sound effects. Without them, it feels as though we're watching clinically from a remote distance.

What does bring *Castles* home is a lively set of story lines. You'll frequently be visited by nobles, churchmen, Celts, and common people, and have to choose among three possible answers to their pleas. Those decisions set the tone for threads that will follow you through the castle's construction and inevitably influence the delicate balance you must strike with different elements of society. There's more to it than appears, and it's a great deal of fun.

The game itself is plenty friendly. It works on everything from an Amiga 1000 to a 3000 and goes on a hard disk. Once the game is installed, copy protection becomes transparent: Answer one question from the manual when you first play, and you're set for life. ▶



And yet, Castles' life isn't as long as it ought to be. It's a bit rocky—both as a game in general and as an Amiga game in particular. While very nice graphically, it's also rather slow, bumpy, and unresponsive. Moreover, there's really about two-thirds of a game here. Combat with the Celt raiding parties is pitifully simple—just archers and infantry—even with some enhancements over the IBM version.

Unlike the fortresses you'll build, the game simply doesn't

endure. Once you've finished a castle, there's nothing to do except move on to building others under more difficult circumstances. (The game allows construction of one or eight castles, in either real-world or fantasy settings. Sadly, the three-castle campaign from the IBM version has been excised.) That quickly gets old. A Sim City-style taste of life outside the walls would have gone down well. Castles cries out for a more advanced simulation that looks a little farther than the quarry. ■

## SHORT TAKES By Peter Olafson



### AGONY

Agony (\$49.99) is ecstasy. *Psygnosis'* first pure horizontal shooter since *Blood Money* is bound to be a little slice of heaven for arcade fans. The 64-color graphics are lovely, and the scrolling and music are peerless. You're steering an owl through a primeval landscape inhabited by various owl-attacking sprites—few of them less impressive or detailed than the backdrop—gathering eight spells as you go.

In terms of pure artfulness, this vast fantasy mural has to be the prettiest game *Psygnosis* has ever laid its hands to. (Will the sequel be called "Owl

Be Back"?) And yet this also seems a curious throwback at a time when *Psygnosis* has sought to broaden its appeal with such games as *Armour-Geddon*, *Lemmings*, *Obitus*, and *Carthage*.

### MIGHT & MAGIC III: THE ISLES OF TERRA

The second *Might & Magic* episode to appear on the Amiga is one of the best role-playing games you're likely to see this year. *Might & Magic III: The Isles of Terra* (*New World Computing*, \$59.95) offers an expansive and lovely game environment with barely a whisker of difference from the IBM version.

The interface has undergone a makeover—it's all portraits and icons now—and there are all kinds of little finesses that either put information at your fingertips or make using it an unalloyed pleasure. But what's most impressive here is a vigorous sense of focus. *M&M II* sometimes felt like a game system without a story to give it cohesion. *M&M III* lets you roam, but also keeps you roughly on track without ever appearing to force you there.

There's a sense of freedom, but also of deliberateness and progression. The monsters aren't infinite in number. The universe is full, but not cluttered.

I suppose you could see this as the same old kill-the-monsters-get-better-weapons-kill-bigger-monsters game, but it's so splendidly done that I never noticed. Very nice, *New World*. I can't wait for IV.

### THE KEYS OF MARAMON

In *The Keys of Maramon* (*Mindcraft*, \$49.95), you're a mercenary in the monster-plagued town of Maramon. The monsters only come out at night. They retreat into their towers at dawn, and the number surviving your depredations is then reflected in the buildings shuttered for repairs the next

**ALIEN AMBUSH**—When the Earth is attacked by hostile aliens, the last resort is an experimental starfighter, *Mantis*, with you in the cockpit. Was the Fist of Earth world government right to trust the job to you? Find out the answer in *Mantis* (\$59.95) from *MicroProse*.

**WORLD POWER**—Even if you can't balance your checkbook, you can balance a planet. *Global Effect* (*Millennium*, \$49.95) simulates the interaction of a world's economic, industrial, environmental, and military factors, with you at the controls. In four scenarios (post-nuclear, post-industrial, global-warming, or spent-world) and with limited time and economic power, you must save a world from man-made crises. Not

## THE NEXT ROUND

your style? Then compete with an opponent to dominate a world in the prime industrial or military force settings. Those with god-like delusions can even choose one of eight planets to nurture, populate, and civilize.

**NO PIECES TO LOSE**—Board-game enthusiasts will enjoy *Hoyle Official Book of Games: Volume 3* (*Sierra On-Line*, \$49.95). You can play against human friends or any of 18 animated creatures culled from *Sierra's* graphic adventures. Challenge them to backgammon, *Parcheesi*, yacht, dominoes, checkers, or snakes and ladders. If you chat with your computer

opponents, you'll even learn some of the history of the game you're playing.

**ATTENTION, ARMCHAIR PILOTS**—Tired of being mouse-bound when you take to the skies with a flight simulator? For a truer cockpit feel, try the *Mouse Yoke* (*Colorado Spectrum*, \$34.95). You simply clamp this aircraft-style yoke to a table and slip your mouse under its elastic strap. Not limited to flight simulators, the *Mouse Yoke* works with all software that uses a mouse for directional control. Pushing the yoke in and pulling it out simulates forward and backward mouse moves, while

turning the yoke left and right mimics sideways mouse strokes.

**SPICE IS POWER**—Arrakis is waiting for you in *Dune* (*Virgin Games*, \$49.99). As Paul Atreides, you and your family arrive on Arrakis to take over the planet's spice-mining operation from the rival (and evil) House Harkonnen at the Emperor's order. Baron Harkonnen does not give up easily, however. In this strategy adventure that attempts to remain true to Frank Herbert's award-winning novel, you must enlist the native *Fremen's* help in building your military might to defeat House Harkonnen, while maintaining Imperial spice-mining quotas and, of course, working towards the *Fremen's* dream of bringing ecological life to the planet. □



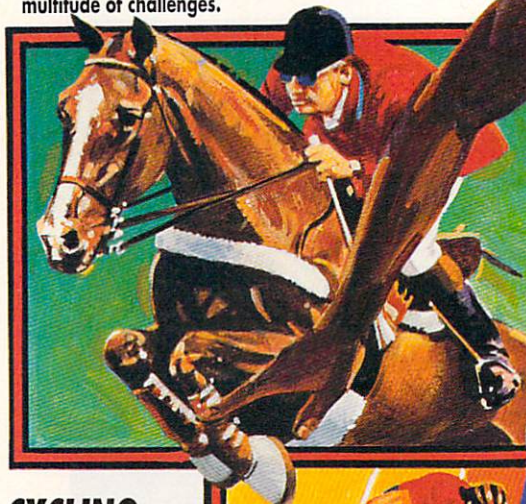
# INTERNATIONAL SPORTS CHALLENGE

"International Sports Challenge brings you all the excitement of 6 different sporting events in the most realistic multi-sports simulation ever produced"

6 SPORTS COVERING  
21 EVENTS

## SHOW JUMPING

- A masterpiece of 3D simulation! • Unique perspective, superb realism! • Different courses offering a multitude of challenges.



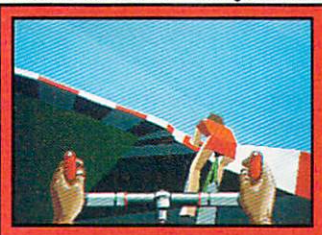
## CYCLING

With stunning 3D vectors and unbelievable speed, the cycling event offers the most exhilarating and exciting race of your life.

## MARATHON

The unique marathon is a test of strategy and technique as you take your runner through "the wall".

- The marathon, linking all other events together, allows you to tackle the ultimate challenge. • 4 courses. • Choice of six different runners. • Changes in terrain, weather and altitudes.



## DIVING

- Over 40 dives to pick from on 1, 3 and 5 metre boards, together with a medley option. • More than 140 frames of animation gives this event unsurpassed realism and gameplay.



## SWIMMING

Test your skills in the 100m Breaststroke, 200m Freestyle, 400m Butterfly or 4x100m Medley.



AVAILABLE ON:  
IBM PC & COMPATIBLES,  
COMMODORE AMIGA  
AND ATARI ST.

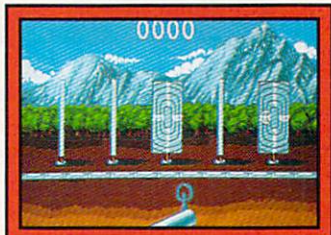


## SHOOTING

- Sharp reflexes will be needed to break records in the shooting events.
- 4 totally different events offering a wide spectrum of challenges from pistols to double barrel shotguns.



COPYRIGHT 1992 EMPIRE SOFTWARE. ALL RIGHTS RESERVED



**empire**  
SIMULATION

EMPIRE SOFTWARE:  
DISTRIBUTED BY READYSOFT INC.,  
30 WERTHEIM COURT, SUITE 2,  
RICHMOND HILL, ONTARIO,  
CANADA L4B 1B9.  
TEL: (416) 731-4175.



# MORE SHORT TAKES

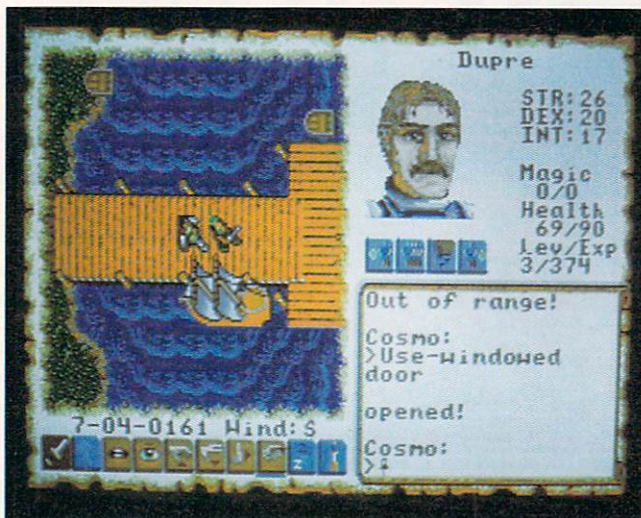
day. If you're consistently good about killing them off, you'll eventually come up with keys to the towers and the labyrinths below. If you're not, you'll dig yourself a nice little hole.

Maramon doesn't have much depth, but there are some nice elements here, and I've no doubt it could make a charming, if light game. But this is very much the sort of half-hearted Amiga port we were seeing three years ago. The music and sound consist of creaky boops and beeps. The graphics aren't even up to the EGA resolution in which the game was originally released. The scrolling is sluggish, and I found the screen shuddering uncontrollably in certain situations. Sorry, but avoid.

## Hoi

I've had arcade games featuring cute characters up the wazoo, but maybe I have room for just this one more. His name's Hoi, and he's the featured performer in *Hollyware's* eponymous five-level platform game (\$39.95) set in the Madlands: a landscape full of springs, conveyor belts, spikes, slippery surfaces, insects, and other hazards that do not love a cunnin' little green critter with a taste for jewels and fruit. In other words, it's very much a Super Mario Brothers/Sonic the Hedgehog-type game, and it's a very good one.

More could have been done with the main sprite, certainly. He just sort of throbs, as though turning invisible pedals. However, Hoi's scrolling is silky smooth, and the game is full of little Amiga refinements: an Eric Schwartz-like intro animation, a dithered sky with stars whizzing by, a hot palette, and a nifty explosion of circles when Hoi meets his maker. And while I didn't find any of the secret areas that traditionally grace these games, there's always the hint of something interesting just out of sight.



## ULTIMA VI: THE FALSE PROPHET

Ultima VI: The False Prophet (*Origin Systems*, \$69.95) should begin to redeem the widespread disappointment with Ultima V: The Crummy Port. Once again, you're the Avatar—that famous eight-virtue guy—summoned back to a Britannia threatened by gargoyles who've come up from the Underworld from which you rescued Lord British in U5.

The heart of this new-look Ultima is essentially the same. You and your traditional Ultima band roam around exploring, performing quests, talking to people, and killing monsters (though, pleasantly, there appear to be far fewer of the last). A big difference is that, for the first time, the outdoors, interior, dungeon, and combat sequences all use the same closeup, overhead perspective, with each party member appearing individually and in some de-

tail. Commands are now icon-based, there's a point-and-click graphic inventory, and conversations are more elaborate than ever. Britannia is a more intimate and real place than ever before.

The detail is staggering; takable objects are everywhere. The in-game graphics are right up to the level of the VGA original, and the music is superb.

So what's not to like? Well, on a 68000-based Amiga, it's very slow—slow to the point of did-my-machine-lock-up ponderousness when something's happening nearby—and that's a substantial failing. You'll need to be extra-emphatic with your key presses to get commands to take. The product-info sticker reports that it can be installed on hard disk only on machines with 1.3 ROMs, while in fact it can be installed manually on 1.2 machines.



## HILL STREET BLUES

Better late than never, I suppose. *Hill Street Blues* (\$39.95), based on the much-honored (and now rather dated) TV series, has been brought over from Europe by *DigiTek*, and it's not without charm.

That charm doesn't rely purely on affection for the show, but also on the large and detailed city under your protection. Driving your black-and-white in overhead perspective, you'll see an astonishing variety of buildings, trains coming and going, cars thronging the streets (and occasionally getting snarled up and honking at each other), and pedestrians.

Of course, some of those pedestrians have done wrong. You'll use an extensive set of icons to investigate crimes, identify suspects, and put them away. Major crimes go to trial—and you'll have to testify in court. There's a lot of detail here. It's quite tricky getting around at first, however, and you'll need time to get comfortable with the system.

## WILD WHEELS

Playing *Wild Wheels* (*Ocean*, \$49.95), a soccer-with-cars game, is a bit like being a bug inside a pinball machine. You're leading a team of bumper cars battering a huge steel ball around a playfield. If you do well, you earn points toward better cars for use against tougher opponents. You know the routine.

This isn't nearly as polished as *Speedball 2*, but it's a lot of basic, well-done fun—abetted by some nice touches in the playfield (such as special tiles) and an option for play on linked computers. The games speed right along—there's no goalie—and the controls (the joystick) serve well.

I do wish it had some league amenities—it's much more an arcade game than a future sport—and that it would run on hard drive so it wouldn't honk the disk at every opportunity. Meanwhile, I'm in the second division, climbing and enjoying it. ■



**\$300**  
OVER-  
NIGHT  
DELIVERY  
(see below)

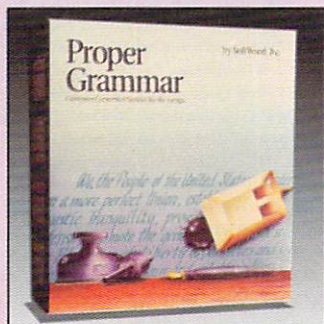
# SMARTSOFT<sup>TM</sup>

Information  
and Order Line:  
**800-824-6785**

## PRODUCTIVITY SOFTWARE



### PROPER GRAMMAR



**The only  
Grammar  
Corrector on  
the Amiga!**

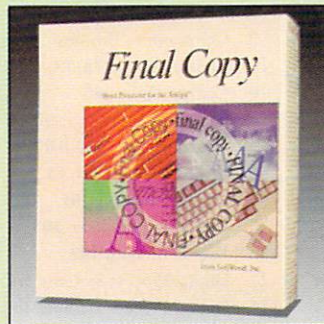
Use Proper Grammar to detect and correct 95% of your writing errors.

The best companion to your favorite word processor. Proper Grammar can read, correct, and save documents created in FinalCopy<sup>TM</sup>, Pen Pal<sup>TM</sup>, ProWrite<sup>TM</sup>, QuickWrite<sup>TM</sup>, Excellence!<sup>TM</sup>, Scribble!, KindWords<sup>TM</sup>, TransWrite<sup>TM</sup>, and TextCraft Plus<sup>TM</sup>.

Don't be embarrassed by bad writing or silly mistakes again. Detect and correct grammar errors in all or your writing.

**\$59<sup>95</sup>**

### FINALCOPY



FinalCopy produces the highest quality output of any Amiga word processor. It comes with 35 outline fonts and creates documents that can be printed on any 1.3 or 2.0 Workbench supported graphic printer or PostScript<sup>®</sup> printer. Say goodbye to jagged edged output forever.

Includes a 114,000 word spell, 470,000 synonym thesaurus with definitions, automatic text flow around graphics, automatic hyphenation, AREXX port, headers, footers, and multiple columns.

**\$59<sup>95</sup>**

**Best Printing  
on the Amiga!**

### SOFTCLIPS



**Best Clip-Art  
on the Amiga!**

SoftClips Clip-Art is an extensive collection of high-resolution, bit-mapped images that can be imported into documents created by most major word-processing and publishing programs on the Amiga. Each volume contains 4 disks, packed with hundreds of useful pictures, created by professional artists. These images are designed for letters, newsletters, reports, and many other documents for home and business use.

**\$44<sup>95</sup>**  
each

### SOFTFACES



SoftFaces from SoftWood utilize only the highest quality fonts, designed by world-famous type designers.

Each volume contains 25 typefaces. These carefully chosen typefaces are designed exclusively for use with Final Copy. Widely recognized and useful, SoftFaces' professional quality typefaces give your documents the creative flair they deserve.

These typefaces are outline fonts that can be sized from 4 points (1/28 inch) to over 300 points (over 4 inches). These fonts have no jaggies and will print using the full capabilities of your printer.

**\$59<sup>95</sup>**  
each

**Quality Typefaces  
for Final Copy**

**FREE 800 LINE TECHNICAL SUPPORT:** You will be given our Exclusive 800 Toll-Free Technical Support Phone Number to call should you require any help or advice on any aspect of the software in the US and Canada.

**EXPRESS SHIPPING:** Next-day shipping to most cities in the continental U.S. only \$3.00, Hawaii and Alaska \$13.00. Free 2nd day shipping anywhere in continental U.S.

**ORDER BY PHONE:** Phone our Order Line with your Visa or Mastercard number and expiration date. M-F, 8-5 P.M. MST

**WARRANTY:** 30 day version protection: If a new version of the program is released within 30 days of purchase, you will receive the new version at no charge regardless of normal upgrade fee. 30 day exchange on all products - no questions asked.

SmartSoft, Inc., P.O. Box 51840, Phoenix, AZ 85076



# LIST OF ADVERTISERS

<b>Reader Service Number</b>	190 A&M Computer Repair, <b>102</b>	<b>Reader Service Number</b>	194 Hammond Photographic Services, <b>104</b>
191 Alpha Data, <b>45</b>		168 INOVATronics, Inc., <b>51</b>	
12 Amigaman, <b>82-83</b>		75 INOVATronics, Inc., <b>CIII</b>	
* AmigaWorld		47 J&C Computer Service, <b>102</b>	
Get Animated, <b>31</b>		173 J&C Computer Service, <b>102</b>	
Videomaker, <b>74</b>		* Kasara Microsystems, <b>102</b>	
Razza Video, <b>80</b>		34 Manta, <b>79</b>	
AW Back Issues, <b>104</b>		93 Memory World, <b>99</b>	
85 Bare Bones Software, <b>102</b>		99 Micro R&D, <b>103</b>	
30 Black Knight Peripherals, <b>108</b>		183 MicroMiga, <b>104</b>	
7 Briwall, <b>110-111</b>		35 Montgomery Grant, <b>109</b>	
162 Centaur Software, <b>18-21</b>		65 New Horizons Software, <b>9</b>	
9 Commodore Business Machines, <b>28</b>		37 NewTek, Inc., <b>CIV</b>	
10 Computability, <b>72-73</b>		170 Northwest Public Domain, <b>102</b>	
10 Computability, <b>85</b>		150 Progressive Peripherals, <b>37</b>	
13 Creative Computers, <b>62-69</b>		17 Progressive Peripherals, <b>39</b>	
14 DevWare, Inc., <b>100-101</b>		* PromoVision, <b>102</b>	
* DevWare/Toolchest, <b>81</b>		62 Psynosis, <b>87</b>	
16 Digital Creations, <b>61</b>		199 ReadySoft, Inc., <b>95</b>	
76 Digital Expressions, <b>103</b>		197 Ramige, <b>57</b>	
156 Digital Images, <b>102</b>		44 Safe Harbor, <b>91</b>	
23 Digital Process Systems, Inc., <b>55</b>		40 SAS Institute, <b>50</b>	
171 Digital Process Systems, Inc., <b>71</b>		21 Sharp Electronics Corp., <b>49</b>	
185 Electronic Services, Int'l, <b>102</b>		45 Sideline Software, <b>107</b>	
166 Foxy Tec, <b>102</b>		81 Smartsoft, <b>97</b>	
18 GENie Information Services, <b>33</b>		90 SMC Software Publishers, <b>103</b>	
13 Go Amigo Video, <b>76-77</b>		46 SoftLogik Corp., <b>41</b>	
154 Gold Disk, Inc., <b>1</b>		88 Software Hut, <b>103</b>	
20 Grapevine Group, Inc., The, <b>92-93</b>		48 Softwood, Inc., <b>17</b>	
67 Graphic Impressions, <b>102</b>		57 Sunrize Industries, <b>59</b>	
1 Great Valley Products, Inc., <b>2</b>		* Supra Corporation, <b>CII</b>	
1 Great Valley Products, Inc., <b>4</b>		22 Tenex Computer Express, <b>88-89</b>	
1 Great Valley Products, Inc., <b>5</b>		15 The Disc Company, <b>47</b>	
1 Great Valley Products, Inc., <b>7</b>		71 Tri State Computer, <b>105</b>	
1 Great Valley Products, Inc., <b>11</b>		86 Visionsoft, <b>103</b>	
1 Great Valley Products, Inc., <b>13</b>		176 Zipperware, <b>104</b>	
1 Great Valley Products, Inc., <b>15</b>			

This index is provided as an additional service. The publisher does not assume liability for errors or omissions.

\* This advertiser prefers to be contacted directly.

## NOTICE TO ADVERTISERS

All advertising is subject to the approval of the Publisher and *AmigaWorld* reserves the right to refuse advertising without notice.

The advertising herein that has been typeset and/or designed by *AmigaWorld* is the property of *AmigaWorld*, and not that of the advertiser. The advertiser has purchased the right of reproduction in *AmigaWorld* only, and does not have the right to reproduce the ad in any other publication without the expressed written consent of *AmigaWorld*.

Advertisers and/or their agencies assume the responsibility for the condition of the contents of the advertising printed herein and agree to indemnify the Publisher of *AmigaWorld* for any claims and/or expenses incurred therefrom.

*AmigaWorld* is not responsible for changes to artwork after the given advertising deadlines, nor assumes responsibility for mistakes, misprints, or typographical errors, and will not issue credits of any kind for such errors.

*AmigaWorld* advises advertisers that statements regarding shipping and handling charges, warranties and/or money-back guarantees should be included within all forms of advertising in *AmigaWorld*.

The opinions expressed in the articles and advertising appearing herein are those of the authors and/or advertisers and are not necessarily those of *AmigaWorld*.

Advertising Inquiries should be directed to Advertising Offices, *AmigaWorld*, 80 Elm St., Peterborough, NH 03458; telephone: 800-441-4403. **Subscription problems or address changes:** Write to *AmigaWorld*, Subscription Dept., PO Box 58804, Boulder, CO 80332-8804. **Problems with advertisers:** Send a description of the problem and your current address to: *AmigaWorld*, 80 Elm St., Peterborough, NH 03458, ATTN.: Mary McCole, Customer Service Liaison.

*AmigaWorld* is a publication of International Data Group, the world's largest publisher of computer-related information and the leading global provider of information services on information technology. International Data Group publishes over 181 computer publications in more than 58 countries. Thirty million people read one or more of International Data Group's publications each month. International Data Group's publications include: ARGENTINA's *Computerworld Argentina*, *Info-world Argentina*; ASIA's *Computerworld Hong Kong*, *Computerworld Malaysia*, *Computerworld Southeast Asia*, *PC World Hong Kong*, *PC World Malaysia*, *PC World Singapore*; AUSTRALIA's *Australian Macworld*, *Australian PC World*, *Computerworld Australia*, *Information Decisions*, *Profit*, *Reseller*; AUSTRIA's *Computerwelt Osterreich*; BRAZIL's *DataNews*, *Mundo IBM*, *Mundo Unix*, *PC Mundo*, *Publish!*; BULGARIA's *Computerworld Bulgaria*, *Ediworld*, *PC World Express*; CANADA's *Direct Access*, *Graduate Computerworld*, *Info-Canada*, *Network World Canada*; CHILE's *Computerworld*, *Informatica*; COLUMBIA's *Computerworld Columbia*; CZECHOSLOVAKIA's *Computerworld Czechoslovakia*, *PC World Czechoslovakia*; DENMARK's *CAD/CAM WORLD*, *Communications World*, *Computerworld Danmark*, *Computerworld Focus*, *Computerworld Uddannelsen*, *LAN World*, *LOTUS World*, *Macintosh Produktkatalog*, *Macworld Danmark*, *PC World Danmark*, *PC World Produktguide*; ECUADOR's *PC World*; EGYPT's *PC World Middle East*; FINLAND's *Mikro PC*, *Tietoverkko*, *Tietoviikko*; FRANCE's *Computer Direct*, *Distributique*, *GOLDEN MAC*, *Info-PC*, *Languages & Systems*, *Le Guide du Monde Informatique*, *Le Monde Informatique*, *Telecoms & Reseaux International*; GERMANY's *Computerwoche*, *Computerwoche Extra*, *Computerwoche Focus*, *Computerwoche Karriere*, *edv aspekte*, *Information Management*, *Lotis Welt*, *Macwelt*, *Netzwelt*, *PC Welt*, *PC Woche*, *Publish!*, *Unit*, *Unix Welt*; GREECE's *Infoworld*, *PC Games*, *PC World Greece*; HUNGARY's *Computerworld SZT*, *Mikrovilag Magazin*, *PC World*; INDIA's *Computers & Communications*; ISRAEL's *Computerworld Israel*, *PC World Israel*; ITALY's *Computerworld Italia*, *Macworld Italia*, *Networking Italia*, *PC World Italia*; JAPAN's *Computerworld Japan*, *Macworld Japan*, *SunWorld Japan*; KENYA's *East African Computer News*; KOREA's *Computerworld Korea*, *Macworld Korea*, *PC World Korea*; MEXICO's *Compu Edicion*, *Compu Manufactura*, *Computacion/Punta de Venta*, *Computerworld Mexico*, *MacWorld*, *Mundo Unix*, *PC Journal*, *Windows*; THE NETHERLANDS' *Computer! Totaal*, *Computerworld Netherlands*, *LAN Magazine*, *MacWorld Magazine*; NEW ZEALAND's *Computer Listings*, *Computerworld New Zealand*, *New Zealand PC World*; NIGERIA's *PC World Africa*; NORWAY's *Computerworld Norge*, *Cworld*, *IDG Direct Response*, *Lotusworld Norge*, *Macworld Norge*, *Network*, *PC World Ekspress*, *PC World Norge*, *PC World's Product Guide*, *Publish! World*, *Student Guiden*, *Unix World*, *Windowsworld*; PERU's *PC World*; PEOPLE'S REPUBLIC OF CHINA's *China Computerworld*, *Consumer Electronics New Product World*, *Electronics International*, *New Product World*, *PC World China*; THE PHILIPPINE's *Computerworld*, *PC World*; POLAND's *Computerworld Poland*; ROMANIA's *Infocub Magazine*; RUSSIA's *Computerworld-Moscow*, *Networks*, *PC World*; SPAIN's *Amiga World*, *Autoedicion*, *CIMWorld*, *Comunicaciones World*, *Computerworld España*, *Macworld España*, *PC World España*, *Publish!*; SWEDEN's *Af-farsekonomi Management*, *Attack*, *CAD/CAM World*, *ComputerSweden*, *Corporate Computing*, *Datalingenjoren*, *DigitalVarlden*, *Lokala Natverk/LAN*, *Lotus World*, *MAC&PC*, *Macworld*, *Maxi Data*, *Mikrodatorn*, *PC World*, *Publishing & Design (CAP)*, *Unix/Oppla-system*, *Windows*; SWITZERLAND's *Computerworld Schweiz*, *Macworld Schweiz*, *PC & Workstation*; TAIWAN's *Computerworld Taiwan*, *PC World Taiwan*; THAILAND's *Thai Computerworld*; TURKEY's *Computerworld Monitor*, *Macworld Turkiye*, *PC World Turkiye*; THE UNITED KINGDOM's *Lotus Magazine*, *Macworld*; THE UNITED STATES' *AmigaWorld*, *Cable in the Classroom*, *CIO*, *Computer Buying World*, *Computerworld*, *Digital News*, *DOS Resource Guide*, *Electronic News*, *Federal Computer Week*, *GamePro*, *IDG Books*, *inCider/A+*, *InfoWorld*, *Lotus*, *Macworld*, *MPC World*, *Network World*, *NextWorld*, *PC Games*, *PC Letter*, *PC World*, *Publish!*, *RUN*, *SunWorld*, *SWATPro*; VENEZUELA's *Computerworld Venezuela*, *MicroComputerworld Venezuela*; YUGOSLAVIA's *Moj Mikro*.



# DRAM BLOWOUT

## We Beat Any Advertised Price NOBODY CHEAPER

### SIMMS

1x8 - 80 .....	\$33.99
1x8 - 70 .....	35.99
4x8 - 80 .....	114.99
4x8 - 70 .....	124.99

### GVP SIM32

4 MB.....	219.99
<b>GVP NIBBLE MODE SIMMS</b>	
4 MB.....	299.99

### ZIPS

#### A3000 STATIC COLUMN ZIPS - \$16.50 EACH

1x4 - 70 SCZ .....	\$17.95
1x4 - 60 SCZ .....	21.95

### PAGE ZIPS

1x4 - 80 .....	17.95
256x4 - 80 .....	5.50

### DIPS

1x1 - 100 .....	\$3.49
1x1 - 80 .....	3.99
1x1 - 70 .....	4.50
256x4 - 80 .....	3.99
1x4 - 80 .....	19.95
256x1 - 120 .....	1.00

### LASER PRINTER MEMORY

HP II, IID, IIP, III, IIID, IIP AND ALL PLUS SERIES	
BOARD WITH 2MB	\$109.95
BOARD WITH 4MB	169.95
DESKJET 256K UPGRADE	79.95
TWO BOARDS FOR	150.00
SIMILAR SAVINGS ON PANASONIC, STAR, OKI, TI, NEC, EPSON AND OTHERS	

### COMMODORE CHIPS

1 MB AGNUS W/PULLER & INSTR.	\$44.95
SUPER DENISE	33.95
1.3 ROM	26.95
CIA 8520 \$10.95 EA. OR TWO FOR	19.95
2 MB AGNUS W/PULLER & INSTR.	69.95
2.04 ROM ONLY	49.95
2.04 KIT FOR A3000	CALL
A1000 1.5MG UPGRADE W/CLOCK/DKB	199.95
Memory World has always brought you the finest in SPEED & Quality, so allow us to introduce to you, Interactive Video Systems.	

## CSA'S MEGA MIDGET RACER

# \$299.95

Board with 68030 & 68881

#### Amiga 500 Controllers:

IVS Grand Slam 500 .....	\$299
IVS Trumpcard Pro 500 .....	245
IVS Trumpcard Classic 500 .....	129
IVS Trumpcard 500AT/IDE .....	179

**I**  
**V**  
**S**  
As always, all IVS products include TC Utils. 2.0! ALL products are 100% compatible under WB 2.0 & w/removable media!

Trumpcard 500AT  
rated BEST BUY  
on the Amiga 500.  
(A/W Feb. '92 issue)  
Holds up to 8  
Megs of SIMMS  
and a fast AT/  
IDE drive!

**COMING SOON!**  
IVS "VECTOR"  
68030 Accelerator

#### Amiga 2000 SCSI Controllers:

IVS Grand Slam .....	\$239
IVS Trumpcard Professional .....	149
IVS Trumpcard Classic .....	85
Grand Slam & Trumpcard Professional are the World's Fastest SCSI Controllers for the Amiga computer. Both controllers have returned disk speed transfer rates in excess of 2.1Mbytes per second.	

Grand Slam includes SCSI-SHARE Networking, Printer-face Parallel Port & sockets for up to 8 SIMM Modules for RAM Expansion! This makes Grand Slam the

**Ultimate Amiga Peripheral.**  
Trumpcard Pro includes SCSI-SHARE Networking & the World's fastest SCSI Controller! This unit works great with any accelerator!

1) MMR 20 MHZ CPU & FPU/68882 tested & clocked at 25 MHZ .....**\$349.99**

Excellent entry level accelerator can be upgraded by user.

2) MMR MHZ CPU & FPU/68882 tested & clocked at 36 MHZ .....**\$499.99**

Need more speed? This is it. Great board — Great price.

3) MMR 38 Special for the speed demon or true professional .....**\$649.99**

38 MHZ CPU & 50 MHZ FPU/68882 allows SERIOUS productivity.

All Mega Midget Racers come with MMU only... You get more for less only at **MEMORY WORLD.**

### CSA UPGRADES

32 Bit 512K SRAM allows copying of 1.3 or 2.0 ROM into 32 bit memory: 100ns	\$99.00	70ns	\$125.00
2 MEG Board	\$269.95	4 MEG Board	\$499.95
		8 MEG Board	\$629.95

### EXTRA SPECIALS

68882RC 33	\$129.95	68882RC 50	\$149.95	68882FN 33 (PLCC)	\$169.95
------------	----------	------------	----------	-------------------	----------

### MEMORY WORLD

3070 Bristol Pike Plaza I, Suite 213  
Bensalem, PA 19020  
Attn: Amiga Dept.



215-244-7930 FAX 215-244-7932

Add \$5.00 S&H Add \$7.00 2nd Day Add \$4.50 COD

VISA / MC / CHECK / COD

Other chips/speeds available — CALL



# DevWare

EXCLUSIVELY SERVING THE AMIGA SINCE 1985

## Public Domain Library

**GUARANTEE** - We believe so strongly in our product that we offer a full lifetime, complete satisfaction guarantee. No questions asked.

We have been the official Public Domain Library of all the best Amiga magazines. Find out why these magazines choose us! Each of our disks are jam packed with only the best programs--no "one program per disk" here...compare this to our competitors--please! Almost all of our software is made and written in the USA for easy compatibility with American machines. The first two letters on each disk indicate the orientation of the disk; WB# general interest - most programs can be run from the workbench, FD# games and entertainment, VO# are video related programs/utilities and DD# advanced--requires thorough knowledge of AmigaDOS/CLI. Thanks to our extensive arsenal of anti-virus software, ALL of our software is guaranteed virus free!

### BEST SELLER

**DD79abcd: Amiga "C" Tutorial** - This is the most comprehensive C language--Amiga oriented--set of tutorials available. Includes full working examples, source code and an incredible set of lessons. Included are full discussions and examples on every topic on Amiga programming. 4 disk set, counts as 3.

### NEW DISKS

**VO9: 24-Bit** - Contains Rend24 which allows you to proof Toaster-generated 24-bit animations. Also contains utilities to convert IFF's to IBM VGA/Windows readable format. Also contains latest release of JPEG file compressor.

**VO8: CompuGraphic Fonts** - Contains 2 clip-art-style fonts and 4 actual typefaces for use with WB2.0 and it's Fountain utility. Great for desktop publishing and/or video projects.

**VO7: StarTrek Objects** - Contains the USS Reliant, NCC-1701D (the Enterprise from Star Trek: TNG) and a Ferengi Marauder ship. Also contains a fully detailed Porsche 911 and Apache Attack Helicopter. Imagine format.

**VO6: Modelling Objects** - Contains 20 vector objects in Imagine format. These are perfect for use with VO5 or your favorite 3D modelling program. Includes Amiga 3000, space station & many more!

**VO5: Modelling** - Vertex allows you to create 3-D objects without using the abstract X, Y and Z views. Loads Sculpt3D/4D, Turbo Silver, Imagine, LightWave, GEO and Wavefront formats. MagicTween will metamorphose any two pictures by automatically animate the "in-between" frames.

**VO4: Video & Anim** - Video\_DB will catalog all of your videotapes. Slate is a sharp graphic of a slate for your productions. CyroUtils splits, makes and gives info about ANIMs. RTAP lets you play large ANIMs on small memory machines.

**VO3: Image Utils** - let VideoToolsOnTap let you tap into the video power of your Amiga for fades, color and greyscales as well as a plethora of other indispensable video functions. TitleGen will do professional crawling titles. JPEG converts JPEGs-->24-bit IFF with amazing compression. ImageLab performs special effects on IFFs.

**VO2: Stillstore** - Used to create the "over the shoulder" graphic inserts ala the 11:00 news.

**VO1: Graphics** - Picbase will let you view and track ALL of your IFF pictures over all of those floppies! Freepaint is a Deluxe-PAINT workalike. Agraph is a powerful utility to produce snazzy graphs.

**FD90: Technoban** - If you like logic puzzles, this disk is for you! Create your own puzzles with the built-in editor or play the many pre-made ones. Requires Pat Agnus (1MB of Chip memory).

**FD78: Addams Family Quiz** - They're delightfully creepy and spooky and now they're in your Amiga! Classic digitized graphics and sound samples make this a real crowd-pleaser. Wait till you "talk with Cousin Itt"!

**FD78: Potpourri** - Lorian is a great Ultima-type adventure game with great graphics. Rocky is a remake of the classic Boulderdash.

**FD77: Arcade Series** - Galaga'92 is a clone of the arcade game of the same name with several gameplay enhancements--with smooth, sharp graphics, it's better than the original! Pharaohs Curse is a clone of the original C64 classic. Diplomacy is a beautifully computerized version of the Avalon Hill board game--conquer or be conquered! Galaga requires 68020+.

**FD76: Catecomb** - is a full graphic adventure game with beautiful graphics and a very slick icon/mouse driver interface.

**FD75: Arcade Series** - Descender is a clone of the classic arcade game "Tempest", complete with vectorized graphics. Tanx is the classic battle of trajectories and inertia between two tanks--incredibly well done! Search is a maze game unlike any other--included is a level editor too. (Tanx requires 1 meg chip memory--Fat Agnus)

**FD74: Arcade Series** - RingWar is an "Outer Limits" clone with vectorized graphics. MotherLode is a "Lode Runner" clone with 50 levels! In BlitzTanks, they're coming at you from all directions!! Call in air strikes and use your heavy artillery to survive!

**FD73: Arcade Series** - Intruder Alert! is a MULTI-level "Berserk" clone. Features smooth gameplay, great graphics & digitized sound f/x.

**FD72: Sword of the Warlock** - This is a demo version of a great public domain graphic dungeon adventure game. The adventure spans three diskettes and allows two players to go adventuring. The game has a "Bards Tale" feel to it. Three disk set, counts as 2. Requires 1 meg of RAM and 2 floppy drives or HD.

**FD71A&B: Star Trek: TNG Trivia Challenge** - So you think you know The Next Generation, huh? Complete with fantastic sampled sounds and digitized images, this game even looks and sounds like a genuine Star Trek terminal! VERY thorough and complete! Counts as 2 disks.

**FD70: SpaceGames** - Contains AmiGoids, >finally< an Asteroids game that takes advantage of the Amiga--totally configurable with great sound and graphics. In Cosmostruction the object of the game is for each Cosmostruction team to acquire the most points while construction energy ducts between the space station and planetoids.

**FD69: MindGames** - Had enough of shoot-em up games? Relax and let these 21 games exercise your mind instead of your wrist.

\$2.95\* ea.  
30+ Disks

\$3.95\* ea.  
12-29 Disks

\$4.95 ea.  
5-11 Disks

SUMMER BLOWOUT!!

Order 15 disks and pick any 4 disks of your choice! \*Anti-Virus is always free on all orders of 15 or more disks--a \$20 value!

\$5.95 ea.  
1-4 Disks

**FD68: Potpourri** - Eternal Rome is a strategic simulation of the Roman Empire including military, diplomatic, political, economic and social factors. Lord of Hosts is a board strategy game for 2 players. In Moonshine, you've got to get the hootch across the state line--a great rolling, scrolling driving game!

**FD67: Arcade** - Includes Llamator a well done "Robotron" clone. Hate is a "terrific" commercial grade Zaxxon clone with multiple levels/worlds and smooth diagonal scrolling...a 10!

**FD64: Games** - Wizzy's Quest - a "great" 50 level game with great graphics, Cubus - a 3-dimensional Tetris type game (rotate and move in 3 dimensions). Husker Du - Colors and pattern rather than shape in this Tetris-esque game; 5 screens and 3 levels of difficulty. Requires Fat Agnus (1 Meg of Chip)

**FD62: PomPom Gunner** - An extremely smooth and well done World War II gunner simulation. Requires 1 megabyte of memory.

**WB117: Religion** - Contains Scripture\_Mem (aids in memorizing verses and passages) and in Pauls Journey, you are Paul of Tarsus exploring the Mediterranean and preaching just as Paul did. Req. 1 MB RAM.

**WB116: Databases** - This is what you've been waiting for! Contains 5 uniquely specialized database programs for tracking: Videotapes, CD's, Magazine Articles, Comic Books and Trading Cards!

### SPECIAL PRODUCT!

**QT1: The A64 Package** - A very complete Commodore 64 emulator. Supports any CPU and is fully compatible with WB1.3 & 2.0. This version includes a special adaptor that will allow you to connect your 64's 1541 disk drive to your parallel port of your Amiga for total emulation. Two disk set, counts as two. Special price \$49.95 - including hardware.

**WB115: Term** - If you have AmigaDOS 2.04 and a modem, then this is THE program for you. Term totally conforms to the User Interface Style Guide for 2.04, has an ARexx port, and supports all popular file-transfer protocols through XPR libraries. We wish all programs were written to this caliber.

**WB114: Fonts #4** - Contains 36 bitmap system fonts.

**WB113: Sid II** - Why pay 40 bucks for a directory utility, when this one will do it all plus much more! A truly professional-caliber program. Sid 1 was our best, now completely rewritten. Sid 2 will undoubtedly astound you.

**WB112: Productivity/Business** - Stock Analysis allows automated downloading of stock data with full analysis capabilities (requires modem). SubStore will allow you to log magazines and articles with full search/can/print capabilities.

**WB111: Cellular Automa** - Straight from the pages of the January 1990 issue of Scientific American, this electronic model will allow you to simulate cellular circuits.

**WB110: Electronic Baby Book** - Immobilize your children on your Amiga! Tracks everything about your newborn--first steps, words, tooth, birthdays, X-mas, friends, etc.--even space for a digitized photo!

**WB109: Verbose** - Display, search and output The New Testament to text files or your printer.

**DB86: The Programmer** - Includes GadTools and REQTools which will allow you to create your user interfaces and then the program will automatically generate "C" source code or Assembly-code--saving you countless hours of work! Requires, and writes code for, AmigaDOS2.04.

**DB85: AnalytiRIM** - This incredible program is a combination of a powerful spreadsheet and a Relational Information Manager (database). Not for the faint of heart, this is a heavy-duty package! Req. 1 MB RAM.

**DB84: Proteus BBS** - This disk contains the full-blown version of the Proteus BBS software. Totally configurable & ultimately powerful. Requires a hard-drive, ARexx and at least a meg of memory.

**DB83: IBM** - Not one, but TWO IBM emulators that will allow the running of MS-DOS software with Amiga programs!! Comes complete with programs to turn your Amiga floppy drives into 720K IBM compatible drives.

**DB82: Unix** - Contains a working demo of Minix - a Unix workalike. Minix is system call compatible with V7 of Unix.

### FUN 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 hard forming.

**FD6: GAMES!** - This disk is chock full of games including: Checkers, Clue, God - a new side the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.

**FD7: Pacman** - This disk contains several pacman type games including: PacMan87, MazMan and Zonix.

**FD9: Moria** - This has great graphic controls, multiple spells, similar to Larn and Hack. Play time several weeks!

**FD10: HackLife** - A dungeon adventure game. Considered a must-have classic. This is the second release of this game on the Amiga. Great graphic interface. Play time several weeks!

**FD11: Las Vegas and Card Games** - Las Vegas Craps - The best Las

Vegas Craps simulation every written for any computer. Contains extensive HELP features. Also Thirty-One, VideoPoker and more.

**FD12A,FD12B: Star Trek, The Game** - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hdi).

**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, Trix - a Qix type clone.

**FD17: Educational Games** - This disk includes several games for the younger members including geography, math, science, and word games, also includes Wheel of Fortune.

**FD20: Tactical Games** - MechForce(3.72): A game that simulates combat between two or more giant, robot-like machines. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.

**FD26: Arcade Games** - Marble\_slide is a commercial quality game--similar to a Lucas game named PipeDreams, excellent playability and entertainment. Mutants--a small version of the same arcade game. SuperBreakout is a Pong/Arkanoids type game.

**FD27: Arcade Games** - This disk is loaded with some great games. Includes Raceorama a great racing car game with ten different courses, MiniBlat a helicopter gunship type clone, Shark in the same class as frogger, and SBreakout the original breakout with more.

**FD29: Shoot'em up's** - WWII - you're the pilot of a WWII plane flying through enemy territory, you've just been spotted, good luck on your mission, SpKiller - try and penetrate enemy lines with this game, and Retaliator - another great game.

**FD31: Games!** - Air Traffic Control - a good ATC simulation, Black Jack Lab - a full featured set of card games, ChessTel - play chess with your friend in distant and remote places with this game and a modem, labyrinth - a well done text adventure game (like an infocom game), and MouseTrap - a 3d maze game.

**FD32: Flight Simulator** - An instrument flight simulator for a DC10.

**FD33: Arcade Games** - Freddy a Mario Brothers type of game, Gerbilis a target practice game, Pipeline a German interpretation of Pipe Dreams, Tron a light cycles version, and Wetroids a wonderful version of asteroids with a hilarious twist.

**FD35: Omega (v.1.3)** - A new outstanding dungeon and outdoors adventure game in a similar vein as hack, rogue, and moria. This version is considerably faster and better than all previous versions. Play time several weeks.

**FD37A&B: Tactical Games** - Empire (2.2w) This great game comes highly recommended. With a full-graphic front end.

**FD38: Games** - Cribbage Master - A great cribbage game and tutor, Spades - a well done card game, ChineseCheckers - A computer version of this classic, Puz - a slide piece puzzle game and construction set.

**FD39A&B: Star Trek, The New Generation** - This is a, completely different version of Star Trek than that found on FD12. This one was created by the German author Tobias. Now with English instructions. Excellent!! Counts as two disks. Requires 512k

**FD40: Games** - 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...

**FD49: Chaos Cheats** - This disk contains an everything you wanted to know about cheat set for Chaos Strikes Back, including full maps, spells, object locations, super characters and more.

**FD50: Submarine Game** - Sealane, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.

**FD52: Classics Games** - PetersQuest a well done Mario brothers type of game, Jynbc a two player missile command clone, and Vstank a tank command game.

**FD53: Great Arcade** - On this disk is a wonderful implementation of the ever popular classic arcade game Defender. Also contain Air Race a WWII flying ace arcade game, and Psycoblast new creation idea game.

**FD56: Arcade** - Includes SpaceWar. HueyRaid is a well done helicopter arcade game. PowerPong's a great expanded pong game.

**FD57: Arcade Games** - Includes 2 truly commercial quality games. MegaBall, an Arkanoid-ish game, features 5 musical scores, multiple levels and addicting gameplay. Gravity Attack is a psychedelic trip through several different worlds--each distinctly different.

**FD58: GAMES!** - Includes Steinschlag: a great Tetris clone from Germany with music. SCombat: simulate battle between up to 40 players & monsters. Imperium Romanum: Battle up to 4 players for control of the Mediterranean in this Risk-esque game.

**FD59: Game Potpourri** - Xenon III is an almost exact clone of the commercial game of the same name...a great shoot'em up. Crossword will take lists of words & automatically generate word-search puzzles for any Epson compatible printer.

**FD60: Games** - In Nebula, race over a 3d world to destroy enemy installations. Interferon - a Great, Dr. Mario clone. Enigma: is it a game or a puzzle?

**FD61: Games** - Solitaire: great graphics, plays two versions. Kluge: an interesting piece of eye candy. Extreme Violence: 2 player kill or be killed game. YATC: A Tetris clone with Artificial Intelligence. Genesis: create realistic 3d fractal worlds.

**WORKBENCH DISKS**

**WB4:Telecommunication** - This disk contains several excellent pd communication programs designed to get you on line quickly and easily. Accoss (1.42) - A very nice ANSI term program based on Comm v1.34, but with the addition of several transfer protocols, Comm (1.34) - Latest version of one of the best public domain communications programs ever made on the Amiga. Handshake (2.12a) Handshake is a Full featured VT52/100/102/220

**WB5: Fonts #1** - Several fonts (35) for the Amiga, also included are five PageStream fonts and ShowFont - a font display program.

**WB6: Fonts #2** - ShowFont(4.0) This program allows you to quickly and painlessly view all 256 characters in a typical font. Large AmigaDos system fonts (many up to 56pts).

**WB7: Clip Art** - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.

**WB9: Icons** - Truly a multitude of various types and kinds. Also includes IconMaster, IconLab, and others great utilities to help generate icons.

**WB10: Virus Killers** - The latest and best VirusX(4.0), Kvr(2.1), and ZeroVirus III.

**WB11: Business** - Clerk(4.0), finally a full featured business accounting PD program for the small to medium company. Includes receivables, payables, end of month and uch more.

**WB12: Disk Utilities** - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts of file manipulation. A must have!

**WB13: Printer Drivers and Generator** - over 70 different drivers, and if these don't do it, with PnDrGen 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 Processors** - This disk contains the best editors. Includes TextPlus (v2.2e) a full featured word processor, Dme(v1.35) a great programmers editor with strong macro features, 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.

**WB22: Fonts #3** - Several more great fonts. These, like the other font disks work great with DPaint and WYSIWYG word processors.

**WB23: Graphics and Plotting** - Plot (20b) a three dimensional mathematical function plotter. Can plot any user defined function, BezSurf2 - produce awesome pictures of objects one could turn on a lathe. Can also map if image files onto any surface that it can draw. Now compatible with most 3D packages, and VScreen - makes a virtual screen anywhere, great for DTP!

**WB25: Educational** - On this disk are two programs that can generate maps of differing types. World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.

**WB26: Disk Utilities #2** - MrBackup, QuickBackup - two well done utilities to do 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.

**WB33: Circuit Board Design** - several terrific routines for the electronic

tor, an eprom programmer, turn your amiga into an eight channel digital data analyzer or oscilloscope, and more.

**WB62: Midi Utilities** - Several useful midi utilities including, programs to transfer to and from several music programs to midi, a midi sysex handler, a midi recorder with timebase, display midi info, file sequence player, and a few scores.

**WB63: Disk Utilities #3** - Several highly recommended programs to aid in removing duplicate files from your hard drive, performing file backups, Binary editing, fast formatting, file recovery, disk track recovery, and forced DISK VALIDATION of corrupt disks.

**WB65: Icons #2** - Lot's of neat icons. Also, several wonderful programs that to let you create your own icons, modify and manipulate icons and info structures.

**WB68: Music Utilities** - several good utilities for the Amiga music enthusiast. Includes, Noisetracker - a great music creation program, Sonix2MOD - converts sonix to .mod files which then can be used by noisetracker, sound-tracker, and MED, SpeakerSim - a speaker design tool demo, Wondersound is an additive harmonic instrument design tool with a separate envelope design window and 16 relative harmonic strength and phase angle controls.

**WB69: Music** - This disk has over 90 minutes of classical and modern electronic music for your Amiga.

**WB70: Desk Top Pub** - Atcp - transfer Macintosh screen fonts, Mac or IBM format .AFM metric files, a transfer Macintosh fonts and PPage .metric files. With this program, open the door to the libraries of Adobe and PostScript files! Calendar - month templates in PageStream format. Post - a full featured postscript file display and print utility.

**WB75: Music** - over 100 instruments files (.inst) and sample sound files (.ss) for your music programs.

**WB76: Applications** - This disk contains Stichery - a often requested knitting design program, Lotto - a rather complete lottery tracking and prediction utility, SSS - this screen capture program can grab almost any screen including games, Today - a personal calendar, Tarot - fortune teller, and Grammar - grammar checker.

**WB79: Home & Business Accounting** - Includes Kcbact - the most complete checkbook accounting program going, LCDCalc - this well done calculator has a very large display and operates from the keyboard or mouse, Mileage master - monitor your automobile mileage with this mileage log, Grammer - a grammar checker, and Wordtime - find out what time it is in up to 50 global cities.

**WB81: Great Applications** - DataEasy a very easy to use, database program. Don't let the ease of use fool you, this is a very full featured database program including full printer control for address labels and mail merge applications. Also includes, TypeTut a good typing tutor, RLC a full featured label printer, Banner, a multi-font banner maker, and Budget a home accounting in a program. Highly recommended.

**WB82: Animations** - Four full length, well done "movie" style animations. Including, Coyote, Jugglerif, GhostPop, & Mechanix. 2 disks, counts as 1.

**WB83: Computer Art** - this disk has some of the best Amiga generated computer art that we have collected in the past 5 years.

**WB85: Graphics** - Contains several programs for manipulating 24 Bit color images (ham-e) and a rather nice IFF image processing package.

**WB86: Centurian Press** - An electronic newspaper - requires AmigaVision.

**WB88AB: The Complete Bible** - A three disk set, with the entire text of the New Testament and Old Testament-King James version. A great utility. Three disk set, counts as three.

**WB90: Rippers, Strippers and Beats** - For the Amiga music enthusiast, this disk contains many programs designed strip music from your favorite games and programs. Music can then be played with your favorite Pd Music program. Also contains Drums, a very nice drum machine. This disk requires some knowledge of the CLI.

**WB93: Workbench Extras #2** - This disk contains the utilities that Commodore should have shipped with the Amiga. VirusX4.0, Snap, FixDisk (recover corrupt/deleted files), Disk Optimizer (loppy & hard), MacHill (screen blanker, hotkey, mouse accel, macro, clock utility), GOMF (a gumball machine) and PrintStudio.

**WB95: Checkbook Accountant 2.1** - This is definitely commercial grade; we've seen many checkbook programs and this is absolutely the best. Full budgeting, transaction recording and report generation.

**WB96: Dupers** - Contains Xcopyll & Nib which will backup copy-protected programs. FreeCopy removes copy protection from several programs, and SuperDuper will crank-out fast AmigaDOS copies.

**WB98: Business** - Includes BzBase! a nice, powerful database; BizCalc—a personal or mortgage loan calculator with amortization capabilities, Loop—a flowchart maker, Formmaker - design professional forms on your Epson LQ-2500 compatible printer.

**WB99: Lifestyles** - Includes AGene—a family tree program that tracks up to 600 people/marriages/etc. Landscape is a CAD program to create gardens/landscapes. Loom simulates an 8 harness loom; experiment with pattern design in an instant feedback environment.

**WB101: Chemesthetics** - is a program that displays molecules as a calotte model. This kind of display contains a certain esthetic attitude, even extremely poisonous molecules like nicotine and dioxine look quite nice.

**WB102: Telecommunications** - Contains the programs NComm 2.0 and VT100-29B. Zmodem protocols, XPR protocol support, full VT100 emulation. NComm's script language is so powerful it comes with a script file that creates a full-featured BBS system.

**WB103: Music** - Contains 12 "great" Soundtracker/MED music MODules...complete with programmable/shuffle player...8 bit audio never sounded so hot! Two disk set counts as two.

**WB104: GrabBag** - Q&A Trivia (requires AmigaVision) is a trivia game for 1/2 players...add your own questions to customize the difficulty level! Sysinfo is great for telling you how fast/slow your computer is, what boards are installed, chipsets, etc. AmiGazer will plot stars in the heaven from any position on earth complete with magnitudes and constellation identification.

**WB106: Home Manager** - This is a great all-in-one address book with an autodialer/rotadialer-to-do list/appointment scheduler/home inventory database and phone number dialer.

**WB107AB: Educational** - Drawmap is a program that generates repre-



**It's Here and in Stock!!**  
Release 2.04 of AmigaDOS for the A500/A2000!! Includes ROMs, disks and full documentation. Requires installation.  
**\$99** While supplies last

## WB105A&B: Workbench 2.0 Extras #2

This set contains the programs that should have been included with WB2.0. These powerful utilities take full advantage of the many new capabilities that are available in Workbench 2.0.

**Tool Manager** - a wonderful utility to add programs to your TOOL menu, create a collection of icons on the workbench to easily launch frequently used programs...and much more! A true must have utility!!!-All of our Amigas rely on this utility. (See the review in AmigaWorld-May'92)

**Virus Checker** - Full virus protection can be yours by simply dropping this icon in your WBStartup drawer.

**Degrader** - gives you tools to try to make non-2.0 happy programs work! Icon - Enhances Workbench's "Show All" to display over 40 distinct icons for different types of files (text, IFFs, source codes, libraries, etc)

**Font Editor** - Create/edit bitmap fonts with full color support.

**Screen Blankers** - ala fractals and splinters and swarming bees! No more boring black screen. Colorful, interesting and highly hypnotic effects!

**Requester Enhancers** - no more stale "Please Insert Volume" requesters--these are animated requesters for all of the system's requesters.

**CPUBltit** - speeds up text displays for owners of 68020+ CPUs.

**SafeReboot** - adds a safe way to reboot your computer...can greatly reduce disk validation errors!

sentations such as hemispherical views, and orbital views of the Earth's surface, complete with national boundaries. Screens can be printed or saved to disk as standard IFF files. Full user-configurable online help facility. 68020+ version included. 2 disk set, counts as 1!

**WB108: OctaMED** - This breakthrough program doubles your Amiga's sound capabilities from 4 channels to an ear-popping 8 channels! All the renowned editing capabilities of MED plus 4 more channels! If you thought your Amiga sounded good before...you aint heard nuthin' yet!

## DEV DISKS

**DD45: AREXX Programs** - This disk contains several useful arexx programs and examples, PopCL14 - The latest of a must have arexx.

**DD47: Pascal** - This disk contains everything needed to program in Pascal. Includes, A58k (1.2) 68000 assembler, Blink linking software and PCQ (1.0) a modest Pascal sub-set compiler.

**DD49: C Compiler** - contains zc(1.01) fully K&R, zcc(1.0) front end, A58k(1.2) assembler, Blink linker.

**DD50: AREXX #2** - a must have set of tutorials on AREXX and several useful examples and utilities for AREXX development.

**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, Lharc, Lhwp, Pkax, PowerPacker a must have by all, Zip, Warp, and Zoo. Also IFFrunch 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. 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 startup-sequence, plus 25 more programs.

**DD62: Basic and Xscheme** - Cursor - a full featured Amiga Basic compiler, basic and flex - several wonderful routines to help in basic programmers, and Xscheme - an interpreted object oriented language.

**DD66: Programming Toolbox** - Many programs to help in your development efforts (most for C some for basic) Includes programs to generate requesters, an incredible spritemaker toolbox, to greatly aid compiling, convert DPaint brushes to C structures, a great library manager, and many more wonderful time savers!

**DD69: Advanced Utilities** - SerNet and ParNet - Connect two Amiga's and share resources, MemMonitor - Similar to WFrug but greatly improved, Selector - put menus on your workbench screen, and more.

**DD71A&B: C Compiler** - This disk contains DICE, Matthew Dillon's full featured, powerful C compiler and environment system. 2 Disks, counts as 2.

**DD72: VT Emulators** - Contains three powerful full featured VT emulators, with many advanced features including Kermit, Xmodem and Tektronix protocols. VaxTerm, VLT, and more.

**DD77: Fortran** - Contains a full featured Fortran77 development system. Also contains EzAsm a strongly macro dependent 68000 assembler.

**DD78: Menus & System Enhancements** - Several programs to aid in launching programs from special icons, adding WorkBench menus and more. Also contains many useful programs to determine operation system configuration, memory usage, load and many other important utilities.

**DEALER INQUIRIES AND SUBMISSIONS WELCOME.**

Please send me the following disks:

Enter disk ID (Example: DD79, FD57, WB105)

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

CC# \_\_\_\_\_ Exp \_\_\_\_\_  
Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ ST \_\_\_\_\_ Zip \_\_\_\_\_  
Phone (\_\_\_\_) \_\_\_\_\_

☐ Payment enclosed  
☐ Please charge my:  
☐ Visa  
☐ Mastercard  
☐ Discover

Total disks @ \$ \_\_\_\_\_ ea. = \$ \_\_\_\_\_  
Disk based catalog (\$2.50) = \$ \_\_\_\_\_  
Anti-Virus (\$19.95) = \$ \_\_\_\_\_  
KAO Blank Disks # \_\_\_\_\_ = \$ \_\_\_\_\_  
CA Residents add 7.75% sales tax = \$ \_\_\_\_\_  
Foreign Shipping = \$ \_\_\_\_\_  
Handling = \$ 3.00  
Total Due = \$ \_\_\_\_\_

Following day shipping in most cases. No shipping charges within USA. Canada add \$25 each. Foreign add \$50 per disk for air mail delivery. Payment in US funds only. A minimum of \$200 required on all credit card orders.

DevWare, 12528 Kirkham Court, Suite 11-AW29, Poway, CA 92064  
Orders Only Please! (800) 879-0759 Support (619) 679-2825 Fax (619) 679-2887



# InfoMarket



## DIGITAL IMAGES

Presents

Digitized COLOR Clip Art specially designed for Desktop Publishing applications. Composite Video Images professionally processed. Beautiful results printing in COLOR or B&W. For the 4 disk sampler set send a Check or Money Order for \$30.00 to:

DIGITAL IMAGES

PO BOX 1274

ATHENS, AL 35611

THIS IS NOT LINE ART!  
Less than \$8.00 per disk!

Specify Amiga, IBM or MAC  
(MOs processed same day.)

YOU'VE SEEN THE REST—  
NOW SEE THE BEST!

Circle 156 On Reader Service Card.



## ELECTRONIC SERVICES INTERNATIONAL

ACCELERATE YOUR AMIGA TODAY  
WITH A CSA MEGA MIDGET RACER  
CLOCKED AT 25 MHz

with math chip

**\$375.00**

Nobody  
cheaper!

Sales  
Technical Support Line **1-800-729-4361** Visa/MC/COD

Circle 185 On Reader Service Card.

## AMIGA Files to 35mm and 4x5

- \* 35mm AND 4x5 B&W/Color Slides, Transparencies, Negatives
- \* 2000 Line Resolution Maintains RGB Quality & Anti-aliasing
- \* 48 Hour In-house Turn Around for 35mm Slides
- \* IFF, IFF24, and All Overscan files supported
- \* Student discounts available



For pricing & samples call: (715) 856-5627

Or write: Graphic Impressions POB 254 Wausaukee, WI 54177

Circle 67 On Reader Service Card.

**A500 Repair  
Only \$69.95\***

## Amiga Repair Services 24 hour Turnaround

\* 10 years experience fixing Commodore Equipment \* 90 day warranty on all parts replaced \* Factory Trained Service technicians \* Low Flat Rate Prices.

No charges for Commodore In-Warranty Service

\* A2000 \$95.00 \* C64 39.95 \* 1541 45.00 \* C128 \$75.00\*

Commodore Monitors \$35.00 Plus Parts

**J & C Repair RD #2 BOX 9  
TO: Rockton PA. 15856**

Phone (814) 583-5996 FAX (814) 583-5995

We will return Your System VIA UPS Ground COD. Commodore In-Warranty repairs please include copy of sales slip.

Circle 47 On Reader Service Card.

## KASARA MICRO SYSTEMS 1-800-248-2983 • 914-735-0960

Now the only source you will need for your Commodore product requirements. We have been your AUTHORIZED source for more than a DECADE of quality service.

### COMPETITIVE

prices on NEW or USED CPUs & accessories, upgrades, replacement parts & assemblies

### SAVE MONEY

with our EXCHANGE programs, repair/maintenance services and stock-to-one-week delivery

### REDUCE COSTS

with our MONTHLY SPECIALS, 90 day warranty on parts/repairs & quantity discounts



Weekday Hours 9:00 AM-6:00 PM EST

## NETWORK

### PROGRAMMER/CONSULTANT

For a 4-6 month project. Experienced. Familiar with Ethernet and/or Novell on the Amiga. Strong local area network credentials. Fax background/references to (212) 447-0375. Resumes acknowledged by return mail.

## The InfoMarket

AMIGAWORLD's InfoMarket is a great opportunity for those with AMIGA products to reach over 100,000 Amiga owners. *AmigaWorld* is the only publication with a subscription offer reaching every new Amiga owner, national newsstand distribution by Kable News Co., and single copy sales in computer stores carrying the AMIGA as well as large bookstores such as B. Dalton and Walden Books.

To reserve your InfoMarket page display ad, call Heather Guinard at 1-800-441-4403 or 603-924-0100. We accept checks, money orders, MasterCard or VISA.

## The Computer Service and Repair Video AMIGA Edition

This video represents six years of first hand experience repairing the Amiga Computer. Covering everything from basic theory of operation to our special tricks and tips section this video is sure to save you many hours of unproductive diagnostic time. For both the user who would like to understand inner workings of this amazing computer to the experienced technician this video can save you time and money.

Send your check or money order for \$39.95 + \$5.00 Shipping & handling to  
**J & C Repair PO Box 70 Rockton PA 15856**

Allow 4-6 weeks for delivery

Circle 173 On Reader Service Card.

# OUCH!

and give us a call! Or send \$2.00 for latest catalog and Sample Disk!

**\$2.00/per Disk**

(That's the sound of you taking it in the shorts by getting your PD Software anywhere else.)

Check the other PD/Shareware ads in this magazine, find what you want

We have it all, AMOS PD, Fish (\$1.50 ea.) and thousands more! Call today.

**(206)351-9502**

We accept cash, check, money order or C.O.D.!

Northwest Public Domain-P.O. Box 1617-Auburn, WA 98071-1617

Circle 170 On Reader Service Card.

## Blowouts \$11.97 or 5 / \$49.97 Blowouts

Arkanoïd	Final Countdown	Magical Myths	Rogue Trooper	Total Eclipse
Batman The Movie	Fire Power	Mind Roll	RVF Honda	Tower Toppler
BattleShip	Fright Night	Night Breed	S.D.I.	Trucers
Battle Tech	Ghostbusters 2	Off Road 4x4	Speedball	Turbo Racing
Blood Money	Harley Davidson	Prison	Street Cat	Warlock
Carthage	Joker Poker	Pyramax	Street Sports Bskball	Weird Dreams
Datascram	King Of Chicago	Rambo III	Summer Challenge	Wings of Death
Dr. Phummitt's House	Last Crusade: Action	Renegade	Games Winter Ed.	William Tell
Fiendish Freddy	Loopz	Rick Dangerous	Torvak The Warrior	Yolanda

**1-800-638-1123** 10-9M-Th All titles are new and fully guaranteed. Call for free  
Tech Support: (304)529-0461 10-5 F-Sat E. S.T. brochure of many other blowouts plus our extensive line of  
current releases and used Amiga titles. We accept Visa,  
**Bare Bones Software** American Express, Discover, Mastercard, and COD orders.

Circle 85 On Reader Service Card.

## EXCITING AMIGA PREWARE?

Hundred's of previews of old and new games! Now you can test drive many programs cheaply before actually buying the final product! We also have an incredible amount of adult software and music modules! A 2-disk adult sampler is available for \$7.00 (must sign stating you are over 18). All shipping is free. Write for a FREE catalog today!

**Foxy Tec • PO Box 2266 • Gresham, OR 97030**

Circle 166 On Reader Service Card.

## SATELLITE

### PROGRAMMER/CONSULTANT

For a 4-6 month project. Experienced. Familiar with various satellite systems and equipment. Must know Amiga. Fax background/references to (212) 447-0375. Resumes acknowledged by return mail.



## New! Video Music Box™

The easiest way to create background music for Amiga multimedia... Everything you need in one program!

\* Combines algorithmic composition of common musical styles with a full-featured graphic note editor that includes special tools for adding melody or counterpoint to chord progressions.

\* Supports both standard MIDI or IFF SMUS music files.

\* Includes over 75 patterns and 50 chord progressions with editors for creating and saving new chord progressions and new patterns, plus more, so...

Call or write now for free product brochure or send \$5 for demo disk.

Price \$109 + \$6 S&H Checks or M.O. only.  
WI residents please add 5% sales tax

Digital Expressions (414) 733-6863  
W6400 Firelane 8, Menasha WI 54952

Circle 76 On Reader Service Card.



Bigfoot 200 Watt A-500 Power Supply	\$129.95
Universal Joystick/Mouse Switch	\$ 29.95
Slingshot A-2000 Slot For The A-500	\$ 39.95
Eureka 512K A-501 Clone	\$ 74.95
Eureka 4MB Ram Expansion W/OK	\$ 89.95
Eureka Swifty True Three Button Mouse	\$ 39.95
Eureka Midi (1 In, 2 Out, 2 Thru)	\$ 39.95

### New From Eureka:

Mouse/Kbrd ROM Switch \$49.95  
B&W Hand Scanner \$229.95  
MIDI W/Serial Pass Thru \$59.95  
(Dealer Inquiries Welcome)  
Visa/MC/COD

(308) 745-1243 (308) 745-1246 FAX  
P.O. Box 130, Loup City, NE 68853

Circle 99 On Reader Service Card.

## Special Offer on Amiga Products

### AmigaDOS Release 2 Upgrades

Release 2 Upgrade Kit	\$87.50
Release 2 Kit for A3000	\$42.00
2620/2630 cpm Kit for Com. Accel	\$35.00
Super Denise 8373 Chip	\$39.95
Fatter Agnus Chip 1MB	\$45.00
Fatter Agnus Chip 2MB	\$80.00
DKB Megachip for above	\$234.95
2MB Agnus Bundle w/swapout	\$280.00
Switch It!	\$44.95
Multi-Start II	\$55.00

### Hard Drives & Accelerators

GVP Series II HCS/O HD Cont	\$169.00
GVP G-Force Combo 030/25MHZ/1MB	\$649.00
GVP G-Force Combo 030/40MHZ/4MB	\$1099.00
GVP G-Force Combo 030/50MHZ/4MB	Call
GVP SIMM 32 - 4MB 60ns for above	\$219.00
Quantum & Seagate Drives available	Call
CBM 2630 25MHZ Accelerator 4MB	\$689.00
GVP A500-HD8/0+ w/120MB Quantum	\$629.00

### Motherboard Replacements

A500 w/swapout (all revisions)	\$150.00
A2000 w/swapout (rev. 4.5 or above)	\$225.00
A2000 w/swapout (rev. 3.9 to 4.4)	\$400.00
A2000 Rev. 6.2E Motherboard	\$549.00
A3000 16MHZ w/swapout	\$449.00
A3000 25MHZ w/swapout	\$489.00

### Amiga Chips & RAM Chips

8520 CIA Chip	\$11.00
Denise 8362 or Paula 8364 Chip	\$23.95
Gary 5719 Chip	\$14.00
KickStart v1.3 ROM	\$29.00
1x8 SIMM Module 80ns	\$35.00
4x8 SIMM Module 80ns	\$129.00
Motorola 68030 CPU 50MHZ	\$189.00
Above CPU w/68882 50MHZ Math Co.	\$269.00

### Power Supplies, Floppies & Keyboards

CBM A2000 Power Supply	\$159.00
Above item w/swapout	\$119.00
Big Foot Power Supply	\$89.00
A2000 Keyboard	\$95.00
A500 Keyboard	\$55.00
A2000 Internal Disk Drive	\$89.00
A500 Internal Disk Drive	\$89.00
Alfa Data or Air External Drive	\$89.00

### Amiga Computers & Monitors

Amiga 500-DS Model or 500-C Model	\$399.00
Microbotics 501 512K w/clock	\$39.00
A520 Video Adapter	\$38.00
1084S Stereo Monitor	\$279.95
A2000, 3000 Computer Systems	Call
2320 Display Enhancer	\$235.00

### NEW ARRIVALS FROM COMMODORE

A690 CD ROM Drive	Call
A2386 SX Bridgeboard	Call



**Software Hut, Inc.**  
2534 S. Broad Street  
Philadelphia, PA 19145

To Order Call:  
(800) 848-0079

In PA or for more information call:

(215) 462-2268  
(215) 339-5336 (Fax)

Many additional products available for immediate shipping. Please call for information. Shipping on chips is \$3.00. Power Supplies, Drives and Keyboards are \$6.00. COD shipping please add \$4.00. For other items or air shipping, please call. We accept International and Canadian orders and only charge actual shipping charges. We accept Visa, MC, Discover, Money Order or Personal Check. All items are shipped same day from stock, personal checks allow 10 days to clear.

Circle 88 On Reader Service Card.

## FREE - 6 DISKS - FREE

Receive 6 Disks Full of our  
Best Selling Software for  
Amiga® Computers

Choose from

**GAMES • ANIMATION  
EDUCATION • UTILITIES  
VIDEO TOOLS**

Pay Only \$5.00 Shipping/Handling per pkg  
of 6 3.5" disks. Foreign add \$5.00 per pkg.

**SMC SOFTWARE PUBLISHERS**

CREDIT CARDS ONLY - ORDER TODAY - CALL  
**619-931-8111 Ext 511**

Circle 90 On Reader Service Card.

## AMIGA Programmers Wanted!

The AmigaWorld Tool Chest has created a fantastic opportunity to publish new, uncirculated Amiga programs. If you've written something special for the Amiga, and would like to earn some extra money, please contact us for our Tool Chest Author Guidelines. Perhaps you'll be the next Tool Chest Star!

**AmigaWorld Tool Chest**  
Submissions Dept.  
11835 Carmel Mt. Rd. #1304  
San Diego, CA 92128

## VISIONSOFT

PO Box 22517 • Carmel, CA 93955

MEMORY	UNIT	2MB	4MB	8MB
1 X 4-80 SC ZIP	\$17.50	—	140	280
1 X 4-70 SC ZIP	18.50	—	148	292
1 x 4-70, 80 PAGE DIP	22.00	88	176	344
1 x 4-70, 80 PAGE ZIP	22.00	88	176	344
256 x 4-70, 80 ZIP	5.50	88	176	344
1 x 1-70, 80	4.25	68	136	264
256 x 4-70, 80	4.25	68	136	264
1 x 8-70, 80 SIMM	34.00	68	136	264
4 x 8-70, 80 SIMM	125.00	—	125	250
ADRAM 540	95.00	162	239	—
BaseBoard	95.00	162	239	—
IVS Meta 4	—	172	239	—
DataFlyer RAM	92.00	159	226	354
DFlyer 1000 RAM	—	245	310	438
DataFlyer 500 SCSI	139	A500/1 MB DL Pak	439	
DFlyer 500 EXP SCSI	199	A2000, A3000	CALL	
DataFlyer 1000 SCSI	159	A520 Video Adpt.	38	
DataFlyer 2000 SCSI	82	A232 Multi-Serial	309	
GVP SIMM 32	220	1084S Monitor	279	
GVP PC 286	325	2.04 ROM Kit	89	
C-NET Amiga Software...\$125				
ORDERS ONLY: 800-735-2633 Visa / MC				
INFO & TECH: 408-899-2040				
Fax: 408-626-0532 BBS: 408-625-6580				

Circle 86 On Reader Service Card.



# InfoMarket

**FREE**  
Sample  
Product

Call or write to receive  
Zipperware's 10 mystery  
software absolutely free:  
Game, Music, PS 1 Fonts,  
Cliparts, Utilities, Video,  
Anti-Virus, Educational,  
European, Productivity!

...or try a popular PD/Shareware pack today!

**DTP PACK** 30 Postscript Type1 Fonts for PageStream & Professional Page (req conversion), near 1 meg of cliparts, PageStream calendar template, postscript and font utilities. Highly recommended.....\$19.95

**VIDEO FONTS** 5 Amiga Video/Graphics Guild disks, 100+ fonts (big, small, color), font manipulators, great for paint and subtitling! \$19.95

**TOP TEN GAMES** 10 best picks of 1991 by this magazine! Rings of Zon, Llamatron, Dungeon, Megaball, & many more. \$14.95

**CLIPART PORTFOLIO** Imported 15 disk set of thousands b&w clips, 17 general themes, over 100 subcategories. Easy search index, high quality, much better value than other commercial packages! \$59.95

To order, call for C.O.D. or send check/M.O. Add \$4 s&h. Open M-S till 7pm  
**ZIPPERWARE** - POB 95285 - Seattle, WA 98145 (206)747-1964

Circle 176 On Reader Service Card.

**MicroMiga**

**Lowest Prices!!**

Supra • Progressive Peripherals • GVP  
Psygnosis • NewTek • Microbotics  
ICD • ASDG • Gold Disk • Accolade  
Electronic Arts • IVS • MicroProse  
ReadySoft • ROCTEC • Quantum  
Spectrum Holobyte • CSA • Taito

We carry over 2000  
hardware and software titles  
for the Amiga. We also offer Fred Fish  
disks for \$2.50 each. Ask about our Fred Fish  
Subscription Plan for \$1.50 each. Our low prices, and  
friendly service will amaze you. Call today!

**1-800-733-AMIGA**

PO Box 1898  
Spring Valley, CA 91977

Customer Service: (619) 670-3161  
BBS 3/12/2400 bps (619) 670-1095  
24 hr. Fax (619) 670-9732

Call for Pricing or  
FREE Catalog

Circle 183 On Reader Service Card.

## ULTRA HIGH RESOLUTION 35mm COLOR SLIDES

from COLOR POSTSCRIPT • 24-BIT IFF  
HAM • Standard IFF

• Over 4000-line Resolution • NO Scanlines • NO Curvature Distortion • Brilliant Color

HAMMOND PHOTOGRAPHIC SERVICES  
(310) 390-3010

Call or Write for order form, price list & sample:  
11280 Washington Place  
Culver City, California 90230

Circle 194 On Reader Service Card.

## The InfoMarket

AMIGAWORLD's InfoMarket is a great opportunity for those with AMIGA products to reach over 100,000 Amiga owners. *Amiga-World* is the only publication with a subscription offer reaching every new Amiga owner, national newsstand distribution by Kable News Co., and single copy sales in computer stores carrying the AMIGA as well as large bookstores such as B. Dalton and Walden Books.

To reserve your InfoMarket page display ad, call Heather Guinard at 1-800-441-4403 or 603-924-0100. We accept checks, money orders, MasterCard or VISA.

## Don't Miss a Word!

Send for your missing back issues and complete your



or **TECH JOURNAL** library today!

**Video and Animation Special Issue 1992.** Articles on Video Basics and Videography Techniques, Tips and Tutorials for better animating, Video/Animation Buyer's Guides, Product Reviews and Roundups. A must-have for any Amiga animator or video enthusiast. **AWSP**

**May 1992.** Amiga Output as Art. Finding the right printer. Creating a cross-platform DTP operation. Part II - Getting the Most from Workbench 2.0. Reviews on newest versions of Imagine and Real 3-D 1.41. **AW9205**

**April 1992.** Music and Sound, Anatomy of a MIDI Studio. Reviews on sound sampling software. First part of series on getting most from Workbench 2.0. **AW9204**

**March 1992.** Multimedia. Comparisons of 9 authoring programs. Step-by-step guide for producing multimedia presentations. Director 2 tutorial. Plunging into CD-ROM. **AW9203**

**February 1992.** Features on Graphics. Tutorial on DPaint IV. Overview on image-making. Structured Drawing. 2-D Painting and Landscape Generators. Trip Prep with the Amiga. **AW9202**

**January 1992.** 8 '040 Accelerators for the Amiga. AW Experts' Choice Awards. Productivity Tips on telecommunications, database management, maximizing printer output. **AW9201**

**December 1991.** Video. Creating low-cost video effects. Guide to A500 Video products. Using DCTV to create low-cost 24-bit animations. Reviving Your A1000. Using PC-generated data and programs on your Amiga. The Scientific Amiga. War games roundup. **AW9112**

**November 1991.** Top 20 Games of 1991. Spot-light on 10 game-construction kits. The Amiga Troubleshooter's Guide. Dressing Up ARexx. Tips on creating smooth transitions with AmigaVision. **AW9111**

**October 1991.** Animation. Pointers and advice from 4 Amiga animators. Learn secrets of 2-D morphing. Step-by-step guide to using Imagine. Planet-building tutorial. Making the leap from 2-D to 3-D Graphics. **AW9110**

**September 1991.** 5 Low-End Post-Script Laser Printers. Quality Separations with 3 Top DTP Programs. Converting Amiga-generated graphics to PC or Mac. Avoiding "Catastrophic" Data Loss. **AW9109**

**August 1991.** Telecommunications. Getting out-fitted. Look at modems, fax/modems, and terminal software. Look at what networks offer. ARexx...For Everyone. Using Workbench Utilities. **AW9108**

**July 1991.** Annual Review Issue. Coverage of hottest hardware and software products. Debut of new monthly column, "Video Suite." **AW9107**

**June 1991.** Special Feature on CDTV with comprehensive Buyer's Guide to CD titles. Tips and techniques features on animation and optimizing your system's resources. **AW9106**

**May 1991.** Leading-edge Amiga graphics and the newest 3-D animation programs. "Special Report" on the A3000 Tower. Beginner's Guide to Music. Conclusion to A500 upgrade series. **AW9105**

**April 1991.** Power Hardware special. Part 3 of A500 Upgrade Series. **AW9104**

**March 1991.** Tips and Techniques on using 7 Amiga 3-D programs. Part 2 of A500 Upgrade Series - 4 Hard Drives. **AW9103**

**February 1991.** Multimedia Special. Part I of A500 Upgrade Series. **AW9102**

**January 1991.** 2-D Graphics Special: Buyer's Guide to Amiga Paint Programs. Tutorials on image-processing portraits, slide-making, painting and 2-D to 3-D graphics conversion. **AW9101**

### AmigaWorld Tech Journal Back Issues With Disks

All disks include source code and executables for articles.

**April 1992.** The Amiga Custom Chip Set. Easy Font and File Requestors. Object-Oriented Display Refreshing. Programming Motion: Animation Elements. Much More. On Disk: Animation Routines, Requestors and Gadgets, Revision Control System: A source-code manager. **AWTC22**

**February 1992.** Amiga NTSC and PAL Genlock Interfacing. A Tight Fit: JPEG Compression. Blitter Optimization. MIDI Programming Demystified. A Developer's Guide to PostScript - Part I. On Disk: Tons of Tools for Programmers, JPEG Compression Routines. **AWTC21**

**December 1991.** 68030 to 68040 Differences. Clean Up Your Programs. Efficient Assembly Programs. Custom Interfaces With ARexx. Hard Drives: How Fast Are They Really? On Disk: Loads of Libraries. Custom Printer Drivers. **AWTC15**

**October 1991.** The Complete Guide for the Blithering Idiot. Extending ARexx. Global Parlor Tricks. Multitasking in Amiga Basic. Designing a User Interface. Arcade Elements. On Disk: A68K version 2.71: a full-featured assembler, BLINK version 6.7. The linker to use. **AWTC14**

**August 1991.** ARexx Arcana: Hosts and Quotes. Inside SCSI. The Basics of Ray Tracing. An Introduction to Boopsi. Postscript Primer. On Disk: 2.0 include files. Post: a PostScript interpreter. **AWTC13**

**June 1991.** An Introduction to the Zorro III Bus. Building a 3-D Object Viewer. Improved Genlock handling. The NTSC/RS- 170A Standard. On Disk: 1.3 include files, Enforcer: an MMU protection tool. **AWTC12**

**April 1991.** Premiere Issue. Menus for a New Generation. Control Your Channels. Recycle Your Sprites. The Fast Floppy System. In Search of...The Perfect Joystick Routine. On Disk: DICE: Dillon's Integrated C Environment. PowerWindows 2.5c demo. **AWTC11**

**Free Tech Journal Binder with the Purchase of 2 or More.**  
Tech Journal Back Issues - an \$8.95 Value! While Supplies Last.

For Credit Card Orders Call

**1-800-824-5499 or 410-543-1989**

Mail order form with check or money order to:

**AmigaWorld Back Issues, PO Box 2151, Salisbury, MD 21802**

Write your issue selections on the lines below. Please use product codes.

AmigaWorld Issues \_\_\_\_\_

Tech Journal Issues \_\_\_\_\_

☐ Yes! I want my FREE binder with the purchase of two or more Tech Journal issues.

I want \_\_\_\_\_ back issues of *AmigaWorld* x \$3.95 \$\_\_\_\_\_

I want \_\_\_\_\_ back issues of Tech Journal x \$15.95 \$\_\_\_\_\_

CA & MD orders add appropriate tax \$\_\_\_\_\_

Canadian orders add 7% GST \$\_\_\_\_\_

Postage and Handling \$1.00 for single issue \$\_\_\_\_\_

\$2.95 for 2 or more issues

Canadian orders, add \$3.00. Foreign orders, add \$4.00

more for surface shipping.

Total Enclosed \$\_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City, State, Zip Code \_\_\_\_\_

Please allow 3 to 4 weeks for delivery. Checks or money orders payable in US funds. **2H2BI**



**We will spend the time you need to make an informed decision**

**160 BROADWAY  
NEW YORK, N.Y. 10038  
BETWEEN LIBERTY ST & MAIDEN LANE  
OPEN 9-6, FRI 9-2:30, SUN 10-4  
'15 Yrs. of Service to the Computing Community'**

**TRI STATE  
COMPUTER**  
ESTABLISHED 1977 • SEE HABLA ESPANOL

**ORDERS: USA & CANADA  
(800) 537-4441  
INFO: (212) 608-1391 / 349-2555  
Fax Us Your Order or Inquiry  
(212) 962-4635**

**"Your Video Toaster—Commodore®AMIGA® Headquarters"**

**FIRECRACKER 24**  
2 Meg, 24 Bit Graphics  
Hi Res, Works on 2500  
Free Imagine 2.0 **\$829.00**

**DCTV-NTSC**  
Digitizer & Display Device  
Frame Buffer w/ 24 Bit Paint  
Millions of Colors **\$384.95**

**GVP-Impactvision 24**  
16.7 Million Colors Flicker Eliminator  
Genlock Pip Framegrabber Video Titler  
A2000 Adapter **\$49.95 \$1869.00**

**AUTHORIZED FULL SERVICE Commodore®DEALER**



**A2000**

Call  
For  
Consultation



**A3000**

Call for  
Custom  
Configurations

**KITCHEN SYNC**  
2 CHANNEL TBC  
Broadcast Quality  
**\$1529.95 LTD. QTY.**

**EPSON ES 300 C**  
Full Color 24 Bit Scanner  
600 DPI w/ ASDG Driver  
**\$1148.95**

**GVP 040 POWER!**  
For A3000 **\$1979.95**  
**TTR FUSION 40**  
23X Faster than A2000 **\$1449.95**

**A3000 TOWER IN STOCK. ALL CONFIGURATIONS!**

**SOFTWARE**

Final Copy 1.4	54.95
Pagestream 2.2	168.95
Art Dept. Pro 2.0	169.00
SAS Lattice Ver. 5.1	187.95
Caligan 2	239.00
AMAX II Plus	349.95
DeskJet 500C Driver	39.95
Imagine 2.0	264.95
Pixel 3D 2.0	67.00
Real 3D V-1.4	319.00
Sculpt Animate-4D	299.00
3D Professional	195.00
Broadcast Titler I	225.00
Pro Video Post	197.00
Screenmaker	LOWEST
VideoTitrer 3D	88.00
Lemmings	29.95
Oh No! More Lemmings	29.95
Toaster 2.0 Upgrade	279.95
Pro Page 3.0	165.00

**NEWTEK  
VIDEO  
TOASTER 2.0  
LOWER THAN EVER  
BEFORE!**

**DRIVES**

Syquest 44 Meg Int. Drive	339.95
Syquest 44 Meg Cartridge	78.95
Syquest 88 Meg Int. Drive	437.95
Syquest 88 Meg Cartridge	109.00
Syquest Cleaning Kit	24.55
Ext. Box w/ Power Supply	109.95
3 1/2" Internal Floppy	67.95
3 1/2" A3000 Internal	84.95
3 1/2" Roctite Drive	68.95
3 1/2" Ext. Air Drive	79.95
Maxtor LXT 213 SCSI	689.95
3 1/2" Roctec Internal Floppy	79.50
3 1/2" Roctec Super Slim Ext.	84.95
Supra 500XP 52MB HD w/512K	529.95
Quant. 52MB SCSI LPS HD	229.95
Quant. 105MB SCSI LPS HD	376.00
Quant. 120MB SCSI LPS	439.95
Quantum 240MB SCSI HD	729.95
Maxtor 1.2 GiG	1899.95
Dataflyer 500	139.95
Dataflyer SCSI Controller	83.00

**We will not be undersold!  
Call if you need a price beat!**



**Commodore®AMIGA® 500  
LOWEST**  
Includes:  
• TV Adapter • Tetris  
• Carmen San Diego  
• Textcraft Plus  
• Tutorial  
• Software  
• Free Amiga  
• World  
**A500 BONUS PACK**  
Commodore Express 24 Hr. Service

**PERIPHERALS**

AmigaVision Newest Version	89.95
A2320 Disp. Enhancer (A2000)	209.95
Mega Midget RAM 2 MB	273.00
Mega Midget 33 MHz 68030	654.95
Mega Midget 25 MHz 68030	589.00
CDTV w/ Pro Upgrade	STOCK
All Computer Saleskins	CALL
Optical Mouse	48.95
Midi Controller (4 outs)	49.95
Phantom Midi Controller	218.95
Microbotics 8up! Dip.2meg	169.95
Flicker Free Video II	234.95
ICD—All Products Available	CALL
Fusion Forty 040/25	1449.00
Prog. Peripherals A2000 28 MHz 040	1568.00
ProRAM 64 MB Exp Card/3000/OK	358.00
Mercury A3000/Imagine 2.0 Bundle	2099.00
DKB-Megachip 2000/500 w/ Agnus	289.95
Multistart II	49.95
DKB 2632 RAM Exp/112/4 Meg	439.95

**Authorized Dealer**  
Trumpcard 500 124.95  
Trumpcard 500/MCTA 4 184.95  
Grandslam 500 289.95  
Grandslam 2000 232.00  
Trumpcard Pro 144.95  
Trumpcard 500 AT 174.95  
\* 68030 & 68000 Share  
Accelerator, SISI & RAM  
\* Exp. to 32 meg RAM  
\* Uses Industry Standard  
Sims  
\* Built in Trumpcard Pro

**PRINTERS**

Epson LQ 200 Printer	199.95
Epson LQ 570	259.95
Epson LQ 870	424.95
Canon BJ-300	419.95
Panasonic 1124i	274.95
Panasonic 1624	324.95
Panasonic KXP 4410	629.95
Panasonic KXP 4450i	999.95

**HP Desk Jet 500 C 699.95**  
HP Laser Jet III 1469.95

**IF YOU DON'T SEE  
WHAT YOU'RE LOOKING FOR,  
PLEASE CALL.**

**SOFTWARE**

1st Prize Toaster Fonts	39.95
Masterpiece Fonts	158.50
Kara Fonts Subheads	38.50
Kara Fonts Starfields	34.50
Showmaker	239.95
Kara Fonts Headlines 3	45.95
Kara Animfont 1(3)	29.50
Cinnamon Toast Fonts	
Vol I & II	64.50
Disney Animation Studio	78.00
The Director V 2.0	72.50
Fractal Pro	49.95
Map Master (Imagine)	44.00
Scenery Animator	57.50
Scenery Animator Disk	18.50
Video Scope 3D	117.00
Vistapro 2.0	84.95
DPaint 4.1	105.95
Dr. T's 3.5 Lev. II KCS	229.95
Diskmaster II	39.95
Directory Opus	37.95
Bars & Pipes Pro	207.95

**MONITORS**

Loop Tech. CT1458	CALL
Commodore 1084S	LOWEST
Commodore 1960	CALL
Pan. CT-1382Y	234.95
Sony CPD 1304S	579.00
Sony CPD 1604S	999.95
Panasync 1381i	319.00
Nec MS 2A	369.95
Nec MS 4FG	729.95

**Tristate is a full service dealer for pros and amateurs alike. We carry everything in Video & Editing**

Authorized Dealer	
A500 HD8+0/520Q-11	489.95
A500 HD8+0/120Q-11	639.95
A500 HD8+0/240Q-11	898.95
A500-PC 286/512	309.95
AT Once + PC emulator	309.95
A2000 HC8+0MB	169.95
A2000 HC8+0MB/520-11	384.95
A2000 HC8+0MB/120Q-11	509.95
A2000 HC8+0MB/240Q-11	819.95
A2000 RAM 8/0	CALL
1MBx8MB SIMM (2MB)	CALL
DSS8 Sound Studio	84.95
Combo 030-25/1/0	689.95
Combo 030-40/4	1149.95
Combo 030-40/4/120	1499.95
Combo 030-40/4/240	1699.95
G Force 030-50/4	1549.95
Combo 030-50/4/120	1849.95
Combo 030-50/4/240	2049.95
Sim32-1MB/60	CALL
Sim32-4MB/60	CALL
S11 030 HD Disk Mt. Kit	42.95

AmiLink CI Editor Headquarters	
A/B Roll System (AG 1960)	CALL
Cuts Only System (AG 1960)	CALL
Toaster Control Module	CALL
TOSHIBA	
TSC-100 Industrial Hi8	CALL
CANON	
LX-100	CALL
Canon A1 Digital Kit	CALL

PANASONIC	
AG 7750 Single Frame Accurate TBC, Built in serial controlled	IN STOCK Perfect for Toaster
AG 7650 Built in TBC 32x search companion to AG 7750	
AG 770 Controls AG 7750 & AG 7650	
AG 7700 Time Code Reader Card	STOCK
CALL FOR SYSTEM DISCOUNTS	

INDUSTRIAL	
AG-1960	939.95
AG-450 SVHS w/ case	1249.95
AG-460 2 chip SVHS w/case	2899.95
AG-185U	CALL
AGW1	329.95
AG-190U	STOCK
WV200 CLE	CALL
AG-7400 Port. SVHS	CALL
AG-1730	SPECIAL
CT-1382Y	234.95
AG-1260 4HD Ind. VCR	259.95



# Manufacturers'/Distributors' Addresses

## Accolade

5300 Stevens Creek Blvd.  
San Jose, CA 95129  
408/985-1700

## Active Circuits

1985 Highway 34, Suite A-4  
Wall, NJ 07719  
908/974-1616

## Advanced Storage Systems

A division of Preferred  
Technologies  
14540 E. Beltwood Pkwy.  
Dallas, TX 75244  
214/702-9191  
800/878-0010

## AltoFirma Software

36M Ridge Rd.  
Greenbelt, MD 20770  
301/345-2357

## American Software Distributors

502 E. Anthony Drive  
Urbana, IL 61801  
217/384-2050

## ASDG

925 Stewart St.  
Madison, WI 53713  
608/273-6585

## Asimware Innovations

101 Country Club Drive  
Hamilton, Ont.  
Canada L8K 5W4  
416/578-4916

## Avalon Hill

4517 Harford Rd.  
Baltimore, MD 21214  
410/254-9200

## Black Belt Systems

398 Johnson Rd.  
Glasgow, MT 59230  
406/367-5513  
800/TK-AMIGA

## Black Knight Peripherals

255 W. Moana, #207  
Reno, NV 89509  
702/827-8088

## Brain Technologies

PO Box 215147  
Sacramento, CA 95821

## Broderbund Software

17 Paul Drive  
San Rafael, CA 94903  
415/492-3200  
800/533-6263

## Canadian Prototype Replicas

PO Box 8  
Breslau, Ont.  
Canada N0B 1M0  
519/884-4412

## CanCor

14 Garrard Rd.  
Whitby, Ont.  
Canada L1N 3K3

## Cardinal Video

PO Box 2617  
Grass Valley, CA 95945  
800/356-8863

## Centaur Software

PO Box 4400  
Redondo Beach, CA 90278  
310/542-2226

## Colorado Spectrum

748 Whaler's Way, E-201  
Fort Collins, CO 80525  
303/225-6929

## Commodore Business Machines

1200 Wilson Drive  
West Chester, PA 19380  
215/431-9100  
215/436-4200

## Comspec Communications

74 Wingold Ave.  
Toronto, Ont.  
Canada M6B 1P5  
416/785-3553

## Crossway Books

1300 Crescent St.  
Wheaton, IL 60187  
708/682-4300

## CSA

7564 Trade St.  
San Diego, CA 92121  
619/566-3911

## DC Computer Repair

14240-M Sullyfield Circle  
Chantilly, VA 22021  
703/222-8799

## Designing Minds

3006 North Main St.  
Logan, Utah 84321  
801/752-2501

## Devasoft

PO Box 41250  
San Jose, CA 95160  
408/927-9645

## Digital Creations

2865 Sunrise Blvd., Suite 103  
Rancho Cordova, CA 95742  
916/344-4825

## Digital Expressions

W6400 Firelane 8  
Menasha, WI 54952  
414/733-6863

## Digitek

1916 Twisting Lane  
Wesley Chapel, FL 33543  
813/973-7733

## Dineen Edwards Group

19785 W. 12 Mile Rd.  
Southfield, MI 48076  
313/352-4288

## Dr. T's Music Software

100 Crescent Rd., Suite 1B  
Needham, MA 02194  
617/455-1454

## EasyScript!

10006 Covington Dr.  
Huntsville, AL 35803  
205/881-6297

## Electronic Arts

1450 Fashion Island Blvd.  
San Mateo, CA 94404  
415/571-7171  
800/245-4525

## Expansion Systems

44862 Osgood Rd.  
Fremont, CA 94539  
415/656-2890

## Future Video Products

28 Argonaut  
Laguna Hills, CA 92656  
714/770-4416

## Gold Disk

5155 Spectrum Way, Unit 5  
Mississauga, Ont.  
Canada L4W 5A1  
416/602-4000  
800/GOLD DSK

## Great Valley Products

600 Clark Ave.  
King of Prussia, PA 19406  
215/337-8770

## Hollyware Entertainment

13464 Washington Blvd.  
Marina Del Rey, CA 90291  
310/822-9200

## HyperMedia Concepts

5200 Washington Ave., Suite 226  
Racine, WI 53406  
414/632-3766

## ICD

1220 Rock St.  
Rockford, IL 61101  
815/968-2228  
800/373-7700

## Interactive Video Systems

7245 Garden Grove Blvd.  
Suite E  
Garden Grove, CA 92641  
714/890-7040

## Merit Software

13635 Gamma Rd.  
Dallas, TX 75244  
214/385-2353

## MicroBotics

1251 American Pkwy.  
Richardson, TX 75081  
214/437-5330

## Micro-Pace Distributors

Commercial Park West, Suite C  
Champaign, IL 61821  
217/356-1885

## MicroProse Software

180 Lakefront Drive  
Hunt Valley, MD 21030  
301/771-1151

## Millennium

Distributed by Electronic Arts

## Mindcraft

Distributed by Electronic Arts

## National Space Science

Data Center  
Goddard Space Flight Center  
Greenbelt, MD 20771  
301/286-6695

## NEC Technologies

1255 Michael Drive  
Wood Dale, IL 60191  
800/562-5200

## New Sound Music

PO Box 37363  
Oak Park, MI 48237  
313/355-3643

## NewTek

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

## New World Computing

Distributed by Broderbund

## Ocean Software

Distributed by Electronic Arts ►



# SIDELINE SOFTWARE

840 Northwest 57th Court, Ft. Lauderdale, FL 33309 1-800-888-9273 Orders

BRINGING THE WORLD'S BEST AMIGA SOFTWARE TO YOUR DOOR

ORDERS ONLY:

1-800-888-9273

INFORMATION:

1-305-491-0398

New Price

## Amiga Ten Star

You get all TEN for \$19.95

Clever and Smart • Eskimo Games  
Power Sticks • Spin World • Sky Blaster  
Vampire's Empire • Crystal Hammer  
Final Mission • Triple X • Little Dragon

## NEW COMPILATIONS!!

**Phantasia Pack:** \$21.95  
Includes: Phantasia 1, Phantasia 3, Questron 2

**Air-Sea Supremacy:** \$49.95  
Includes: Gunship, Silent Service, Wings, P-47 Thunderbolt, Carrier Command.

**High Energy:** \$24.95  
Includes: North and South, Teenage Queen, Hostages, Fire & Forget, Tin Tin On the Moon.

**TNT:** \$24.95  
Includes: Toobin, Xybots, All Points Bulletin, Hard Driving, Dragon Spirit

**Power Pack:** \$24.95  
Includes: T.V. Sports Football, Xenon 2, Bloodwych, Lombard Road Rally.

**Max Pack:** \$44.95  
Includes: S.W.I.V., Night Shift, Turrican 2, St. Dragon.

**Top League:** \$49.95  
Includes: Speedball 2, F-16 Falcon, Rick Dangerous 2, Midwinter, T.V. Sports Football.

**Power Hits** \$49.95  
Includes: Shanghai, Battle Tech, Fighter Bomber, GB Air Rally, Wicked, Hacker 2, Ports of Call, Tournament Golf, Little Computer People, Spin Dizzy Worlds.

**Winning Team** \$29.95  
Includes: All Points Bulletin, Cyberball, Klax, Victindicators, Escape from the Planet of Robot Monsters



Special Forces	\$45
Utopia	\$40
Sensible Soccer	\$40
Silent Service 2	\$35
Robocod	\$37
The Simpsons	\$37
Heindall	\$45
Chaos Engine	\$37
Winter Super Sports	\$37
Knightmare	\$40
Lotus Turbo 2	\$37
Final Fight	\$40
Deuteros	\$40
Smash TV	\$37
Shadowlands	\$45
W.W.F. Wrestling	\$37
Deliverance	\$37
A320 Airbus	\$45
Epic	\$45
Columbus' Discoveries	\$40
Simearth	\$42
Cover Girl Strip Poker	\$37
Project X	\$37
Space Crusade	\$40
Pinball Dreams	\$37
Varoom	\$37
Steel Empire	\$45
Hook	\$45
Storm Master	\$40

**FAX 305-491-6134**

No refunds or exchanges. U.S. products warranted through manufacturer. Overseas products warranted by Sideline Software.

Check availability and compatibility before buying! Software performance not guaranteed.

SHIPPING CHARGES:  
MasterCard / Visa / UPS ground:  
\$5 for up to 3 pieces.  
C.O.D. (cash only) / U.P.S. ground: \$10  
for up to 3 pieces.

Second day air: add \$3 to regular shipping charges.

Next day air & Overseas Shipping: Call. Canadians: add \$3 to regular shipping fees.

Shipping Note: Compilations Count As 1 Piece

1943	14.95
3 Stooges	14.95
4-D Sports Boxing	21.95
4-D Sports Driving	21.95
Advanced Destroyer Simulator	16.95
Alpha Waves	16.95
Altered Beast	14.95
Amazing Spiderman	16.95
Amnios (Psychosis)	21.95
Arkonoid 2	14.95
Atomic Robo Kid	9.95
Baal	13.95
Backgammon Royal	17.95
Ballgame	16.95
Ballistix	14.95
Barbarian 2 (Palace)	14.95
Barbarian 2 (Psychosis)	21.95
Bard's Tale 3	21.95
Bar	16.95
Batman The Movie	14.95
Battle Chess	18.95
Battlesquadron	6.50
Beast Busters	24.95
Bionic Commando	14.95
Blasteroids	14.95
Blockout	14.95
Bloodmoney	14.95
Bloodwych	14.95
Bloodwych Data Disk	12.95
Brat	12.95
Brigade Commander	16.95
Bubble Bobble	16.95
Budakon	18.95
Cabal	16.95
Cadaver	24.95
California Games	16.95
Captive	18.95
Cardiac	14.95
Carrier Command	14.95
Carthage (Psychosis)	19.95
Centurion: Defender of Rome	21.95
Championship Run	16.95
Chips Challenge	17.95
Chuck Yeager 2.0	18.95
Colossus Chess X	16.95
Conflict In Europe	14.95
Crackdown	16.95
Craps Academy	16.95
Cyberball	16.95
Dark Spyre	14.95
Days Of Thunder	16.95
Demons Tomb	9.95
Disc / Tron	16.95
Double Dragon 2	16.95
Dragon Breed	14.95
Dragons of Flame (SSD)	18.95
Dragon Wars (Interplay)	18.95
E-SWAT	16.95
F-16 Combat Pilot	16.95
Fast Break	14.95
Final Command	16.95
Fire & Brimstone	14.95
Flight Of The Intruder	24.95
Flintstones	16.95
Flood	18.95
Forgotten Worlds	14.95
Future Basketball	16.95
Future Wars (Interplay)	18.95
Gauntlet 2	14.95
Games Summer Edition	14.95
Games Winter Edition	14.95
Germ Crazy	16.95
Ghouls and Ghosts	16.95
Gold of the Aztecs	17.95
Gold Runner 2	12.95
Golden Axe	18.95
Grand Prix Circuit	18.95
Hard Driving 2	17.95
Heart of the Dragon	18.95
Hollywood Poker	16.95
Hunt For Red October (Arcade)	17.95
Imperium	18.95
Impossible Mission 2	14.95
Infestation	16.95
Iron Lord	16.95

It Came From The Desert	18.95
It Came From The Desert 2	16.95
Ivanhoe	16.95
Jack Nicholas Greatest 18	14.95
James Bond: Stealth Affair	18.95
James Pond	16.95
Jupiter Master Drive	14.95
Keef The Thief	18.95
Khalaan	19.95
Kid Gloves	14.95
Killing Cloud	17.95
King Of Chicago	14.95
King's Bounty	16.95
King's Quest IV (Sierra)	21.95
Klaxx	16.95
The Krystal	19.95
Leatherneck	12.95
Legend Of Faragahl	19.95
Line Of Fire	16.95
Lords of the Rising Sun	18.95
Magic Fly	18.95
Megalomania	22.95
Menace	16.95
Midnight Resistance	16.95
Midwinter	14.95
Mig 29 Fulcrum	19.95
Monty Python	17.95
Moonshine Racers	17.95
M.U.D.S.	16.95
NAM 1965-1975	16.95
Neuromancer	16.95
New Zealand Story	16.95
Night Hunter	16.95
Night Shift	16.95
Ninja Spirits	14.95
Nitro	16.95
North & South	14.95
Operation Harrier	16.95
Operation Snowstrike	16.95
Operation Thunderbolt	18.95
Pacmania	16.95
Paperboy	16.95
Phasar Home Accounting	21.95
Pictionary	14.95
Pit Fighter	21.95
Populous	18.95
Populous World Editor	16.95
Pro Tennis Tour	16.95
Projectile	18.95
Puffy's Saga	12.95
QIX	12.95
RBI Baseball 2	18.95
Red Lightning (SSD)	18.95
Red Storm Rising	19.95
Resolution 101/Overforce	14.95
Rick Dangerous	14.95
ROTOX	16.95
R.V.F. Honda	14.95
Satan	14.95
Savage	6.50
Shadow Of The Beast	18.95
Shadow Warrior	16.95
Shogun	16.95
Sir Fred	14.95
Ski Or Die	16.95
Sky Chase	14.95
Shufflepuck Cafe	14.95
Silkworm	14.95
Star Command (SSD)	18.95
Starflight	18.95
Starglider 2	16.95
Stormball	18.95
Street Fighter	16.95
Street Rod	12.95
Strider	16.95
Stryx	16.95
Stunt Car Racer	16.95
Super Off-Road Racing	16.95
Switchblade	16.95
Sword Of Sodan	9.95
Swords Of Twilight	14.95
T.V. Sports Basketball	18.95
T.V. Sports Football	18.95
The Immortal	18.95
The Krystal	19.95
The Third Courier	16.95

## EUROMAGS

Amiga Format	W/Disk	\$10.00
Amiga Action	W/Disk	\$10.00
Amiga Power	W/Disk	\$10.00
Amiga Shopper	No Disk	\$5.00
C.U. Amiga	W/Disk	\$10.00
Amiga User	W/Disk	\$10.00
Amiga Comp.	W/Disk	\$10.00
Amiga Games	W/Disk	\$10.00
Zero	W/Disk	\$10.00



## Manufacturers'/Distributors' Addresses, cont.

### Origin Systems

110 Wild Basin Rd.,  
Suite 330  
Austin, TX 78746  
512/328-5490

### Panasonic Communications

Two Panasonic Way  
Secaucus, NJ 07094  
201/348-7000  
800/447-4700

### Parth Galen

PO Box 482  
Cold Spring, MN 56320  
612/685-8871

### Polaroid

784 Mermaid Drive  
Cambridge, MA 02139  
800/225-1618

### Preferred Technologies

14540 East Beltwood Pkwy.  
Dallas, Texas 75244  
214/702-9191  
800/878-0010

### Pre'spect Technics

PO Box 670, Station H  
Montreal, Que.  
Canada H3G 2M6  
514/954-1483

### Progressive Peripherals & Software

464 Kalamath St.  
Denver, CO 80204  
303/825-4144

### Psychosis

29 St. Mary's Court  
Brookline, MA 02146  
617/731-3553

### Radical Eye Software

PO Box 2081  
Stanford, CA 94309  
415/322-6442

### ReadySoft

30 Wertheim Court  
Unit 2  
Richmond Hill, Ont.  
Canada L4B 1B9  
416/731-4175

### Roctec

17 Knowles Drive, Suite 202  
Los Gatos, CA 95030  
408/379-1713

### Roland US

7200 Dominion Circle  
Los Angeles, CA 90040  
213/685-5141

### Rombo

Distributed by American Software  
and Micro-Pace

### Selectra

PO Box 5497  
Walnut Creek, CA 94596  
510/283-1670  
800/874-9889

### Seven Seas Software

PO Box 1451  
Port Townsend, WA 98368  
206/385-1956

### Sierra On-Line

PO Box 485  
Coarsegold, CA 95614  
209/683-4468  
800/344-7448

### Texture City

3215 Overland Ave., #6167  
Los Angeles, CA 90034  
213/836-9224

### The Blue Ribbon SoundWorks

1293 Briardale Lane N.E.  
Atlanta, GA 30306  
404/377-1514

### The Byte Factory

2317 SW 31st St.  
Oklahoma City, OK 73119  
405/631-BYTE

### The Mellen Company

RFD #5  
Penacook, NH 03303  
603/648-2121

### Vertical

1411 Lemay, #406  
Carrollton, TX 75007  
214/466-0048

### Videographix

12231 Nicollet Ave. S.  
Burnsville, MN 55337  
612/890-2189

### Virgin Games

18061 Fitch Ave., Suite C  
Irvine, CA 92714  
714/833-8710

### Walnut Creek CD-ROM

1547 Palos Verdes Mall  
Suite 260  
Walnut Creek, CA 94596  
510/947-5996  
800/786-9907

### Waterloo Maple Software

160 Columbia St. West  
Waterloo, Ont.  
Canada N2L 3L3  
519/747-2373

### Xetec

2804 Arnold Rd.  
Salina, KS 67401  
913/827-0685

### XXIX Corporation

14631 Martin Dr.  
Eden Prairie, MN 55344  
612/949-2388 ■

### Soft-Logik Publishing

11131 South Towne Sq., Suite F  
St. Louis, MO 63123  
314/894-8608

### Springer-Verlag

175 5th Ave.  
New York, NY 10010  
212/460-1500

### Strategic Simulations

675 Almanor Ave., Suite 201  
Sunnyvale, CA 94086  
408/737-6800

### Strategic Studies Group

8348 Montecello Drive  
Pensacola, FL 32514  
904/494-9373

### Stylus

PO Box 1671  
Ft. Collins, CO 80522  
303/484-7321

### SunRize Industries

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

### Supra

7101 Supra Dr. S.W.  
Albany, OR 97321  
503/967-2400  
800/727-8772

## THE BLACK KNIGHT NEEDS YOU!

### KICKMAGIC

The ultimate ROM switcher, KM has 3 ROM sockets and an EPROM programmer for blowing KStart-type, etc., EPROMs! Simultaneously supports FOUR different versions of KStart. ROM Selection is 100% software controlled. KM remembers on powerup the last version used! Easily plugs into any A500/A2000. Easy to use software lets you backup KS from ROM to EPROM, or from disk to EPROM. A disk file can be made from ROM. Backup 1.2 & 1.3 ROMs into 1 EPROM, plug 2.0 into another socket & burn a custom EPROM for the 3rd socket. The Sale of the Century at \$99 for the two. Or ROM adaptor \$59, Programmer \$69. Budget 2 EPROM version \$39. 40 pin EPROMs are an additional \$30.

### READ ON!



"Power Peripherals  
that don't cost a  
King's Ransom!"

### S.A.M.

Conquer the audio/video synchronization battle with SAM - SMPTE And MIDI Time Code, 4 Midi out, 1 MIDI in, & serial pass-thru in one convenient unit. On board CPU, generating crystal-locked SMPTE & MIDI Time Code with zero system overhead, synchronizes the Amiga and any attached instruments to audio/video tape or any SMPTE signal. Compatible with all MIDI and MTC software, including Bars & Pipes and MusicX. Includes Timecode Tool for monitoring and recording time code signals and also LED status panel. Reads & writes SMPTE in PAL, NTSC, film format in both forward & reverse direction from less than 0.25 to twice normal speed. Price \$199.

## - FREE HARDWARE -

This is a genuine offer. Instead of wasting money on glossy advertising, BKP is providing free & heavily discounted hardware to our Beta and Gamma Testers. Any Amiga owner can apply to join the Black Knight Testers Guild. Upcoming products include VKey, a velocity sensitive MIDI keyboard, QuickNet Ethernet board with software & 8Mb RAM, The Fast Lane Chip RAM accelerator, Screamin' Banshee accelerators, and The Rainbow Factory - low cost 24 bit graphics. For details, send a 50 cent Stamped & Self-Addressed business size envelope to BKP. Please do not telephone about membership details.

### TOP CHIP

Top Chip puts your A500/A2000 on the road to A3000 graphics power & if you later upgrade to The Fast Lane it will take you over the top. TC is a 2Mb Chip RAM expander for your A500 or A2000. The miniscule unit (2.5" x 1.7") fits all versions of the A500/A2000 tested to date, and is physically & electrically compatible with KickMagic. TC plugs in with no need to cut traces or solder wires. TC is software switchable between 0.5, 1 & 2Mb of Chip RAM. TC comes with 2Mb on board. Most importantly, TC uses a new innovative DRAM technology that is used on The Fast Lane (Chip RAM accelerator). Please note that competing products do not use these device, so if you're thinking of Fast later, think TC now. Price \$199 including 2Mb RAM, excluding 2Mb Agnus. 2Mb Agnus \$65.

### CRYSTAL SOUND

Crystal Sound is a high performance 8 bit sound digitizer designed specifically for high quality audio sampling. With the right input signal, it will provide the best results possible on the Amiga's 8 bit audio system. Twin ultrafast low noise AD converters sample at up to 70kHz in stereo, with a signal to noise ratio of 48dB. Conversions are crystal locked for jitter free sampling, with on-chip sample & hold circuits for low distortion. CS has double pole active audio filters on all inputs, separate left & right gain controls, separate left & right mic + line inputs, and printer pass-thru. Price \$99.

### MIDI EXPRESS

Midi Express is a compact, low cost MIDI interface. Featuring 4 outs, 1 in & 1 thru, ME also has serial port pass-thru. What else do you want for \$49 bucks?

## Black Knight Peripherals

255 W. Moana #207, Reno NV 89509 - Tel: (702) 827 8088 Fax: (702) 827 8099  
Registered Trademarks of relevant companies are acknowledged



# MONTGOMERY GRANT

EST. 1967  
CELEBRATING OUR  
25TH ANNIVERSARY  
RWM  
8/92

FOR ORDERS ONLY IN U.S.A.  
& CANADA

**1-800-759-6565**

ORDER MON-THURS 9:30-7/FRI 9-6:30  
HOURS CLOSED SAT/OPEN SUN 9:30-6 (ET)

OR CALL: 718-965-9077

WRITE TO  
MONTGOMERY GRANT MAIL ORDER DEPT.  
33 34TH STREET DEPT. A  
BROOKLYN, NY 11232

RETAIL OUTLET  
PENN STATION, MAIN CONCOURSE, N.Y.C. 10001  
(Beneath Madison Square Garden)  
OPEN: MON-THURS 9:30-7/FRI 9-6/CLOSED SAT/OPEN SUN 10-6PM (ET)

CUSTOMER SERVICE  
AND ORDER STATUS CALL: 718-965-9285  
MONDAY TO FRIDAY, 10AM-4PM

NO SURCHARGE FOR CREDIT CARD ORDERS

FAX # 718-965-8689 • TELEX 422132MGRANT

WE SPECIALIZE IN OVERSEAS ORDERS

**NewTek**



**VIDEO TOASTER  
ON SALE**

DPS TBC II.....\$899

**TOASTER  
WORKSTATIONS**

STARTING AS LOW AS

**\$3995\***

\*Includes: Computer, 52MB HD, HD Controller,  
7MB RAM, Video Toaster, Color RGB Monitor

**HARD DRIVES  
& CONTROLLERS**

**HARD DRIVES**

QUANTUM 52S.....\$259  
QUANTUM 120S.....\$419

**CONTROLLERS**

DATA FLYER 500.....\$139  
DATA FLYER 2000 SCSI.....\$79  
SUPRA WORD SYNC 2000.....\$89  
TRUMPCARD 2000.....\$69  
DATAFLYER 1000.....\$159

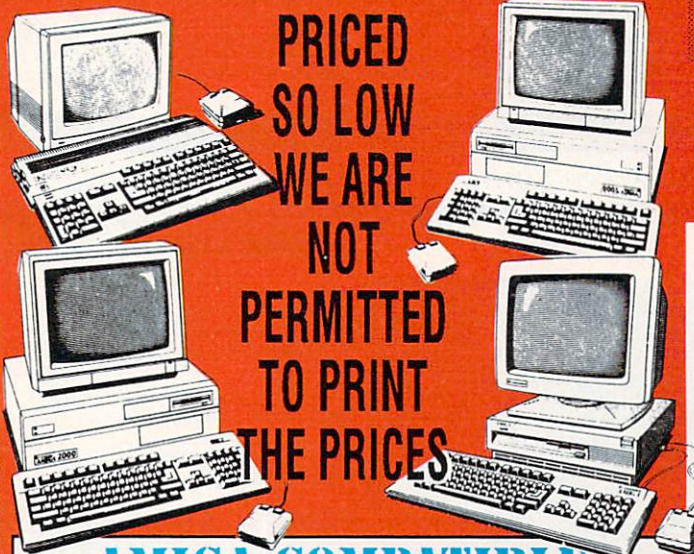
Free Spirit  
Software

**SEX  
OLYMPICS**

**\$5.95**

**AMIGA™**

**500, 2000, 2000HD, 3000  
ALL MODELS**



PRICED  
SO LOW  
WE ARE  
NOT  
PERMITTED  
TO PRINT  
THE PRICES

**AMIGA COMPATIBLE  
ACCESSORIES**

2.0 ROM KIT.....CALL	CSA 2MB RAM BOARD
256K X 4 ZIPPS FOR A-3000.....\$2.95	(for Mega Midget Racer).....\$249
256K X 4 ZIPPS FOR SUPRA 500 RX.....\$2.95	CSA 8MB RAM BOARD
68882 25 MHz. MATH CO-PROCESSOR.....\$89	(for Mega Midget Racer).....\$599
68882 33 MHz. MATH CO-PROCESSOR.....\$99	FIXED LENS for
A-500 KEYBOARD ASSEMBLY.....\$79	PANASONIC 1410 CAMERA.....\$7
A-1000 256K RAM EXPANDER.....\$19	RAPID ACCESS 3.5" EXTERNAL DRIVE.....\$59
A-1000 MODEM (VOLKS).....\$19.95	RCS 68040 ACCELERATOR.....\$1529
A-1000 RF MODULATOR.....\$19	SUPRA 3.5" EXTERNAL DRIVE.....\$99
ADSPED.....\$149	
BLACK RIBBON FOR GSX-140.....\$7.95	
CHIP PULLER.....\$3.95	
COLOR RIBBON FOR GSX-140.....\$19.95	
COLOR RIBBON FOR GSX-145.....\$19.95	

**JOYSTICKS**

BLACK MAX JOYSTICK.....\$9.95  
MAX YOKE JOYSTICK.....\$7.95  
SLICK STICK JOYSTICK.....\$3.95

**MONITOR  
SPECIAL**



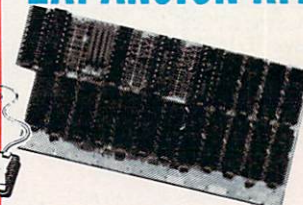
COMMODORE  
1084 RGB  
COLOR  
MONITOR

**\$299**

**TRUMPCARD 2000**

**\$69** with:  
Q52S HD.....\$259  
Q120S HD.....\$419

**A500  
EXPANSION KIT**



•3.5" 880K External Drive  
•512K RAM Expansion

**\$79**

**SHOWMAKER**

**\$129**



**SOFTWARE CLOSEOUTS**

(WHILE SUPPLIES LAST ONLY)

ABYSS.....\$4.95
ADV. FLIGHT TRAINER 2.0.....\$9.95
ALTERED DESTINY.....\$8.95
AMIKIT.....\$4.95
ART DEPARTMENT PRO.....\$139.95
ARTURA.....\$4.95
ATF-II.....\$6.95
BARD'S TALE III.....\$8.95
BLOCKOUT.....\$4.95
BYTE AND BACK.....\$4.95
CHRONOQUEST I.....\$4.95
CRIME WAVE.....\$4.95
DAILY DOUBLE RACING.....\$4.95

DARKMAN.....\$9.95	L-DEBUG.....\$4.95
DELUXE VIDEO III.....\$25.00	MACRO PAINT.....\$24.95
DIGIPAIN III.....\$14.95	MASTERING CLI.....\$8.95
EXPRESS COPY.....\$8.95	NITRO.....\$4.95
GREENS (GOLF SIM).....\$8.95	PERSIAN GULF INFERNO.....\$8.95
HARPOON.....\$12.95	PRO FOOTBALL (FACTS).....\$4.95
KING'S BOUNTY.....\$6.95	PRO PAGE.....\$79.95
KING'S QUEST II.....\$8.95	SEX OLYMPICS.....\$5.95

SEX VIXENS SPACE.....\$2.95
SHOWMAKER.....\$129
SILENT SERVICE.....\$2.95
SUPER HUEY.....\$4.95
TERMINATOR II.....\$9.95
TIE BREAK TENNIS.....\$4.95
TV SHOW.....\$14.95
TV TEXT.....\$14.95
TV TEXT PRO.....\$29
ZONE WARRIOR.....\$4.95
ZUMA FONT PACK I.....\$12.95
ZUMA FONT PACK II.....\$12.95

Certified check, Bank check, Money Orders, approved P.O.s, Visa, Mastercard, Amex, Optima, Diner's Club, C.O.D.'s and Wire Transfers accepted. Please call before submitting P.O.s. Non-cert. must wait 2-4 weeks for clearance. Prices and availability subject to change without notice. Not responsible for typographic errors. Return of defective merchandise must have price return. number or returns will not be accepted. Please add 5% shipping & handling (minimum \$6). Orders over \$1500 are discounted to 3% shipping & handling. Orders over \$3000 are discounted to 2% handling. Canadian orders please call for shipping rates. APO/FPO orders please add 10% shipping & handling minimum \$15. (Over \$1200-8% over \$3000-6%.) All APO/FPO orders are shipped class priority air. 2nd day and next day air delivery available at extra cost. We check for credit card theft. DCA #802233. Amiga is a registered trademark of Commodore-Amiga, Inc.



# Briwall Video, Your Total VIDEO SOLUTION!

For Videographers, Personnel Directors, Advertising Managers, Sales & Marketing Professionals, and Small Business Owners, Briwall can help you make your presentations & training videos cost effective!

**Basic Toaster Workstation**  
**\$4099**

W/52MB HD, 7MB RAM  
TOASTER, 14" MONITOR

**25MHz Toaster Workstation**  
**\$4799**

W/52MB HD, 10MB RAM,  
TOASTER, 14" MONITOR

**68040 Pro Toaster W/S**  
**\$5999**

W/120MB HD, 68040 28 MHz,  
9MB RAM, IVS Trumpcard Pro  
TOASTER, 14" MONITOR

Our knowledgeable Sales Consultants and trained Technical staff will work with you to choose one of these Toaster Systems, or help you configure a custom system, according to your needs. We also configure, install and test every Toaster System before it leaves our shop! Call Briwall Toll-free at 1-800-766-5757 to order all of your Computer and Video products. Write us if you would like a free copy of Briwall's Catalog-On-A-Disk.

## Peripherals to save time & increase your video production!

### DISPLAY

CBM 1084S 14"	289
CBM 1960 Multiscan	399
Loop CT1458	389
PanaSync CT1395	529
Relsys RE-1420 Super VGA	389
Sony CDP1304S	659
ViewSonic 7 (17")	1259

### TBC's

DPS Personal TBC	\$819
DPS Personal TBC 230	1699
Kitchen SyncDual/TBC	1629
IDEN TBCard	Call
Panasonic WJ-AVE5	Call

### SFC's

SFC Personal	\$379
BCD2000A	759
DQ-Taco	1899

### SPEED

GVP Combo 25MHz w/1MB	\$669
GVP Combo 40MHz w/4MB	1199
GVP Combo 50MHz w/4MB	1549
IVS Vector	Call
Progressive 68040	1679
Magnum 44 68040 w/4MB	Call
Zeus	Call
Mercury 68040 A3000	2059
32-bit Memory available for all of the above	

### GENLOCK/CHROMAKEY

RocgenPlus	349
MiniGen	189
SuperGen	669
SuperGen 2000s	1459
Rockey	359
ChromaKey Plus	379
OmniGen PAL/NTSC	Call

### OTHER

AmiLink Editing Systems	Call
DCTV	\$399
Firecracker	829
DMI Resolver	999
Flicker Free Video	259
Rambrandt	Call
Video Blender	979
GVP IV24	1899
DPS Personal VScope	799
Panasonic AGW1 Universal	2299
Panasonic A1960	Call
JX100 Color Scanner	569
Sony CVD-1000 Vdeck	Call
Epson ES 300C Scanner	999
BreadBoard delay and DA	359

### SOFTWARE

Animation Journeyman	\$379	Trexx Pro	79
TAO Editizer	Call	Draw 4D Pro	199
1st Prize Toaster Fonts	199	VistaPro v2.0	62
Scala	179	FractalPro v5.0	99
Broadcast Titler II	229	Toaster Master	99
Video Director	169	Imagine v2.0	279
Pro Video Post	169	Real 3D Turbo Pro	299
TV TextPro	99	Toaster Toolkit	109
ArtD Pro	179	Pixel 3D	79
Caligari 2	269	Deluxe Paint v4	109
Caligari Broadcast	1699	Scenery Animator	59
3D Pro v2.0	Call	ImageMaster Pro	145
Video Effects 3D	129	Fonts, Clips, Video Tapes, Books, Textures, Objects, etc.	
Pro Video CGII	129		

### STORAGE

52, 120, 240 Quantum	Call
120MB Maxtor	399
213MB Maxtor	619
535MB Maxtor	1429
676MB Maxtor	1499
1.2GIG Maxtor external	2189
44MB Syquest removable	349
88MB Syquest removable	449
20MB DMI Floptical	479
640MB Ricoh Optical ext.	2499
1GIG Maxtor Tahiti Opt Ext.	3499
Xetec CDROM Drive	529
Wangtek 250MB Tape Drive	629
DAT 2GIG Tape Drive	1879
External Solutions available for all of the above	

# Briwall Video

**Briwall's Toll-Free HOT LINE!**  
**1-800 766-5757**  
(US & Canada)

OUTSIDE USA: (215) 683-5661 TECH SUPPORT: (215) 683-5699  
CUSTOMER SERVICE: (215) 683-5433 FAX (215) 683-8567  
Order lines are open 24 hours (Briwallians are in 9-8 EST)  
Store Hours: Monday - Friday 9AM-6PM, Saturday 10AM-2PM  
P.O. BOX 129/58 Noble St. Kutztown, PA. 19530

Any Visa & MasterCard Accepted with NO surcharge. Hardware shipping charges vary depending on weight & value. Software shipping charges are \$6.00 per total order via UPS ground to anywhere in the continental USA. All orders over \$300 are insured at customer's expense. All returns require an RA#. Please call before returning anything. All returned items are subject to a restocking FEE. Ad prices subject to change without notice.

**FEDERAL EXPRESS** Charges for all orders under 20 pounds: 2nd day Delivery - \$13, Next Day Delivery - \$17. DHL Canadian & Overseas customers shipped DHL. Call for rates.





# BriWALL

## Mailorder The Total Solution

### A1000 Owners!

AdSpeed .....	\$189
Insider 2 .....	\$189
DataflyerRAM w/2MB .....	\$289
CBM1300 Genlock .....	\$69
Rejuvenator w/1MB Agnus ..	\$419
Rejuvenator w/2MB Agnus ..	\$629
Phoenix Board .....	\$850
KwikStart II .....	\$62
Keyboard .....	\$99

Call us for all of your A1000 needs!

### CBM, CSA & DKB What a combination!

Start with Commodore 2630 (68030/25MHz) accelerator board with 4MB of 32-bit RAM. **Our low price \$679**

Now, add DKB's 2632 32-bit RAM daughter board w/4MB (expandable to 128MB!). **Just \$539**

Then, upgrade to a 50MHz 68030 and a 50MHz 68882 with CSA's Rocket Launcher. Get this add-on board for **only \$699**

For a combination that will blow you away, we'll combine all three boards, assemble, and test the entire system for **just \$1799**.

Gold Disk

### VIDEO DIRECTOR



Complete Video Editing System for everyone with a camcorder, VCR and an Amiga. Quickly & easily catalog & edit the best moments from your video tapes! Includes hardware to control most camcorders & VCR's!

**Only \$169!**

### CALIGARI

The Leading Real Time 3D Modeler, Animator and Renderer

Caligari Broadcast is the premier product of its kind. Film-quality output resolutions up to 8000x8000. Requires 32-bit processor. **The Ultimate Solution -- \$1699**

Caligari2 is the ideal choice for animation and animatics. For professional artists that don't require broadcast output. Requires 24 or 32-bit processor. **Just \$269**



### ROCTEC Rochard 52

Attention A500 owners! Roctec has bundled their IDE/SCSI combo controller, an 8MB capacity memory board, and a Quantum 52MB hard drive in a color-matched, molded, Rochard case with an auto-switching power supply, game switch and quiet fan.

**Summer Sale -- \$469**

(and we'll add the first 2MB of RAM for only \$79!)

### AUGUST SPOTLIGHTS

CBM 386SX Bridgeboard .....	Call
MaxiPlan v4 .....	\$99
SCS A2000 Tower Case .....	\$359
SCS A500 Tower Case .....	Call
AD1012 w/Studio 16 .....	\$539
Pinball Dreams .....	\$27
HST Standard (to 16.6Kb) .....	\$599
AMAX II Plus .....	\$369
CNet v2.0 BBS .....	\$129
Progressive 040 A500 .....	\$1129
SupraFax Modems .....	Call
Roctec 501 .....	\$39
Roctec Slimline Floppy .....	\$94
IVS Vector .....	Call
Superbase Pro v4.0 .....	\$179
Bigfoot A500 200W P/S .....	\$95
Bomac Tower A2000 .....	\$269
Final Copy .....	\$59
ARexx .....	\$32
Quarterback v5 .....	\$49
Quarterback Tools v1.5 .....	\$53
Pelican Press .....	\$59
Digital Sound Studio .....	\$89
Sim Ant .....	\$39
Mavis Beacon Typing .....	\$34
Any Barney Bear Title .....	\$21
Any Carmen SanDiego Title .....	\$33
Scala .....	\$179

Get up to \$200 back directly from Octree. See the Avid 5/92 issue, or the June/July AmigaWorld Outlook for details.

### DATAFLYER from Expansion Systems

Choices and More Choices! Fast, Reliable, and Flexible; all Dataflyer boards are A500/1000/2000 compatible.

SCSI Controller -- \$79 IDE Controller -- \$75  
A500 Case -- \$79 A1000 Case -- \$129  
RAM Board -- \$99

Dataflyer SCSI or IDE 52MB Quantum Packs  
A500 - \$399 A1000 - \$479 A2000 - \$349

Buy a Dataflyer RAM board, and we'll add the first 2MB of RAM for only \$79!

### DMI Flopticals

Don't be fooled by others!

DMI offers a complete Amiga solution. You just add it to your system like any other hard drive, and you've got low-cost storage at \$1/MB. Comes complete with an Insite floptical drive, DMI's Amiga driver, a 20MB disk, cabling, and a free copy of Quarterback. All you have to supply is the SCSI controller.

**Internal -- \$479 External -- \$589**

(External unit includes a 110/220VAC auto-switching power supply)

### Blizzard Board

From Preferred Technologies

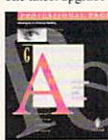
Increase the performance of your Amiga 500/1000/2000 with a 14MHz 68000 processor, and up to 8MB of RAM on a single board! Also has Shadow Memory option to put Kickstart in 14MHz RAM, utility software disk, and a 5 year warranty.

**Blizzard w/4MB 500/2000 -- \$44 500/2000 -- \$449**

**Blizzard w/2MB A1000 -- \$385**

### Professional Page 3.0

The latest upgrade for the Professional's choice!



Page and Function Genies give total ease of use. Irregular text wrap. Adobe type 1 font support. 7 Compugraphic Fonts. Mail-merge and hot link to spreadsheet.

**Only \$179**

BRIWALL's Choice for our in-house DTP needs!

### CSA's Magnum 44

For the really serious A2000 user, nothing beats the Magnum 44

68040/28-33MHz, SCSI-2 Controller, 64MB Memory Capacity (4MB of 32-bit RAM included), high-speed Parallel port (print at blazing speeds), and an extra serial port, all smartly designed into one beautiful board

### Call for Special Introductory Pricing

We also still have the ever-popular, reliable, upgradeable 68030-based MegaMidget Racer for as low as \$399 (\$429 w/68882.)



### RocGen/RocKey Video Combo

With the RocGen Plus Genlock and RocKey Chromakey, you can add a whole new dimension by bringing high quality studio effects to your desktop video production.

**Special Low Combo Price ..\$599**

Addison-Wesley ROM Kernel manuals (2.04) Libraries, Devices, Hardware, Includes, & Intuition Style Guide. Get ALL 5 for \$99!

### DKB

### Megachip 500/2000

Expanding your Amiga just isn't complete until you've expanded your graphics capacity to 2MB of chip Ram! You need Megachip to get it into your 500 or 2000, (sorry 1000's).

**Megachip 2000 or 500 complete w/2MB Agnus - \$299**

No, we don't have a lot of line listings, but who can read that tiny type anyway. **Just call us at 1-800-766-5757** and let one of our Sales Consultants help you! We specialize in 'solutions', and we carry all of the good stuff. And if you want a complete listing, packed full of descriptions, just write us for a **Free** copy of our Catalog-On-A-Disk!



# THE LAST WORD

*Kudos, complaints, comments, concerns, and contributions from our readers.*

## MORE ON AMIGABASIC

AmigaBasic not compatible with AmigaDOS 2.0? Tell that to my A500, which has been happily running Amiga-Basic programs ever since I made the switch to 2.0. I didn't know it wasn't supposed to work until I read the letter in your May issue's Help Key. I can tell why it does work: I am still using Amiga-Basic 1.2 from the disks that originally came with my Amiga. When I moved to AmigaDOS 1.3, I didn't bother to replace AmigaBasic 1.2. Since it does work, and AmigaBasic 1.3 does not, I suggest that anyone who has made the upgrade to 2.0 contact a local user's group to hunt up a copy of AmigaBasic 1.2.

*Leslie S. Bird  
Morrow, Georgia*

Regarding J. Watson's problem with AmigaBasic being unable to run under AmigaDOS 2.04 (in Help Key, May '92), there is actually a simple way around the problem. Remember the NoFastMem utility mentioned in the manuals for the DOS 1.2 and 1.3 versions? With DOS 2.04, open the System2.0 drawer or partition, then double-click the drawer labeled SYSTEM to display the NoFastMem icon. Click on this icon so that the "Other Mem" value shown in the Workbench window title bar becomes zero. After this, AmigaBasic will run properly in AmigaDOS 2.xx. When terminating AmigaBasic, don't forget to click on the NoFastMem icon again to return "Other Mem" to its previous value.

*Gene Amarante  
Houston, Texas*

## MISSING THE POINT

In last February's Chief Concerns, you strongly defended the Amiga's almost total lack of quality business software, saying that the computer is not an IBM clone and that it would be impossible to break into a market already so dense. The point you seem to

be missing is that potential customers for business software are not only those who might buy Amigas primarily to use that software, but also the three million or so existing Amiga owners, many of whom (myself included) presumably crave a good spreadsheet. I admit the Amiga is a specialized machine, but its lack of business software is totally baffling. We've got a CPU, haven't we? So why not use it in every way possible?

*Julian Coldrey  
Hawker, A.C.T., Australia*

## CBM's HUMAN FACTOR

Commodore may be lacking in its ability to market the Amiga in the US, but its employees are not lacking the high level of enthusiasm and love of

*Come on Commodore!  
Let's shake the image of  
the Amiga being  
just a toy.  
Promote it properly!*

the machine that have made the computer a success. We demonstrated DCTV and DeluxePaint at the 32nd annual National Art Education Association Convention in Phoenix in May, and subsequently received a very warm letter of appreciation from the Division Sales Manager, Steve Johnson.

We have from time to time engaged in friendly Commodore bashing, but now that we have met Steve and realize that there are talented, hard-working, intelligent people at Commodore who are just as dedicated to the Amiga as we are, the fun has fallen a little flat. Perhaps words of encouragement and positive feedback to Commodore would be

more appreciated and called for.

Having owned both IBM and Macintosh hardware, we know just how truly great the Amiga is. If only software developers like Adobe, Aldus, and Microsoft would see the light and write for the Amiga platform, this memory-efficient, cost-effective, dazzlingly fast, multitasking machine would no doubt attract the numbers of users who would more than pay for the cost to develop the software.

*Laurel and Tony Kashinn  
Grafton, Wisconsin*

## OFF THE BALL

On last February 28, National Technological University announced its plans to broadcast a special series of programs dealing with multimedia. These live, interactive satellite broadcasts were received and viewed by hundreds of corporations, educational institutions, and government divisions across the continent. There were many speakers, including several from IBM and Apple. This was a big event.

Commodore was not present.

In fact, there was no mention of the Amiga. How can Commodore afford not to participate in something like this? Come on, Commodore! Let's shake the image of the Amiga being just a toy. Let's promote it properly!

*Alex Sheffield  
Ottawa, Ont., Canada*

## THE UKRAINIAN CONNECTION

If you are interested in an Amiga-based videographics business in Ukraine, please contact Alexander V. Romanov, Dreiser St. 1/25, flat 59, Kiev-217, 253217 Ukraine; telephone (044) 5461063 (please, after 7 PM, Kiev time); FAX: (044) 2744265 (FAX must be marked "for Vasilenko-for Romanov"); E-Mail: AVR%DRP.UNIV.KIEV.UA@RELAY.USSR.EU.NET. ■



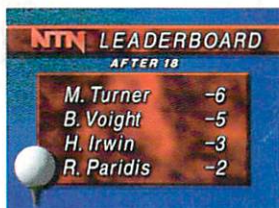






#### Digital Video Effects

Real-time digital video effects on live video. From flip, spin and tumble to high-end warping effects.



#### 35ns Character Generator

Scroll, crawl and key professional-quality titles over live video and still images or warp, peel, and spin titles with digital effects.



#### 24-bit Broadcast Paint

Create 16 million color images with powerful tools for drawing, tinting, blending, colorizing and warping images.

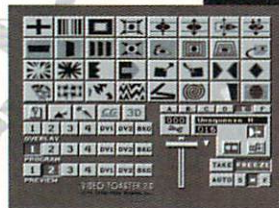


#### 3D Animation

LightWave 3D is a complete animation system that creates high-resolution 24-bit color images with incredible speed and quality.

#### 4 Input Production Switcher

Perform cuts, fades and wipes between 4 video inputs and 3 internal sources. Now includes amazing new transitions such as fire, liquid and breaking glass.



#### Dual Frame Buffers

Hold two high-resolution 16 million color video frames in perfect broadcast quality.



#### Luminance Key

More than just simple weatherman over a map, Toaster keying does luminance fade transitions and even key-based digital trails.



#### Color Processing

Re-color live video or alter brightness and contrast. Effects include sepia-toning, color-negatives, day-for-night, chrome and more.



#### Still Store / Frame Grabber

Freeze flawless broadcast resolution images instantly and recall them as sources for the switcher and digital video effects.

# VIDEO TOASTER<sup>TM</sup> 2.0

**9 essential tools you need if you're using your Amiga for video or graphics.**

*The Video Toaster is the world's first all-in-one broadcast-quality video production studio. It's giving everyone from desktop producers to network producers the power of a high-end production studio on a desktop. You've seen the award-winning Toaster used on network television, now you can add the same level of quality and excitement to your videos. Find out why everyone from Time and USA Today to Business Week and Rolling Stone is raving about the Toaster, call for your free Video Toaster tape today.*



Complete systems starting at \$4595. Outside North America call 612-882-1662. Demo also available on S-VHS, Hi8, 3/4", MII, Betacam, 1", LaserDisc and D2 at nominal cost. Next-day delivery available. Price and specifications subject to change. Video Toaster, Lightwave 3D and ToasterPaint are trademarks of NewTek, Inc. © NewTek, Inc. 1992.

**Free Toaster<sup>TM</sup> Video Tape**

**Call 800-765-3406**

**NEWTek**  
INCORPORATED