Graphics BONANZA! pp. 24–54

AMIGA WORLD

February 1992
U.S.A. $3.95
Canada $4.95
UK £2.80
An IDG Communications Publication

2D Or Not 2D ?

Graphics '92

Paint Packages
- The All-New DPaint IV

Structured Drawing
- 3 Top Programs

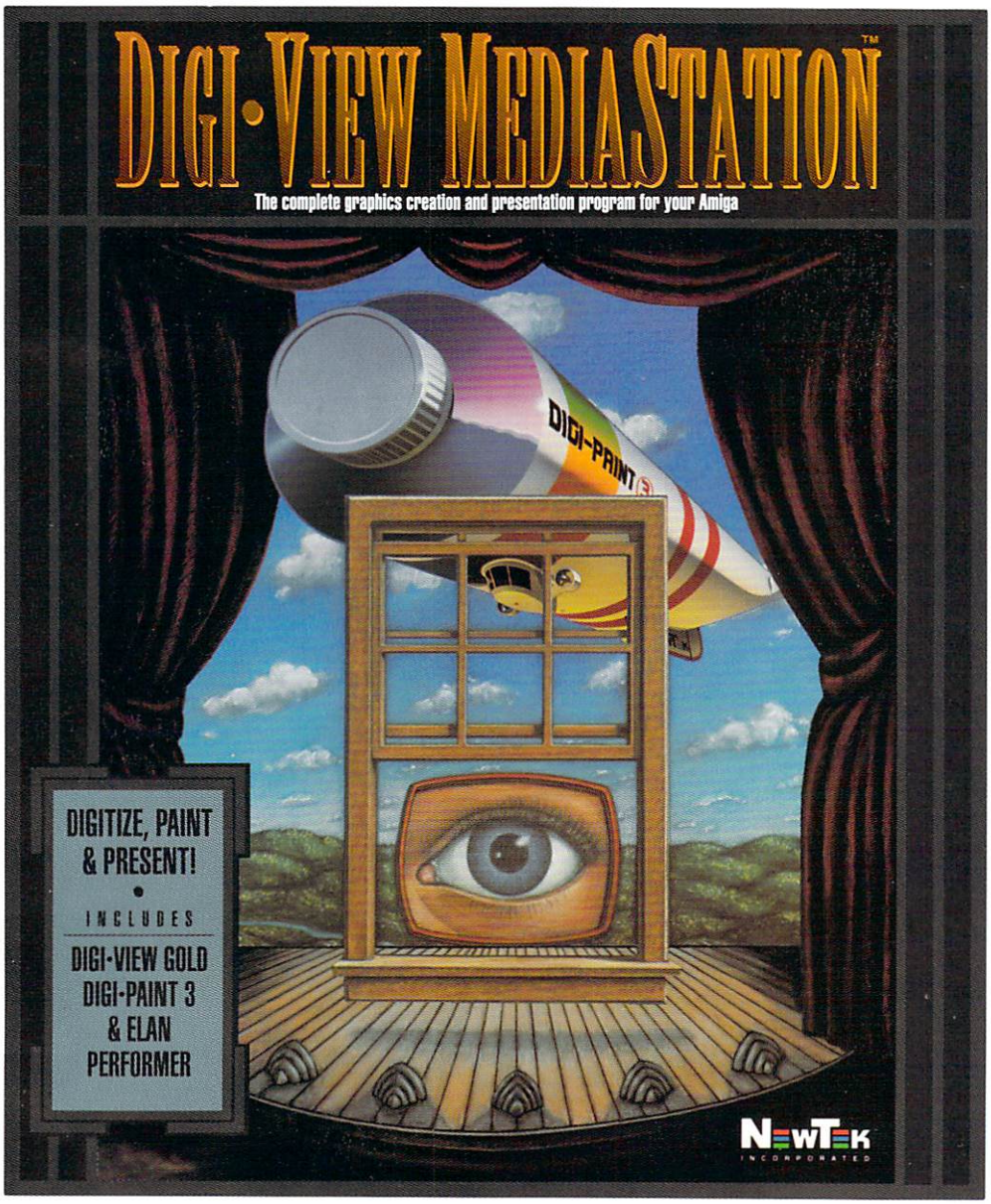
3D Effects
- 2D–3D Landscaping
- Texture-Mapping Tips

PLUS!

- Beat The IRS!
- A500 Expansion
- A1000 Upgrades
- Reviews & Games

02
0 74470 65948 8

NEW FROM NEWTEK!



Digi-View MediaStation gives you the three tools you need to use your Amiga to its fullest

DIGITIZE - Bring the world into your Amiga with Digi-View, the best-selling, most award-winning Amiga peripheral of all time. Amiga World Magazine says "the best value in Amiga digitizers and delivers the best images". Just point your camera and in seconds Digi-View will capture images with brilliant color and stunning clarity. Whether you're creating graphics for video, desktop publishing, presentations, or just for fun, Digi-View is simply the best.

PAINT - NewTek pioneered the 4096 color HAM mode back in 1985, and since then no other program has come close to matching its amazing power. This all-new version, Digi-Paint 3, is the fastest, cleanest, most powerful HAM paint program ever created. As Amiga World Magazine says, "If you are really serious about owning only one paint program, we would have to recommend Digi-Paint 3".

PRESENT - Elan Performer 2.0 makes slideshows and interactive presentations a snap, just click the mouse to assign pictures or animations to your keyboard. Performer will automatically sequence the images with precise timing, or you can tap a key to bring your images up instantly with this high-performance presentation too!. AmigaWorld Magazine calls Elan Performer "the finest display tool to date for the Amiga artist."

NEWTEK
INCORPORATED

$249.95

Soon to be available at your local Amiga dealer, or call NewTek at 800-368-5441 or 612-881-2862.

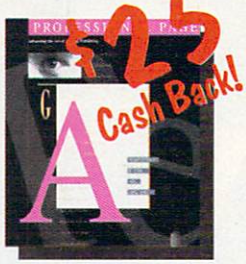
Digi-view Gold, Digi-Paint 3, Dynamic HiRes are trademarks of NewTek, Inc. HiRes requires 2 megs of RAM. Amiga is a trademark of Commodore Amiga, Inc. Elan Performer is a trademark of Elan Design. © NewTek, Inc. 1991

Circle 38 on Reader Service card.

CASH BACK!

Buy the best selling Amiga software and Gold Disk will put cash in your pocket!

DESKTOP PUBLISHING

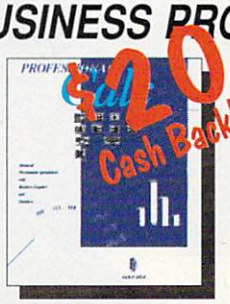


PROFESSIONAL PAGE 2.1
The leader in DTP and the choice of more professionals than any other product. Now with text editor & spell checker.

PAGESETTER II
The best entry level DTP package with new color features and a free word processor, spell checker, paint program, and clip art!

PROFESSIONAL DRAW 2.0
The perfect companion for any illustrator or desk-top publisher. Brilliant hi-res structured drawing beats paint programs every time.

BUSINESS PRODUCTIVITY



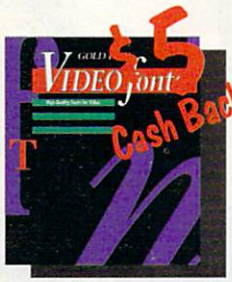
PROFESSIONAL CALC
The most advanced spreadsheet ever! Point & click toolbar, outlining, 3-D graphs, database, ARexx, multiple fonts, PostScript output, and more!

OFFICE
Word Processor, Desktop Publisher, Spreadsheet, Graphing, and Database all in one integrated package!

HYPERBOOK
HyperBook lets you quickly and easily organize your world or even create inter- active presentations. An indispensable tool!

DESKTOP VIDEO

SHOWMAKER
The complete desktop video solution for combining video, animation, Toaster effects, and sound with mattes, wipes and titling!



VIDEO FONTS
Now you can create jaggie free fonts in exactly the size and style you need for video from high quality Compugraphic outlines. Supports Toaster format.

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

Get Cash Back every time you buy Gold Disk software! Cash back is available on most of your other favorite Gold Disk packages too! From Video to Page Layout to Office Productivity, Gold Disk software can unleash the true power of your Amiga - and now Gold Disk software does something no other software can do - puts cash in your pocket!

This Ad was produced using Professional Page 2.1. All product names mentioned are trademarks of Gold Disk Inc.

Circle 154 on Reader Service card.

GOLD DISK AUTHORIZED SOFTWARE CENTERS

Gold Disk products are available at most Amiga dealers. The following dealers have qualified as Gold Disk Authorized Software Centers and carry a complete range of Gold Disk products.

Alaska: Best Electronics, Anchorage (907) 278-2378 **Alabama:**Alabama Computers, Huntsville (205) 837-9324 **California:** Century Computer Systems, La Habra (310) 697-6977;Computer Guild, Mission Viejo (714) 951-1355;Computer Showcase, San Francisco (415) 563-1953; Creative Computers, Lawndale (310) 542-2292;Creative Computers, Santa Monica (310) 394-7779;Dataphile, Watsonville (408) 724-3322;HT Electronics, Sunnyvale (408) 737-0900;KJ Computers, Granada Hills (818) 366-9120; Transnational Electronics, Anaheim (714) 630-8644;Winners Circle Systems, Berkeley (415) 845-4814 **Florida:** Amazing Computers, Tampa (813) 977-6511;Commodore Country, Pinellas Park (813) 576-5242;Computer Lane, Pembroke Pines (305) 435-1118; Computers Plus, Jacksonville (904) 268-2359;Computers Plus, Daytona Beach (904) 252-6442;Creative Equipment, Miami (305) 266-2800;Eagle Computers, Melbourne (407) 253-1805;New Age Electronics, Largo (813) 530-4561 **Georgia:**Ampex Systems, Inc., Norcross (404) 263-9190 **Illinois:**Micro Ed Enterprises, Chicago (312) 245-0066 **Indiana:**CPU Inc, Indianapolis, (317) 577-3677 **Kentucky:**Expert Services, Florence (606) 371-9690 **Maryland:** Buried Treasure, Rockville (301) 770-6778;Professional Micro Services, Baltimore (301) 366-0010 **Nebraska:** Double E Computers, Omaha (402) 334-7870 **New Hampshire:** Digital Connections, Dover (603) 742-2233 **New Jersey:**Golden Hedge, Cherry Hill (609) 354-1500 **New York:**Amagination, New York (212) 727-3290;Microworks, Buffalo (716) 873-1856 **North Carolina:**SBS, Durham (919) 5286-9493 **Oregon:** Clackamas Computers, Clackamas (503) 650-0701 **South Carolina:**Computer Port, Spartanburg (803) 574-9679 **Texas:** Computer-Ease, Corpus Christi (512) 882-2275;Metropolitan Computers, Dallas (214) 702-9119;Microsearch, Houston (713) 988-2818;The Edge Computers & Video, Dallas (214) 392-7447;The Edge Computers & Video II, Irving (214) 570-1300;The Station, Austin (512) 459-5440 **Washington:**Nybbles & Bytes, Tacoma (206) 475-5938;Omni Inter -national Trading, Seattle (206) 620-2925 **CANADA Alberta:** Computer Works, Edmonton (403) 424-0011; Software Supermart, Edmonton (403) 425-0691;The Computer Shop of Calgary (403) 243-4356 **British Columbia**:Conti Computers, Vancouver (604) 734-0606; M.L.C. Computers, Kelowna (604) 861-5520;Nu-Tek Computers, Vancouver (604) 435-0113 **Manitoba:** Adventure Software, Winnepeg (204) 942-4752 **Ontario:** Comspec, Toronto (416) 633-5605;Computer Variables, Richmond Hill (416) 771-6807;Leppert Business Systems, Hamilton (416) 522-9029;Lynx Technical Services, Orleans (613) 830-8396;Lynx Technical Services, Ottawa (613) 237-4701; Neutron Computers, Kitchener (519) 742-9821; Obys Softshop, Sudbury (705) 673-8520;Software Zone, Brampton (416) 791-76500;Thornhill Computers, Thornhill (416) 886-2494 **Quebec:** Software House, Montreal (514) 374-3614; Soft Wares, Montreal (514) 737-5865 **Saskatchewan:** Memory Lane Computers, Saskatoon (306) 242-4000

Cash Back Terms & Conditions: Qualifying products must have been purchased from a participating dealer between Dec. 1, 1991 and Jan. 31, 1992. Mail the following to Gold Disk (address below): 1)Proof of purchase showing: Name of dealer, dealers telephone number, date purchased, and amount paid. (invoice, receipt, etc) 2)Valid completed product registration card 3)Completed Cash Back Rebate coupon 4)Self addressed, stamped envelope. Cash Back Rebate is not valid in conjunction with any other Gold Disk promotion. This offer is void where prohibited or regulated by state, provincial or local laws or ordinances Please allow 4 to 6 weeks for delivery of rebate check. Rebate requests must be postmarked before Feb 28, 1992. Rebates not payable in store. No reproductions of coupon accepted. Gold Disk not responsible for lost or misdirected mail. **Send to:Gold Disk Rebate, PO Box 789, Streetsville Mississauga, ONT L5M 2C2 CANADA**

Sullivan Bluth Presents

SPACE ACE II: BORF'S REVENGE™

Sullivan Bluth Presents
SPACE ACE II: BORF'S REVENGE™

READYSOFT

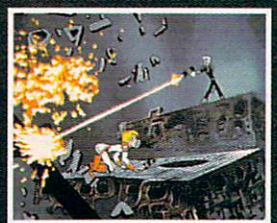
BORF'S BACK WITH A VENGEANCE...

IBM VGA Screens Shown

Just when you thought Earth was safe from the evil Commander Borf, his little henchmen, The Goons, have blasted Borf with the Infanto Ray a second time returning him to his full age - and evil. Lead Ace through battles with the goons and Borf's other allies until you encounter the evil Commander himself in the ultimate battle for the universe.

Space Ace II: Borf's Revenge brings the classical animation style of Don Bluth to the computer format featuring over five megabytes of full screen animation, digitized sound and new animations not included on the original Space Ace laser disc.

Available for IBM PC™ and Compatibles, Amiga™, Atari ST™ and Macintosh®.



READYSOFT

ReadySoft Incorporated
30 Wertheim Court, Suite 2
Richmond Hill, Ontario, Canada L4B 1B9
Tel: (416) 731-4175 Fax: (416) 764-8867

"Space Ace" is a registered trademark of Bluth Group, Ltd. ©1989. "Space Ace II: Borf's Revenge" is a trademark owned by Sullivan Bluth Interactive Media, Inc. - ©1991 Sullivan Bluth Interactive Media, Inc.; used under license from Sullivan Bluth Interactive Media, Inc.; Character Designs ©1983 Don Bluth; ©1989 all audio, visuals and concept - Sullivan Bluth Interactive Media, Inc. ALL RIGHTS RESERVED; Programming ©1991 ReadySoft Incorporated.

Amiga, Atari ST and IBM are trademarks respectively of Commodore International, Atari Corporation and International Business Machines. Macintosh is a registered trademark of Apple Computer Inc.

Circle 40 on Reader Service card.

·C·O·N·T·E·N·T·S·

FEATURES

GREAT GRAPHICS, GODZILLA, IT'S DPAINT IV! *By Gene Brawn* ... 24
The latest version of standard-setter DeluxePaint is out, and our man at the source will lead you through a hands-on tutorial on using new DPaint IV features: from HAM support, to new Palette and Stencil features, to brush-morphing and LightTable animation capabilities.

AMIGA IMAGE-MAKING: CREATIVE METHODOLOGY AND GRAPHICS TECHNOLOGY *By Phil Fitzpatrick* 30
Insights and techniques on creating *traditional* graphics art apply equally to *computer* graphics art—as this overview of image-making by an art teacher/computer artist will clearly show.

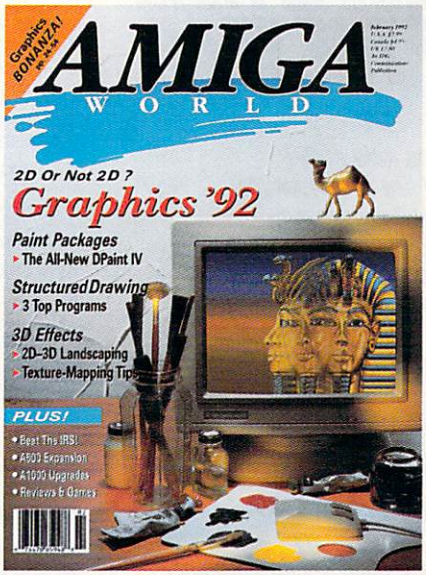
THE PAINTER'S GUIDE TO STRUCTURED DRAWING
By Eyo Sama 35
Structured drawing may sound engineering/CAD oriented to many, but it's definitely not. Our well-known graphics/DTP expert will show you painters, publishers, and just plain punters how this technology—and three leading Amiga programs in the field—can help you out on all kinds of occasions.

LANDSCAPING IN CYBERSPACE
By Joel Hagen..... 41
Combining 2-D painting techniques with the 3-D options of landscape generators—and sprinkling a little magic around the edges—graphics guru Hagen will take you beyond the ordinary once again—just as he did in the "planetbuilding" installment of this series (Oct., '91, p. 39).

"MAPPING" NEW WORLDS
By Louis Markoya 50
Texture-mapping techniques can lend an entirely new, richly realistic 3-D look and feel to your graphics—as one of the leading experts in this field will amply demonstrate.

ARTICLES

PREPARE TO MEET THY AUDITOR *By Gary Ludwick* 55
Lest we get too wrapped up in Amiga art this issue, February is a good month to think of more mundane, but eminently practical matters such as tax preparation—and your Amiga can help you here, too!



It's a gala affair and ***AmigaWorld*** *is hosting. Our* ***Graphics '92*** *February special showcases the new DPaint IV, Amiga structured-drawing programs, plus tutorials on painting, landscaping, and texture-mapping. Harness your creativity and join us!*

COLUMNS

CHIEF CONCERNS *By Doug Barney* ... 6
Barney takes Amiga critics seriously, but he doesn't take their criticism lying down.

ACCENT ON GRAPHICS
By Joel Hagen 60
We're looking hard at the new DPaint IV in this issue, and Joel makes his contribution with some tips on techniques for utilizing its new gradient-fill features.

VIDEO SUITE
Because of our "Graphics Bonanza" coverage this month—and especially as our *Video & Animation Special Issue* will be out shortly after this issue appears—"Video Suite" takes a break this month.

DEPARTMENTS

OVERSCAN 10
Lots of news—Amiga trade shows and new-product announcements—to report on this month in the column that keeps you up to date on *all* Amiga happenings.

HELP KEY 80
Whether you're from South Bend or south of the border, Senor Lou is always ready to go the whole enchilada to answer your technical queries.

***AW* PRODUCT INFORMATION** ... 112
To contact the developer of any product mentioned in this issue of *AmigaWorld*, consult our all-in-one "Manufacturers'/Distributors' Addresses" List.

THE LAST WORD 120
Whether you paid the postman in francs, lira, pounds, yen, or good old dollars, we're ready to publish your letters.

REVIEWS

DELUXEPAINT IV *(Electronic Arts)* .. 18
The new DPaint IV also leads off our Graphics special "Reviews" section.

PERSONAL WRITE *(Cloanto / Centaur)* 19
Inexpensive, text-only word processor.

A500 HARD DRIVE EXPANSION BOXES 22
Five low-cost solutions to expanding A500 storage and memory

TEACHER'S TOOLKIT *(TTR)*..... 94
Multipurpose records-keeping package for teachers.

THE REJUVENATOR *(Expert Services)*. 98
An upgrade board that is a true godsend for A1000 owners.

KWIKSTART II *(DKB)*..... 100
Run your A1000 from 1.3/2.0 Kickstart ROMs!

BACK TALK 100
Responses to *AW* reviews.

GAMES

CRIB NOTES *By Peter Olafson*..... 74
Tips on top plays from the Amiga games guru.

SILENT SERVICE II *(MicroProse)*.... 74
Sub-simulator sequel outruns the original.

LORD OF THE RINGS *(Interplay)* ... 76
Tolkien readers should love this fantasy role-playing knock-off.

MURDER! *(US Gold)*..... 77
Murder mystery with infinite variations.

SPACEWRECKED *(Konami)*..... 78
Get back to Earth—if you can!

FLAMES OF FREEDOM
(MicroPlay / MicroProse) 79
The follow-up to "Midwinter" is brilliant.

COVER PHOTOGRAPH BY ED JUDICE

DURING THIS SPECIAL TIME OF THE YEAR...

The folks at GVP would like to express their warmest thanks to our countless customers around the globe ★ and the Amiga community at large ★ who have shown their appreciation for the quality ★ of our products by making us ★ #1 in the worldwide Amiga hardware peripherals ★ market.

And to ALL the members of GVP's extended family of dealers and distributors ★...

Here's Wishing You a Healthy and Prosperous ★ ★ New Year!

GVP's International Distributors include:

Prodis (SDL UK)–United Kingdom
Unit 10, Ruxley Corner Ind Est.
Edgington Way, Sidcup
Kent DA 145SS
+44-81-300-3399 (Phone)
+44-81-300-6765 (Fax)

DTM–West Germany
Dreiherrenstein 6A
6200 Weisbaden-Auringen
+49-61-27-4065 (Phone)
+49-61-27-66276 (Fax)

Micropace–USA
604 N. Country Fair Dr. #C
Champaign, IL 61821
+217-356-1885 (Phone)
+217-356-0097 (Fax)

CIS–France
Europarc 14, Avenue Gustave Hertz
33600 Pessac
+33-56-363-441
+33-56-362-846

R.S. Ricerca E Sviluppo SRL–Italy
Via A Grandi 22
40057 Cadriano di Granarolo, Bologna
+39-051-765299 (Phone)
+39-051-765252 (Fax)

Power Peripherals–Australia
1st Floor, 257 Hawthorne Rd.
Caulfield North 3161, Victoria
+61-3-532-8553 (Phone)
+61-3-532-8556 (Fax)

Datacorp–Canada
431 Hampton Court Rd.
Dollard des Orneaux, Quebec H9G 1L1
+514-624-4700 (Phone)
+514-620-7136 (Fax)

Pixel Soft–Spain
c) Gral. Franco, 7 Entlo F-G
34001 Palencia
+34-88-751180 (Phone)
+34-88-751191 (Fax)

Microtron Computerprodukte Switzerland
Bahnhofstrasse 2, Postfach 69
CH-2542 Pieterien
+41-32-87-24-29 (Phone)
+41-32-87-24-82 (Fax)

Merlin–Austria
Dorfstrasse 5, A06074 Rinn, Innsbruck
+43-522-38896 (Phone)
+43-522-38897 (Fax)

Fromont Holdings–New Zealand
114 Richardson Road
Mount Albert, Auckland 1030
+64-9-815-2338 (Phone)
+64-9-815-2338 (Fax)

Datacom APS–Denmark
Kirkevaenget 23, Hatting
8700 Horsens
+45-75-65-37-88 (Phone)
+45-75-65-37-16 (Fax)

Karlberg & Karlberg AB–Sweden
Fladie Kyrkvag, 23700 Bjarred
+46-46-47450 (Phone)
+46-46-47120 (Fax)

Jotec AS–Norway
Osterdalsgaten 1, 0658 Oslo 1
+472-67-77-70 (Phone)
+472-67-03-91 (Fax)

Broadline OY–Finland
Vanha Porvoontie 295, 01260 Vantaa
+358-087-479-00 (Phone)
+358-087-479-44 (Fax)

MIQ Japan Ltd.–Japan
4-7-1, Nishi-Shinjuku Ku,
Tokyo, 160
+81-3-3299-7377 (Phone)
+81-3-3299-7371 (Fax)

GVP

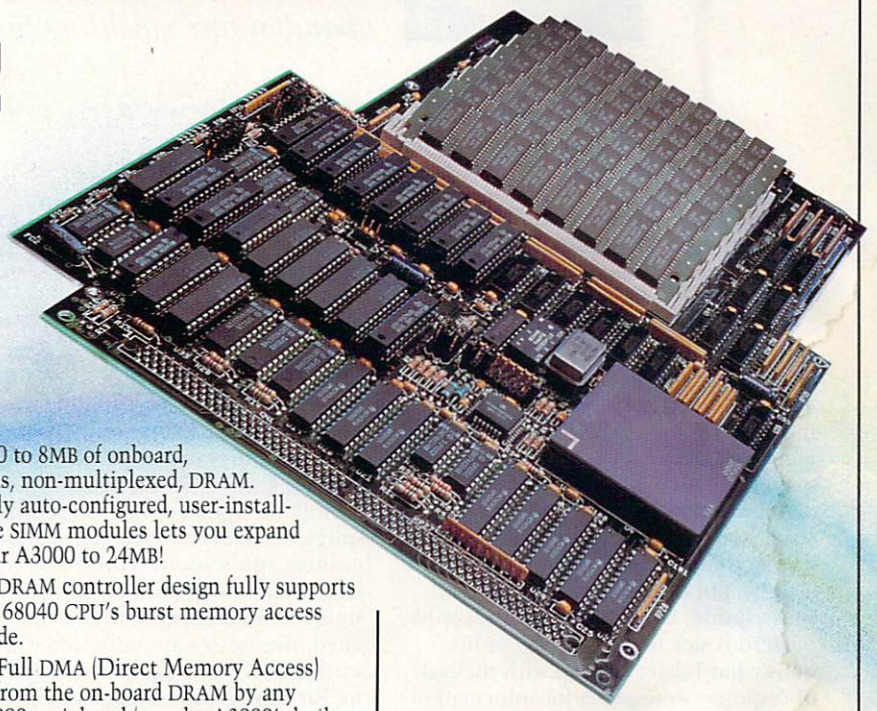
GREAT VALLEY PRODUCTS INC.
600 Clark Avenue, King of Prussia, PA 19406

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.

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 nanoseconds!*). 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.

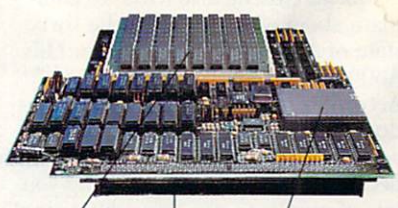
▶ Incorporates GVP's proven quality, experience and leadership in Amiga accelerator products.

TRY A RAM DISK PERFORMANCE TEST AND SEE FOR YOURSELF HOW THE G-FORCE 040 OUT PERFORMS 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™



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

Dealers Circle 23 on Reader Service card. **Consumers** Circle 24 on Reader Service card.

CHIEF CONCERNS

Although thousands swear by their Amigas, those who abandon our machines have reasons and should be heard.

IN A SINGLE day, I received three letters that made me as nervous as a squirrel on a four-lane highway.

The first one was just signed "Wayne." It seems that last summer Wayne bought a cheap IBM clone and kissed his "terminally brain-dead" Amiga off for good. Wayne blames incompatibility, the lack of software, and poor service and support for his switch.

A few letters further down in the stack was one from Christoph L. Herd, who not only sold his A500 and bought a clone, but cancelled his *AmigaWorld* subscription. Say it ain't so, Christoph!

Herd is sick of gurus, tired of his quirky hard drive, fed up with the lack of response to requests for information (including three or four unanswered letters to us), and appalled at the lack of serious business software. He did have a comment about the Amiga's great authoring and video-titling products, saying, "Next time I need to title a movie, I'll be sure to buy myself another Amiga." While I always like good sarcasm, this line hits a little close.

Marlin Greene also wrote to complain about what he called the sorry state of Amiga software, and said his A3000 is a "$3000 game machine." According to Greene, many products do not work as advertised, and he accuses *AmigaWorld* of hiding this truth because "these jokers are paying you lots of money to run that advertising!" He also blasts away at the lack of a decent structured-drawing program, the absence of support for color PostScript, and the instability of the tools we have.

We may not like what turncoats have to say, but they should be listened to—carefully. Yes, the Amiga can be a quirky machine. Part of this has to do with our multitasking, and those now trying to multitask with Microsoft Windows 3.0 are learning about the "unrecoverable application error," their form of the guru.

But that's not a complete excuse. My system sometimes crashes when I'm *single*-tasking, and I say it is because those who develop operating systems and write programs don't do enough testing!

I will, though, strongly defend the Amiga's lack of software, particularly in business applications. When Commodore tried, in the USA, to position the Amiga as a do-all, end-all machine, it failed. Businesses are saturated with boatloads of ultra-cheap clones from the Far East, and nothing's going to crack that market.

The Amiga is not an IBM clone. It is a specialized machine for graphics, animation, sound, music, multimedia, video, games, and programming. Unix workstations from Sun, Next, and IBM also lack many tools, but their excellence in special areas makes up for the shortage. The Amiga, too, can do quite well without Lotus 1-2-3 and Dbase.

No Excuse

But specialization is no excuse for software that crashes, fails to perform as advertised, or imposes its own oddball interface, and it is clearly no excuse for the failure to listen to customers and help them solve their problems.

We are trying to attract new users to our platform, users who have heard about the multitasking, the real-time animation, the video capability. The last thing they want to see is a flashing orange message from Hell.

I've heard developers complain in turn that the reason they can't help customers or develop products as slick as those on other platforms is that the Amiga market is smaller, and they consequently make less money. But that's like saying, "I'm fat already, so why not have another Twinkie?"

Amiga owners pay money like anyone else, and they deserve customer support, good manuals, and stable, slick, full-featured products. If they don't get them, they may just turn away, and do their animation/graphics/music/video work somewhere else.

That's why *AmigaWorld* reviews point out the flaws, as well as the benefits, of Amiga products. We're not mean-spirited. We just believe that Amiga products should be judged in accordance with those on other platforms. And believe me, we take a lot of heat for this position, despite what Greene believes.

We know it's harder for our developers to provide superb products and give top-notch support in this market. The Amiga universe *is* smaller, and our software prices are lower. Still, companies must support customers or lose them.

So if you buy a product, and you're not satisfied, raise a ruckus. And if a company is not responsive to your complaint, scream bloody murder. It could be the best thing to happen to the Amiga since Andy Warhol. ■

Doug Barney

G-FORCE 030™ - 50/4

PRICE/PERFORMANCE VALUE OF 030 ACCELERATION AT THE ROARING SPEED OF 50 MHZ...

IT'S ONLY THE BEGINNING

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

With its 68030 Central Processor, 50 Mhz clock speed, 68882 Floating Point Processor, 4-16MB RAM and an on-board SCSI controller, the G-FORCE 030-50/4 gives you more performance and control for the money than any other single board out there.

GFORCE 030-50/4
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 of a 3.5", 240MB hard drive on a single card...

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

Speed up all your New Tek Video Toaster™ applications.

Plus, when you install the G-FORCE 030-50/4 combo board, you still have all your original expansion slots open and free for other uses.

It's no wonder we say the G-FORCE 030-50/4 is the ***Must Have*** Combo Board for your A2000.

IT'S A COMPLETE SYSTEM ON A SINGLE BOARD

Just look what you get from this workhorse, powerhouse:

- 50Mhz 68030 Accelerator
- UP to 16MB of full Direct Memory Accessible, 32-bit wide, SIMM-Based RAM.
- High Performance, Auto-Booting, SCSI Hard Drive Controller
- SCSI Connector for External SCSI Peripherals
- Icon-Based, Software Switchable, 68000 Mode Switch

G-FORCE™ 030 COMBO

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

GVP'S Optional "Hard-Disk-Card" Conversion Kit turns your G-FORCE 030-50/4 into a Hard Card Drive — right on the board!!!

For more information on how you can put the ***Must Have*** combo board — or any of GVP's growing family of A2000 combo boards to work for you — ask your GVP Dealer today.

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 registered 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.

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

Introducing the IMPACT VISION 24™ from GVP

The All-In-One Video Peripheral for the A3000 and A2000

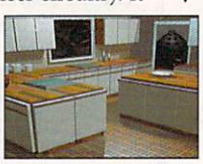
If you're into video, IMPACT VISION-24 is truly a dream come true for your A3000 or A2000. It is the first multi-function peripheral specifically designed for the A3000's video expansion slot.
With the optional A2000 genlock slot adaptor kit, it also perfectly complements and enhances the A2000.
Check out these features, all packed on a single Amiga® expansion board!

▶ **Separate Composite and Component Video (RGB+Sync) Genlocks.** RGB genlock operates in the digital domain, for digitally perfect production studio quality mixing: no color bleeding, no ghosting, no artifacts . . .!

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

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

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



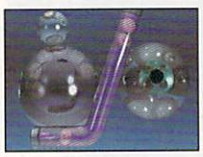
▶ **Simultaneous Component Video (RGB) Out, Composite Video Out and S-VHS Video Out.** Now, anything you can see on your Amiga monitor can be recorded on video tape, including animations, ray-traced 24-bit images and more!

▶ **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.

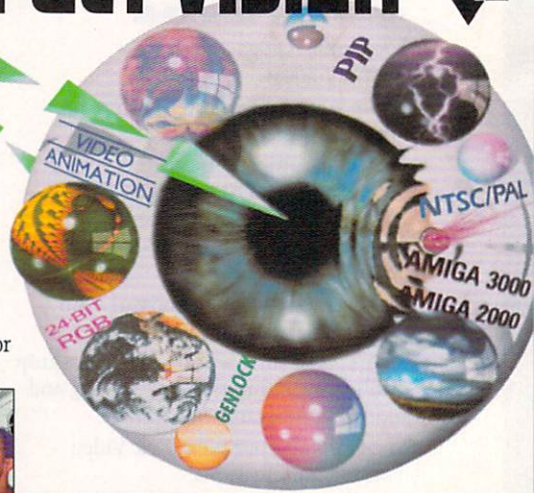
- **Control Panel.** Provides full software control over all Impact Vision-24's numerous features. Use your mouse or simply press a (configurable) "hot key" to activate any feature.



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

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

#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 . . .

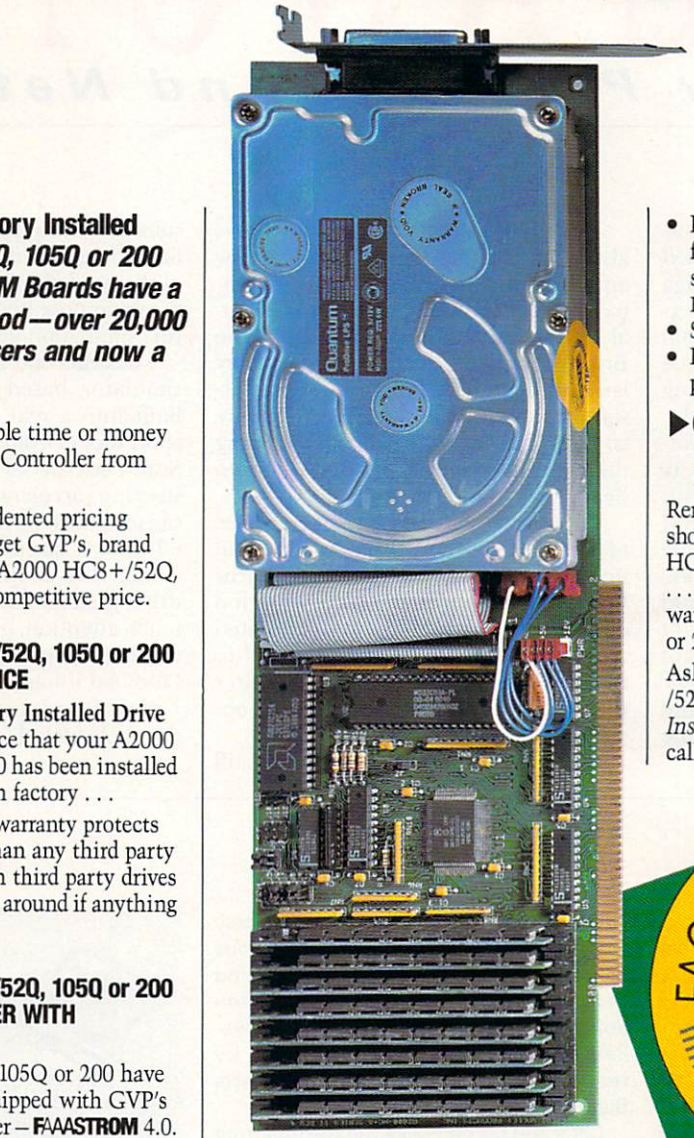
▶GVP's A2000 HC8+ /52Q, 105Q or 200 —JUST LOOK AT THESE FEATURES

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



Up to 8MB FAST RAM Expansion

Factory Installed 3.5" Hard Disk Drive

GVP Custom VLSI Chip

GVP Factory Installed Seal

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

Dealers Circle 29 on Reader Service card.

Consumers Circle 30 on Reader Service card.

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

OVERSCAN

News, New Products and Networks

The Great One

COLOGNE, GERMANY—What has more than 150,000 legs and descended upon Germany in October? The Amiga '91 Cologne Show! With almost 200 exhibitors in four halls and over 75,000 Amiga fans attending over four days, the show easily lived up to its advanced billing as the largest Amiga show in the world.

More than half the booths were devoted to European-developed productivity software and hardware products, with desktop video, music applications, RAM boards, and disk drives in the lead. Game vendors filled only one of the four halls.

The largest crowds collected around the Commodore booth, the largest of the show, where many Amiga fans got their first look at CDTV, the A3000T Tower and the A500 Plus. Commodore now boasts more than 100 available CDTV titles.

The biggest attraction of the show, also at the Commodore booth, was a new and still somewhat experimental Amiga-based product called "Virtuality," a virtual-reality simulation product from the British company W. Industries. Virtuality is a combination of "wearware" and software driven by an A3000. The wearware consists of a space-age helmet containing dual miniature LCD displays, stereo headphones, and a motion sensor.

The Amiga generates a virtual space of stereo sound and three-dimensional images that "move" as the wearer turns his head, creating an uncanny sensation of being inside the computer-generated scene. Additional sensors, attached to the arm and fingers, permit the wearer to reach for and manipulate virtual objects in virtual space.

While the displayed graphics are still somewhat simplistic, and the software did little more than demonstrate the features of the hardware, Virtuality demonstrates the great potential of the Amiga in futuristic simulation and game applications.

The other star attraction was a driving simulator, based on an Amiga, that is built into a real automobile, a Toledo sport model from the Spanish car maker, Seat. With special sensors attached to the steering, accelerator, and brakes of the car, and with the moving scenery projected onto a large screen in front of the driver, the simulator creates realistic driving situations. The simulator drew much attention, but the emphasis was on the car's capabilities, not the Amiga. (Too bad it wasn't a Ferrari!)

New American products introduced at the show included SupraTurbo 25 and

Continued on p. 16.

England Swings for Amiga

LONDON, UK—"Mad! Bad! And In Your Face!" That's how the ad for Ocean's new WrestleMania game read on the back of AmiEXPO's World of Commodore show guide. And that is how the event appeared—at least to this statesider, accustomed to the more sedate US shows. Of course, bad means good, but mad is mad—and there's no doubt that the British market is mad for Amiga!

The four-day show opened Thursday, November 14. On Saturday, the queue to get in stretched 50 yards out of the Earl's Court 2 convention center. Once inside, the 38,000 attendees were welcomed by show sponsor Future Publishing, which prints four Amiga magazines in England.

Although there were plenty of hardware and productivity manufacturers to be found, resellers and entertainment developers dominated the show. Flanking the Future Publishing booth were Electronic Arts and Mindscape. EA boasted Populous II, Birds of Prey (a flight simulator), and several other entertainment titles. In addition, folks crowded around to see DeluxePaint IV, demonstrated on Sunday by renowned14-year-old cartoonist Chris Blackwell.

Chris and his dad Mike run the nonprofit Harry Project, helping kids overcome their fear of hospitals by way of comic strips. During the show, Commodore agreed to donate an Amiga to every hospital in England, and EA joined in by promising DPaint copies for each. These donations will allow hospitals to customize the Harry cartoons for young patients.

Mindscape's huge display included a demonstration theater, which was usually packed with people eager to learn about the Miracle Piano Teaching System, which in-

Continued on p. 16.

OVERHEARD

When Software Publishing Corporation purchased Precision's Superbase products, observers wondered what would happen to the Amiga line of the popular database. Now, it's time to sigh with relief. On November 13, Oxxi picked up not only the Amiga products, but also the Atari ST and C-64/128 releases. Support and upgrades for Superbase Personal (which Software Publishing had discontinued about a month before) and Superbase Professional are now available through Oxxi.

Meanwhile, a spokesman for WordPerfect announced that the company will no longer develop the Amiga version of its word processor due to lack of demand. ►

To locate the vendors of products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 112.

---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 FAAASTROM 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!!

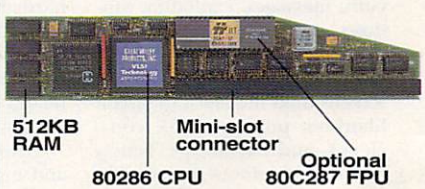
The GVP/PC286 "Mini-Slot" module features:

- 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.

AND THE WORD WAS...

...Explosive? With **TNT** ($39.95, ***Shocking Software***), which combines The New Testament and a study program, you can search The King James version of the New Testament for any word(s). A more complex search function lets you locate phrases that do not contain a specified word or string, and you can use the Print All command to output them. A handy Book Mark feature allows you to quickly move between selected verses. (RS# 115.)

Bible Search (***SOGWAP Software***) is available in either the King James or New International versions. Thanks to data compression, the entire text of the Bible fits onto two disks and the Exhaustive English Concordance fits onto one. Search functions include exact phrase, single or multiple words using AND, OR, and NOT Boolean logic, and wildcard. You can search by book, chapter, or verse, and use up to eight "bookmarks." The program sells for $100, and a demo disk is $5. (RS# 116.)

—BG

OVERHEARD

Users' groups unite! The Computer Desk is trying to arrange an international meeting of Amiga users' groups for the spring. The tentative site is Augusta, Georgia. If you have ideas or would like further information, contact the Computer Desk at 191 Old Wagener Rd., Aiken, SC 29801, 803/641-9016, Fax 803/642-6190.

OPERATION SPEED STORM

It fits onto your A500 or A2000 processor socket. It attacks your applications with both 68030 and 68882 chips. It holds 1, 2, 4, or 8MB of RAM. It's **Stormbringer**, from German developer ***Memphis Computer Products***. The Stormbringer accelerator is available in several speeds; the 16-MHz board is $1099, the 24-MHz model is $1199, and the 30-MHz unit is $1549. The two top-of-the-line models are a $2349 board with a 50-MHz 030 and a 60-MHz 68882, and Stormbringer 55sync ($2599), with a synchronous 55-MHz processor and coprocessor, which promises to run 35% faster than the standard 50-MHz version. (Prices include 4MB ZIP-RAM.) The board provides a disable switch for finicky programs, and it comes with software that caches,activates burst mode, and loads Kickstart into RAM. (RS# 112.)

—BG ►

ON-LINE SCAN

By Tim Walsh

Electronic networks can serve as catalogs of aftermarket Amiga software. Instead, however, of the fuzzy dice and glass-pack mufflers offered in such catalogs as JC Whitney, on the nets you will find digitized sounds, special effects, and even some useful tools for your operating system. Switch on the Amiga of a telecommunications fanatic, and you will probably see and hear some unusual things. The standard Amiga screen fare has likely given way to fraudulent Guru messages, exploding windows, and animated requesters.

Thanks to my online excursions, my own Workbench screens hold the latest in screen blankers, pointers, 3-D icons, clocks, and backdrops. Fellow *AmigaWorld* editors never know what to expect when they insert or remove a floppy from my machine; the action may be acknowledged with an an angrily barking dog, or Scotty complaining of the Enterprise's faltering impulse engines.

Before making alterations to your Amiga's operating system, which is what is involved in installing many of these "finds," you must know how to undo any damage they may cause. If you are unsure how to recover and repair damaged directories, you should not customize your operating system. "Hacks," as these programs are known, can wreak havoc to hard disks by improper installation, so be sure to read the procedures carefully.

Always decompress downloaded files to your RAM disk or an empty floppy, not onto a hard disk. If you own a hard disk, you should always back up your Workbench and boot-partition files onto floppies or other media before embarking on a customizing crusade.

Finally, to avoid wasting time and money collecting a hodge podge of hacks that are incompatible with your system, read their file descriptions carefully before downloading. Make certain the file offers 100% compatibility with your Amiga's operating system (either 1.3 or 2.04 for A3000s and upgraded systems).

Because there are so many customizing files from which to choose, I thought it best to present a small sampler from each of the networks. One of my favorites on GEnie is PLAYBEEP_V1.1.ZOO from Library 4 (file #6242). This file replaces the system beep with your IFF sound file of choice. For enhanced appearance and functionality under Workbench 1.3, check out version 1.2 of Gary Knights's AmiDock, AMIDOCK.LZH (file #10424, Library 4). It gives your Amiga the NeXT computer's user interface.

BIX subscribers have access to a newer version of AmiDock (1.3) in the Amiga.user area. AmigaDOS 2.0 users should get a copy of AddTools14.lzh (also in the Amiga.user area). This is a must-have for making quick additions to the Workbench 2.0 Tools menu option.

CompuServe's Library 11 in the AmigaUser area is a haven for system enhancements. Need snazzy 2.0 icons? Get the files of WB2ICN.LZH. and EMBOSS.LZH for 2.0 and 1.3, respectively. If you use 2.0, don't leave that library without getting a copy of WBFED.LZH (version 0.93 of WBFed, a 2.0-specific font editor).

Not surprisingly, Portal offers the most complete collection of 2.0 enhancements to be found anywhere. I recently counted almost 60 top-notch 2.0-compatible hacks residing in the area with the no-nonsense name, "2.0-Only or Amiga 3000-Only Files." Favorites in this area range from the frivolous POINTERX2.LZH, which spins the hands on 2.0's busy clock pointer, to the useful WBGAUGE.LZH, which adds a full/empty gauge to 2.0 disk-icon windows.

BIX
One Phoenix Mill Lane
Peterborough, NH 03458
800/227-2983

CompuServe
PO Box 20212
Columbus, OH 43220
614/457-0802
800/848-8199

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

Portal Communications Company
10385 Cherry Tree Lane
Cupertino, CA 95014
408/973-9111

Experience The Power Of ProWrite® 3.2

(Racing Attire Optional)

Test Drive The Best-Selling Amiga® Word Processor.

Feel the power at your fingertips. ProWrite 3.2 has all the features you need to speed through your documents in record time. Unique functionality, direct PostScript® capability and a long list of features are the driving forces behind ProWrite's ability to outperform other word processing programs. Features such as jaggie-free printing, improved picture handling, timed saves and automatic backups. Maneuver through documents with multiple columns, snaking and side-by-side text and manual text wraps around graphics. Cruise effortlessly with ProWrite's 100,000-word spell checker that can check as you type, and the reserve power of a 300,000-word thesaurus. ProWrite 3.2 means high performance in printing as well. Options include multiple fonts and sizes in PostScript or high-quality dot-matrix printing and options for 8, 64 or 4096 colors in your graphics.

Register To Win An Odyssey--The CDTV Personal Workstation!

Race to your nearest Amiga dealer to test drive ProWrite 3.2 today. You'll qualify to win the exciting Odyssey, a CDTV Personal Workstation complete with CDTV unit, keyboard, external floppy drive, mouse, stereo color monitor, modem and printer, with a CD-ROM containing ProWrite 3.2, DesignWorks™ 1.0, Flow™ 3.0, ProFonts™ I and extensive public domain software.

NAME

ADDRESS

CITY, STATE, ZIP

TELEPHONE

SALESPERSON

(Entry form must be countersigned to be valid)

No purchase necessary, need not be present to win. Offer may be void in some states. Ask your dealer for details.

NEW HORIZONS

First in Personal Productivity and Creativity

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

ProWrite is a registered trademark and Flow, DesignWorks and ProFonts are trademarks of New Horizons Software, Inc.
Amiga is a registered trademark of Commodore-Amiga, Inc. PostScript is a registered trademark of Adobe Systems, Inc.

Circle 65 on Reader Service card.

KID STUFF

With ***Discis*** "books" and a CDTV, your child can read a variety of children's classics complete with voices, music, and sound effects accompanying the illustrations. Using CDTV's remote-control unit, your child can click on any word in the text or on items in a picture to obtain the correct pronunciation, explanation, and syllable breakdown. The ten titles currently available (from $49.95 to $59.95) are **The Tale of Peter Rabbit**, **The Tale of Benjamin Bunny**, **The Paper Bag Princess**, **Mud Puddle**, **Thomas' Snowsuit**, **Scary Poems for Rotten Kids**, **Cinderella**, **A Long Hard Day on the Ranch**, **Heather Hits Her First Home Run**, and **Moving Gives Me a Stomach Ache**. (RS# 101.) —*JJ*

You can hear the Amiga read the text that you"ve selected, and then get an explanation of it.

GET THE CONNECTION

Let your Amiga step right up and connect to any standard Novell NetWare network as a workstation or client with ***Oxxi***'s **Amiga Client Software**. Now you can enjoy the best of both worlds—full-range Novell NetWare functions, along with the Amiga's multitasking, graphic environment.

Amiga Client Software comes with two utilities. AmigaBack lets you back up and restore server-based data without leaving the Amiga workstation. NetMessage lets you send messages and attached files to those tied into the same network or, when these networks are tied via gateways, to people outside it. To run Amiga Client Software, you will need a LAN ARCNet or Ethernet card (one for each workstation, one for server), cabling, and IBM-PC-compatible servers running Novell NetWare version 2.15 or higher.

Oxxi's **P-Stat** offers interactive statistical data analysis and graphing. You can place numeric data into P-Stat's spreadsheet-like interface either manually or by cutting and pasting ASCII information from other programs such as MaxiPlan. With P-Stat, you can perform over 50 functions, including matrix multiplication, transposition, addition, inversion, logarithmic and nonlogarithmic transformation functions, and random-number generation complete with uniform, normal, exponential and gamma distribution. Once you have entered your data, you can employ the program's statistical tools to perform component and factor analysis, tabulation techniques, one- and two-way analysis of variance, regression, cluster analysis, and multidimensional scaling. (RS# 103.)

—*JJ*

RED FOR GAMES, YELLOW FOR GRAPHICS

If cleaning up your hard disk is one of your New Year's resolutions, take a look at ***Display Systems International***'s **Hard Disk Organizer** (HDO). With HDO ($44.95), you can run games and applications by clicking on a button. If you wish, you can organize your applications by color. The program also features an unlimited number of buttons and a Pause command that allows multitasking programs to run before returning to HDO. (RS# 107.)

—*JJ*

FLEXIBLE FONTS

Apogee 3D Fonts were designed for broadcast video. According to developer ***Digital Arts***, you can enlarge the hi-res characters five times and more with minimal distortion, and you can wrap, skew, and mold the fonts while preserving true curvature. Baseline identification allows accurate alignment, while even, dense distribution of vertices ensures correct Phong shading. Available in all 3-D formats, the first set ($29.95), contains Helvetica, Times, and Courier faces (with numerals and symbols) in bold. Stay tuned for more! (RS# 114.)

—*BG*

MEAN AND UGLY

With **Volfied** ($39.95, ***ReadySoft***), you fight giant crabs, killer ladybirds, violent insects, and the ever-changing massive "Boss Alien" through 16 levels of arcade action. Do the job well, and you gain extra powers, such as lasers, power-ups, and time stops. Of course, there are surprises too, including hidden enemies and bonuses. (RS# 109.)

Strategy and reflexes. You need both to win at Volfied.

If it's spiders you abhor, here's a chance to get back at the long-leggedy creatures. ***Disney Software***'s **Arachnophobia** ($39.95), based on the film by the same name, may have you looking over your shoulder as you play (RS# 110.)

—*JJ*

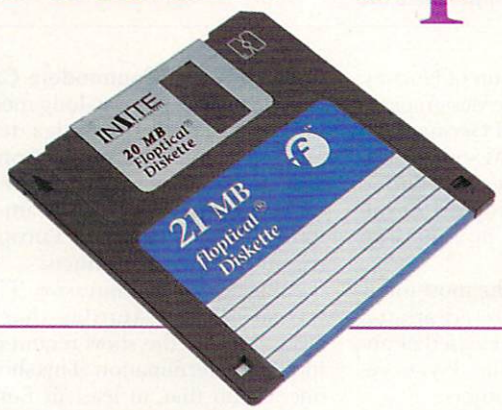
CLEARER VISION

You will be glad to know that ***Commodore*** has been busy fine-tuning **AmigaVision**, its icon-based authoring language. Version 1.7OZ features the ability to chain applications together with simple icon control, and it allows you to manage your creations in smaller, memory expanding, modular programs.

In addition, version 1.7OZ boasts an upgraded standard-music file—including improved support for tempo, dynamics, and chords—and new video-device drivers. AmigaVision now lets you drive more peripherals from the serial port and offers six additional functions in the Expression editor. The new version retails for $149.95, and upgrades are available for $35. (RS# 108.)

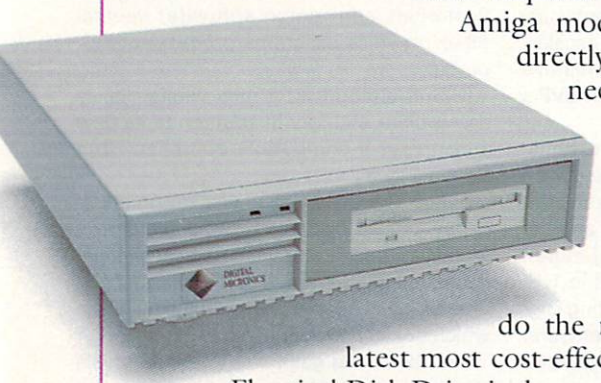
—*JJ* ►

The Data Storage Solution That Won't Stack Up!



The DMI Floptical® Disk Drive for the Amiga Packs Twenty-two Floppies into One!

Digital Micronics brings the latest in Floptical disk technology to the Amiga. The DMI Floptical Disk Drive is a mass storage solution that provides unprecedented cost performance. Each Floptical disk looks and handles just like a standard 3.5" floppy but stores a whopping 20 megabytes of data at a cost of $1.00 per meg! The Floptical Disk Drive requires a standard SCSI interface and is compatible with all Amiga models (including IBM and Mac). It is available NOW directly from Digital Micronics for **$649** – it includes all necessary cabling, a 100/260-volt autoswitching universal power supply, and one Floptical disk for 20 megs of immediate storage (additional disks available).



The unit is designed and assembled in the USA using solid all-metal construction and comes with a 1-year warranty.

As the Amiga grows in power and versatility so do the resulting data and image files. Take advantage of the latest most cost-effective disk-based storage technology available. The DMI Floptical Disk Drive is the storage solution for todays data-hungry applications.

Use your MasterCard or Visa to order the DMI Floptical Disk Drive today. Call Digital Micronics at 619-431-8301.

MasterCard VISA

Digital Micronics, Inc.
5674 El Camino Real, Suite P
Carlsbad, CA 92008
Tel: (619) 431-8301 • FAX: (619) 931-8516

"Floptical" is a registered trademark of INSITE Peripherals.

What It Sees Is What You Get

Tired of keying in text? ***Migraph***'s intelligent **Optical Character Recognition**, based on an Omnifont engine, promises to recognize text characters you scan on a printed page and produce ASCII files for use with word processors or desktop-publishing programs. Migraph's OCR ($299) directly supports the Migraph and Golden Image hand scanner, loads IMG and TIFF files, defines text and graphic areas, includes four different linguistic databases—English, French, German, and Dutch—and lets you create dictionaries for multipage documents having the same types of characters (mathematical, Greek, and so on). The OCR requires 2MB of RAM and a hard drive.

Also from Migraph, a **Merge-It** and **Scanning Tray** hardware/software combination ($149) lets you scan full-page graphics and merge them to create one composite image. **Scan & Save** ($20) provides the capability to scan and save an image if that's all you need. Migraph also released version 2.0 of **Touch-Up**, its hi-res scanning and image-editing program. The new version provides a custom screen and an image viewer to preview monochrome, color (including HAM), and gray-scale IFF files. You can also specify the degree of overscan and load an image automatically at the launch of Touch-Up. (RS# 102.)

—JJ

The Great One, from p. 10.

SupraTurbo 68040 cards from Supra, 68040 and 24-bit video cards from Great Valley Products, plus an assortment of RAM boards, hard-disk drives, accelerator boards, and emulators.

New European software products included a development environment and language called "Cluster" from the German publisher DTM, described by the developers as "a cross between Modula-2 and C." There was also an Amiga-based hotel/airport information-display package called InfoChannel, based on the very popular multimedia-presentation package Scala, from Digital Vision of Norway, and a user-friendly database-design package from C-Laboratories of Germany.

As you might expect, PAL-only European products dominated the video hardware arena, with European developers filling the gap left by American (NTSC) video vendors.

In the world of games, the most interesting developments centered around CDTV, with new products released or announced by Virgin, Lucasfilm, Psygnosis, and Korona Soft, among others.

In an effort to encourage wider distribution of Amiga products on both sides of the Atlantic, Commodore CATS US/Europe arranged a day-long meeting between more than 100 Amiga developers and ten Amiga distributors from the US and Europe. Several European distributors later reported a significant increase in developer interest in European distribution of their products.

Amiga '91 was impressive. The crowd was so big on Saturday that getting around inside the show required real effort and determination. This show proves once again that, at least in Europe, the Amiga gets the respect it deserves!

—George Chamberlain

England Swings, from p. 10.

cludes a MIDI keyboard and music-instruction software. Outside, crowds queued to try out such games as Ultima VII, Paperboy 2, and Captain Planet.

Psygnosis showed off its arcade-adventure Leander, the scrolling shoot-'em-up Agony, and more favorites. Next door, Virgin Games upheld its' "pure entertainment" credo with such new releases as Jimmy White's Whirlwind Snooker and Conan the Cimerian.

Contributing to the party-like atmosphere was Ocean Software's "booth," which consisted of a whirling-teacups-type carnival ride. Around back were some of Ocean's games set up in arcade consoles. Among the titles Ocean promoted were Terminator 2 and The Simpsons.

Gremlin Graphics Software made a big hit with its Lotus Turbo Challenge auto-racing game; lured by its video-wall screen, folks lined up to take turns "driving." Meanwhile, MicroProse (Silent Service II and Knights of the Sky), Domark (Shadowlands role-playing adventure and Trivial Pursuit on CD), UBI Soft (Battle Isle, Celtic Legends), and other entertainment developers competed for the attention of game-loving attendees.

Beyond Games

Those who sought fun but not games were pleased to find a demonstration of The Blue Ribbon SoundWorks' SuperJAM!, an easy-to-use composition program that a number of graphics programs promise to support directly. On a more serious note, Digita International showed its Home Accounts 2 finance program and Wordworth word processor.

Great Valley Products and Supra had booths as large as most game manufacturers. Both companies touted 68040 accelerators, and GVP's IV24 picture-in-picture video card made appearances at both GVP's booth and Commodore's display.

Commodore had two booths, one housing computers and the other packed with CDTVs. In the computer camp were the A1500 (an A2000 without PC slots) and the A500 Plus (with 2MB chip RAM and more), neither of which is available in the US. Some American developers, including Digital Creations and Micro-Systems Software, set up shop there, as did British educational-software developer Think Ltd.

At the overpopulated CDTV City, scores of applications demonstrated developers' growing commitment to the system. Connected to one unit was Commodore's AVM enhanced-display product for CDTV.

Rombo Ltd. showed up in living color to demonstrate its Vidi-Amiga real-time black-and-white/still color video digitizer. An upcoming bundle will reportedly include a sketch tablet.

A graphics device of a different sort was on display at Amiga Centre Scotland's booth, that being the Harlequin 32-bit (24 bits/pixel, plus an optional extra eight bits for more functions) framebuffer. (At the time of the show, it was out to a handful of developers in the US to garner support for its NTSC release.) The board comes packaged with its own TV Paint and Active Circuit's RasterLink conversion software; several other graphics programs promise to support it.

HiSoft announced a new version of its assembler/debugger in addition to its new Turbo Pascal-compatible compiler, High Speed Pascal.

While The Vivid Group was not in attendance, the UK distributor of the company's Mandala virtual-reality system was. The Mandala/Live! (A-Squared) combination drew aisle-blocking crowds with demonstrations in which onlookers were invited to take part.

But the crowd gathering for the Mandala display was nothing compared to the throngs at the back of the convention center, where most retailers were. A popular London radio station added to the excitement by broadcasting live from the show, and nearby, as folks queued up to join the Video Arcade (50 pence bought you 15 minutes of time with popular games; the proceeds went to charity), Commodore sold logo-emblazoned sportswear. With this kind of enthusiasm—and support from CBM to boot—is it any wonder the Amiga is England's most popular computer?

—BG ■

SUPRA MODEM

Supra Quality, Supra Prices, Supra Fax Modems

V.32bis

Introducing three great new data/fax modems from Supra — the 2400 bps SupraFAXModem™ Plus, the 9600 bps SupraFAXModem V.32, & the 14,400 bps SupraFAXModem V.32bis! All three modems feature V.42bis & MNP (2–5, 10) data compression & error correction, plus they work with nearly all popular telecommunications programs, including BaudBandit™, JRComm, A-Talk III™, & many others. With telecom software & your SupraFAXModem, you can access computers close to home & around the world, where you'll find everything from airline schedules & stock quotes to technical help & free software.

And as an added bonus, all three modems feature compatibility with Group 3 fax machines & Class 1 & 2 fax commands, which means you can use any fax software that also supports these industry standards to easily send faxes directly from your computer.

SupraFAXModem V.32bis
$399.95 Retail
14,400 S/R FAX
14,400 DATA

SupraFAXModem V.32
$299.95 Retail
9600 S/R FAX
9600 DATA

SupraFAXModem Plus
$199.95 Retail
9600 S/R FAX
2400 DATA

Telecom & Fax Software Not Included

Supra Corporation

ORDERS: 1-800-727-8772

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

DeluxePaint IV

Electronic Arts

A new chapter in Amiga art.

By Mark Cashman

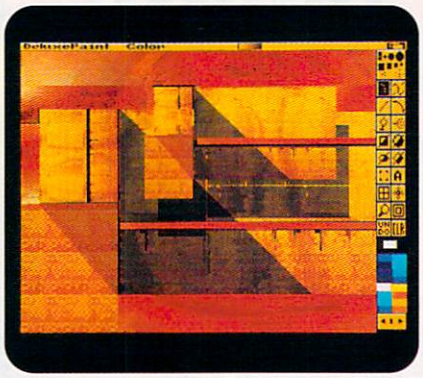
THE ORIGINAL DELUXEPAINT followed closely on the heels of the Amiga's launch. Even though the first version was well received, ***Electronic Arts*** immediately set the wheels in motion for an extended period of growth. In its third version, DPaint took a dramatic leap from mere static painting to animation.

While it has been considered a staple of Amiga artists over the years, some expressed one or two misgivings, mainly concerning the lack of Hold-and-Modify (HAM)-mode support. Long limited to 32 colors (or 64 in Extra-Halfbrite mode), DPaint IV ($179.95) can now handle the 4096 simultaneous colors of HAM.

In addition, the new version offers a wide variety of new or greatly enhanced features, including new gradient fills, a color mixer, and improved ranges. Particularly significant are additions to DPaint III's animation module, namely, a new Animation Control panel, brush-morphing capabilities, and a Light Table function for key-frame animating.

DPaint's newfound support for all native Amiga color options is still subject to normal Amiga restrictions, so you can use HAM only in lo-res and lo-res overscan horizontal resolutions, and with no more than 16 colors in hi-res and hi-res overscan horizontal resolutions. HAM capabilties extend throughout the program's features and tools, including animation.

Handling of overscan has improved in that you can now use the entire overscan screen for painting. Previously, the screen provided only a view onto a larger, overscan-sized bitmap that you needed to scroll to use.



Realistic effects in DPaint IV' HAM mode.

A Decided Effect

Under the Effects menu, DPaint IV provides some special options that work well with HAM. Translucency, particularly suitable for drawing shadows, lets you mix the colors from your brush with the colors in your backgrounds in specified proportions. The Tint, Hue, and Value Process options allow the current brush to affect the background only with the tint, hue, or value of its colors. These functions allow you to add effects to work in progress.

With the new Color Mixer, you can mix existing colors to create new ones, much as in traditional painting. You can change the palette's 32 colors with the updated Palette requester and keep up to 256 colors in a palette in HAM mode, most of which are unassigned at the beginning of a session. Changing colors in a HAM palette does not affect the on-screen colors.

If you are new to *any* version of DPaint, some things may seem atypical to you. Oddly, the program does not provide a three-paned representation of the RGB color cube on which you click to select a color. This is a standard feature of the other major HAM paint programs, and I was surprised it was left out.

The Palette requester, like other requesters in DPaint, does not follow the Amiga standard. For example, you use arrow buttons and numeric text entry in place of sliders. Also, the Palette requester, like some other requesters in DPaint, is on a screen of its own, raised only partially from the bottom of the screen, which makes it easy to accidentally lose it behind the DPaint screen.

DPaint IV's use of ranges is vastly improved. Ranges, for color-cycling animation and filling objects with gradients of color, are no longer restricted to the order of colors in the palette. You can create up to eight ranges, each consisting of up to 32 colors.

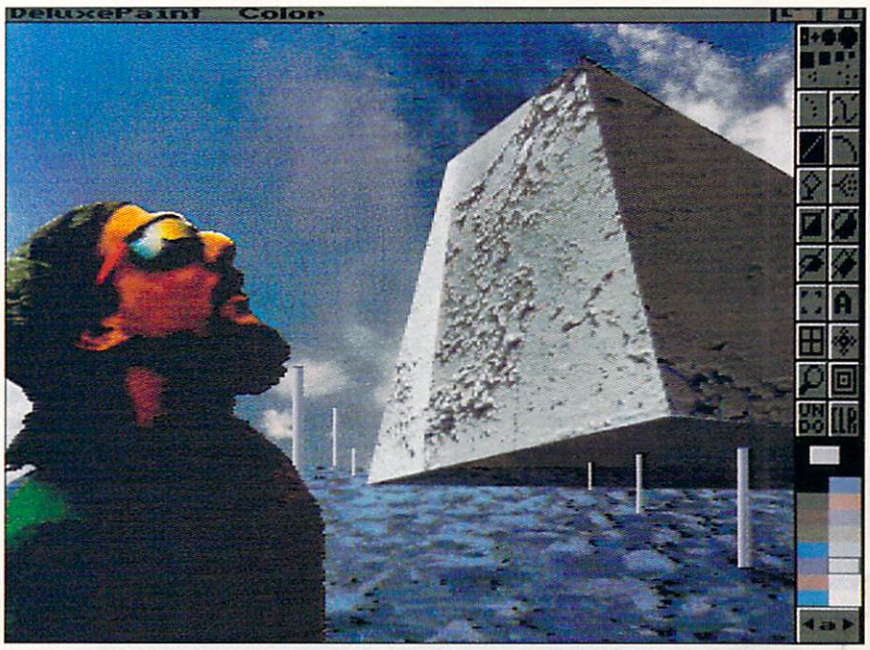
Paint-Filled Centers

An area where DPaint IV shows a tremendous amount of progress is with its two kinds of gradient fills. Based on the program's improved ranges, these fills let you easily create complex, shaded images. As in its previous version, DPaint IV provides support for linear gradients and for directional gradients that let you specify both the direction of a linear gradient and the central points for radial gradients.

Gradients come in one of two possible dither styles, Pattern and Random. When painting with Pattern, colors will appear ordered with smoother transitions. If you click on the Random button, you can give your colors an uneven appearance.

Five new gradient fills bring the total to eight. Of the two new linear gradients, Line lets you specify fill angles around forms, and Shape, similar to the left-to-right linear fill, lets you direct the fill's angle. Of the

To locate the vendors of products reviewed, see the "Manufacturers'/Distributors' Addresses" list on p.112.



The sky's the limit with DPaint's new range of colors.

three new radial gradients, Circular fills outward from a central point in concentric circles, Contours conforms gradients to the shape of a filled area, and Highlight closely simulates shading from a single light source. (See "Accent on Graphics" on p. 60 for more detail.)

DPaint IV's fills improve with the added colors, although I found neither Random nor Pattern dither to blend well with less than five colors in a range. Generally, DPaint's gradients are not as smooth as those in Digi-Paint (NewTek) or Photon Paint (now SpectraColor, from Oxxi). The variety in DPaint's gradient orientation is similar to that in Digi-Paint, but not as great as that in SpectraColor.

Animation

You can incorporate more colors into your DPaint animations, thanks to the program's new HAM-mode support, and you can now animate HAM brushes. Another important change to the animation module is the new Animation Control panel. With these VCR-like controls, you can add or delete frames, play your animations forward and backward, either continuously or one frame at a time, and loop them. The panel's Go to Frame button is linked directly to a requester where you can enter the number of a specific frame and have the program bring it up.

If you click on the Play Ping Pong button, your animation will play forward to the end and then play in reverse back to the beginning, continuing on indefinitely until you stop it. The Add a Frame function produces copies of frames. You can also delete single frames with the Delete a Frame function.

In the Brush menu, Metamorphosis lets you create morphed brushes. The program lets you define a starting brush and a quite different ending brush; then the program blurs one into the other over several predefined frames, the whole of which you can save as an anim-brush. (This function differs from tweening, which makes use of the same type of computer-generated animation, except that with tweening, the two brushes are essentially the same character or object, but just in a different position or attitude.) This effect is particularly spectactular in HAM.

To help you create cel and character animations, DPaint IV now offers Light Table, a key-frame animation tool found in the Effects menu. Light Table lets you see previous frames below the image of the current frame, which is especially useful for character animation.

Renewable Resources

DPaint IV is a large program, requiring 282K on disk. A normal lo-res screen with 32 colors uses 40K of memory. A lo-res, interlaced HAM screen requires 96K of memory. To conserve memory, you can take advantage of an option that lets you load parts of the program into RAM. Electronic Arts recommends 2MB of RAM, although only 1MB is required. Again, although not required, the program could make good use of the Super Agnus custom chip, with its full 1MB of chip RAM.

DPaint is a powerful, mature program. Many artists still consider it the workhorse of Amiga paint programs. At the same time, even with all of its power, it remains the best paint program for the first-time Amiga graphics artist. And, in responding to criticism of the program's former lack of HAM support, Electronic Arts has eliminated DPaint's single greatest drawback.

The manual is excellent. It is well laid out, contains useful and interesting tutorials, and covers the full range of program operation.

My criticisms of the program in general concern its nonstandard requester layout and menu details, which I believe detract from its operation. Also, DPaint's memory requirements continue to increase, slowing its operation. Fortunately, it is still possible to use it on small-memory Amigas, thanks to the efforts of the programmers to provide memory-saving options.

In short, DPaint is a good value and is a must for every Amiga owner interested in graphic arts—professionals and dabblers alike.

Personal Write

Cloanto/Centaur

You get what you pay for.

By Dave Johnson

A NEW WORD PROCESSOR is something the Amiga market hasn't seen in some time, and it was with some anticipation that I tore the wrapper off ***Cloanto***'s Personal Write ($49.95) and tossed it into the disk drive.

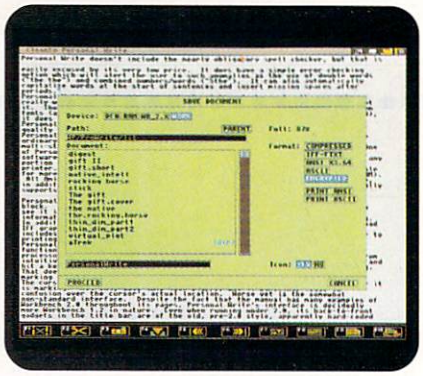
This package turns out to be a well-featured, quite inexpensive program aiming to fill the niche of a professional word processor that handles only text and printer fonts. Unfortunately, it accomplishes that goal with only moderate success. It not only acts and feels more like a text editor, but it places demands that would frustrate even the ►

most dedicated of Amiga-literate writers.

The Introductions

Personal Write installs neatly onto a hard drive. By default, it opens to Workbench-screen format, a handy feature if you like to resize your work area. To perform some of the program's most common word-processing tasks, consult the line of icons adorning the bottom of the screen. These buttons, which you can assign to your keyboard function keys, let you perform ten operations: Cancel operation, Cut, Copy, Paste, Move cursor to beginning, Move cursor to end, Remember cursor position, Mark block of text, Mark page, and Print. The program's six menus provide access to its other features, such as configuration options, mail merge, error handling, and statistics.

The document window is not What You See Is What You Get (WYSIWYG); instead, it displays text in single-spaced Topaz. The program attaches paragraph symbols to lines ending in hard returns, and shows page breaks if you define page length in the format requester. Unfortunately, there is no scroll bar on the side of the document window, which makes it difficult to move quickly to specific points in the text.



PW saves documents as compressed files.

You will need to get used to the way the program handles text blocks. In most word processors, you simply highlight a block of text and then select Cut, Paste, or some other text function. In Personal Write, that sequence happens the other way around: You first select the text operation, and then the title bar prompts you to highlight the desired block of text. In fact, it is generally not possible to select a block of text until you request an operation.

To its credit, Personal Write provides some unique features. It lets you save documents as compressed files that are about 60% smaller than a comparable ASCII document. This feature is great if you have limited storage capacity. In addition, you can optionally encrypt documents so that a keyword is necessary to load and read the file. While encryption algorithms—and their effectiveness—vary considerably among computer programs, it turns out that Personal Write's is fairly deep. Rather than simply shuffling header data, Personal Write completely scrambles the file, making it impossible to recover any meaningful data without the key. In fact, Cloanto states in the manual that if you forget your code, you are on your own.

Cloanto designed Personal Write to act as common ground between a variety of computer formats and languages. Using the file-format menu, you can configure it to load or save files using character sets from the Amiga, Mac, IBM, or Atari, as well as the Commodore 64 and international ASCII keyboard layouts. If you tell Personal Write that a document is written in English, Italian, German, French or some other language, the program tailors its error handling to detect certain kinds of typing errors. You can also modify the interface to

VXL★30

68030 ACCELERATION

Cost-effective, leading edge, high quality system acceleration for the Amiga 500 and Amiga 2000. Uses the low cost 68EC030 or the standard, MMU-bearing 68030. True asynchronous design supports versions at 25Mhz, 40Mhz, and 50Mhz. Installs into the Amiga's 68000 socket. Accepts either the 68881 or 68882 math chip. Compatible with AmigaDOS 1.3 and 2.04 systems. Cold-boot jumper selection as 68030 or as 68000. Warm boot software selection as 68030 or 68000. Supports VXL RAM-32 Memory module– 2 or 8 megabytes of Fast Page Mode RAM with Burst capability. RAM autoconfigs and is DMA-able; can be mapped high; supports mapping Kickstart to 32-bit RAM even without MMU. RAM-32 has alternate Kickstart ROM socket for 2.04 ROM. VXL Prices start at $399.

MicroBotics, Inc. 1251 American Parkway, Richardson, TX 75081

"Amiga 500","Amiga 2000" and "Kickstart" are registered trademarks of Commodore-Amiga. "VXL-30" and "VXL RAM-32" are MicroBotics, Inc. trademarks.

Circle 6 on Reader Service card.

display in a variety of languages.

Free-Form Modeling

Quite a few of the program's features are configurable. It provides stereo audio cues for menu and requestor selection, and makes the keys click when you type. Via a palette requestor, you can change the screen colors and adjust many other options.

Personal Write does not include the nearly obligatory spelling checker, although its very low price excuses it. It does have a simple error-checking option that alerts you to such anomalies as double words ("the the") and number/word combinations ("5the"). It can also automatically capitalize words at the beginning of sentences and insert missing spaces after periods.

The program provides a wealth of printing features for those who prefer customized output and are willing to put in the extra effort. Although it cannot print Amiga system fonts (a true detriment now that outline fonts have arrived in Workbench 2.0), it does support downloaded printer fonts. Using a program like Cloanto's Personal Font Maker, it is possible to create a wide variety of extremely high-quality printer fonts that you can include in your documents.

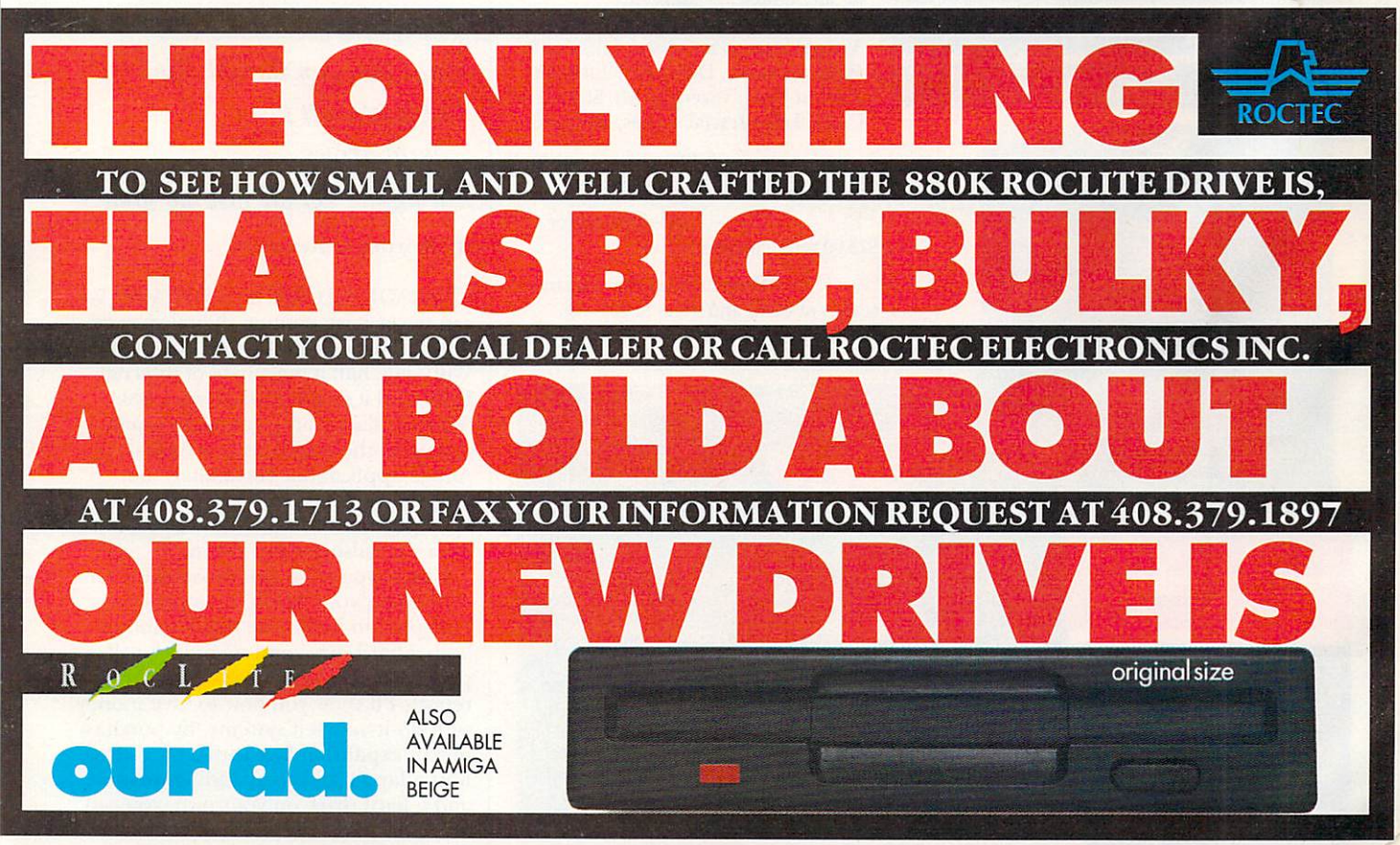
Personal Write supports several printing options, permitting bold, italic, and underline formats, as well as any number of multi-strikes (good for high-quality print saturation on 9-pin printers). Most notably, thanks to Personal Write's software printer spooler, you can dedicate any portion of free RAM as a buffer to queue files for printing. This means that you can begin typing something else as soon as you've sent a job to the printer (given sufficient RAM). All Amiga word processors should include this outstanding feature. Finally, in addition to using the Amiga's standard printer drivers, Personal Write fully supports PostScript.

The program can print an entire document, just a page, or a marked block. What's more, it lets you preview the finished product on screen, so that you can see slightly more of a WYSIWYG version, including the headers and page numbers. You can also use Personal Write to load and print IFF graphics, although you cannot combine them with text. The program's simple palette tool lets you adjust colors before printing.

Parting Ways

Personal Write has its share of problems. First, it functions too much like a text editor and not enough like a standard word processor. In other word processors, it is as instinctive as breathing to select text with the cursor and hit a keyboard shortcut for Cut, Copy, or Paste. Highlighting text *after* selecting a cut/paste function is far from intuitive.

The cursor itself is oddly sized, and doesn't completely cover the character it is marking. Not only does this look sloppy, but it sometimes leads to confusion over the cursor's actual location. Worse yet is the somewhat non-standard interface. Despite the fact that the manual contains many examples of Workbench 2.0, Personal Write's interface is decidedly more Workbench 1.2 in nature. Even when running under 2.0, its back-to-front gadgets in the title bar are of the old, pre-2.0 style, ►



Circle 177 on Reader Service card.

apparently hard-coded that way.

Furthermore, not only are the requesters not up to Workbench 2.0 standards, but their scroll bars are oddly designed. If there is only one file or directory too many to fit in the requester window, you must pull the scroll bar down to the bottom just to make that one file visible. Clicking under the bar unexpectedly causes it to advance only a few pixels at a time.

Finally, I have to question the user-friendliness of the formatting options. The program comes without useful defaults, so the new user must completely configure the word processor before he can hope to get a useful hard copy. I've never before used a word processor that was so hard to set up. The Tab key comes without any value assigned to it, paragraphs don't auto-indent, and before you *can* indent, you have to assign an indentation value to the tab key.

It even took me several days to figure out how to double-space my printout. Although the line-spacing option is in the printer options requester, Personal Write will not display on-screen in any form except single spaced, regardless of the spacing you select. I might have had better luck finding this information in the manual if it weren't filled with so many facts about general computing. I hope Cloanto's other product manuals are more focused.

In summary, Personal Write is a solid, inexpensive, but somewhat frustrating word processor. I would not recommend this program to the creative writer, because I don't feel its operation is sufficiently fluid and intuitive. Many of its features, however, like data encryption, PostScript output, and the variety of languages and character sets supported, do hold a certain amount of appeal.

IF YOUR AMIGA COULD DREAM IT WOULD DREAM IN VISTAPRO 2.0.

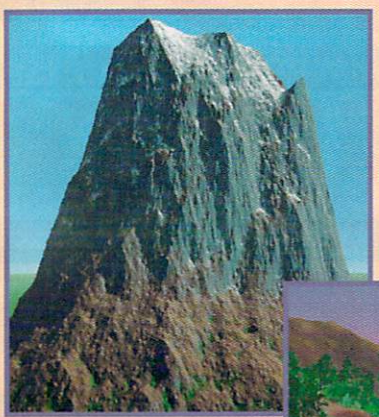
FOR PROFESSIONAL QUALITY LANDSCAPE ARTISTRY VISTAPRO IS UNPARALLELED.

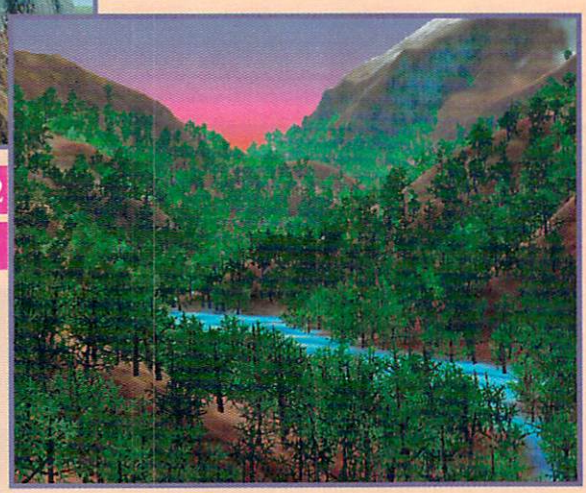
VISTAPRO 2.0 OFFERS
- Most complete final image control of any landscape simulator
- Most advanced color palette
- Virtual trees, stars, rivers, lakes, snow
- Basic animator, Direct 24 bit output
- Parts of Mars, Yosemite, Mt. St. Helens, Crater Lake, fractal scapes, and more!

MAKEPATH – Advanced animation utility $25.00 with coupon in box.

TERRAFORM – Landscape editor $25.00 with coupon in box.

SCAPES – Over 2,000 additional landscapes of earth and Mars to explore. Interlocked for animation. Call for info.





AVAILABLE 2/14/92

$99.95

HARDWARE REQUIREMENTS
- 3 megs RAM required
- Accelerator strongly recommended.

Virtual Reality Labs, Inc.
2341 Ganador Ct.
San Luis Obispo, CA 93401
Phone or FAX 805/545-8515
Dealer Inquiries welcome!

Circle 58 on Reader Service card.

A500 Hard-Drive Expansion Boxes

Comspec's SA 500
DataFlyer 500
GrandSlam 500
Trumpcard 500 Series

Metal boxes

Metal boxes

Metal boxes on the left side

And they're all filled with hard drives

But they're not all just the same.

By Morton A. Kevelson

STORAGE, STORAGE, STORAGE. We can never have enough digital storage. A500 owners especially feel the pinch. With only half a megabyte of internal RAM and a single 880K floppy disk drive, its data storage capacity is just not up to the demands of a typical Amiga application. Fortunately, not only do A500 owners have many storage options from which to choose, but prices are also coming down.

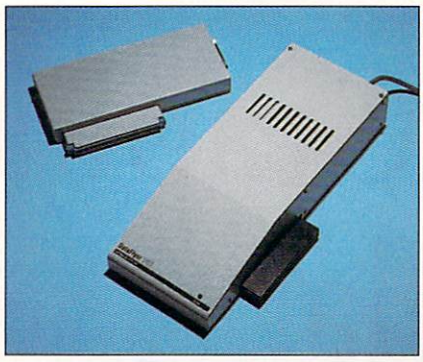
Unless you have grandiose plans for expanding your A500, an expansion-port plug-in box—one that combines both a hard drive and memory—will probably meet your needs. In this report, I'll show you how to save money with do-it-yourself systems. By purchasing an expansion box with a hard-drive host adapter and then adding memory and a hard drive on your own, you can save a considerable amount of cash compared to a comparably equipped turn-key system.

The following report covers Comspec's SA, Expansion Systems' DataFlyer, and IVS's Trumpcard A500 series.The beauty of these products is that you can play a primary role in tailoring your system according to your needs.

Say Again

The A500 version ($199, US) of the ***Comspec*** SA-series SCSI host adapter is housed in a very sturdy heavy-metal enclosure. It is the smallest unit of this group, measuring in at only 4×9½×1 inches, but keep in mind that this is only the SCSI host adapter. To complete the system, you will have to supply a self-powered SCSI hard drive in its own enclosure and a 25-pin SCSI-interface cable. For this review, I drafted from my A1000 a Seagate ST-157N 48MB hard drive in a Xetec self-powered enclosure. The SA host adapter is fitted with a red drive-activity LED at the front, a 25-pin SCSI connector on the back panel, and an autoboot-selection switch accessed through an opening underneath.

Although the set-up program had a point-and-click user interface, it was



The Comspec and the Data Flyer.

confusing and limited. I ultimately succeeded in formatting the hard drive with two partitions via trial and error. The set-up software handles only low-level formatting and partitioning. You perform high-level formatting and software installation through the Workbench or CLI. What's more, the SA SCSI host adapter requires that you format a boot partition with the old file system, although you can format all other partitions to use the newer fast-file system. I ran the performance tests on a fast-file system partition.

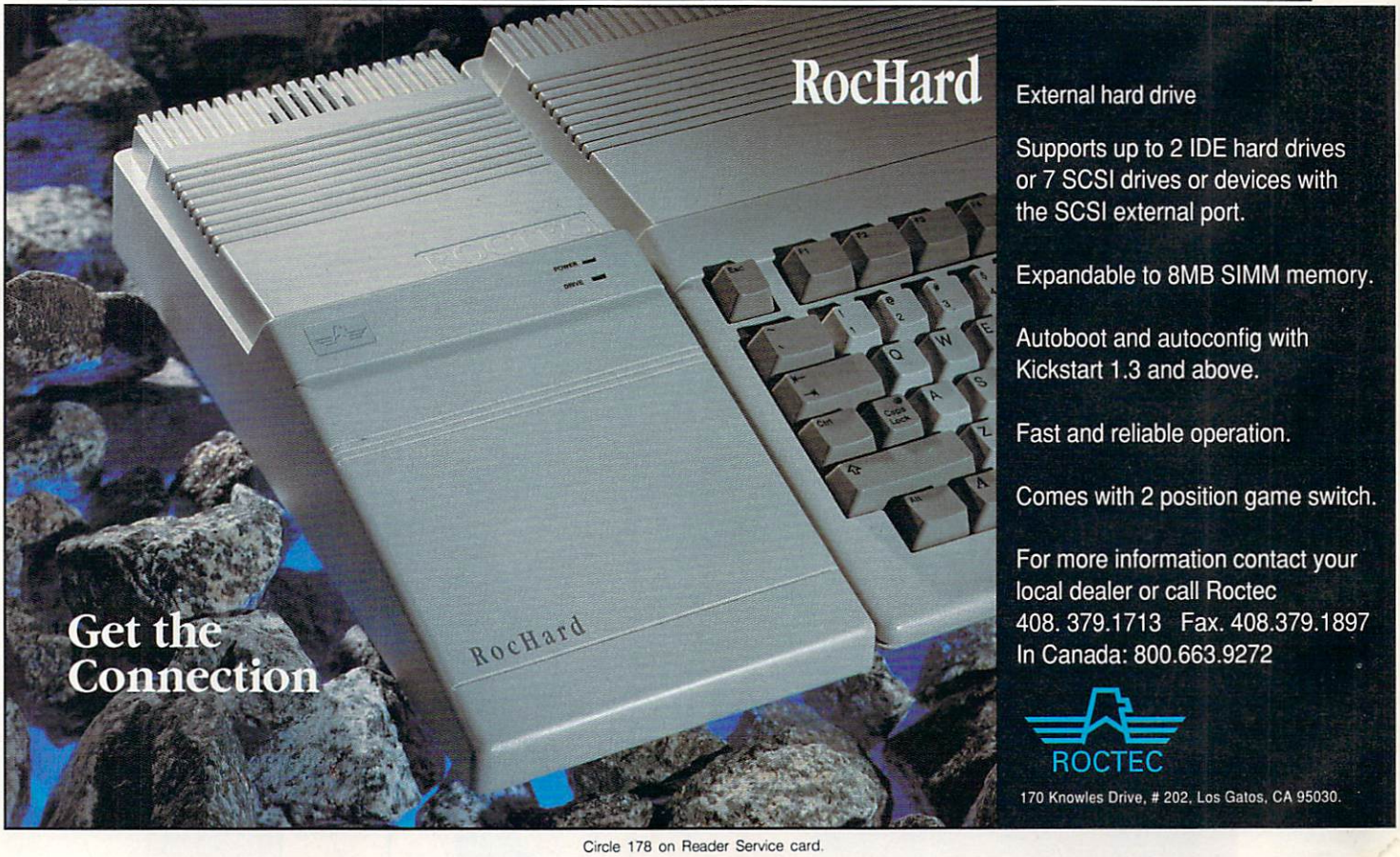
The performance of the SA SCSI host adapter is a bit slack, even considering the slower performance of the Seagate hard drive. After my experience with the A2000 version of the SA host adapter, I made sure to set the test intensity to low. This allowed the test with DMA and CPU contention turned on to run to completion in only 30 minutes. Another drawback is that Comspec chose not to provide for memory expansion, something to keep in mind if you plan to add memory in the future.

Although the SA Series SCSI host adapter lacks some of the features of the other host adapters, it is one of the few units that support the Bernoulli removable-media drives. Bernoulli systems, which utilize large-format enclosed floppy disks, are more expensive, but they have developed a reputation for reliability.

Flying High

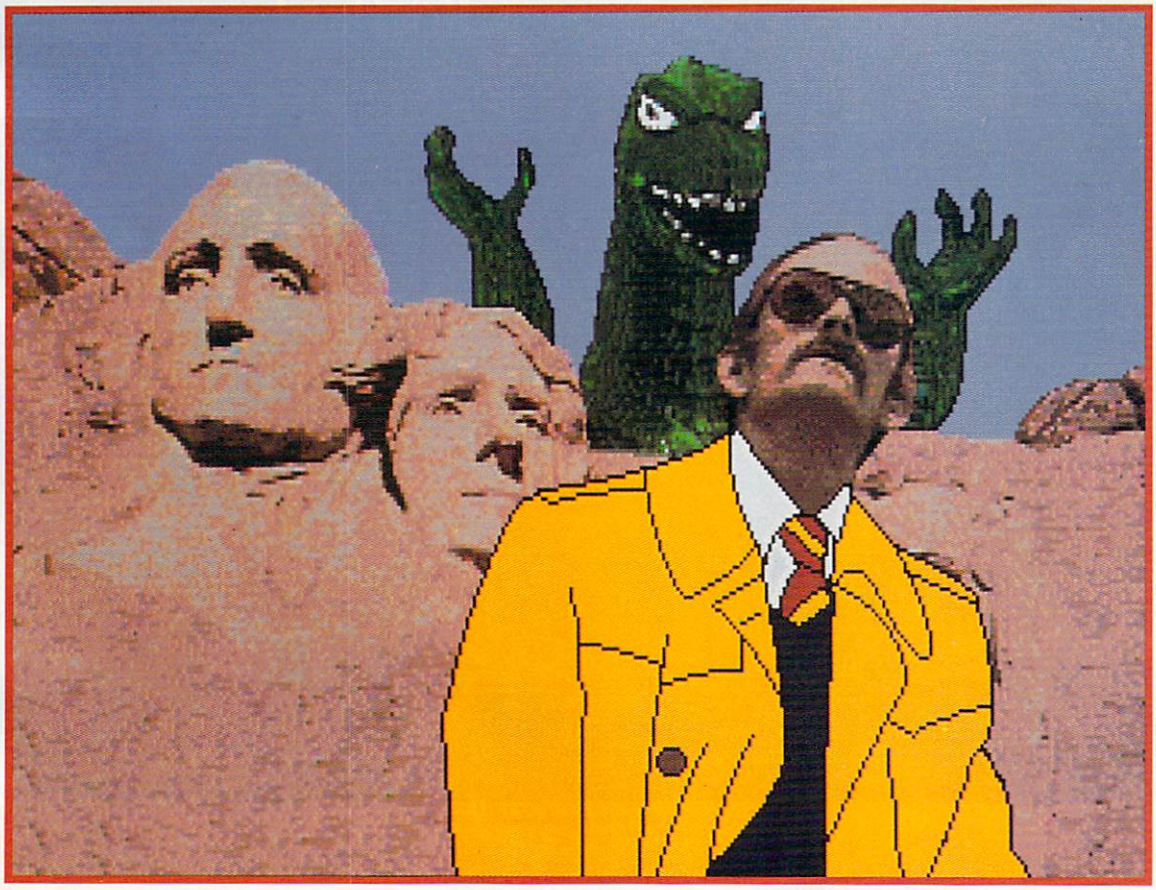
The DataFlyer 500 ($239.95) from ***Expansion Systems*** comes in a rather bulky all-metal enclosure measuring

Continued on p. 92.

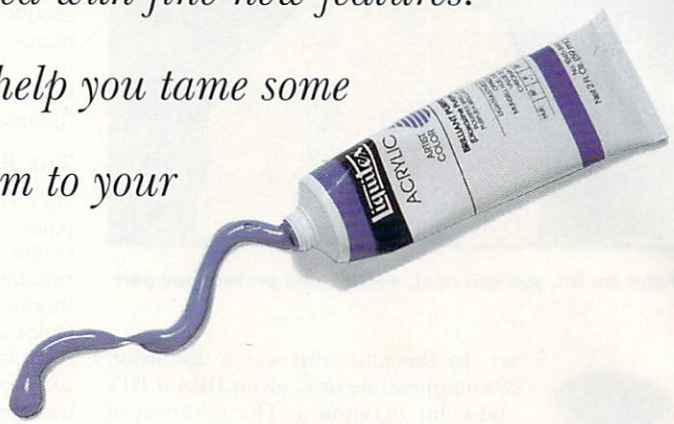


Circle 178 on Reader Service card.

Great Graphics, Godzilla, It's DPaint IV!



The fourth incarnation of the Amiga's most popular paint program is packed with fine new features. Here are some tips to help you tame some of its tools and use them to your best advantage.



By Gene Brawn

The long-awaited update to ***Electronic Arts'*** DeluxePaint paint-and-animation software is sweeping the Amiga community—and it's everything it was rumored to be. **DeluxePaint IV** ($179.95) now allows you to paint and animate in 4096-color Hold-and-Modify (HAM) mode, and offers powerful, time-saving new tools.

While the DPaint manual is excellent, it cannot possibly tell you everything without becoming an epic-length tome. To get you beyond the basics, I have picked a few of the more exciting and useful tools as a practical demonstration of the program's new powers. Because many of DPaint IV's enhancements are most effective in HAM, the following tutorials are designed around this mode. You can use these techniques in any other painting mode, however, given enough colors and the right palette. (For a complete review of the new DeluxePaint, see p. 18.)

Project #1: Fun With Color

Our first project demonstrates some tools that you will employ nearly every time you fire up DPaint IV. First you will use the completely revamped Palette requester and its new Arrange function to create a single palette from three disparate images. Then you will use the new Stencil Paint, Translucency, and Process functions to composite the three images on a single screen. This example uses artwork I created for the Bonus Utilities disk included with the DPaint IV package, so you will be able to duplicate my tips using the actual images referenced in this article.

In order to combine images with differing palettes, you must first create a single, compromise palette and remap each of the three pictures to this new color ►

Figure 1. With Paint On/Off, you can coat, soothe, and protect any part of an image.

set. In the past, this was a daunting, often impossible task, given DPaint III's 64-color maximum. The addition of HAM to DPaint's color arsenal makes the process much easier.

Your first step is to remove from each image's palette any colors that are not used. Start by loading the Godzilla.ab file from the DPaint IV demo disk as a picture. Press the right mouse button to display the menu bar and pull down the Picture menu. Select Screen Format and click on 16, then on OK. In a moment, Godzilla reappears with a 16-color palette. Reselect the Screen Format requester by pressing the a key and, this time, click on HAM to convert the file to that mode. Save the file with a new name, and repeat the process with the file named Rushmore.bg.

The third image, Lookingup.ab, is a special case that requires some extra work. What you need to do is remove the skyscraper from the picture's background before you reduce the number of colors. Normally, you would use the Stencil tool to protect the colors in the man, and then clear the screen to eliminate the unwanted portions of the image. That process will not work here, as some of the background colors are also present in the man.

Fortunately, DPaint IV includes an enhanced version of the Stencil tool—called Paint On/Off—in the Effects/Stencil submenu. Selecting the Paint On/Off tool causes the screen to dim. Click the Freehand Fill function from the toolbox and carefully outline the figure of the man in the trench coat. If you make a mistake, you can use the right mouse button to erase the errant lines. When you are finished, the entire figure of the man should be covered with a translucent mask (see Figure 1).

Be sure to reselect Paint On/Off from the menu to turn it off, or the next step may yield unpredictable results. From the palette, select sky blue as the background color and then clear the screen. Only the man's image should remain. Turn off the stencil by pressing the ~ key. Now you can safely use the Screen Format function to reduce the number of colors to 16, convert the image to HAM, and save the file.

The Big Squeeze

Now you are ready to build your new "compromise" palette. What you must do is squeeze the remaining 48 colors (16×3 images) into a new 16-color HAM palette suitable for all three source pictures. Press the right mouse button to display the menu bar and go to the Color menu. (Note that DPaint's color tools are now consolidated here—a definite improvement over the old version's helter-skelter arrangement.) For this step we'll use two new tools: the Arrange selection, found in the Palette submenu, and the Color Set requester.

Choose the Arrange selection first. When you do, you will see your current 16-color palette along the top row and three more rows of "ghosted" squares below it (see Figure 2). This is your main color work area. Using the gadgets along the bottom edge of the display, you can pick colors from the screen, create a spread, and then copy or exchange them from one color register to another.

The last gadget in this set, Delete, is a powerful new function with which you can eliminate a color or a range of colors from your palette. Try it by clicking on color 0 at the far left of the top row and then clicking on Delete. When the cursor changes from an arrow to the word To, click on the last color in the row—that is, color 16. Instantly, all the colors in your palette are "ghosted" and your screen turns white. (Click the Undo button at the bottom right of the requester to return things to normal.)

Let's fill in a few more of those empty boxes and build our new HAM palette. With the Arrange requester still visible, select the Color Set item from the Color menu. When the File Load requester appears, select your new HAM version of the Rushmore picture. Instead of loading your image, the program displays a new requester, similar to the Arrange requester. Click on All to load all the palette's colors, and then click on Add to append this color set to the current palette. When the Arrange requester reappears, it will contain 32 colors: your original palette in registers 0 through 15 and Rushmore's 16 colors in slots 16 through 31. Click on OK to close the requester.

Now return to the Color/Palette submenu and select Mixer. What appears is a new version of DPaint's Palette requester. For now, you will use it to compare hues and delete the duplicates. Some are easy to see—yellow and red, for example. Simply click on the duplicate color, select Delete, and finally click on the duplicate again to remove it. Finding the other clones is easy, but tedious. Starting from the left, click on the

first color and remember its RGB value. Moving to the right, click on the remaining colors in turn, deleting any with the same RGB value.

You now have a color set full of holes where the duplicate colors used to be. An easy way to close the gaps is to use the Color Set menu selection to save the colors as a new file and immediately reload the data. Since the Color Set tool does not save the ghosted positions, reloading the file with the Overwrite option closes the gaps. This makes for an easy way to "pack" your palette.

Now comes the most important step—creating your final 16-color HAM palette from the colors remaining in your palette. If you do not have the new version of the Lookingup image loaded, call it up now. Then use the Color Set requester to replace the existing palette with the one you built in the last section. There should be no change in the image, as the base colors (the lower 16) came from this image.

Next load the HAM version of the Rushmore picture, select Restore Palette from the Color/Palette menu, and then remap it with the tool of the same name in the Color menu. If you are not happy with the results, you can use the Copy button in the Arrange or Mixer requester to move more appropriate hues from the upper 16 colors of your new palette to the lower 16 (base) colors.

This ability to swap is the reason for building this 32-color palette. Remember that all these pictures are now in HAM format, yet they use only the first 16 colors of the palette. The upper 16 are there for convenience should you need to modify the palette to reduce fringing or create a color for one of the other pictures.

To change your palette, pick a color to sacrifice in the lower 16 and replace it by copying a spare color to its slot. Remap the picture to test the results. If it does not look right, select Restore Palette from the menu and reload and remap the picture (you cannot undo a Remap function). Try again until you are satisfied, and then save the new version of Rushmore.

Paint It Green

The third component of our composite image is Godzilla from the Godz&Ted.ab file. Once you load this picture, the first thing to do is fill the red background with the sky- blue color in register 15. There is not enough room in our palette to include any of Godzilla's monochrome gray scale. This presents a problem, because HAM mode has a difficult time creating grays from other hues (the result is usually a fringing nightmare). You can get around this, however, by changing the monster's color to something more appropriate for HAM—and DPaint IV's Tint tool can help.

To turn your black-and-white monster to a gorgeous green, load his newly remapped image and select the Palette/Mixer requester. Click on any register in the upper 16 and set the RGB sliders to 0 red, 0 blue, 15 green. Click OK to exit. Set the background color to blue and pick up Godzilla as a brush with the left mouse button. Go to the Effects/Process submenu and, if Tint is selected, choose On/Off (otherwise, select Tint and press Alt-p). Make the brush solid green by pressing the F2 key, then place the brush precisely over the Godzilla image and click the left mouse button.

Slowly, your monochrome monster will assume a green tint. But there's one small problem: His eyes and teeth should be white. To remedy this, press the u key to reset the image to its original colors. Turn on the Stencil/Paint option (remember the trenchcoat man?). Select white from the palette and Freehand Fill from the toolbox, and outline the reptile's eyes and teeth as if you were painting normally. Return to the Stencil menu, turn off the Stencil Paint option, and repeat the steps above to effect the tint. This time, the monster's eyes and teeth will remain a pearly white.

Finally, you are ready to meld the three images. Start by loading the Rushmore picture. Next, press the j key to summon the

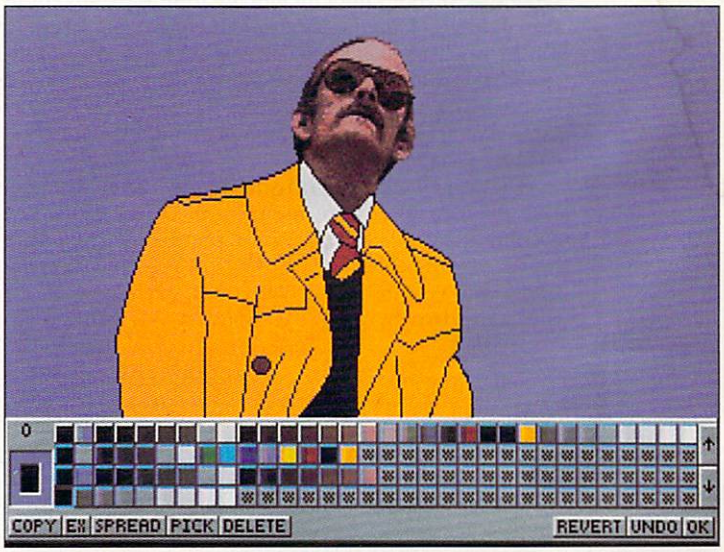


Figure 2. The Arrange register is DeluxePaint IV's "Color Central."

spare screen and load your green monster there. Pick Godzilla up as a brush, switch to the main screen, and stamp him down in the notch above Teddy Roosevelt's head. Follow the same steps with the man, stamping him down in front of the mountain, and you are done (see the opening illustration).

Project #2: Morphing Madness

While DPaint's new Metamorph feature is not a bread-and-butter tool, it is one of the more intriguing additions to the program. You need not look far to find out that morphing is hot. No less than five national television commercials currently use this technique. Different than a fade or dissolve, a metamorphosis is the smooth transformation ►

of one object to another, wherein the original image appears to change shape as if it were made of flowing hot plastic. Perhaps the best illustration is the silvery villain of last summer's hottest special-effects flick, Terminator 2.

Not to be left behind, the wizards at Electronic Arts performed some metamorphosis on DPaint, including a new feature to allow such transitions. It is great fun, but a word of warning: Don't overdo it. Something this good is easy to overuse, but doing so lessens its impact in your finished product. Be selective and use a morph (or any other effect) to advance your story, not just to satisfy a "gee whiz" impulse.

For all its power, the Metamorph tool is simplicity itself. Nevertheless, there are a few tips and at least one trick that you can use to improve your results.

If you examine the Brush menu, you will see a new entry named Spare. This submenu contains three items: Swap, Copy, and Metamorph. Swap and Copy function identically to their big brothers in the Picture menu. This means that you now have a spare buffer for your brushes.

You begin a metamorph by choosing two images to transform. If they are not already brushes, make them so, taking care that the images share the same palette. Keep in mind that the brushes should be nearly the same size. If your target images are radically different in size, simply pick up the same amount of screen real estate for the smaller brush as you do for the larger. For an interesting effect, try locating one image in the lower-right corner of its brush and the other in the upper-left corner—then watch the resulting morph migrate from one corner to the other.

Pick up or load your brushes in any order you like. Use the Brush->Spare menu item or the Alt-n key combination to copy the first picture to the spare buffer. Be sure that the last image of your transformation is the visible brush. If it is not, exchange it with the spare brush using the Brush<->Spare (Alt-b) function. Finally, invoke the Metamorph process from the same menu. A requester will appear, asking you to enter the number of frames you want to use for the morph (indicating many frames produces a smooth effect, but a large file). Clicking on this requester's OK button starts the process.

As DPaint proceeds with the transformation of your brushes, each step is displayed (don't worry, you will get your original screen back when the program is finished). The result is a standard animbrush file that you can save, add to your animation, or discard as you desire.

The Unexpected

Sometimes the morph may not be what you expected. If you try to morph brushes larger than 250 pixels wide in any resolution, for instance, you may be in for a rude surprise. To get around this annoying limitation, divide your brush into equal pieces, morph them separately, and reassemble the results. (You may have to do some touch-up work where the pieces join.)

As another example, morphing two radically different shapes—such as the letter K to the letter G—results in a tearing effect as the angular legs of the K move horizontally to form the round shape of the G. This will happen anytime you try to transform an irregular shape to one that is smoother and rounder. To avoid the tearing, try this: Rotate both brushes 90 degrees by using the z key or the corresponding Brush/Rotate submenu selection, and do the morph again.

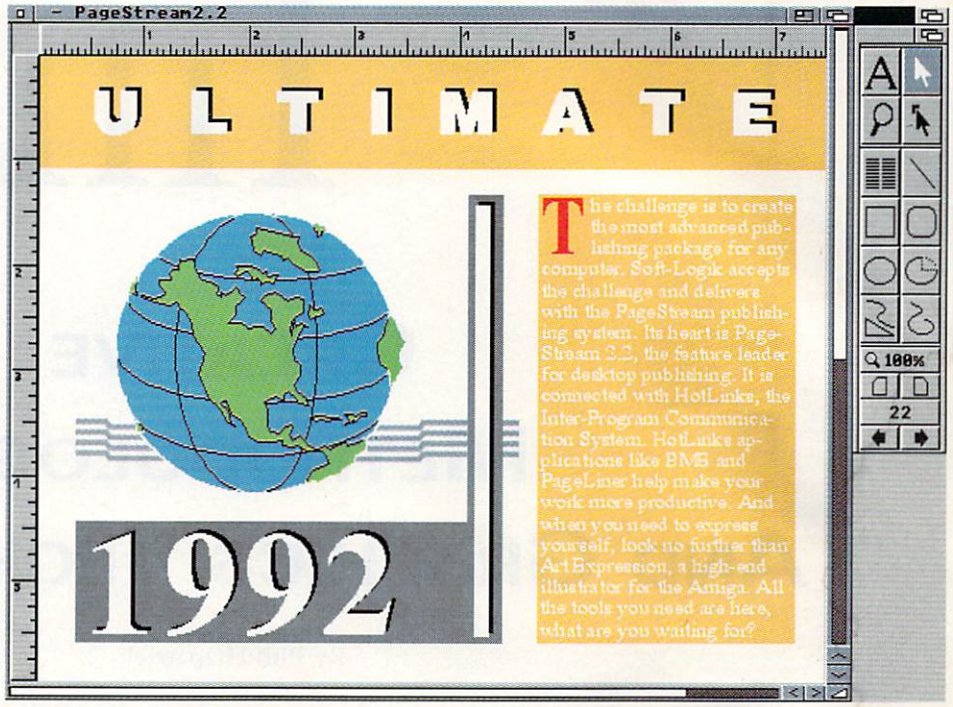
Because you cannot use the Rotate function with the resulting animbrush to return the morph to its original orientation, you must create some animation frames, stamp it down to create an ANIM file, and rotate each frame 90 degrees. Preserve the morph's registration by drawing an identically sized and positioned rectangle around each frame's image. Pick up both the rectangle and the image, rotate the brush, and stamp it down, keeping the rectangle's location constant for each frame. Erase the rectangles to complete the process. The results are well worth the effort. (For more on DPaint IV morphing, see Accent on Graphics, Jan. '92, p. 78.)

Unfortunately, one article cannot detail all of DPaint's new tools. This is also fortunate, however, because it means DPaint IV offers so much. In future issues, I will cover the uses of such terrific features as the LightTable (great fun for animators, as it lets you see four previous frames—in color—through the current one), plus Translucency, HAM stenciling, and Mix mode (which give you incredible control over your images). In the meanwhile, I am sure that as you experiment with DPaint IV, you will find uses for its new tools that their creators never even imagined. ■

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

More than Skin Deep.

INTERFACE	ProPage 2.1	PageStream 2.2
AmigaDOS windows	N	Y
AmigaDOS gadgets	N	Y
AmigaDOS scrollbars	N	Y
AmigaDOS file requester	N	Y
ENVIRONMENT		
# of Open Documents	1	Unlimited
View Magnifications	7 fixed	15–1500%
Variable Zoom	N	Y
Magnifying Glass Tool	N	Y
"No Frames" Text	N	Y
Moveable Toolbox	N	Y
HotLinks Compatible	N	Y
GRAPHICS		
IFF (24 bit)	Y	Y
ProDraw Clip – Editable?	Y / N	Y / Y
Aegis Draw – Editable?	Y / N	Y / Y
IFF DR2D – Editable?	N / N	Y / Y
EPS – TIFF/PICT preview	Y / N	Y / Y
PC: TIFF, GIF, IMG, GEM	N	Y
Mac: Paint, PICT, TIFF	N	Y
FONTS		
PostScript Type 1	N	Y
PostScript Type 3	N	Y
Compugraphic	Y	Y
Soft-Logik format	N	Y
Outlines on Screen	Y	Y
# Outline Fonts Included	2	18
Typographic Precision	1 pt	0.01 pts
Maximum Size	720 pts	183,000 pts
OUTPUT		
Amiga Preferences	Y	Y
Custom Printer Drivers	N	Y
Print to Disk	Y	Y
LAYOUT		
Templates	Y	Y
Master Pages	N	Y
Maximum Page Size	22x22 in	1200x1200 ft
Paragraph Tags	Y	Y
Snap-to-Grid	Y	Y
Snap-to-Guides	N	Y
Measurement Systems	3	9
TEXT		
Bold, Italics	Y / Y	Y / Y
Underline, Outline	Y / Y	Y / Y
Shadow, Light	N / N	Y / Y
Reverse, Strike-Through	N / N	Y / Y
Import ASCII	Y	Y
Import excellence!	N	Y
Import ProWrite	N	Y
Import WordPerfect	Y	Y



PageStream 2.2 in 16 color mode

The new PageStream 2.2 is a work of art. The first thing you notice is the snazzy new toolbox. But beauty is more than skin deep. A screenshot cannot show you the power of version 2.2. Using a common PageStream system, text speed is improved up to 500% over the previous release. The January issue of AmigaWorld called PageStream 2.1 the Experts' Choice, what will they call PageStream 2.2?

Here's some ideas. Innovative. Fast. Professional. Solid. Workhorse. Amazing.

To further increase your productivity, try our new HotLinks Express Pack. It includes PageLiner, a feature-laden text processor, and BME, a bitmap editor. HotLinks connects these programs to PageStream for seamless desktop publishing. All for only $99.95.

PageStream 2.2 is a free upgrade to registered PageStream 2.1 owners. It's our way of saying thank you for your patronage. With all the money this will save you, you will be able to pick up a Starter Fonts Pack for $99.95. The eight fonts in this package will make your pages come alive.

If you haven't already tried PageStream 2.2 visit your local dealer or call us for more information.

HotLinks »

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

PageStream, BME, PageLiner and HotLinks are registered trademarks or trademarks of Soft-Logik Publishing Corporation. Compugraphic is a registered trademark of AGFA Compugraphic. Amiga is a registered trademark of Commodore Business Machines.

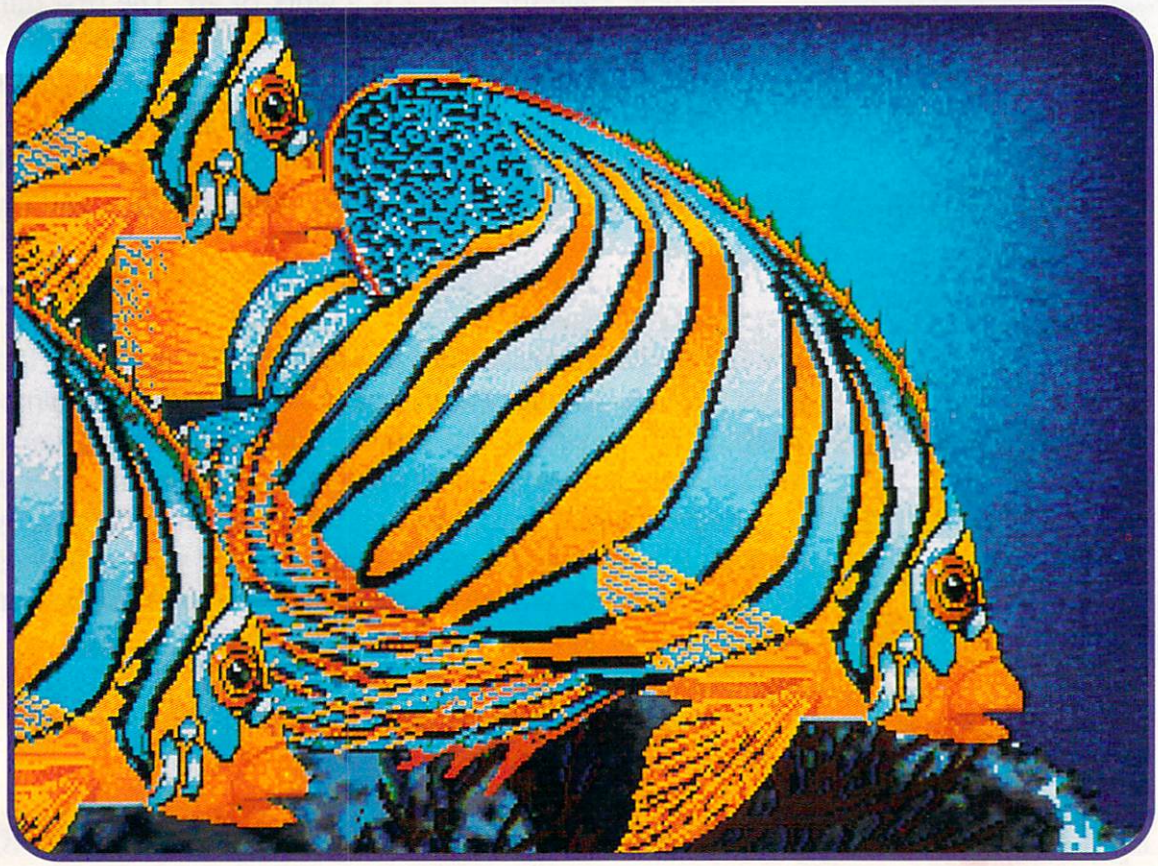
Come see us at AmiExpo in Long Beach, CA, Feb 14 – 16.

Circle 46 on Reader Service card.

Amiga Image-

Creative Methodology And Graphics Technology

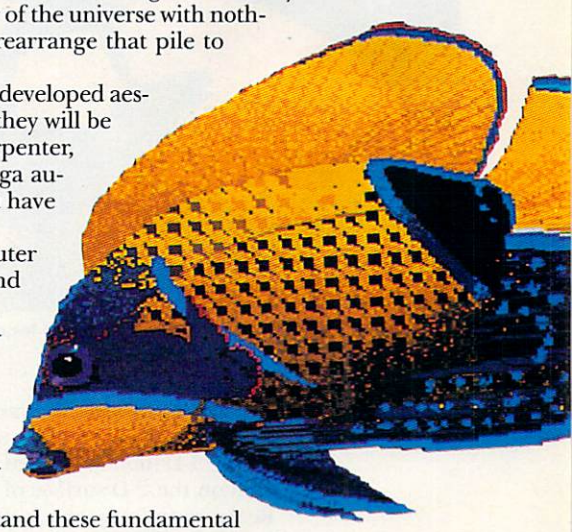
By Phil Fitzpatrick



Making

Sometimes we forget the second half of the equation when we say "computer art" or "computer graphics." Whether you use a pencil, a brush, an open can of paint, or an Amiga mouse, you need to understand and to visualize what you want to achieve in making images. The "basics" presented here by a thoughtful teacher and computer artist aren't necessarily just for beginners.

From the moment that first Cro-Magnon grabbed a stick out of the fire and recorded the mysteries of the Neolithic world on the walls of a cave, we have made images to tell our stories, record our history, commemorate our heroes, and enhance the aesthetic quality of our lives. What motivates that kind of activity? Simply this: Human beings are innately and instinctively creative. Set us down in the remotest corner of the universe with nothing more than a pile of sticks and stones, and we will immediately rearrange that pile to make it more interesting to look at.



Arguably, instinctive creativity does not spontaneously include a well-developed aesthetic sense, and the desire to make images does not guarantee that they will be good ones. Just as owning a hammer won't qualify you as a master carpenter, neither does owning a sophisticated graphics computer like the Amiga automatically make you an artist. This does not mean, however, that you have to settle for poor-quality images. In fact, it's just the opposite!

But what does all this philosophical rhetoric have to do with computer graphics? Quite a lot, actually, when you distill it to its essence. You end up with three primary ingredients and a lot of subtle flavorings.

As a computer-graphics instructor, much of my time is spent in discussions of technical how-to—sometimes at the expense of fundamentals that have been around a lot longer than computers. Such ideas, however, are just as important in electronic media as they are in traditional image-making. In any creative endeavor, *perception*, *selection*, and *organization* are the keys to comprehending, extracting, interpreting, and translating your experiences of the world into visual form.

If this sounds like a glossy simplification, it is; but once you understand these fundamental concepts, you can do a great deal to improve the way you create your own images and to make the entire process more challenging for yourself at the same time.

Sign Up and See the World

First, how do we *perceive* the world? Only marginally, I'm afraid. We can only focus our eyes on one thing at a time, so we really get only brief glimpses that our brains construct into the larger concept of "world." Of course, this is supplemented by our other senses, but in spite of the fact that we are all extremely comfortable and familiar with our three-dimensional environment, it's hard for us ►

to fill in the details and reconstruct or "remember" the relationships of objects in three-dimensional space unless we are looking directly at them.

This vagueness makes up the transient feelings, emotions, or impressions that a scene creates in us. To make things worse, our images (drawings, photos, paintings, and so on) are *two-dimensional* abstractions or translations of that 3-D world onto a flat surface. Even the 3-D models created on the computer are presented on the 2-D surface of the monitor.

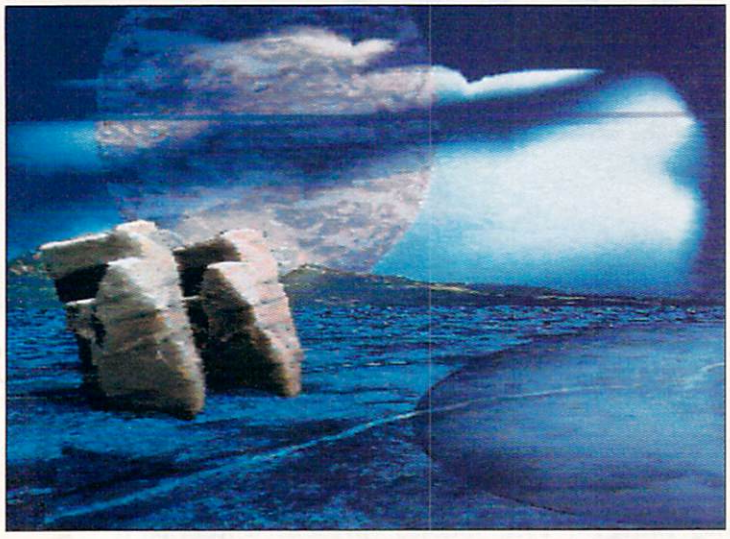


Figure 1. The positioning and size of the elements in your composition can make your images communicate more fully and be more exciting.

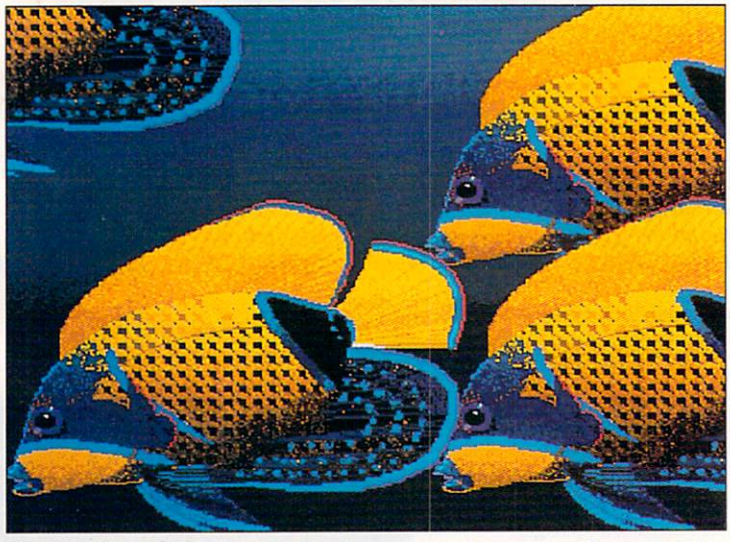


Figure 2. Placing the fish on the diagonal lends a sense of movement.

Real perception comes with understanding the visual clues our brain uses to create its world and learning how to use them effectively. Fortunately, human beings possess complex mechanisms for dealing with abstraction, and these permit us to suspend our disbelief and superimpose our knowledge of reality on these 2-D representations. Some of the mechanisms we use to interpret and translate 3-D "clues" are size, scale, overlap, color, value, and perspective. Visual space (as opposed to real space) is actually a cleverly conceived series of visual lies that uses combinations of these mechanisms to create the illusion of real space.

For the most part, none of these things are strangers. All of us are familiar with the fundamental concepts of perspective. We are aware that objects farther away appear to be smaller, and that parallel lines going off toward the horizon appear to meet. Overlapping objects to suggest distance is one of the first tricks we learn as school children. Color and value tend to be more elusive, but that is a whole can of worms by itself.

You Gotta Be Choosy

Being selective in choosing what to include in an image is sometimes difficult. One of the best ways to begin is to think of storytelling. Select a theme that might evoke an emotional response from your audience (maybe something humorous) or, perhaps, suggest an episode from a story. (This is a trick many illustrators use.) Maybe you could even create your own personal, surrealist fantasy environment like the one in Figure 1.

Remember, however, to keep it simple. Don't try to tell your audience too much at once. Excite their curiosity and tease them into becoming involved in your image. Beginners generally put too much information in a single picture. By selectively showing portions of objects, you can create an illusion of something unseen about to happen. And filter out unnecessary details—leaves on a tree at close range are merely blobs of color at a distance.

Consider the really important factors in what you are trying to show and then adjust your viewpoint accordingly. For example, let's say you are trying to show a sports car and want to communicate a sense of its dynamics and speed. A side view will tell you a lot about the car, but not much else. However, moving your eye to a point not far in front of the headlamp so you are looking at both the front and side simultaneously will create a distorted perspective view with a strong suggestion of movement. Notice in the opening illustration and in figure 2 how the movement is directed diagonally. This positioning reinforces the notion of action; if the fish were horizontal they would appear static.

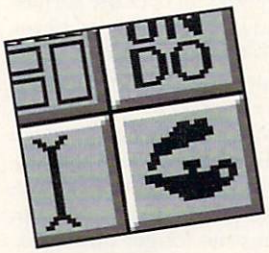
Organization Is the Key

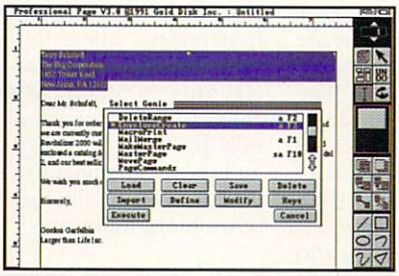
Composition, or *organization*, is probably the most important of the three ingredients in creating dynamic and powerful images that communicate the feelings and concepts you intend. Organization of pictorial space hinges on the notion of visual balance; that is, the arrangement and distribution of elements to combine states of visual tension and stability and create an overall sense of cohesiveness. That's quite a mouthful, so let's translate it into a set of guidelines that make a little more sense. Traditionally, arrangements of objects in pictures have fit into one of two categories:

- Formal, symmetrical arrangements that usually have bilateral symmetry (equal matching, or mirrored, halves). If more than two matching segments exist around a center point, then we use the term "radial" symmetry.
- Informal, asymmetrical arrangements, where objects of unequal size but of equal importance (determined by color, shape, value, texture, or placement) make up the image. For example, a small, brightly colored ►

SO ADVANCED
IT EVEN CREATES YOUR PAGES FOR YOU!

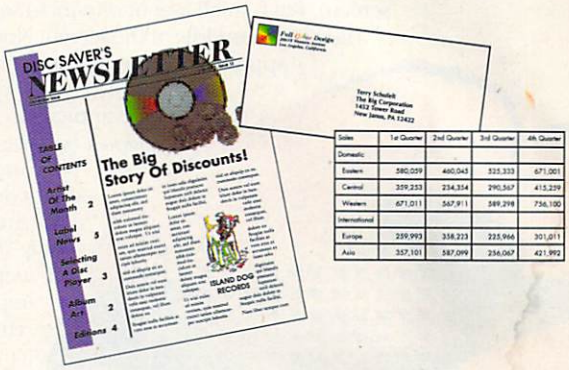
1 *Just Press Our New Genie Button Or Select Page Genie From The Menu…*





2 *Then Simply Choose From a Variety of Automated Layouts or Other Functions Like Envelope Addressing and More…*

3 *And In No Time You Have a Quick Professional Layout Designed to Your Specifications, or an Automatic Table From Your Spreadsheet, or a Mail Merge From Your Database, or an Addressed and Printed Envelope, or…*



PROFESSIONAL PAGE 3.0

Introducing GENIE, more than 30 great reasons to move up to Professional Page 3.0.

With Genie you don't have to be a pro to design like one. Just click on our new Page Genie option and Professional Page will ask you some simple questions, then automatically design a custom professional layout for you. Press the Function Genie button and Professional Page will automatically address and print your envelopes, create beautiful tables from your spreadsheet data, perform complex mail merges for you (a FIRST for any DTP program on any platform), and much more! You can even create your own Genies using our 300 ARexx functions. But the new features don't stop there, you get 7 high quality scalable typefaces, type sizes in .125 point increments, a new UnDo button, new text import filters, improved color separation and much much more. So if you want to be the best, it's time to buy the best. Step up to Professional Page 3.0, it couldn't be easier.

New Features:

- Page Genies: 6 different styles of Automatic Page Generation, including newsletters, ads, flyers, brochures, and more.*
- Function Genies: over 25 time saver Genies like Automatic Envelope Addressing, Automatic Table Creation, Automatic Mail Merge, Automatic Drop Caps, Small Caps & Super/Sub Script, Automatic Grid Creation, Pop Up Units Converter, HotLink to Art Department Pro, and many more.*
- Total Programmability: Using over 300 ARexx commands you can take complete control of Professional Page.*
- Undo for correcting mistakes
- New Color Separation Algorithms with improved undercolor removal
- 5 New AGFA Compugraphic Scalable Typefaces have been added for a total of 7
- Type sizes in .125 point increments
- Professional Draw Hot link so you can instantly link to Professional Draw, edit your drawings or clip art, and send them right back!
- New text import filters for Pro-Write, QuickWrite, Excellence
- Auto-tiling for printing large pages

Now's the time!

Even if you've never done desktop publishing before, you can with Professional Page 3.0 and our exclusive Page Genies. And power users will delight in the sophisticated array of Function Genies that speed your work like never before.

Plus you get the benefits of 5 new fonts, improved color separations, more precise font scaling, and more.

So what are you waiting for? Step up to the most advanced desktop publishing package for the Amiga. See your dealer today or call us at:

1-800-GOLD-DSK or
1-416-602-4000

And you get Purchase Protection: If you purchase Professional Page 2.1 between January 1 and March 31, 1992, you'll receive version 3.0 free.**

PROFESSIONAL PAGE 3.0

It Couldn't Be Easier.

GOLD DISK

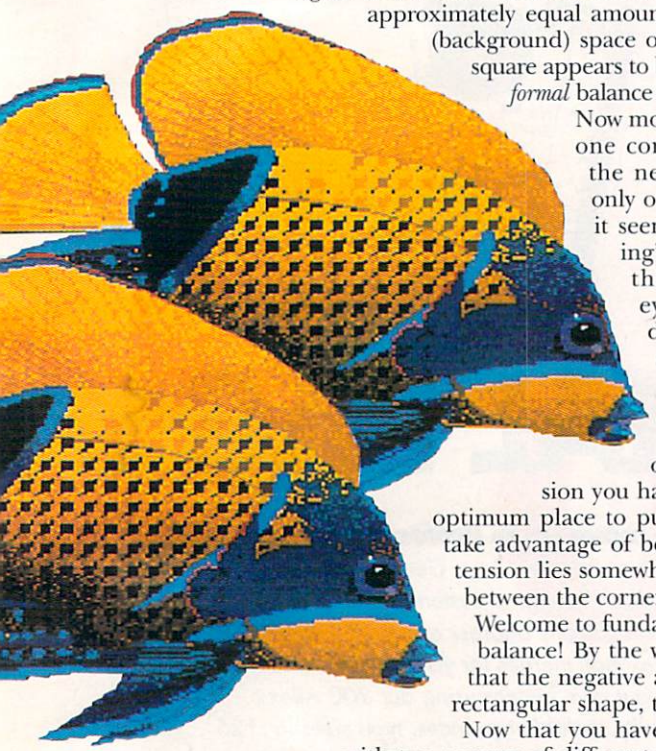
Circle 19 on Reader Service card.

*Genies require ARexx. ARexx comes with Workbench 2.0 or can be purchased separately.
**Just send in your dated sales receipt with your registration card. Professional Page is a registered trademark of Gold Disk Inc. Specifications are subject to change without notice.

object can be visually as important as a large, neutrally colored one.

Definitions and theory are great, but how do you decide if you really have succeeded in organizing your picture to make it interesting to look at? Unfortunately, there are no absolutes—this is something that requires subjective judgement and practice on your part.

There are, however, a couple of things you can do to make things clearer. First, boot up your favorite paint program. Then set the background color to something other than black (that way you can see the boundary of the screen). Put a small (about one-inch) square of any color right in the middle of the screen. Notice that there are approximately equal amounts of "negative" (background) space on all sides. The square appears to be at rest. This is *formal* balance at its simplest.



Now move the square to one corner. This time the negative space is only on two sides, and it seems to be "pushing" the square into the corner. Your eye is constantly drawn to the unstable corner at the expense of the rest of the space because of the visual tension you have created. The optimum place to put the square to take advantage of both balance and tension lies somewhere along a line between the corner and the center. Welcome to fundamental *informal* balance! By the way, don't forget that the negative area is just a big rectangular shape, too.

Now that you have the idea, try it with two squares of different sizes and colors and then add other shapes. Change the relative positions and distances of the shapes and notice, as they move, the visual tension that is created or lost in the process. Try adding textures to make it more interesting. If you try these simple exercises, I think you will be surprised at how quickly your awareness and sensitivity to these relationships increases.

On to the Big Picture!

Now let's see how all this works! Figure 1 incorporates most of the principles described, but a step-by-step tour will help tidy up any loose ends. First, the picture plane (for our purposes, the monitor screen), which defines the boundaries of the image, is divided into unequal sections by the horizon. This avoids any monotony caused by splitting it at the middle and leaving it in two equal parts.

While the term "lines of force" may sound like something from a sci-fi novel, the concept is important and actually refers to a visual trick used to direct, or "force," the eye to follow a path around the surface of a picture. To take advantage of the trick, I rotated the ground plane to the left to create a directional movement toward—but not smack in the middle of—the horizon. I added the two stones to appeal to my sense of mystery, but also to redirect the eye up to the clouds drifting across the sky, leading away from the left side of the picture until the eye eventually follows the curve of the clouds down the right side to the ground. The large, partly visible spheroid points back to the left across the ground plane, pushing the eye back up into the picture.

The result is that the viewer looks all over the surface of the picture, but is constantly pulled back in, never wandering out of it. All of this explanation may seem a bit melodramatic, but the point is that by carefully thinking out where things are placed and what sizes they should be, you can develop the means to make your images communicate more fully and be more exciting to look at. Each of the parts in Figure 1 is carefully positioned relative to the others. Cover one up, and the arrangement of the rest no longer functions.

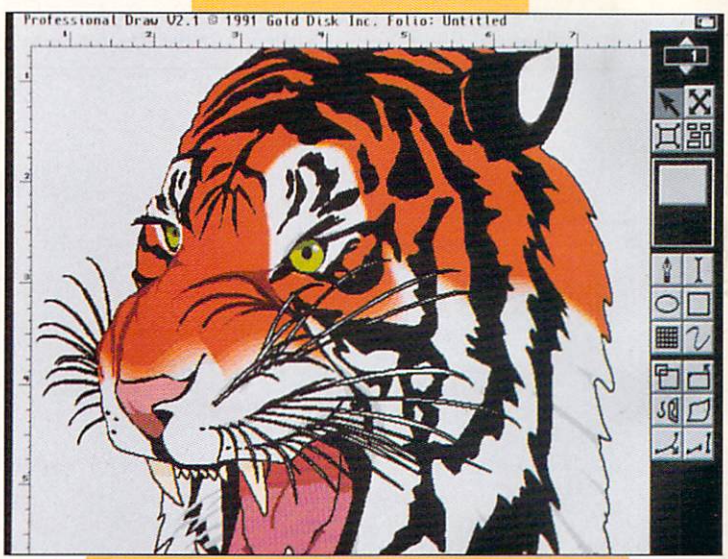
In conclusion, let me leave you with a few observations, hints, and tips:

1. Depending on a single software package not only severely limits what you can expect to accomplish, but it often gets in the way of paying attention to the important design concepts. It is true that familiarity with the tools is essential to being productive, but each paint or modeling program has its own strengths and weaknesses. Take advantage of the best parts of each and don't hesitate to mix and match.
2. Try not to "over-think" your ideas before you actually begin working. A strong preconception can be a death sentence if you are unwilling to adapt to needed changes; if it becomes an unattainable goal, the image—no matter how hard you try—will never quite turn out right.
3. When you are creating something new, don't automatically stick it in the middle of the screen. Doing so is not necessarily wrong, but it is better to think about the whole picture, not just the parts. And don't let the edges intimidate you.
4. Look carefully at everything you see around you. Pay attention to how pictures in magazines are composed and see what gimmicks the Sunday comics use to punch their point across. When taking photographs, stop a second and think about what you see in the viewfinder. What works with a camera also works with a computer.
5. Try to remember your impressions of things you have seen, because the quality of what you remember frequently makes a better picture or story than the real thing.
6. If you have access to some books on basic design principles, read them. As most design books have examples and problems to solve, you can add to what you know while you try them out on the Amiga! Remember, there is no one right way to make a picture, but there are right choices that can make it better! ■

Phil Fitzpatrick teaches art—including Amiga graphics—at Lamar University in Beaumont, Texas. His background is in commercial design and advertising. Write to him c/o AmigaWorld, *Editorial, 80 Elm St., Peterborough, NH 03458.*

The Painter's Guide to Structured Drawing

Structured-drawing programs can add valuable new tools to the creative arsenals of artists and desktop publishers alike. This tutorial on structured drawing—with comparative evaluations of three leading programs—will show you the way.



There are two distinctively different ways of designing or creating art on a computer: structured drawing and bitmapped painting. Knowing the particular advantages and disadvantages of each method can add substantially to the repertoire of both painters and publishers. While this article deals mainly with structured drawing, it will compare the differences between the two methods and also point out instances where both techniques can be combined successfully. Take the first part of this article as a bitmapped painter's introductory guide to structured drawing.

In the second part, I will examine three leading Amiga structured-drawing packages: **Professional Draw 2.1**, **ProVector 2.1**, and **DesignWorks**. Although I will, of course, compare their features and evaluate their relative strengths and weaknesses, I intend such comparisons mainly to illustrate further how these programs—and structured drawing in general—can be used to enhance painting and publishing processes on the Amiga.

Structured-Drawing Methodology

JUST WHAT IS the difference between a paint program and a drawing program? By way of analogy, compare it to the difference between painting on paper with a paint brush and drawing with ruler and compass.

In computer terms, with a bitmapped paint program such as DeluxePaint (Electronic Arts), all the drawing tools modify a bitmapped area of the computer's screen memory. What that means in plain English is that your pictures are made up of hundreds or even millions of pixels arranged in a two-dimensional grid where each pixel can be painted one of several colors selected from a color palette.

When you use a paint program, drawing a line in red between two points colors all the pixels between them; in fact, all paint operations affect several individual pixels. This means that a filled circle is not just a shape with a certain radius, but an area composed of several colored pixels.

Drawing a red line with a structured-drawing program is something entirely different. Instead of modifying numerous pixels, you are only defining the coordinates of the two end points, specifying the color you wish to use, and stating that you are drawing a line. In practical terms, this means that the structured line is device-independent, because the computer remembers only the coordinates and the attributes of the line.

When you print this line to a laser printer, for ex-►

By Eyo Sama

ample, the line is printed using the high resolution of that printer. A bitmapped line, on the other hand, is always composed of the number of pixels it was drawn with, and it therefore often looks the same whether it is printed with a 300-dpi (dot-per-inch) or a 1200-dpi printer.

Bitmapped paintings also frequently exhibit "jaggies" (unwanted jagged edges), depending on the resolution and scale at which they are reproduced. Of course, if you use your paint program at its highest screen resolution, you can sometimes avoid these problems. Unfortunately, higher resolutions on the Amiga also mean fewer colors. What Amiga bitmapped painters really need is to have programs such as DeluxePaint work on the new 24-bit (16-million color) graphics cards.

Like the lines described above, the computer remembers other structured objects in a similar fashion: A circle is composed of the coordinates of its center, its x and y radii, and its attributes (line weight, color, filled/not filled, and so forth); a curve (Bezier curve) is defined by four sets of coordinates and the attributes of the curves. There is another, on-screen advantage to the way structured art is represented. Because only coordinates and attributes are remembered, lines and curves in a structured drawing are always smooth, even if you zoom down to the highest magnification your program allows.

Structured drawing and bitmapped painting go hand in hand when it comes to the desktop-publishing process.

"Structured" Flexibility

One of the major advantages to working with a structured-drawing program is that objects in a structured drawing can be modified. For example, if you draw a green line from one point to another, you can always pick up either end point and move it to a different position, or you can change the color of the line. Similarly, you can modify the shape of a Bezier curve by either moving its end-points or by moving one of its two control points. To do the same in a paint program, you have to erase all the pixels of the line or curve, and then redraw it in the desired new position.

Drawing an object in a paint program always erases whatever is behind the object, because everything exists in one layer. All structured objects, on the other hand, exist in their own layers; therefore, drawing a horse in front of a tree does not erase the obscured parts of the tree. In addition, you can pick up the horse and move it to a different location without having to re-create parts of either the tree or the horse. You can also rotate the horse or skew its shape without affecting the smoothness of the object.

Documents containing structured artwork usually print faster than those containing bitmapped artwork, especially if the structured artwork is not very complex. However, a very complex structured drawing containing several blends, graduated fills (color shading), and multiple objects may take quite a long time to output to a PostScript printer; it also uses a vast amount of the printer's memory.

All of this sounds as if there is no need for bitmapped paint programs at all. That is not the case, of course, because there are many things that are just not feasible to do with a structured-drawing program. Although it is possible to create the effects of shading with a structured-drawing program by using multiple objects and several shades of color, you simply cannot produce the subtle variations in shading you can achieve with a paint program.

Because you have control over every single pixel of your painting, a paint program allows you to work in great detail. In DeluxePaint IV, for example, there are tools enabling you to smear colors, to use tinting and transparency, and generally to manipulate your painting in ways not achievable with any structured-drawing program—be it Amiga-based or otherwise. Don't forget, a bitmapped paint program also allows you to modify scanned or digitized images, which you can then combine with your own painting.

Structured Drawing and DTP

As far as desktop publishing is concerned, the choice between using a paint program or a structured drawing program does not really exist; you need to be able to use both. Often you will find yourself using a combination of bitmapped and structured art in many of your publishing projects.

Most structured-drawing programs allow you to edit and manipulate the outlines of text characters. This particular feature is one I use most often, as it allows you to create very impressive headings consisting of skewed, rotated, patterned, graduated, and otherwise enhanced text. You can create 3-D effects on text using these tools, too. Producing realistic-looking shadows is also possible, and, in fact, is simple to do.

A structured-drawing program is also handy for creating very simple illustrations that you can use to enhance the look of some documents. For example, if you are designing a valentine card, it is easy to draw a small heart using two Bezier curves in a structured-drawing program and then to use multiple copies of it—in various sizes—to illustrate the card.

With a bitmapped paint program, you would have to draw multiple hearts (for the different sizes) or use a single heart in either low or high resolution. If you use a low-resolution heart, you will get jaggies whenever the heart is scaled up, but the page will print fast. If you use a high-resolution heart, you may be able to avoid the jaggies, but the page will take forever to print if you have multiple hearts. In situations like this, the structured-drawing program is the way to go. ►

LEANDER

Thanatos lurks in his lair, bathing in the power-giving life-force he is sucking from Princess Lucanna.

Princess Lucanna is dying: Imprisoned in the Sphere of Depletion her strength will soon be gone.

Meanwhile, Leander – Captain Of The Guards – kneels before his master seeking advice. He is told: *The princess is the balance between good and evil, if she dies, good dies and evil shall engulf the land.*

As Thanatos' power grows, the world succumbs to his evil grasp; Leander now has to face and conquer dangers beyond his darkest dreams before he can free the princess and save the land.

*You play the part of the Princess as she hangs around inside the Sphere Of Depletion waiting for Leander to rescue her. Will he make it?
Or will you spend the entire game doing nothing but having your life-force sucked?

Leander: Where heroes Sphere to tread!

*Psygnosis reserve the right to amend this storyline.

Screen Shots from the Amiga version.

BARBARIAN II

Necron's back in town and he wants revenge. Only you – in the guise of Hegor the Barbarian – have the courage, strength and stupidity to face the challenge:

It's time once again to don your dented hemlet, tie your sweaty breechcloth, sharpen your rusting sword and move your big feet in the direction of danger.

Forests, caves, dungeons, castles and temples await your barbaric exploration, each is infested with deadly inhabitants and devious traps ready to terminate your lowbrow activities.

Featuring 2,000 frames of sprite animation, 32 colours on-screen, parallax scrolling, 6 levels of continuous arcade/adventure action, over 1 megabyte of fully-animated sprites, 50 divergent enemies, Magic & Health Potions to help you on your quest and a plethora of unique weapons to find and use. **Barbarian II** is:

The ultimate in loincloth entertainment

Screen Shots from the Amiga version

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

Circle 62 on Reader Service card.

A structured-drawing program is also the perfect tool to use when you are trying to draw impressive three-dimensional charts and graphs, especially since you can add rotated and enhanced text. Again, because of the problems with jagged edges, a paint program is unsuited for such work. In general, text created within a paint program looks fairly shabby when output, while text from a structured-drawing program is always drawn at the resolution to which the printer has been set.

Combining Structured and Bitmapped Art

Sometimes it is advantageous to combine elements of both structured and bitmapped art to create an illustration. This allows you to use each form of computer art to its best advantage. For example, say you are designing a postcard and have a beautiful bitmapped painting of dolphins, parrots, water, and palm trees, and you want to add some fancy text to your card. It is best to use a structured-drawing program to add the text; you could perhaps even design the text characters in the shape of palm trees, or dot the i's with a structured drawing of a hat.

In many of today's magazines, you will often see blocks of smooth color graduations. With a structured-drawing program, you can achieve this by using either the blend tool or graduated-fill feature in your software (if available). I use a trick that will give you beautifully smooth graduations using bitmapped objects instead of structured ones. Using the Backdrop loader in Art Department Professional (ASDG), I create a graduated (and dithered) 24-bit bitmap that is only 16 pixels wide, but several hundreds tall. Whenever I want to use a smooth graduation, I import the bitmap into either my layout software or into my structured-drawing program and resize it to the shape I require.

The resulting color graduation prints very fast because the bitmap is only 16 pixels wide, and it is smooth because it not only uses several shades of color for the graduation but it also dithers these colors—thereby effectively increasing the range of colors. Because PostScript printers—and color printers in general—have a limitation of 256 shades for any color, doing these kinds of graduations is not really possible with a structured-drawing program. To get the maximum benefit from publishing on desktop, it is a good idea to combine the use of both structured drawing and bitmapped painting programs.

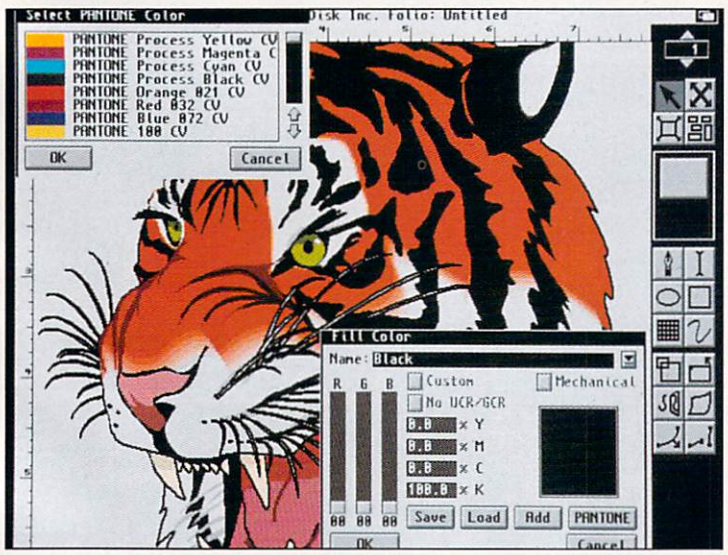


Figure 1. Professional Draw 2.1 is the only structured-drawing program that supports The Pantone Color Matching System (PMS).

Structured-Drawing Programs

LET'S NOW TAKE a look at three leading contenders in the Amiga structured-drawing arena and compare the kinds of things each one does best to help you see which one might most closely suit your needs.

Professional Draw 2.1

***Gold Disk*'s Professional Draw 2.1** ($199.95) is aimed at the professional and amateur desktop publisher. First announced as a companion program to the company's page-layout software, Professional Page, it is now also regarded as a stand-alone illustration package. Other layout software, such as Soft Logik's PageStream and Saxon Industries' Saxon Publisher, can also import Professional Draw illustrations, although only Professional Page and PageStream show the actual illustration on screen. PageStream even allows you to edit the illustrations.

Of the three structured-drawing programs covered here, only Professional Draw supports PMS (Pantone Color Matching System), the color-printing standard of the publishing and printing industries.

Professional Draw's features include dithered colors, gradient fills, compound objects, and the ability to import bitmapped images, to blend one object into another, and to warp objects to obtain 3-D effects, among several others. You can add text to illustrations, and because the font outlines are fully editable, you can make the text a part of the illustration. You can apply gradient fills to text characters and make lines of text fit the shape of a curve.

Professional Draw will print to any device/printer that supports PostScript, even color PostScript. It will also print to any Preferences-selectable dot-matrix printer or to HPGL-compatible (Hewlett-Packard Graphics Language) sign-cutting machines.

Anyone familiar with using illustration software (such as Adobe Illustrator or Aldus FreeHand) on other platforms will be comfortable using the interface and drawing tools of Professional Draw.

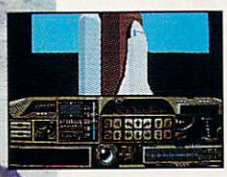
ProVector 2.1

***Stylus*' ProVector 2.1** ($299.95) is a feature-filled structured-drawing program, again aimed at both the professional and amateur desktop publisher. Only PageStream and Saxon Publisher will directly import ProVector's illustrations; Professional Page can only import them as Encapsulated PostScript (EPS) files.

What I find impressive about ProVector is the way it can simulate multiple colors by dithering whatever number of colors you make available to it. The dithering is coarse, but even an eight-color Workbench screen is sufficient for ProVector to produce several additional colors. ProVector is also the only one of these three programs that supports ARexx. With ARexx, you can write code to link an ARexx-supporting spreadsheet program to ProVector, thereby letting the ARexx program use the spreadsheet data to automatically create fancy 3-D graphics ►

Create your own reality.

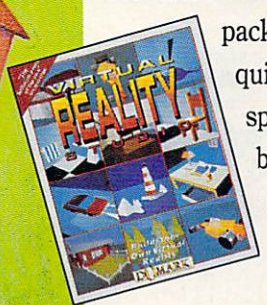
Build your dream house and design the furniture to put in it. Then, walk around it, fly through it... or over it!



Hop into a space shuttle and fly to worlds which you have designed. Create the beings, their environment – and develop their behavior.

Games? All the necessary tools are available for developing the next great 3-D computer game – including sounds. Or, play Studio Game which is included in the program.

Now everyone using a personal computer may enter the realm of virtual reality. *Virtual Reality Studio™* enables you to create and explore 3-D worlds. Using nothing more than a mouse or keyboard, you can design, color, and animate limitless scenarios. A video cassette tutorial is packed into every box to quickly bring you up to speed allowing you to begin creating your own reality. The limit is your imagination.



VIRTUAL REALITY STUDIO™

A tool for your imagination.

To order call your local retailer or call: 1.800.245.7744.

Available on IBM PC, 100% compatibles and Amiga. Designed and programmed by Incentive Software. © 1991 New Dimension International Ltd. Artwork, instructions and packaging © Domark Software Ltd., IBM PC SCREENSHOTS.

incentive
The Award Winners

DOMARK

Circle 74 on Reader Service card.

with ProVector. This is a very powerful feature, and I would like to see developers take advantage of it more fully.

Another handy ProVector feature is the ability to draw with multiple layers, each being individually selectable. ProVector prints to PostScript printers, Preferences-selected printers, and HPGL-compatible devices. It can also output illustrations as IFF images.

Like Professional Draw, ProVector has tools that allow you to scale, rotate, duplicate, and group structured objects. You can load bitmapped images and combine them with structured art. Although it has many professional features and abilities, I find its interface and drawing tools to be rather nonstandard as far as structured-drawing software is concerned. Especially weak is Bezier drawing, which should be the most important tool in any structured-drawing program. With a little spit and polish, this program could become a formidable contender.

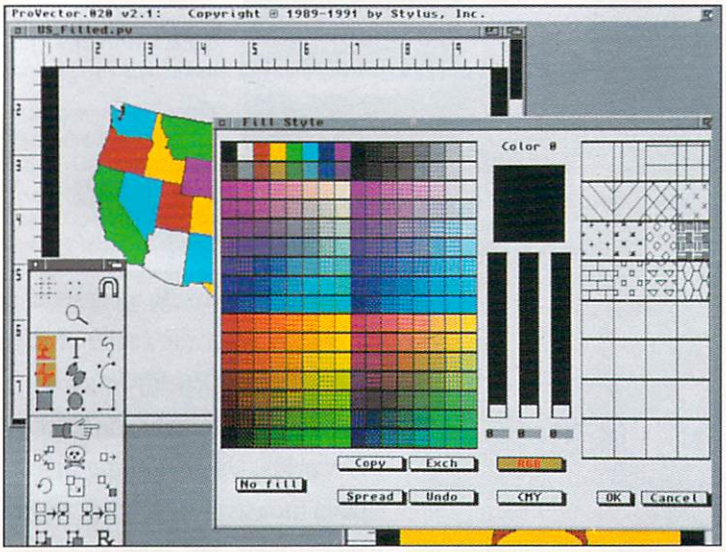


Figure 2. ProVector 2.1 can simulate multiple colors by dithering whatever number of colors you make available to it.

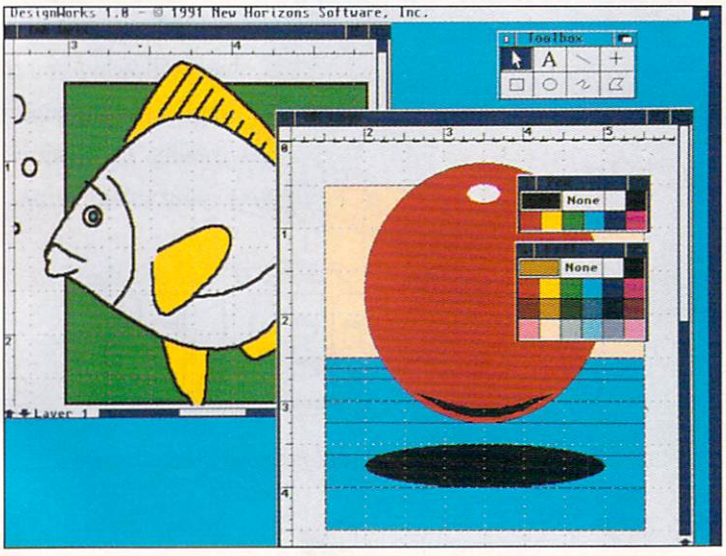


Figure 3. The less-sophisticated (and less-expensive) DesignWorks still allows you to work on multiple-layer drawings.

DESIGNWORKS

New Horizons' **DesignWorks** ($125) is an entry-level structured drawing program suitable for users who wish to produce simple illustrations for their word-processing software. Inexpensively priced, DesignWorks is not meant to be an alternative to the other two programs, but it can still be useful if you do not require their powerful features.

The drawing tools are simple to use, but basic in operation; for example, there is no Bezier drawing tool. You can draw curves with the freehand tool or create them by smoothing polygons; movable Bezier control points become available once you have drawn the object. The interface is easy to learn, even without glancing at the well-written manual, and it follows the conventions used by structured-drawing programs available on other computer platforms.

Like ProVector, DesignWorks also lets you work on multiple drawing layers. There are tools to scale, rotate, flip, and clone objects. You can perform rotations, however, only in 90-degree increments. DesignWorks also supports ARexx, which extends the capabilities of this program. For instance, it might prove interesting to send data from a spreadsheet to DesignWorks, have it produce a 3-D bar graph, and then send the graph to New Horizons' ProWrite to be included in a document.

As of this writing, I know of no software, other than the newest version of ProWrite (3.2), that will import DesignWorks illustrations in its structured-drawing format. Other layout and paint software can import DesignWorks illustrations if they have been saved as bitmapped images, but this negates the advantages of structured illustrations in the first place. DesignWorks does not support PostScript or HPGL printing, but it will output to any Preferences-selectable printer.

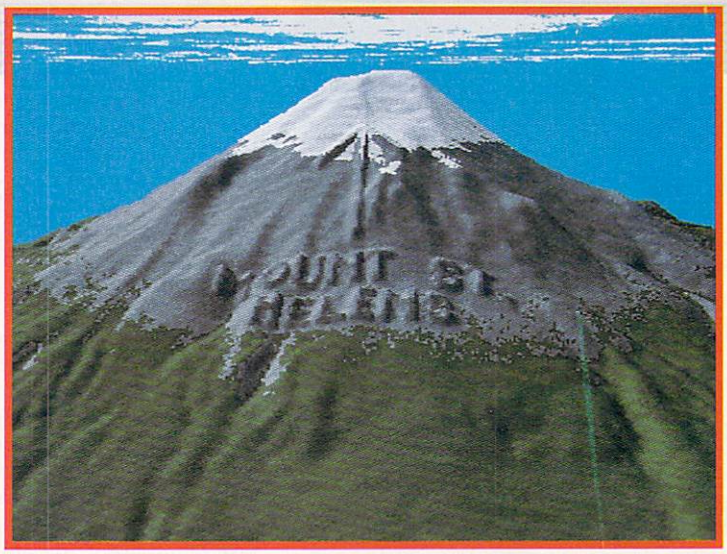
STRUCTURED-DRAWING SUMMARY

DesignWorks is not aimed at the professional desktop publisher, but it may be useful to those who are not power users. ProVector still needs some improvement, especially in its handling of drawing tools, but it is a capable program, and its ARexx support greatly extends its usefulness. Professional Draw may not match some of the capabilities of such programs as Adobe Illustrator 3.0 or Aldus FreeHand running on the Macintosh, but it comes close, and in a few areas even surpasses them. As far as the Amiga is concerned, it is still considered the structured-drawing program of choice for Amiga desktop publishers.

Structured drawing and bitmapped painting go hand in hand when it comes to the desktop-publishing process. When you are trying to determine which type of program to use, consider what is most important to you: printing speed, ease of creation, output quality, level of detail, range of colors, and so on. These factors are always different for various projects, so it is wise to consider them all each time you embark on illustration. ■

Eyo Sama is the former publisher of Amigo Times, *a full-color magazine created entirely on the Amiga. He currently does consulting work for publishing houses and is writing a book and developing software. Write to him c/o* AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03468.*

LANDSCAPING IN Cyberspace



Combining paint-program techniques with the operations of a new breed of landscape-generating programs can lead to some very exciting and imaginative creations.

By Joel Hagen

As an astronomical artist spending much of my time painting planetary surfaces, I have always had a keen interest in computer-generated landscapes. In 1977, I saw my first examples of realistic computer landscapes in Benoit Mandelbrot's classic, *Fractals: Form, Chance and Dimension*. In that work, Mandelbrot and Richard Voss used algorithms based on fractal mathematics to produce computer-generated hillsides and islands that were astonishingly naturalistic in form.

Until recently, implementation of related graphic techniques on personal computers has been limited and simplistic. Thankfully that has changed. A growing number of Amiga products can put remarkable capabilities in your hands. It is now possible to create realistic, fractal-based random landscapes, to generate real-world landscapes based on US Geological Survey (USGS) data, and even to paint aerial maps by hand to be generated as full three-dimensional landscapes. This latter process will be our focus here as we explore techniques through which the artist can collaborate with the Amiga, building landscapes in cyberspace.

Landscape Generators: Fantasy and Reality

Currently, the two leading landscape-rendering programs are **Vista Pro** ($149.95, ***Virtual Reality Laboratories***) and **Scenery Animator** ($99.95, ***Natural Graphics***). (For a review of Vista Pro, see Jul. '91, p. 15; for Scenery Animator, see Dec. '91, p. 20.) Both programs can load or create landscape information in the form of Digital Elevation Map (DEM) files, such as those based on USGS data. This DEM data appears as an aerial topographic map on the user-interface screen. On that map, a "camera" can be positioned and adjusted to "take a picture" of a portion of the landscape. That computer-rendered picture is a naturalistic view of a three-dimensional illuminated landscape, with shadows, tree lines, snow, and lakes. Both programs allow you to plot a path on the map to be rendered as an animation. ►

Vista Pro and Scenery Animator are both excellent programs, each having a slightly different interface philosophy, rendering style, and set of controls. Vista Pro can create rivers, Scenery Animator, clouds. Vista Pro includes more controls for such things as smoothing landscape data and adjusting haze and pixel dithering. Scenery Animator has more powerful built-in animation controls.

Both programs save images in low and high resolution, interlace and noninterlace, and overscan and nonoverscan. Vista Pro supports 16-color, 32-color, HAM, and IFF24 output, and it can also save files in Sculpt and Turbo formats. Scenery Animator supports 16-color, 32-color, DCTV, IFF24, and PCX output. *(To contact the developers of these and other programs mentioned in this article, consult the "Manufacturers'/Distributors' Addresses" list on p. 112.)*

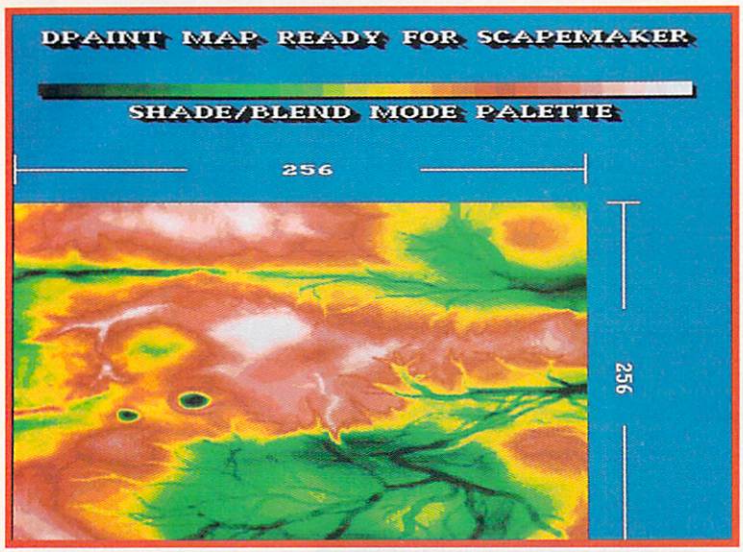


Figure 1. An aerial-map view—painted in DeluxePaint—that will be rendered later as a landscape in Figure 4.

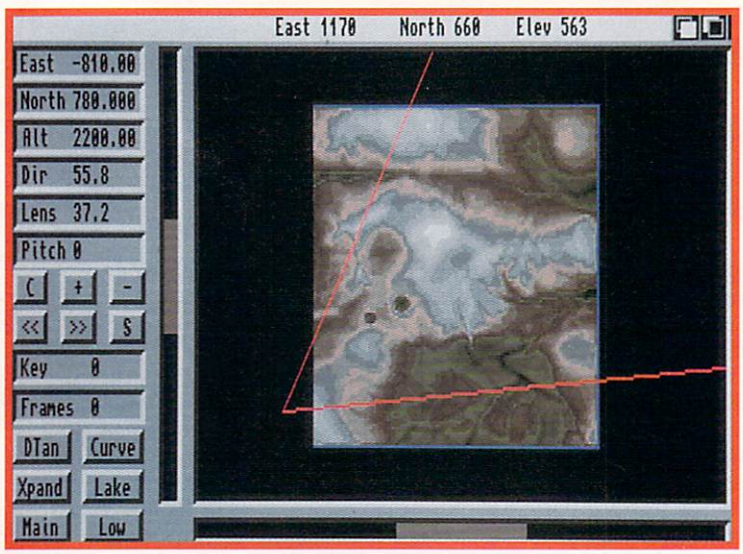


Figure 2. The painting in Figure 1 now converted to a DEM file and loaded into Scenery Animator.

Landscapes are rendered as a net of triangles, colored and shaded to give the appearance of a solid, natural surface. In the distance these triangles vanish, but up close they can appear large and distracting. Vista Pro provides a rendering option employing Gouraud shading to smooth the look of the landscape. This solves the distracting near-triangle problem by giving an interesting painted look to the landscape. Scenery Animator solves the near-triangle problem with a "Detail" button that breaks up large triangles close to the camera into tiny ones to add close-up surface detail where needed. This is one of my favorite features.

If these two programs produced identical images from the same data, I might choose just one and put the other away. Interestingly, they have remarkably individual rendering styles. Scenery Animator produces very smooth landscapes, excelling at rendering nearby terrain and realistic clouds. Vista Pro has a nice craggy look to it, wonderful control of atmospheric haze and color, and an interesting way of distributing vegetation up into valleys. I use both programs extensively.

Included with both programs (with more available at an additional cost) are disks of USGS DEM data files of an extremely wide variety of places, such as the Grand Canyon, Yosemite, the surface of Mars, and many more. Both programs also include fractal landscape generators that can produce DEM files. Instead of accepting real-world topographical data like the USGS files to create landscapes, fractal generators create naturalistic landscapes solely through internal computation based on random-number "seeds." Another source for DEM files is the program **Fractal Pro** ($89.95, ***MegageM***, reviewed Mar. '91, p. 18), which can save Mandelbrot and other fractal sets as DEM files to be rendered as landscapes.

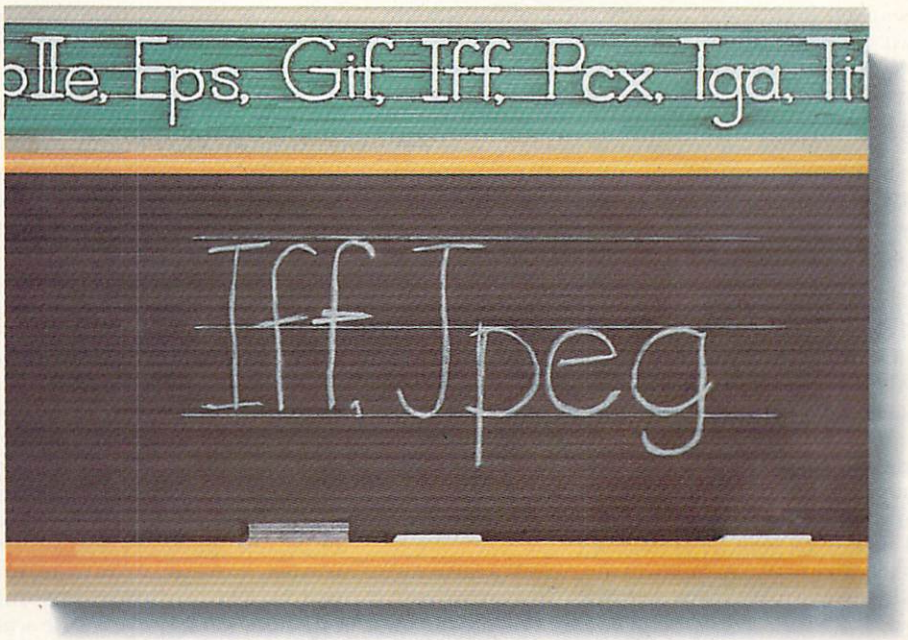
While converting mathematical structures into landscapes is an interesting prospect, what excites me most is painting and editing DEM files from scratch to build my own landscapes. The foundation of this process rests on a great little program called **ScapeMaker 2.0** ($39.95, ***MegageM***). ScapeMaker loads any standard IFF image, including HAM, and translates it into DEM format to be rendered in Vista Pro or Scenery Animator as though it were a landscape file. The different colors of the image represent different elevations.

Get Out Your Brushes

What I call the Shade and Blend technique in DeluxePaint (see "Accent on Graphics," #9, Nov. '89, p. 74, and the unofficial first part of this article, "Around the World in 80 Frames," Oct. '91, p. 39) is an ideal way to quickly paint detailed aerial-map views that can later be rendered as landscapes. The painting method is unique to DPaint. Unfortunately, **DeluxePaint IV** ($179.95, ***Electronic Arts***) slows down some processes so much that this particular technique is virtually crippled, so don't throw out DPaint III when you upgrade.

Start on a low-resolution 320×200 screen and set up a smooth 32-color sequence in your palette. I usually leave the first two palette positions as contrasting menu colors for readability. The remaining colors can be any that you like, but for clarity they should ramp smoothly through colors and values as shown in Figure 1. When using ScapeMaker to convert the picture into DEM data, we will use an option that treats each successive palette position as a higher elevation. Color 0 will be ►

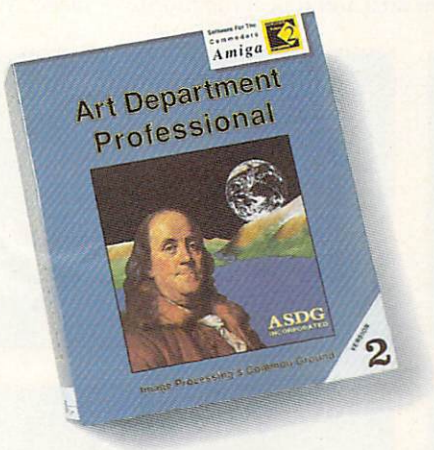
Teach Your Art Department To Read And Write



Think of the opportunities you'd miss if you couldn't read or write.

An imaging professional needs to be fluent in many languages. For instance, you have a picture in IFF which you need to combine with clip art stored in PCX. You need the result in GIF for use on PCs, but you also need it in PostScript to be sent to a service bureau.

Art Department Professional (ADPro) is your short cut to picture format literacy. Using it, you can read and write many important formats. ***ADPro's*** modular design allows additional formats (or even the ability to control scanners, digitizers, printers and film recorders) to be added as your needs grow.



No matter which format you're coming from or going to, ***ADPro's*** advanced image processing capabilities help you get the best results. And, you can use ***ADPro's*** comprehensive ARexx interface to batch process hundreds of conversions as easily as one.

If pictures are your words, don't let a language barrier get in your way. Get ***Art Department Professional!***

ASDG

925 Stewart Street
Madison, WI 53713
608/273-6585

The following names are trademarked by the indicated companies: Art Department Professional: ASDG Incorporated. PostScript: Adobe Systems Corp. PCX: ZSoft Corporation. GIF: CompuServe Information Systems. ARexx: Wishful Thinking Development Corporation.

Circle 4 on Reader Service card.

level 0, color 1 will be level 1, and so on. Thus, in this method, the actual colors we paint do not matter; their position in the palette does.

When the palette is finished, set Range number 1 to include all 32 colors. Return to the main screen and clear to color 0. Select Shade mode (F5) from the menu, and begin painting with a round brush the size of a silver dollar, using the Dotted-Line tool.

In Shade mode, one button causes colors under the brush to move up the palette; the other button causes colors under the brush to move down the palette. Think of yourself high above a landscape looking straight down. One button raises elevations, the other lowers them. Scrub the large brush around the screen until you have some interesting high and low points. Use smaller and smaller brushes to refine the detail, adding valleys, carving coastlines, and so on as in Figure 1.

When you have painted a good rough map in Shade mode, press the F6 key to switch to Blend. Use a 1-inch round brush and the Dotted-Line tool to push the colors around. Painting with Blend will smooth out abrupt elevation transitions, pull regions of low elevation deeper into higher elevations, and so on. Switch back and forth between Shade and Blend using large and small brushes until the aerial landscape is complete.

With a little practice, it is easy to see which areas will be steep slopes and which will be shallow. For example, if an area of color 4 in the landscape is right next to an area of color 26, there will be a very steep cliff. Repeated passes over that color border with a Blend brush will interpose bands of intermediate colors that will reduce the severity of the slope.

I have found that it improves the natural appearance of a landscape to do a final agitation of the entire painting with a 3-inch round Blend brush before saving the image. Place the large brush over an area of the picture, hold down the left mouse button, and jiggle the brush back and forth about a quarter of an inch in both directions. Move to a new area and repeat the process until the entire map has been affected by your "cyberquakes." This subtle agitation has little effect on the structure and detail you have created, but it does eliminate stray pixels, unnaturally abrupt color changes, and accidentally sharp lines in the map that could spoil the final rendering with spikes and walls. Save your finished image.

This painting technique is incredibly fast. From the time I boot DPaint, it takes less than ten minutes to build a logical palette and to complete an aerial landscape like Figure 1. Later in the article, I will address a more advanced method that compensates for pixel aspect ratios, but for now, let's move on to creating a DEM file from the painting.

Making the Conversion

While ScapeMaker is a bit rough-hewn, it is inexpensive, unique, and gets the job done. It is the only program I know of that will convert IFF pictures into DEM files. Run ScapeMaker 2.0 from its Workbench icon or from the CLI.

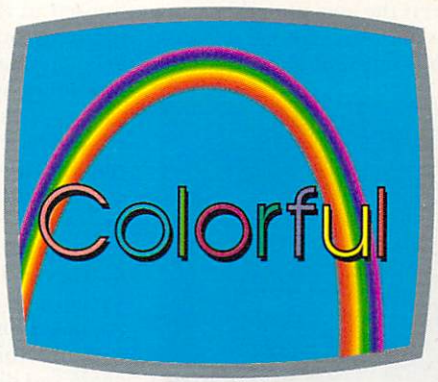
A few simple menu-bar controls and a screen window constitute the interface. From the menu, select Open Image to load the aerial map just saved. It can be seen briefly as it loads to a screen in the background. From the Controls submenu, select Color Number. This mode uses the numbers of the palette positions as described earlier to assign elevations. The Color Value option computes elevations from the RGB values of each color, but I find those results less predictable.

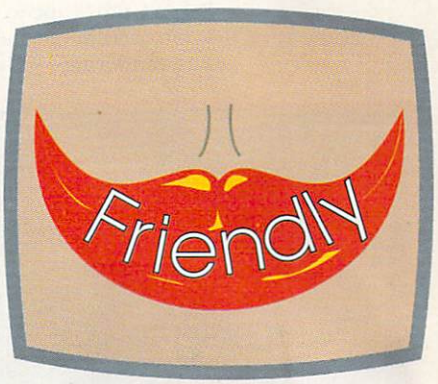
From the Controls submenu, select Scale Factor. At the default setting of 1, the landscape will have very little relief, the lowest point being level 1 and the highest, level 31. The landscape will become more interesting if its elevation increments are scaled up by a factor of 5, 10, or 20. Scale factors up to 99 may be entered, but beware of exaggerating the steepness of the landscape.

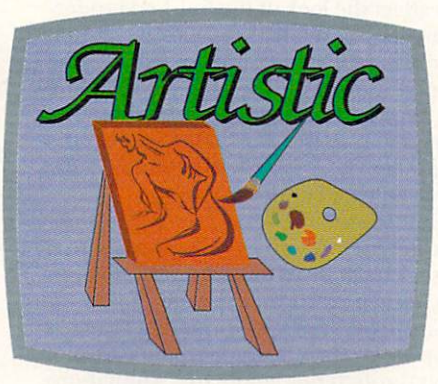
Set the Scape Area by selecting that option from the menu. A window appears on the screen with the painting. ►

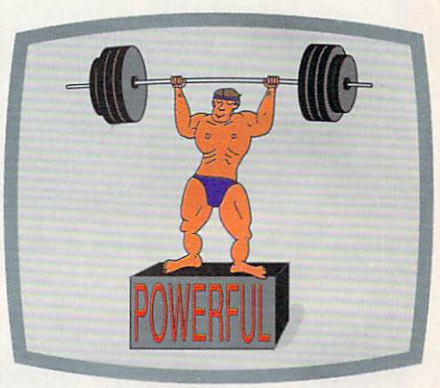
Figure 3. This sequence shows a flyby of the landscape painting as rendered from a higher altitude in Vista Pro.

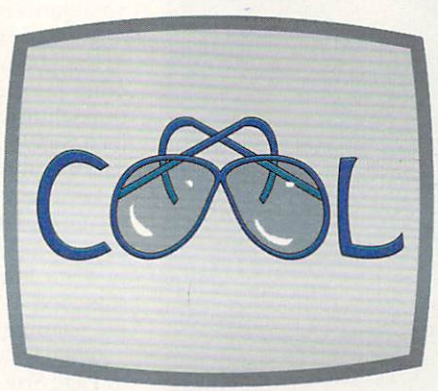
A few words about **ProVector**™, the professional illustrator's choice...











Each of the above drawings was created using just a few of the incredible number of features and effects in ProVector 2.1. Professionals and home-users alike are praising the remarkable speed, ease of use, and flexibility of ProVector. If you're serious about creating professional-quality structured artwork on your Amiga, ProVector is the only real choice.

Any questions?

Stylus, Inc.

P.O. Box 1671
Ft. Collins, CO 80522
(303) 484-7321
Mon.-Fri. 9-5 MST

All illustrations were created with ProVector 2.1, then imported into Saxon Publisher 1.1 to create this ad. Registered owners of ProVector 2.0, be sure to contact Stylus, Inc. for upgrade information, you'll find a tremendous number of additional features and functions in ProVector 2.1 over previous versions. ProVector is a trademark of Stylus, Inc., Saxon Publisher is a registered trademark of Saxon Industries, Amiga is a registered trademark of Commodore-Amiga, Inc.

Copyright 1991 - Stylus, Inc.

This window can be sized up to a maximum dimension of 258×258 pixels and positioned anywhere on the image. When you are satisfied, click on the Close gadget at the upper-left corner of the window and return to the menu.

Select Grab Scape to convert the area under the window into a DEM file. I always perform a smoothing pass before rendering—either in ScapeMaker or Vista Pro.

Figure 4. The finished rendering of the landscape from the point of view shown on the map screen.

Figure 5. The same landscape as in Figure 4, with the addition of craters created with TerraForm's Nuke button.

This removes the otherwise "terraced" look from the final landscape. This is particularly important in painted maps. All illustrations in this article were smoothed. Save the DEM file and quit the program. ScapeMaker has other options, but, for now, let's move along.

Prepare to Render

You can load the DEM file just created into either Vista Pro or Scenery Animator for final rendering. Figure 2 shows the DEM file loaded into Scenery Animator. (For a discussion of Vista Pro's interface, see "Accent on Graphics," #31, Sep. '91, p. 59.) You can see how effectively the original painting translates into an elevation map. Notice that my painted aerial view appears compressed in the north-south dimension compared with the image on the map screen. This was done on purpose to compensate for the pixel aspect-ratio problem.

Scenery Animator's main screen contains buttons for various settings, an image-preview window, and a camera-positioning window. This map screen has position controls, animation buttons, and a great interactive camera-view gadget. Clicking the left button anywhere on the map sets the camera location. Holding down the right mouse button, you can rotate the camera and adjust the field of view by moving the mouse. Returning to the main screen, a click of the mouse in the preview window sets the target for the camera and recenters the image.

Buttons on the main screen allow adjustment of light angle and direction, water and waves, cloud height and density, timberline, snow levels, and other factors that can dramatically affect the look of the finished rendering. Scenery Animator can render single images as well as animations. Pressing the Render button switches the view to a screen upon which the image is painted, line by line. Figure 4 shows a finished landscape rendered by Scenery Animator from the position shown on the map screen. The image is in 320×400 32-color mode, with palette colors adjusted after rendering.

For the first time, we see the results of this collaboration with the computer. A web of valleys, cut with a small Shade brush, stretches out toward the mountains. Clearly visible is a steep scarp pulled from the center of the map with a Blend brush. The rim of a crater is visible in the upper left. It is a simple matter to plot an animated path through this landscape. Animations rendered directly in DCTV (Digital Creations) format are relatively small and very impressive.

The series of views from a higher altitude (see Figure 3) was generated in Vista Pro as a flyby. This gives another perspective on how the painting translated into three dimensions. The craters made by jiggling a half-inch Shade brush show up clearly from this altitude. The different rendering style of Vista Pro is also evident.

Let's return to the painting stage for a moment. I mentioned the problem of pixel aspect ratio. If you were to paint a perfect circle in DPaint on a 320×200 screen, in Vista Pro or Scenery Animator it would wind up stretched severely in the north-south dimension. A simple painting procedure can eliminate that distortion.

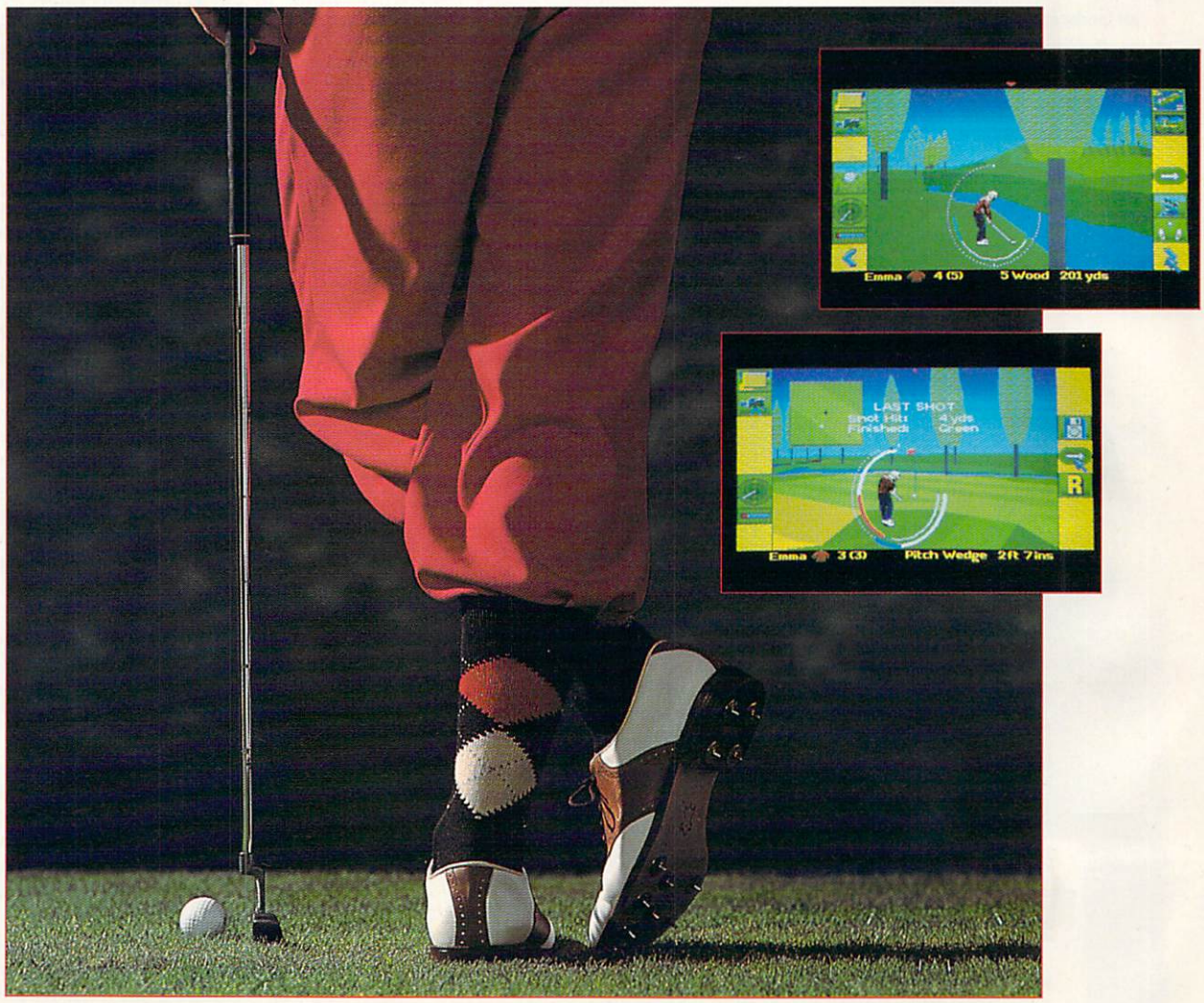
Open DPaint to a lo-res 320×200, 32-color screen. Go to Page Size in the menu and enter 320 by 258 so that you can paint on the full area that ScapeMaker can grab. Paint as before with Shade and Blend, using the cursor keys to scroll around the extended screen. You can use coordinates to mark the screen at about 260, indicating the horizontal limit of what ScapeMaker will grab.

When the painting is finished, go to Screen Format and select Interlace 320×400. When the Stretch Image requester appears, click on No. The landscape will appear on the screen, compressed vertically. Save it and proceed as before with ScapeMaker. There will be no noticeable distortion in the rendered image.

And Now for Some Special Effects

There is another great landscape program—also from ***Virtual Reality***—that has recently become available. ►

Bring The Challenge Of GREENS™ To Your Screen



Actual screens may vary.

Put the fuzzy head covers back on your clubs. It's dark out and it's raining. If you absolutely must play golf, boot up **GREENS**, the ultimate 3-D golf simulation.

No other golf game can match **GREENS** for realism, variety and pure entertainment. **GREENS** features three-dimensional, landscaped courses that show real contours and ground types. Accurately integrated ball mechanics make sure your shots behave like they would in real life. Six different courses, Singles or Tournament matches, and human or computerized opponents with varying strengths and weaknesses make the possibilities endless.

Power and precision. Critical decision-making. Unflinching authenticity and intelligent gameplay. State-of-the-art graphics. **GREENS** is as close as you can come to real golf — without worrying about lightning.

- Stunning 3-dimensional technology lets you travel anywhere around the course. Follow the ball as it flies through the air; watch your shots from numerous selectable camera angles.
- Change your stance, swing, tee and ball positions and see their effects on your shots before and after each stroke.
- Player profiles, which change over time, including a full handicap system.
- A dozen game types, including strokeplay, matchplay, best ball, skins and a full tournament option for 1 to 4 human players.
- Customizable computer opponents and replay facilities.

MICROPROSE™
ENTERTAINMENT • SOFTWARE

MicroProse Software, Inc.
180 Lakefront Drive • Hunt Valley, Maryland • 21030-2245

For Amiga and IBM-PC/Tandy/compatibles. For the latest information on release dates and availabilities, call MicroProse Customer Service at 410-771-1151, 9 am to 5 pm EST, weekdays. © 1991 MicroProse Software, Inc.

Genesis: The Third Day

Shipping too late for inclusion in this article, Genesis: The Third Day (Microllusions, $149.95) is another major landscape generator for the Amiga. Because it does not accept the format of DEM files shared by ScapeMaker, Vista Pro, and Scenery Animator, Genesis cannot at this time be used as a renderer for the techniques described in this article. Genesis can, however, load its own proprietary DEM format files via the included Dem2Gen program. Dem2Gen allows the creation of animations through nine quadrangles of one-degree or 7.5-minute data. Microllusions is selling DEM data disks for many regions of the US.

TerraForm ($39.95) does not load and convert IFF images. Instead, it has a great interface, crammed with tools for altering and editing existing DEM files or for creating them from scratch. Figure 5 shows the TerraForm screen with my DEM landscape loaded. You can see where I have used my favorite TerraForm tool, the Nuke button, to add a couple of craters to the landscape. Other tools smooth, roughen, create hills, raise, lower, steamroll, and so on. The 3D View window allows fine-scale editing, point by point, with the mouse. This is really a fun program.

For building landscapes from scratch, it would be hard for anything to match the speed and flow of Shade/Blend elevation painting. TerraForm, however, provides a different and broader set of tools. It is the only program I know that allows you to edit DEM files. You must render these, however, in Vista Pro or Scenery Animator.

Although Vista Pro's animation features are fairly basic, a ***Virtual Reality*** companion program is now available to extend its capabilities. **MakePath** ($39.95) is a powerful interface for designing simple or complex animation paths through a landscape. Several default models, available right from the menu, provide a variety of elevation, camera, and speed settings, including Glider, Jet, Cruise Missile, Helicopter, Dune Buggy, and Motorcycle.

You can control pitch, bank, acceleration, and a host of other options from the interface screen. You can even include Barrel Rolls automatically. The saved settings are loaded as a script in Vista Pro for execution.

One last ScapeMaker stunt deserves mention. The Double Exposure mode allows you to grab an IFF image and add its elevation data to that of a previously loaded DEM file. The results are impressive, as you can see from the illustration that opens this article. This is a Mount St. Helens DEM file, double-exposed with text and an arrow done in DPaint. The rendering was done in Scenery Animator. A future "Accent on Graphics" column will explore double exposure in greater detail.

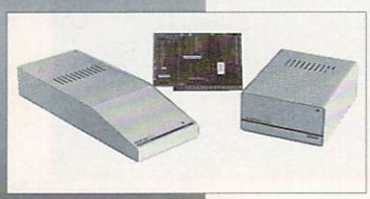
If this article barely touches the surface of these programs, it is because I want to emphasize the thread of interaction possible between human painting and computer rendering. Landscapes evolve in an exciting realm where the artist's skill and imagination work in collaboration with the style of the software in Amiga cyberspace. ■

Joel Hagen is a contributing editor to AmigaWorld *and the author of* AW*'s monthly "Accent on Graphics" column. His credits include work in art, astronomy, science fiction, and software development. Write to him c/o* AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03458.*

HARD DRIVE CONTROLLERS
IDE, SCSI and IDE/SCSI
for every Amiga

DataFlyer™

FINEST HARD DRIVE CONTROLLERS IN THE WORLD



The objective was simple enough. Design a line of controllers low enough in cost that would appeal to people who thought it was out of their price range. The DataFlyer does everything the expensive controllers do and a few things they don't. Thousands of satisfied customers add their own SCSI or IDE/AT drives and save money. Call your dealer for the kit or system price and us for all the details. Consider a hard drive for your Amiga and see for yourself how nice life is as a frequent flyer.

Product	Suggested Retail IDE	SCSI	IDE/SCSI
DataFlyer 2000	$89.95	99.95	159.95
DataFlyer 500	179.95	189.95	239.95
DataFlyer 1000	189.95	199.95	249.95

Does not include hard drive

Features:
Mouse button game switch, optional "plug on" 8 megabyte RAM card, A500/1000 cards fit in A2000, AmaxII driver (SCSI only), Auto-Installing format software, autobooting with KS 1.3 or higher, Workbench 1.3/2.0 compatible and more.

A FULL WARRANTY ONE YEAR

EXPANSION SYSTEMS
Making Technology Affordable

510 656-2890

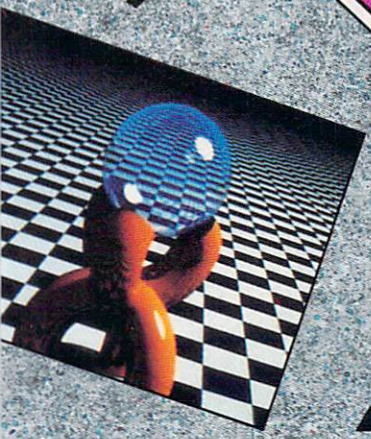
ExpansionSystems 44862 Osgood Rd. Fremont, California 94539 USA. Fax 510 656-5131 Dataflyer, DataFlyer RAM are trademarks of Expansion Systems ©1991 Expansion Systems. Dealer inquiries welcome, call us directly or any Amiga distributor. For International sales in the U.K. call ZCL at 05 43 41 48 17 - France, Bus Plus at 01 45 80 05 66-Germany, ETS at 08 12 47 677. This ad is small but so are our prices.

Circle 33 on Reader Service card.

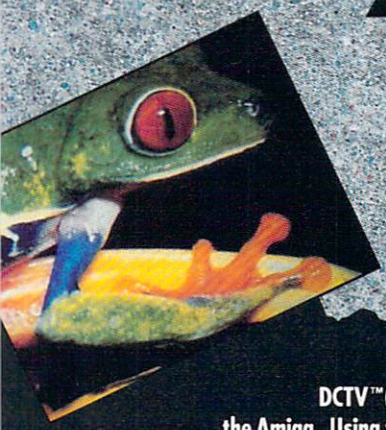
All photographs are of actual DCTV screens.

DCTV™

The Future Is Here



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



$495

** Min. 1 Meg. required*

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

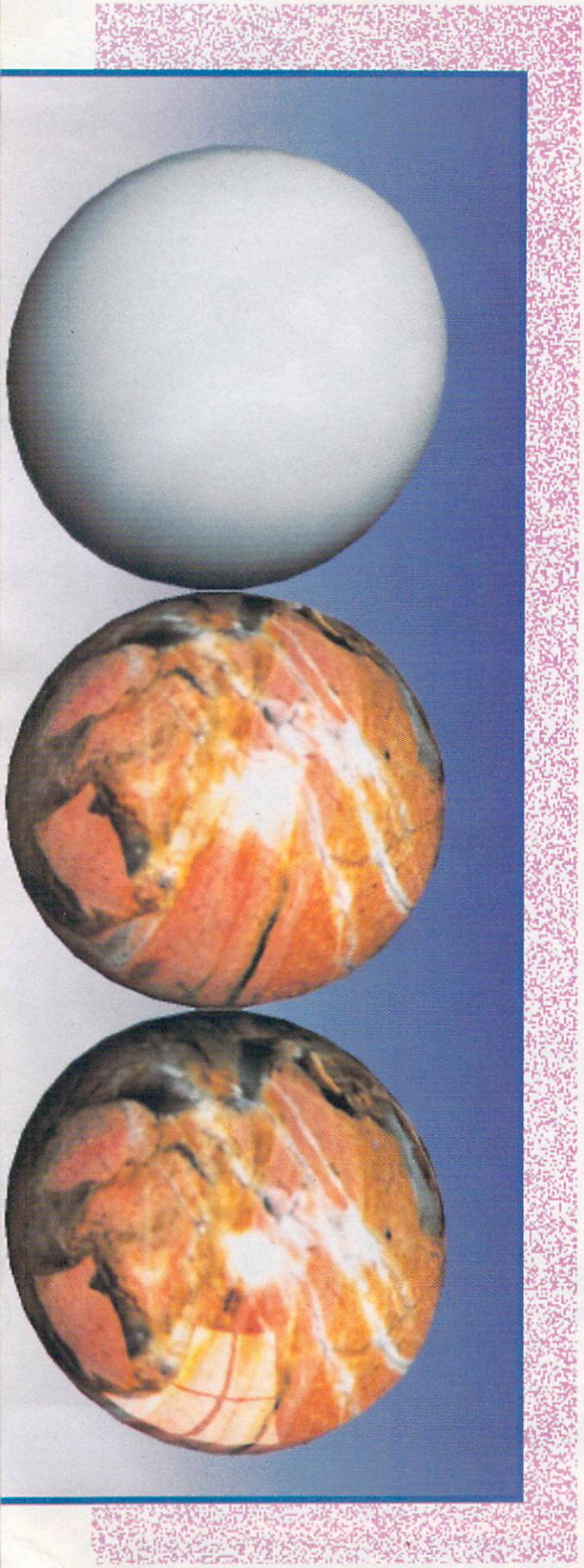
DIGITAL

C R E A T I O N S

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

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

Circle 16 on Reader Service card.



"Mapping" New Worlds

By Louis Markoya

Like today's sophisticated advances in cartography compared with the fancifully inaccurate, hand-drawn efforts of early map makers, texture—or image—mapping on the Amiga has come a long way in terms of conveying complex, richly detailed, realistic effects. Only in 1987 did Impulse's Turbo Silver break new ground in allowing IFF images to be mapped on flat planes (grounds). Since then, we have added powerful new tools to our imaging arsenal, including reflection mapping, filter (or transparency) mapping, bump (or altitude) mapping, global (or environmental) mapping, backdrops, and many combinations of the above.

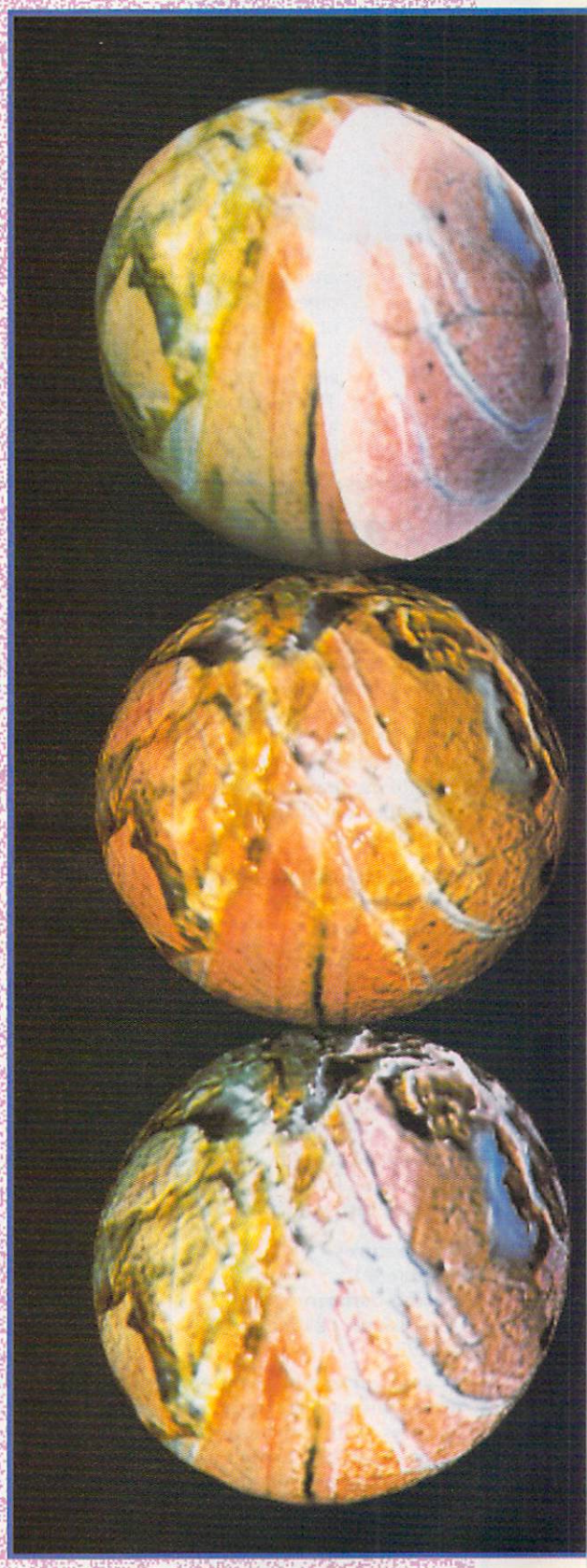
Among Amiga ray-tracing and solid-modeling programs, **Imagine** ($350, ***Impulse)*** and **LightWave 3D** (bundled with the **Video Toaster**, $2495, ***NewTek***) offer the most mapping options, with many similarities between the two programs. These advanced mapping techniques allow you to create complex objects that are difficult, if not impossible, to construct through modeling alone, and they add greater realism and visual punch to your traces. This article will introduce you to mapping techniques, give some hints on maximizing their use, and briefly describe some of the many individual texture packages that have appeared in this fast-growing market segment. *(To locate the vendors of products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 112.)*

Before I cover any specific effect, program, or texture package, it is important that you, the user, first take the time to consider the effects you wish to achieve. Doing so will force you to consider the type of map(s) to use, the type of brushes or images needed to achieve the effect, the sizing of the objects within your scene, how much memory you have available, and a number of other parameters. All of these will determine your ability to create the effect you desire and will shape just how you need to go about it.

A Multitude of Maps

Color mapping simply maps the IFF image you desire on the object exactly as it is viewed, in full color. Both LightWave 3D and Imagine support normal Amiga IFF resolutions/bitplanes as well as full 24-bit images. This type of map is used for backdrops as well as for wrapping solids, such as stone, onto objects.

New 3-D modeling programs with advanced features are providing Amiga users with new methods of image mapping that yield outstandingly rich and realistic results. Well-known Amiga artist Louis Markoya offers this tutorial guide to texture-mapping techniques.



Filter, or transparency, mapping maps a pattern defined by the gray scale onto an object, making areas at the ends of the spectrum (black or white) completely opaque or transparent. You can employ this effect to make clouds, lace, or any variety of complex objects requiring holes. You can use the gray scale to make the transition abrupt or soft-edged.

Reflection mapping is like filter mapping in that it uses the gray scale to designate areas. Here, though, the black/white extremes reflect totally or do not reflect at all. Obviously, it is an easy way to make complex shapes reflect on objects. The famed SIGGRAPH artist Y. Kawaguchi uses this technique to great effect.

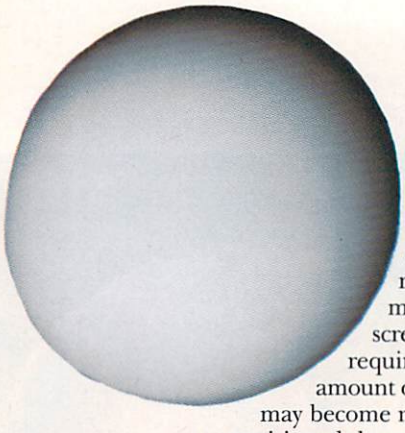
Bump, or altitude, mapping uses the gray scale to raise or lower features on an object in the shape of the brush. One extreme raises the surface at a particular point, while the other creates a depression. The results are bumpy surfaces that look quite realistic. The effect is widely used to create raised features that are nearly impossible to model. The face on a coin, the bumpy skin of an orange, or the raised veins of marble are easily achieved with this method.

Global, or reflected-image, mapping maps a reflected image on an object as if the image were the "world" about the object (which is why it is also referred to as "environmental" mapping). This method is used to map a chrome-like color gradation on letters over a black background or, more often, to map the reflected highlights on flying logos. Beautiful things happen using simple brushes mapped to produce specular highlights on logos or other objects.

You can use all these mapping effects in both solid modeling and ray tracing; the latter offers the advantage of true reflection and refraction, although it also increases rendering time substantially. Many striking effects are possible with any one of the above methods, but it is when they are used in combination that real magic begins to happen, and your traces start to take on the professional look of work done on much higher-end systems. Before we move on to combining techniques, however, let's consider some other factors that will affect the success of your texture-mapping experiments.

First Things First

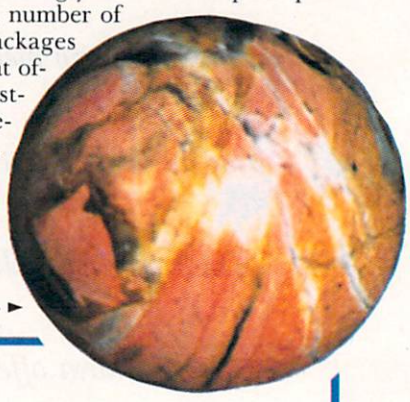
Object size is an important factor in selecting textures. If the object is small in the scene and will remain small in an animated scene, a ►



texture may not show up at all unless the contrast or effect is dramatic. At first glance, you may be drawn to a great-looking texture containing lots of fine detail—*all* of which, unfortunately, will be lost if the object you are mapping onto does not nearly fill the screen. The effects you want frequently require textures that exhibit a surprising amount of contrast; the design of such textures may become radically different from what you first envisioned they would be. Only when viewed on your object, in your lighting conditions, can the true value of the texture be estimated.

Not only is the overall object size important, but it also makes a difference if the faces are flat or curved. This is especially true in reflected-image mapping, where a texture with fine detail can produce very beautiful, nearly unrecognizable glints and gleams on the face of a logo when used as a reflection map. Above all, don't be afraid to experiment and try maps in places where at first they may not seem to fit.

Once you have decided on your mapping methods, consider the image(s) or brushes you will need. Making your own maps is as easy as scanning or digitizing an existing picture or drawing your own in a paint program. In addition, a number of texture-mapping packages are now available that offer ready-made assistance. If possible, before you purchase, check to see if the manufacturer includes pictures of the textures; if not, ask your dealer if you could view the tex- ►



Ready-Made Textures

THE FOLLOWING ARE a few of the texture packages now available for the Amiga. Many more will doubtless appear in the near future. Be sure to try to get a look at just what they contain before you purchase. Price is often not the determining factor with these packages, because you may find more textures of use to you in a small, inexpensive collection than on a more costly, multidisk set.

Photon Paint Surface Disk
Woods and Marble
MicroIllusions
Two-disk set / HAM
$29.95

This collection may have been the very first brush-texture package for the Amiga. The images are tried-and-true HAM pictures of stone and wood that by today's standards are of medium-to-good quality, but they have been used in a wide array of beautiful Amiga artwork. Don't let the age or price of this package turn you away from it.

Pro-Textures
Volume #1
Merlins Software
Ten-disk set / 24-bit and HAM
$59.95

A wide variety of seamless textures makes this package attractive. It offers textures from marble to clouds and water—in HAM, as well as 24-bit, for those occasions when the latter is not a real necessity. The manual provides a few hints, and the cover picture offers a look at some of the textures offered.

Full24 Textures #1
Brush Maps #1
Bump Maps #1
AirStream Graphics
Five- and ten-disk sets / 24-bit, 8-bit, and 16-color
$30–50

AirStream's first offering in this field, these sets offer a wide variety of textures. Some are rather odd, but may prove just the ticket for unusual effects. I found the brush maps to be sized properly to save memory. The packaging was not available for the preview sets I received.

Image Catalog 1
Stone and Wood Patterns
Robert Young
Custom order / 24-bit and HAM

Robert Young's Image Catalog is a great little Director (Right Answers Group) program that displays samples of all 30 of his brush textures. They are good-to-excellent quality stone and wood textures. You can view the Image Catalog file and order only the textures you wish on a fee-per-texture basis. This is a great idea, and the package is well done.

Texture City
Pro-40 and Pro-15
Texture City
Disk and Syquest collections / 24-bit, HAM, and DCTV
$299.95 and 159.95, respectively

Texture City offers the most comprehensive collection of textures for the Amiga. The Pro-40 package includes a wide variety of different textures—some useful and others perhaps not—all of which are well done, with excellent color and resolution. There are two Pro-15 packages, one diversified and the other dedicated to stone and wood textures. The packages are a bit pricy, but are high in quality, and they represent a great addition to the professional studio.

Virtual Marble
Volumes 1 and 2
Rapid Eye Technology
One disk each / HAM

I have seen only a flyer for these collections of stone and marble patterns, but if the images supplied match the pictures on the flyer, the quality may be quite good.

MapMaster for Imagine/Lightwave
Computer Imagery
Three-disk set

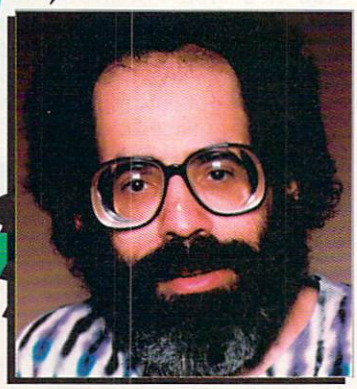
This set, my own offering, comprises 14 gray-scale organic textures designed for bump, reflection, and transparency mapping. A full tutorial and a manual are included.

Materials Texture Library
Volume 1: Stone Surfaces
MicroSearch
Five-disk set / HAM
$49.95

These textures are generally of higher quality than the MicroIllusions bunch and offer more variety in the area of stone. The manual includes pictures of all the textures and offers a few hints for their use.❑

Dr.T's® MUSIC SOFTWARE DiRECT

Quality Software At A Great Price



"For over 8 years we have led the way with innovative software at fair prices. 80,000 computer musicians know Dr.T's stands for quality, service, and support. If you want the best in AMIGA music software for professionals and amateurs check us out. We have the programs you can rely on every day!"

Emile Tobenfeld, President

124 Crescent Rd.
Needham, MA
02194
617-455-1454 voice
617-455-1460 fax

CALL 1-800-989-MIDI

800 number is for ORDERS ONLY • OTHER INQUIRIES PLEASE USE 617-455-1454

HOT

KCS 3.5 ™
With Level II

This is the MIDI sequencer that has set the standard for the AMIGA. KCS features IFF sample-play support, full realtime piano-roll style graphic editing, event list editing, notation transcription and printing, integrated algorithmic-composition module, sys-ex recording, and complete integration with our full line of MIDI instrument editors, Copyist, and Phantom synchronizer. Some programs charge extra for features KCS 3.5 has standard. If you want a program that you can do real work with, and not a toy, buy KCS!

Only $229!

NEW

Copyist Companion

Copyist Companion flawlessly converts any DMCS file to a Copyist file. It makes creating a complex score a real breeze!

Only $49!

SEQUENCERS	
KCS 3.5 W/LEVEL II	$229
TIGER CUB	$89
MIDI RECORDING STUDIO	$29
PATCH EDITORS/LIBRARIANS	
X-OR (UNIVERSAL EDITOR)	$229
SINGLE INSTRUMENT EDITORS (CALL FOR AVAILABLE INSTRUMENTS)	$59
SMUSit *NEW*	$59
NOTATION AND SCORING	
COPYIST PRO-DTP 1.6	$229
APPRENTICE 1.6	$99
COPYIST COMPANION *NEW*	$49
EDUCATION/COMPOSITION	
MUSIC MOUSE	$49
"M"	$119
HARDWARE	
PHANTOM (SMPTE SYNC)	$250
AMIGA MIDI INTERFACE	$79
5 ' - MIDI CABLE	$8

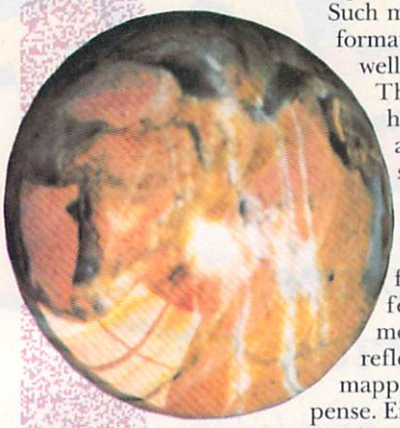
Products are also available through selected authorized retailers and foreign distributors.

✓ Our Policies

- To order, call our 800 number Monday through Friday 9:00 to 5 EST.
- For all other information including literature call 617-455-1454.
- VISA and MASTERCARD accepted. No fee on orders over $50.
- Your credit card is not charged until your order is shipped.
- 120 day limited warranty on all products.
- Defective items will be repaired or replaced at our discretion.
- COD is available for a $5 fee. Cash or certified check only.
- If we ship a partial order, no freight is charged on the balance of the order.
- No sales tax, except to Massachusetts residents (please add 5%).
- All US orders ship via UPS ground if applicable. Faster service is available.
- We are not responsible for typographical errors. Prices and promotions are subject to change without notice.
- Call customer service for a return authorization number. Unauthorized or incomplete returns or refused shipments are subject to a 20% restocking fee.
- Demo disks for most products available.

Circle 17 on Reader Service card.

tures first. While they constitute a handy source of material, they may not provide the solution you need, as some of the packages may contain few, if any, usable textures. In any case, I have included mini-reviews of some of them in the sidebar "Ready-Made Textures" that accompanies this article.



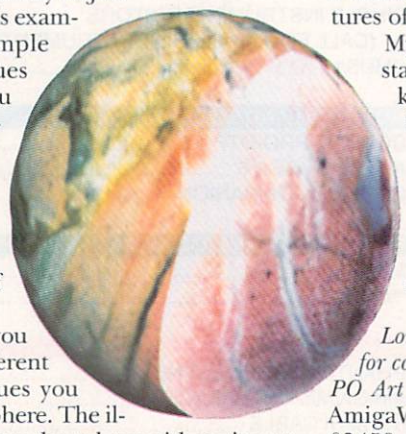
Such maps are now available in 24-bit format for greater color resolution, as well as in normal IFF Amiga modes. The 24-bit files are capable of holding true color information, albeit at the cost of increased file size, so if you are interested in doing color maps, these are probably the choice. (Keep in mind, though, that many fine effects can still be achieved with fewer colors by using HAM mode.) You can also use them for reflection, transparency, or bump mapping, but at even greater RAM expense. Eight-bit gray scale or normal 16-color IFF in grays will usually do the job just fine and save you precious RAM space.

When using combinations of maps, remember that you can employ the same brush for several effects, which also saves memory. Mapping the same brush in different ways or at different magnifications can make it seem completely different from one object to another. Texture or brush size is also an important factor. If you are not using the brush as a background map, then full-size overscan is not necessary. If the brush does not need to contain extremes in detail, you can probably get away with a small size, too, again saving memory. One brush feature used by a number of developers, edge matching, allows you to repeat a pattern without "seams" appearing along the edge of the brush. This is excellent for repeating patterns and wide expanses.

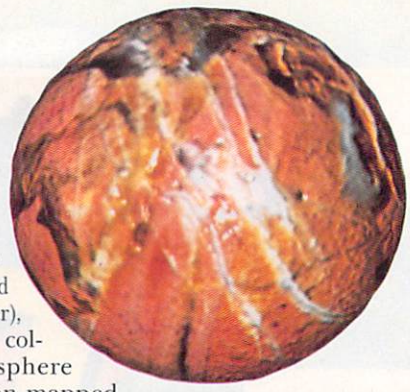
Finally, a perfect companion product to have for mapping textures is **Art Department Professional** ($299, ***ASDG***). It allows you to scale, add contrast, lighten, darken, or combine your textures—all in full 24-bit or any other IFF mode possible.

Mix-and-Match Mapping

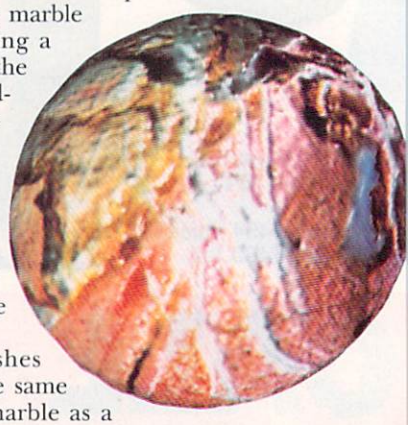
In the following section, I will outline a typical sequence—or combination of mapping techniques—I would use to map an ordinary object in a marble brush. For this example, I have chosen a simple sphere, but the techniques will work on any object you desire. Use the illustrations on the opening spread of this article to help you follow the example—as well as to plan other, different mapping combinations of your own choosing.



On pages 50 and 51, you see the results of five different image-mapping techniques you can apply to a common sphere. The illustration on page 50 shows the sphere with no image manipulation (top), with a marble texture color-mapped onto it (center), and the same color-mapped sphere also reflection-mapped with a simple black-and-white "window" reflection (bottom). On page 51, the spheres are all color-mapped, but with additional mapping effects applied. On the top, reflection-mapping the environment adds the color and horizon to the sphere. The center sphere is bump-mapped to raise the veins of the marble and to place indentations on the dark areas. The sphere at the bottom is both bump- and reflection-mapped, which adds environmental color to the lighter areas on the sphere and colors the marble with those reflections.



Now on to the example sequence: First, I select or scan the marble I desire, making sure the brush contains sufficiently different patterns and enough contrast to be effective. I usually load and save this image in AD Pro, scaling it to a common screen size (640×400) to save memory. I add bump mapping to make the marble more realistic—creating a gray-scale version of the brush in AD Pro and adjusting the contrast upwards just a bit to provide more dramatic features on the surface of my sphere. I save the second brush as a 16-color IFF image in the same resolution.



Both of these brushes will be mapped to the same object, the original marble as a color map, and the gray-scale version as a bump map. It is therefore important to map both images in exactly the same way and place on the object so that all features align properly. That done, I load a simple black brush with four white rectangles placed on one side and map it as a reflected, or environmental, map. This provides a highlight in the object that looks like a window reflection—a glossy look often seen in pictures of eyes—adding more beauty to the sphere.

My example is simple, but the effect is an outstanding one. By experimenting with different kinds of textures and trying them out with various combinations of mapping techniques, you will soon be creating some dramatic effects of your own. I have offered some general guidelines here to help, but don't be afraid to break the rules when the right opportunity presents itself. That's when some of the more stunning—and magical—results happen. ■

Louis Markoya uses his Amiga to do freelance graphics for corporations. He is the 1989 winner of the AmiEXPO Art Conference's 3-D competition. Write to him c/o AmigaWorld, *Editorial, 80 Elm St., Peterborough, NH 03458.*

Prepare to Meet Thy AUDITOR

Death and taxes may be inevitable, but at least you can survive an IRS audit with prudent preparation.

Next to a death in the family, it could be the most distressing news you will ever receive: You are being audited by the Internal Revenue Service! Those sweaty palms and that bowling ball in the pit of your stomach will be with you from the time you are notified until the ordeal is over. It's the adult version of being called to the principal's office.

But why should you worry, you say? You keep all your financial transactions and records on your trusty computer, and you are honest to a fault, correct? Well, get worried, because if you are ever audited, you enter a dimension of time and space you might call the Internal Revenue Twilight Zone.

Computerized Filing

Computers are wonderful things, and with everything they do so well, it stands to reason ►

By Gary Ludwick

that they ought to be a major help in making your annual tax return simple and quick. More to the point, their ability to organize and categorize should make them invaluable should a tax audit ever occur. Maybe, but not without a lot of help from you.

When it comes to filing your annual tax return, computers are, if I may be frank, limited in what they can accomplish for you. Most of the tax-preparation programs available, such as **Data-Tax** ($59, ***Datamax Research***), are of the spreadsheet variety. That is, they perform all the math functions on the various forms and insert the right totals from the various schedules in the proper places on the summary page. And, if you change one number on a schedule, they will change all related totals wherever they occur.

What they *won't* do, with few exceptions, is generate the numbers that go into all the schedules. All those deductions, write-offs, and income and depreciation numbers originate in the old-fashioned way, with you wading through endless pieces of paper using a pencil and an adding machine. Discouraging, but unfortunately true.

Of course, if you are using a computerized checkbook or accounting program that records most of your financial transactions, it can very likely generate many of the totals and breakouts you need. The problem is that you have to enter your numbers in that one program all year long, and then generate the totals to be entered in a tax-form preparation program.

The last step can be cumbersome and time-consuming, and may be an example of where "manual" is superior to "computerized." In the time it takes to enter all your numbers into the tax package, you could easily enter them manually on the 1040 form we all know and love. A simple pocket calculator can do all the math you need.

There is, however, at least one program available (and there may be others) that shortcuts this keyboarding nightmare. **Phasar** ($89.99, ***Marksman Technology***), a home/business accounting system package, combines a very powerful checkbook and accounting program with a basic 1040 tax package. The tax-program aspect is essentially a spreadsheet that looks like the 1040 form plus any of the supplementary schedules

Tax Information Categories

THE OLD COMPUTER homily about "garbage in, garbage out" (GIGO) has never been more true than when you are talking about tax accounting and financial program systems.

Business-Related List of Accounts

Current Assets:
- Cash
- Savings
- Petty Cash
- Accounts Receivable—Officers
- Accounts Receivable—Employees
- Federal Corporation Tax Deposit
- State Corporation Tax Deposit
- Federal Unemployment Tax Deposit

Fixed Assets:
- Land
- Buildings
- Building Improvements
- Automobiles
- Office Furniture & Equipment
- Accumulated Depreciation—Building
- Accumulated Depreciation—Improvements
- Accumulated Depreciation—Automobiles
- Accumulated Depreciation—Office Furniture

Other (Start-Up Costs):
- Organizational
- Deposits
- Prepaid Interest

Current Liabilities:
- Federal/FICA Withholding Payable
- Sales Tax Payable
- Federal Corporation Taxes Payable
- State Corporation Taxes Payable
- Notes Payable

Long-Term Liabilities:
- Notes Payable

Stockholders Equity:
- Common Stock
- Additional Paid in Capital
- Retained Earnings

Income:
- Revenue
- Interest
- Investment

Cost of Sales:
- Outside Production
- Wages
- Contract Labor (Form 1099)
- Other

Expenses:
- Accounting
- Advertising
- Amortization
- Bank Charges
- Building Upkeep
- Car/Truck Gasoline
- Contributions
- Depreciation
- Dues & Subscriptions
- Education
- Electricity
- Federal Corporation Tax
- Heating
- Insurance—Officers
- Insurance—Business
- Interest
- Legal
- Licenses
- Medical Plan
- Miscellaneous
- Office Supplies
- Payroll Tax—FICA
- Payroll Tax—FUTA
- Payroll Tax—SUTA
- Pension Administration
- Pension Contributions
- Postage
- Property Tax

you need to create. What makes it valuable is its ability to "look up" category totals from the accounting program and insert those numbers on the correct lines of the tax form.

Another feature of Phasar allows you to enter budgets in all categories for every month of the year. The program can then perform tax projections at any time, using your actual figures to date and the budgeted numbers for the rest of the year.

Business accounting programs—such as **Service Industry Accounting** ($199, ***Brown-Wagh***) or **The Accountant** ($299.50, ***KFS***)—seldom provide a tax-computing feature. Most programs such as these are based on the premise that an accountant will do your year-end returns and reports, so they are generally organized to provide your accountant with all the necessary information and numbers, organized in a format that will require the least amount of billable time.

Dear Taxpayer...

So now you've satisfactorily organized your information and filed your return, and then, several years later, you suddenly receive the fateful notice: You are summoned to an audit! Of course, all you do is just hit a button, print out the information requested by the IRS, show up at the appointed time and deposit those neat-looking sheets on the auditor's desk, and assume they'll be so impressed with your computerized organization and record keeping that they'll just pass you on with a "no change" recommendation.

Fat chance! You stand a better chance of finding a mint 1957 Porsche Speedster in a barn somewhere, for *original* documentation is the only thing that counts with the IRS. The best-organized computer printouts in the world carry little or no weight in an audit, compared to the original receipts.

For example, a MasterCard billing statement will not take the place of the original charge slip and detailed receipt/invoice. This is true of any expense you are claiming as a deduction, whether the transaction is by check, credit card, or cash.

In short, the IRS wants paper—original, detailed, and specific paper—so keep your receipts! Computer ►

The following is a list of accounting categories and expense listings that will provide a good starting point for users setting up a financial system such as Phasar or Service Industry Accounting. Of course, only an accountant familiar with your personal or business situation can advise you on exactly how to adapt these guidelines to your own use.

Rent—Office
Rent—Office Furniture
Rent—Auto
Repairs—Equipment
Repairs—Other
Sales Tax
Taxes—Other
Tax Penalties
Telephone
Travel Entertainment
Meals & Entertainment
Officers' Salaries
Office Wages
State Corporation Tax
Water

Personal List of Accounts

Income:

One account for each source of revenue, including interest, investments, and/or outside income.

Assets:

List all assets you currently own or are paying for at their current market value. Be sure that every tangible item (cars, homes, equipment, tools, home furnishings, etc.) you list under Liabilities has a corresponding listing in Assets.

Liabilities:

Set up one account for each note or debt payable. This would normally include all credit cards, charge accounts, alimony, loans, and so on.

Expenses:

Groceries
Electricity
Heating
Medical
Dental
Interest
Life Insurance
Car Insurance
Home Insurance
Telephone
Gifts
Entertainment
Meals—Outside
Car—Repair
Car—Gasoline
Car—Other
Vacation
Clothing
Home Repair
Home Maintenance
Home Furnishings

Add other expense categories to suit your personal situation. If self-employed or earning money outside of a salaried position, keep track of all business-related expenses that could help offset this additional income. For example:

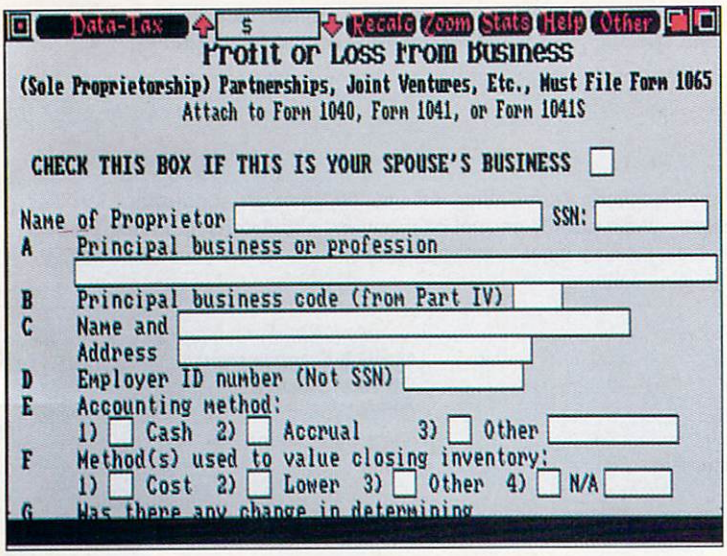
Books & Magazines
Business Gifts
Business Meals & Entertainment
Business Telephone
Car Expenses
Car Maintenance
Computer Expenses
Dues & Subscriptions
Legal Fees
Office/Business Supplies

printouts, no matter how detailed and organized, will not make the wolf go away from your door.

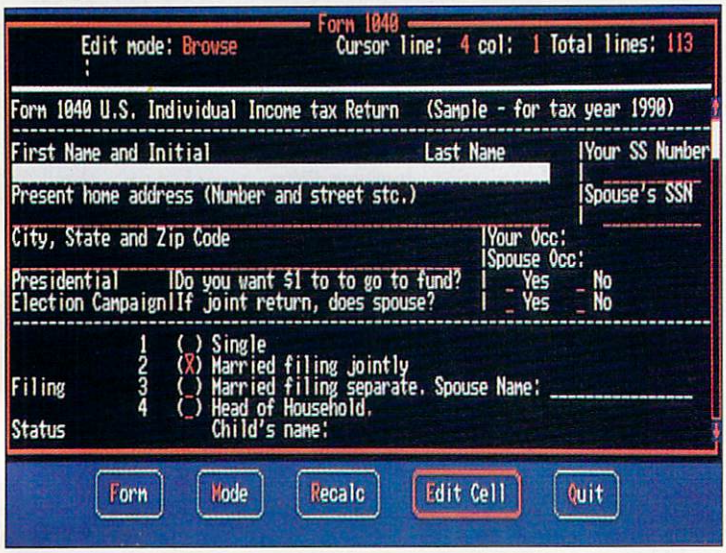
How To Get Ready

Whether you're working with a check book-based system, like Phasar, or a business-oriented accounting system, such as Service Industry Accounting or The Accountant, the key to the program's usefulness lies in how well it is set up initially. For example, in every program of this type, you are required to set up your own list of accounts and expense categories. Then, as checks are written, you assign each amount to a given category. Many such transactions will have multiple categories.

Take, for instance, that MasterCard bill. Every purchase on your monthly statement must be assigned to a specific expense category. If you set up your program using only broad-based categories (such as Business Expenses), you'll wind up at the end of the year manually trying to extract all the information you need to match the IRS Schedule C categories.



The business profit-and-loss schedule from Data-Tax.



Part of Phasar's 1040 form.

Another consideration is that in business use, almost every facet of an accounting program is aimed at the tax consequences. Depreciation, retained earnings, and accounts receivable are just a few of the categories that impact your business's tax picture.

On a purely personal tax level, there are far fewer categories that carry explicit tax implications. But even though the IRS may not care how much you spent on movies or vacations or groceries last year, that information may be important to you and your budgeting.

How to balance all these conflicting needs for information? Because tax systems for business and personal use have such different requirements, there is no pat answer. In the accompanying sidebar, however, is a list of categories that accountants use as the starting point for most businesses, as well as suggestions for setting up a personal accounting system. I stress that these categories are starting points, to be adapted to your individual situation.

In setting up the expense categories for your personal use, my best advice is to go through your last tax return, identify all those areas where you have deductions, and then make sure you create those categories in your accounting/tax program. Similarly, go through two or three months worth of checks and credit-card statements to obtain the general expense categories that suit your personal lifestyle and informational needs. Because so few expenses are tax deductible for the salaried individual, most of these will be for your personal information and budgeting purposes.

The Bottom Line

The final consideration is that a computer is no substitute for detailed receipts and record keeping. If you're one of those who use the shoebox filing system, you are in for a rude awakening if you're ever audited. You'll spend hundreds of hours trying to piece together financial information that could be as much as three years old.

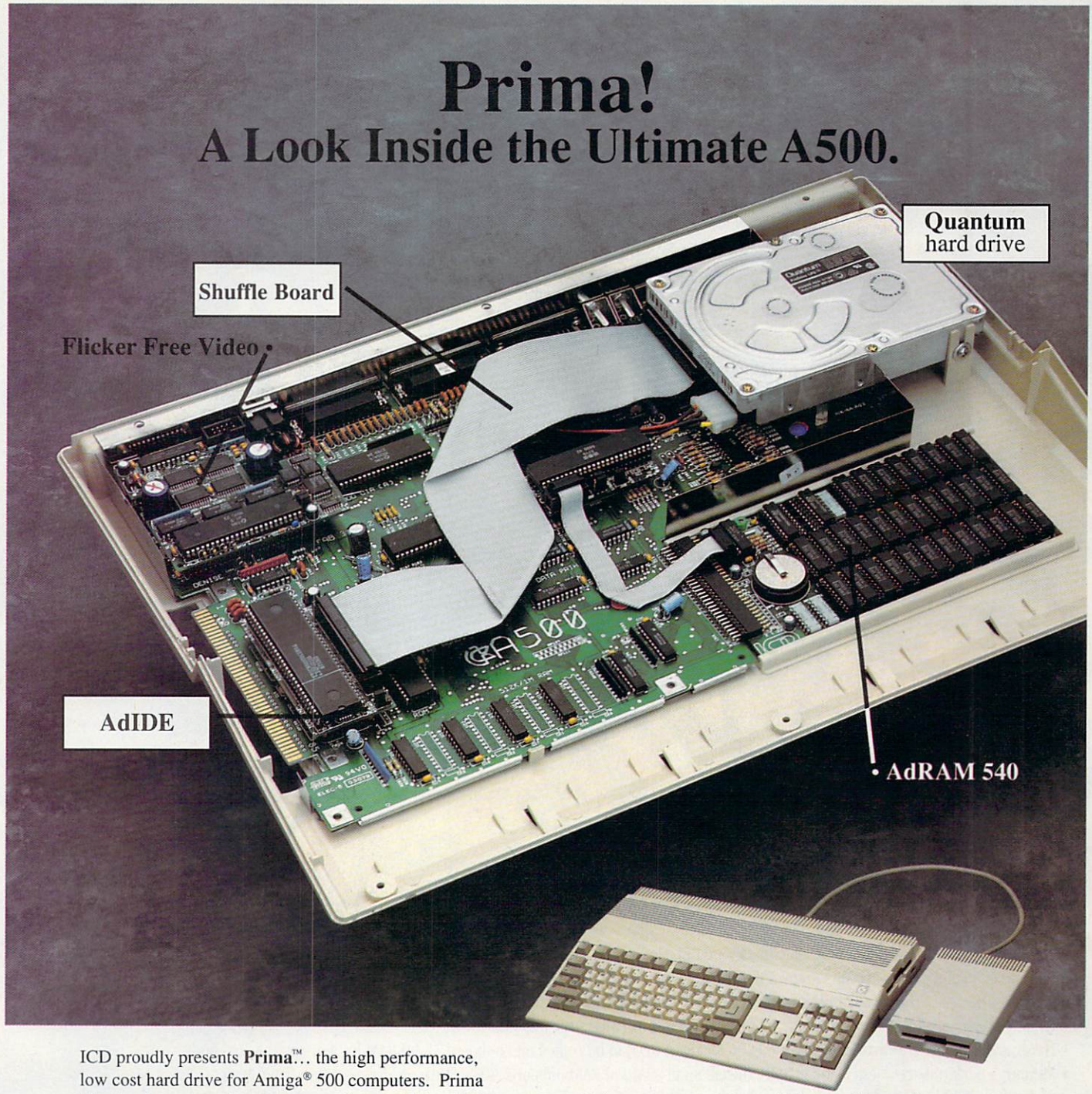
What's the best system? A computer-based accounting/tax system with a *matching* paperwork filing system. For every category of income and expense you keep in a computer, create a matching filing system to keep track of the supporting paperwork: receipts, monthly statements, cancelled checks, and the like. Or, if you prefer, create a filing system matched to specific sections of the tax forms.

While it's more work than simply keyboarding in your check-writing activities, it will greatly facilitate your year-end tax computation. More important, it is guaranteed to save you both hours and possibly many dollars should the IRS come knock, knock, knocking at your door.

Quoth the audited, "Nevermore. Please, dear God, nevermore!" ■

Gary Ludwick is president of The Creative Department, an advertising agency based in Charlotte, North Carolina. The Amiga has been an essential part of his company's video, graphics, and presentation capabilities for the past five years. Write to him c/o AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03458.*

Prima!
A Look Inside the Ultimate A500.



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

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

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

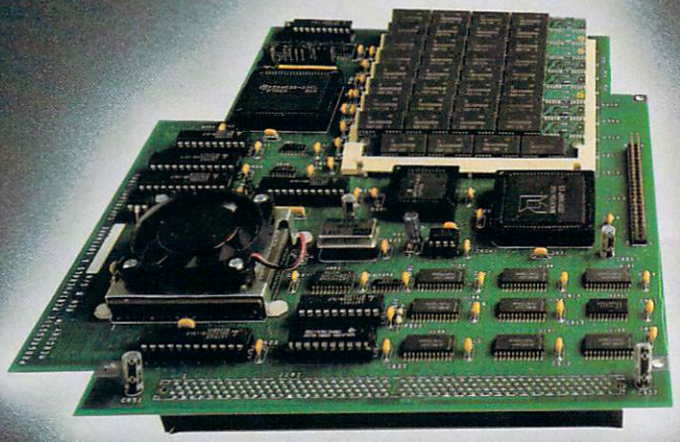
What other products would we include in the "Ultimate A500"? Of course a four megabyte **AdRAM**™ **540** and **Flicker Free Video**™ with a multi–sync monitor. Why settle for less?

ICD

ICD, Incorporated
1220 Rock Street
Rockford, Illinois 61101
USA (815) 968-2228 Phone (800) 373-7700 Orders (815) 968-6888 FAX

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

Circle 31 on Reader Service card.



Mercury

040 ACCELERATOR FOR THE AMIGA 3000

THE CARD. ACQUIRE IT.

- Easy "no-jumper" installation - plugs into the A3000 CPU slot.
- Full Direct Memory Access (DMA) to the A3000's hard drive controller.
- Mercury's 68040 CPU runs at 28MHz, providing 22 MIPS and 3.75 MFLOPS performance!
- Supports high-speed RAM bursting from the 68040 processor to Mercury's onboard RAM.
- Hardware and software (provided) allow the 2.0 KickStart ROM to be copied into onboard 32-bit RAM for a dramatic speed boost!
- Mercury's performance doesn't stop at 8MB. Install up to 32MB of RAM onboard: 40ns, 60ns, or low-cost 80ns, Page, Static Column, or Nibble Mode RAM for lightning-fast direct 32-bit access by Mercury's 68040 processor (faster speeds with faster RAM chips). All RAM autoconfigures, with options of 4MB, 8MB, 16MB, 20MB, and 32MB. Increase your A3000's RAM capacity to a total of 50MB!
- Software switchable between 68030 and 68040 modes for full 68030 compatibility, with access to Mercury's onboard RAM in either mode.
- Efficient, compact design with custom components for reduced power consumption, reduced operating temperature, and 68040 power at a revolutionary price.
- Designed for easy upgradability to 33MHz and 40MHz 68040 processor, for performance of 25-31 MIPS. Compatible with 16MHz and 25MHz A3000 systems!
- Active cooling with Mercury's onboard processor fan keeps operating temperatures low and stable, for increased reliability over passive (heat sink) cooling systems.
- Satisfy yourself! Compare Mercury to any other accelerator using 3-D software ray tracing times, dhrystones, or any other "real world" benchmark. Don't be fooled by overpriced, "high-speed" RAM schemes which *force* you into an 8MB dead end.
- Full one-year warranty, backed by Progressive's reputation for outstanding Amiga product value. Here's what *Amiga World* reviewers have said about Progressive's first A3000 accelerator: "...the Progressive 040/3000 hardware performs flawlessly." [Jan. 1992] Progressive began producing Amiga products in 1985. Our commitment to top-level technical support and service assure that you're getting the best accelerator value for your Amiga.
- Built-in high performance integer and floating point processors and MMU (memory management unit), with AmigaDOS 2.0 floating point software library included.
- Compatible with Progressive's ProRAM 3000 64MB RAM expansion board, for RAM capacity up to 114MB! [Additional memory capacity when installing multiple ProRAM boards].

Available from your local dealer, or contact: Progressive Peripherals & Software, Inc.
464 Kalamath St.Denver, Colorado 80204 •USA Telephone: (303) 825-4144 •Fax: (303) 893-6938

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

Circle 150 on Reader Service card.

With Imagine 2.0 you and your computer can boldly go where no one has gone before. (maybe, you decide)

Imagine 2.0 is the next generation in 3D rendering and animation software. No other has the power and support of Imagine 2.0. If you are active in the broadcast industry, video productions, corporate multi-media or just enjoy creating stunning images, then it's time that you purchased Imagine 2.0.

Imagine 2.0 lets you create at the speed of light with image quality that is unsurpassed on any computer. You could pay thousands even hundreds of thousands more and still not have the power of Imagine 2.0.

Impulse and Progressive Peripherals have joined forces to bring you even greater power. Impulse has optimized Imagine 2.0 to operate as fast as possible with the Progressive Peripherals line of 040 accelerators. Use the coupon below to get Imagine 2.0 free, when you purchase a Progressive Peripherals 040 accelerator board.

You have heard the others claim speed, rendering quality and features, but only Imagine 2.0 the leader in 3D software delivers.

Here is a partial list of new Imagine 2.0 features:

- Real Time Point Manipulation
- Object And Motion Path Spline Manipulation
- Digital Image, Reflectivity, Bump & Texture Mapping
- Quickrender In All Editors
- Hard And Soft Edges
- Special Animation Effects
- Up To 8K By 8K Image Size
- Direct Support Of The Firecracker 24™
- Real Time Digital Movie Preview
- Easy To Use Forms Editor For Making Complex Objects
- Full Object And Texture Morphing
- Automatic Triangle Fill For Fonts and IFF Images
- Backdrop Picture In Any Scene
- Scanline, Full Ray Tracing & Solid Model Rendering Methods
- Superb Anti Aliasing To Eliminate Jagged Edges
- Supports All 020/030 and 040 Accelerators
- 24bit IFF And RGB8 Image Support
- Full DCTV Support
- 3D Stereo Capability

If all this were not enough, Impulse has through arrangements with Viewpoint Corporation, a Utah based, high end object creation company, is now able to offer you objects that are virtually impossible to model on any computer system. Imagine 2.0 comes with a variety of these objects, free.

You can spend more money and get less or you can buy the best. See your dealer today and begin your own journey into Imagination, get your copy of Imagine 2.0 today.

impulse inc.

8416 Xerxes Ave. N.
Brooklyn Park, Minnesota 55444
612-425-0557

Notice to present users of Imagine 1.1 or Turbo Silver, please contact Impulse for information regarding upgrading your present software. Call 1-800-328-0184 for upgrade details.

Buy the Mercury A3000/68040 accelerator and receive a copy of Imagine 2.0...Free! Simply fill out this coupon, attach your original Mercury A3000/68040 warranty card and sales receipt, and return all three to: Progressive Peripherals & Software, 464 Kalamath St., Denver, CO 80204 USA. Progressive will send your free complete Imagine 2.0 - it's that simple! Act quickly... your completed coupon, warranty card, and sales receipt must be received by May 31, 1992.

❑ Yes - send me Imagine 2.0! I've attached my original sales receipt for Progressive's Mercury A3000 accelerator, and my complete warranty card. A retail value of $450.

Name _____

Address _____

City _____ State _____ Zip _____ Country _____

Daytime Phone # _____ Other Phone # _____

Limit one entry per person. Offer void where prohibited by law. This coupon has no cash value. Offer expires May 31, 1992. Offer good only while supplies last. This offer valid ONLY with purchase of Progressive's Mercury A3000/68040 accelerator - not valid with the purchase of any other accelerator.

New Thrills With DPaint Fills

36

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

By Joel Hagen

GRADIENT FILLS ARE one of the most entertaining features of any computer paint package. Cascades of color automatically flood shapes on the screen. Carefully used, gradient fills are powerful graphic elements, and they have become a hallmark of the "computer style." This month, I will focus on new fill options in the recently released DeluxePaint IV (Electronic Arts—see p. 18 for a complete review and p. 24 for a tutorial on its use) and on a technique of my own, the "outline fill."

DPaint IV's Fill requester offers five new gradient-fill options, bringing the total to eight. The three original fills from DPaint III—Horizontal, Vertical, and Horizontal Line—function as they did before. The new fills are Line, Shape, Circular, Contour, and Highlight. The illustration accompanying this column shows how some of these Fill options affect a simple line drawing. The "outline fill" in Figures 1–3 (top row) will be discussed below. Underneath that sequence is a comparison of the effects of the four automatic fills that follow contours, each shown with its associated button from the Fill requester. At the bottom of the illustration is DPaint IV's new Range requester, showing how the colors for these gradients were set up.

The first (from the left) example in the middle row shows the Horizontal-Line fill familiar from earlier DPaint versions. The gradient changes line by line to follow all contours. This is the only flood-fill option that is affected by internal lines in a closed drawing.

The second example demonstrates Shape, a new linear fill that follows the contour of a shape but allows you to direct the angle of the fill within that form by dragging out a line.

Third is Contour, one of three new radial gradients. Successive colors from a Range radiate from the point where you click, but follow the contours of the shape they fill.

The fourth, Highlight, is similar to Contour but modified to allow more color variation at the edges of a shape. I find its effects a bit more natural and realistic.

In addition to the new DPaint automatic fill features, there is another manual-fill technique using DPaint's outline function that I find very useful. I developed it as a fast way to turn a line drawing into a solid form having the look of highlight and shadow. It is especially suited to filling complex drawings with shaded volumes that follow every convolution of line. The three figures in the top row of the illustration present the sequence for doing an outline fill.

Just Dial O—For "Outline"

In DPaint III and IV, the o key automatically outlines any brush you have picked up. This is a powerful way to emphasize the edge of a complex shape. Simply cut a brush, pick a pen color with the left mouse button, and press the o key. A single-pixel outline appears in the selected pen color. You can repeat the process as often as you like, building up a thicker and thicker outline. Also, you may select different pen colors at any time.

I work with the Continuous-Freehand line tool to draw shapes or figures. Picking up the drawing as a brush, I can use the outline key to thicken the lines or to add color. Such a brush will be outlined on both sides of all lines. This is the basis for the outline-fill method. Using a succession of pen colors, you press the o key repeatedly until the drawing fills in completely. In my example, I used the

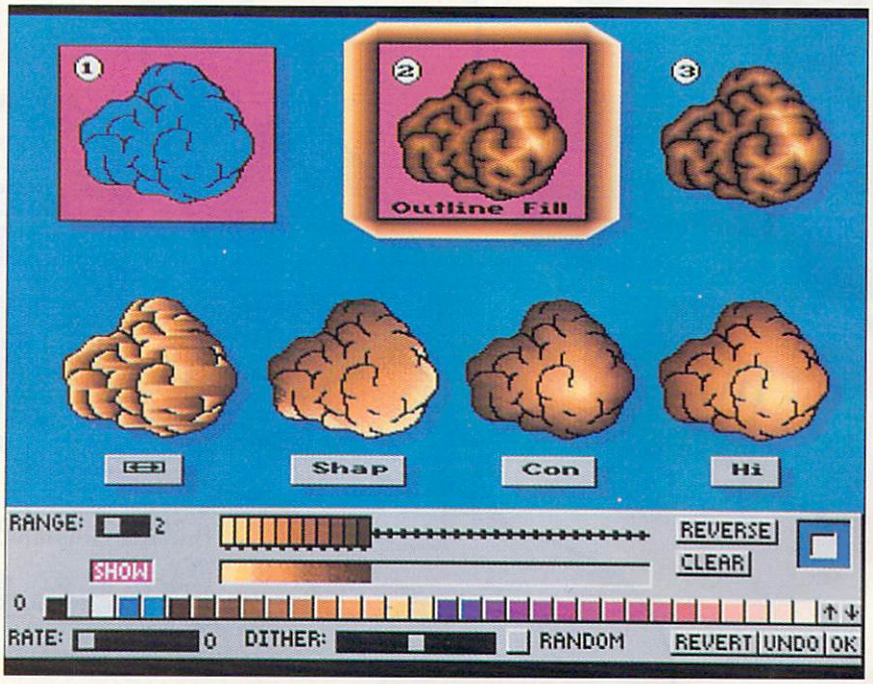
DeluxePaint IV not only provides additional built-in gradient-fill features, but also offers opportunities for you to devise new fill techniques of your own.

same browns and yellows of the gradient fills for comparison. Bear in mind, however, that this technique does not require you to set a Range; you may follow any sequence of palette colors.

Experiments with outline fills show that there is an important interplay between the number of colors used, their range of values, and the distance between lines in the drawing. If you use only three or four colors to fill a drawing in which the lines are far apart, any sense of volume will be limited to the area near the lines. Conversely, if you use 20 or 30 colors to fill a drawing with lines in close proximity, the spaces will completely fill long before all colors are used.

You must make a judgment at the outset to balance the number of intended fill colors with the spacing of line elements in the drawing. Notice in the example how lines that are closer together restrict the outline fill to the darker colors used first. Those areas simply fill in quickly. In more open areas of the drawing, a greater number of colors are used, creating highlight effects. This variation enhances the illusion of light and volume. If an area of a drawing is too broad and open, adding even a single pixel can greatly alter the way it will fill. That pixel becomes a node from which each outline color will expand.

The method that I find works best is to make a box around the drawing with the Rectangle tool. Fill the box with any color, as in Figure 1. Pick up this entire box, making sure that the interior of the drawing is transparent (the right mouse-button color). With the left mouse button, select the darkest color



The illustration compares the effects of some of the automatic fill features in the new DPaint IV with a manual technique, the "outline fill."

you intend to use and press the o key to add an interior outline to the drawing. The filled box prevents the distraction of an outline being added to the outside of the drawing. Instead, it appears around the box, as in Figure 2.

Continue this procedure with lighter and lighter colors until the drawing is completely filled in. Although you may run out of colors before this occurs, just hold the last color and keep pressing the o key until the fill is complete. If the colors are in sequence, you can use the bracket keys—[]—to move up or down the palette. This keyboard shortcut makes doing outline fills very fast. When the object is completely filled, you can remove it from its box with the brush tool, as in Figure 3.

Remember, though, to first select the color in the box as a transparent background color with the right mouse button. ■

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.

ANNOUNCING

the 1992 AmigaWorld SPECIAL ISSUE

ORDER NOW! SUPPLIES ARE LIMITED!

FREE DISK OFFER!

© 1991 AntiGravity Workshop

A comprehensive guide to

DESKTOP VIDEO & ANIMATION

If you enjoyed our previous video and animation special, you'll really appreciate the 1992 issue. Written by industry experts and published by the #1 Amiga magazine, this jam-packed informational guide will cover:

- Basic Videography
- Time Code
- Toaster Techniques
- Video-Editing Tips
- Budget Videos
- Synchronized Sound
- Combining 2-D and 3-D
- A Roundup of Genlocks
- Editing Products
- Computer Graphics Training
- Buying Tips

and much, much more!

An indispensable resource that will serve you month after month after month as ... a buyer's guide, a teaching tool, a different perspective!

And, if you order now you'll receive a ***FREE DEMO DISK*** of the new multimedia program, ***SCALA!***

ORDER FORM

YES!

Send me the 1992 *AmigaWorld* SPECIAL ISSUE *and* my ***FREE SCALA DISK*** for **only $4.95.**

❑ Check or Money Order Enclosed
❑ Charge my: ❑ MasterCard ❑ Visa ❑ AmEx ❑ Discover

CARD# EXP. DATE

SIGNATURE

NAME (PLEASE PRINT)

ADDRESS

CITY STATE ZIP

California, Canada, Mexico, and Foreign Surface send $5.50 per issue (includes applicable tax). Airmail cost is $9.50. Prepayment is required. US funds on US bank. Publication release date is 2/11/92. Please allow for 2-4 weeks delivery.

2B2SPC

For Immediate Service, Call 1-800-343-0728 or 1-603-924-0100

The Creative Computers Low-Price Guarantee.

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

Creative™ COMPUTERS

Commodore Amiga 500DS

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

CHRISTMAS SPECIAL ...$399

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

Commodore® AMIGA®

The Creative Computers Exclusive Money Back Guarantee Program

(CC-MBG)

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

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

CC-MBG rules: Limited-time offer expires 2/28/92 and only applies to the above listed categories only. You must call Customer Service to obtain a Return Authorization number before sending the item(s) back. The item(s) must be in original condition and in original packaging. No damaged items will be accepted. Refunds issued within 14 days of receipt of the returned item(s). Refund is limited to $3,000 per customer.

ORDER BY PHONE -OR- MAIL IN THIS FORM

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

ORDER FORM

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

QTY.	PRODUCT NAME	UNIT PRICE	TOTAL

8.25% SALES TAX (CA. RES.ONLY) _____
SHIPPING _____
TOTAL _____

SHIPPING METHOD: (Call for rates)
☐ UPS Ground ☐ Airborne Express
☐ DHL -International orders
☐ Other _____

OFFER CODE: P2140111

Method of Payment ☐ Check ☐ Money Order ☐ Visa ☐ MasterCard ☐ American Express ☐ Discover

CREDIT CARD USERS ONLY:

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

CC does it again!
The largest ad in the Amiga industry ever. 12 pages jam-packed with Amiga excitement!

OFFER VALID December 1,1991

Circle 13 on Reader Service card.

Creative™ COMPUTERS

U.S. ORDERS ONLY:
800-872-8882
CANADA: 1-800-548-2512

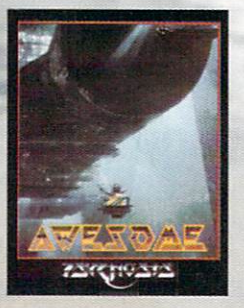
CUSTOMER SERVICE OR
213-214-0000
ORDER STATUS

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

Altered Destiny 31.46

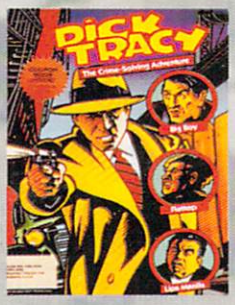
Armour Geddon 29.95

Audition 4 ..... 64.95

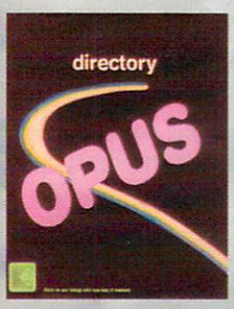


Awesome 34.95

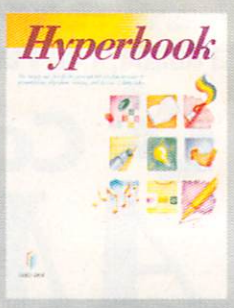
Chaos Strikes Back 23.95



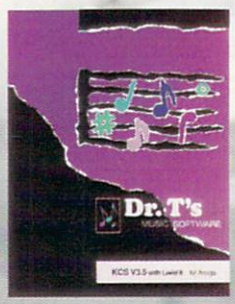
Dick Tracy 18.86



Directory Opus 34.95



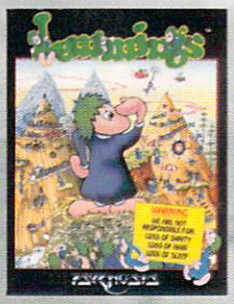
Hyperbook 64.95



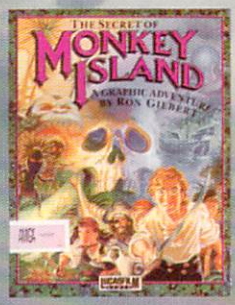
KCS Level II 229.00

The Killing Game Show 26.95

Knights of the Crystallion 38.95



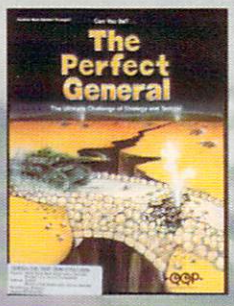
Lemmings 32.95



Secret of Monkey Island 38.95

Monty Python 32.95

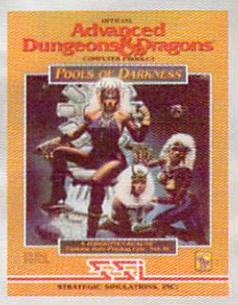
Our Wedding 24-Bit 55.95
Ham Version 44.95



The Perfect General ... 36.95

OFFER VALID December 1,1991

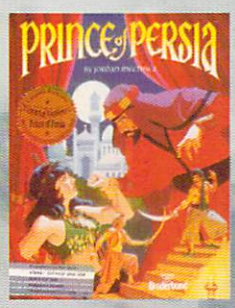
Holiday Season Super-Specials



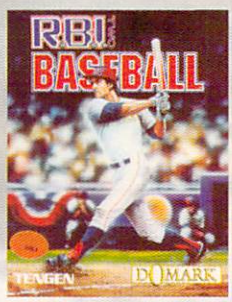
Pools of Darkness 39.95

PowerMonger 33.95

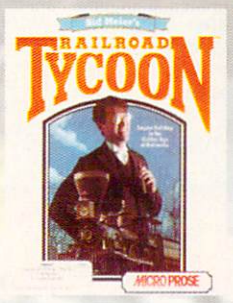
PowerMonger WWI ... 19.95



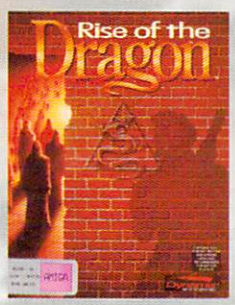
Prince of Persia 25.95



R.B.I. Baseball 34.95



Railroad Tycoon 39.95



Rise of the Dragon 38.95

Screen Maker 24-Bit 239.00

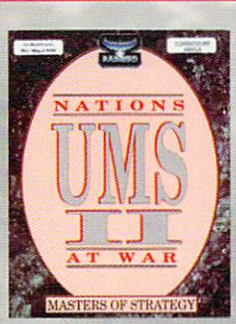
Secret of the Silver Blades 34.95

Shadow of the Beast .. 34.95

Speedball II 32.95

Star Control 32.95

Their Finest Hour 24.95



Universal Military Simulator 34.95

The Works Platinum ... 89.95

Worlds at War 29.95

OFFER VALID December 1,1991

Circle 13 on Reader Service card.

Creative™ COMPUTERS

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

DRIVES, HARD DRIVES AND CONTROLLERS

AT DRIVES & CONTR

AD IDE 40 AT BUS 3.5 HARD DRIVE 99.00
AD IDE 44 AT BUS 2.5 HARD DRIVE .. 119.00

SCSI CONTROLLERS

ADVANTAGE 2000 SCSI 129.00
ADVANTAGE 2080 SCSI 199.00
DATAFLYER 500 SCSI DRIVE KIT 149.00
DATAFLYER SCSI CONTROLLER 85.00
GRANDSLAM 2000 ..... 239.00
GRANDSLAM 500 ..... 289.00
NEXUS HCO 0/8MB 229.00
SUPRA WORD SYNC SCSI 99.00
TRUMPCARD A2000 PROF 159.00
TRUMPCARD A500 PROF 229.00

CONTROLLER/HARD DRIVE COMBINATIONS

NOVIA 20I A500 20MB INTERNAL ICD 449.00
PRIMA 105i ..... CALL
SUPRADRIVE 500XP 52MB W/1MEG 499.00
SUPRADRIVE 500XP 52MB W/2MEG$579.00
SUPRADRIVE 500XP 120MEG W/2MEGSCALL

FLOPPY DRIVES

A2000 INT. DISK DRIVE 89.95
A3000 INT DISK DRIVE 99.95
AE HIGH DENSITY DRIVE 184.00
FUJITSU MAC FLOPPY 880K 3.5" DISK DRIVE 194.00
ROCTEC 5.25" FLOPPY DRIVE 89.95
AMIGA/IBM 40/80TRACK 159.00
ROCTEC SLIM EXT 3.5" EXTERNAL FLOPPY DRV RF332C 89.95

HARD DRIVES

QUANTUM 52MB LPS SCSI HARD DRIVE 239.00
QUANTUM 105MB LPS SCSI HARD DRIVE 377.00
QUANTUM 210MB SCSI HARD DRIVE 698.00

REMOVABLE MEDIA

SYQUEST INTERNAL 45MB DRIVE 349.00
SYQUEST INTERNAL 88MB DRIVE 499.00
EXTERNAL BOX W/ PSUPPLY FOR ABOVE 119.00
SYQUEST CARTRIDGE 45MB 80.00
SYQUEST CARTRIDGE 88MB 125.00

CBM PRODUCTS

COMMODORE SOFTWARE

AMIGA CLIPS VOL. 1
AMIGAVISION SOUND EF CBM 25.85
AMIGA LOGO 58.95
AMIGA VISION 99.95
TCP/IP NETWORKING SOFTWARE 139.00

COMMODORE REPLACEMENT PARTS

A1000 KEYBOARD ONLY 99.00
A2000 KEYBOARD 129.00
A3000 POWER SUPPLY 289.00
A500 DRIVE REPLACEMENT 159.00

COMMODORE ACCESSORIES

A10 STEREO SPEAKERS W/AC ADAPTOR 33.95
A1011 EXTERNL FLOPPY 3.5" FDD ... 139.00
A1680 1200 BAUD MODEM 49.95
A2232 MULTI-SERIAL BRD 299.00
A2286 AT BRIDGECARD 699.00
A2320 DISPLAY ENHANCER FOR A2000 239.00
A3070 150MB EXT TAPE BACKUP DRIVE A3000 CBM 949.00
A520 COMPOSITE ADAPTOR 41.95

ACCELERATORS

FOR GVP'S ACCELERATORS SEE OUR GVP FULL PAGE AD

MEGA MIDGET RACER 25MHZ ECONOMY 425.00
MEGA MIDGET RACER 33MHZ ECONOMY 519.00
MEGA MIDGET RACER 512K STATIC RAM PACK 220.00
MEGA MIDGET RACER 25MHZ 68030 589.00
MEGA MIDGET RACER 33MHZ 68030 659.00
MEGA MIDGET RAM 2MB 279.00
MEGA MIDGET RAM 4MB 779.00

PRINTERS AND PRINTER SUPPLIES

PRINTERS

CITIZEN 200GX 9 PIN 185.00
CITIZEN GSX130 24 PIN 299.00
DESKJET 500 ..... 429.00
LASERJET IIIP WITH EP-L TONER 1199.00
PAINTJET PARALLEL PRINTER 699.00
QMS PS-410 LASER POSTSCRIPT PRINTER 1989.00

PRINT CARTRIDGES

CITIZEN COLOR KIT FOR GSX140 & 200GX 49.95
DESKJET BLACK CART 16.95
DESKJET INK FULL COLOR KIT STARTER34.95
EP-L TONER CARTRIDGE LASER PRINTER TONER 76.85
EP-S TONER CARTRIDGE LASER PRINTER TONER 99.95
OKIMATE BLACK RIBBON 4.99
OKIMATE COLOR RIBBON 5.99
PAINTJET BLACK CARTRIDGE FOR XL .. 25.95
PAINTJET COLOR CART 29.95
STAR NX-1000 BLACK RIBBON 3.95
STAR NX-1000 RAINBOW COLOR RIBBON 8.95
STAR NX-2400 RIBBON 7.95

PRINTER MEMORY CARTRIDGES

PACIFIC 4 MEMORY 2MB LASERJET IIP/III 199.00

PRINTER ACCESSORIES

DESKJET INK CLEANING INKMUN 3.95
PACIFIC PAGE P E POSTSCRIPT - IIP . 419.00
PAINTJET CUT PAPER 17.95
PAINTJET FONT CRTRG 149.95
PAINTJET PAPER CATCH 22.95
PAINTJET TRANS FILM 54.95
PAINTJET Z-FOLD PAPER 17.95
PLOTPRINT 44.95
PLOTTER IN CART P E 289.00

MONITORS AND MONITOR ACCESSO-

Newtek Video Toaster

Call

FireCracker 24

$829.00
2 Meg Version

- High-resolution
- 16.8 Million Colors
- 24-Bit graphics display card
- Works on the Amiga 2000 and 2500

DCTV From Digital Creations

Full NTSC Color Display and Digitizer.
$399.00

DCTV: A guided tour

This easy-to-follow, comprehensive VHS tutorial will tell you all you need to know about DCTV. $26.95

Printers

HP PaintJet	699.00
HP DeskJet C (Color)	CALL
HP DeskJet 500	429.00
LaserJet IIP	799.00
QMS-PS 410	1989.00

Supra Corporation

SupraRam 2000
2/8mb Board
$169.00

SupraRam 2000 4mb RAM	235.00
SupraRam 2000 6mb RAM	299.00
SupraRam 2000 8mb RAM	369.00
SupraRam 500 512k	47.00
SupraRam RX 1MB	125.00
SupraRam RX 2MB	189.00

Due to industry fluctuation, RAM prices are subject to change without notice

OFFER VALID December 1,1991

Best International freight service and low, low rates via: AIRBORNE EXPRESS

Overnight International Shipping Including Canada as low as $15

Most rates cheaper than Express Mail at the Post Office!

RIES

MULTISYNC MONITORS

NEC MULTISYNC 3D/3 (NEW!) $99.00
SEIKO 1440 MULTISYNC 519.00
SONY 1302A $99.00
SONY 1304 MULTISYNC 779.00

CABLES

CABLES FOR MOST MONITORS AVAILABLE (CALL)

MONITOR ACCESSORIES

FLICKER MASTER 12.95
MONITOR STAND A500 ..... 27.95

MISC. HARDWARE

AUTO DROID 50.95
LENS 16MM NO IRIS F1.6 W/O 18.95
LENS 16MM W/IRIS 53.95
MEGACHIP 2000 AGNUS FOR A2000 219.00

INPUT HARDWARE

PANASONIC WV1410 INCL LENS & CABLE 189.00
PANASONIC WV1500X INCL LENS & CABLE 319.00
SKETCH MASTER 12X12 ..... 419.00
SKETCH MASTER 12X18 ..... 619.00
WIZ DRAWING TABLET 9 X 11 ..... 269.00
X-SPECS 3D 99.95

SCANNERS/DIGITIZERS

AUTOLINK 44.95
DIGI VIEW GOLD V4.0 ..... 119.95
EPSON ES300C SCANNER COLOR/256 GRAY 1199.00
HAND SCANNER, GOLDEN IMAGE 289.00
SHARP JX100 SCANNER 579.00

AUDIO/MUSIC

AMAS MIDI SAMPLER A500/2000 VERSION 129.00
DIGITAL SOUND SAMPLER 99.95
ECE MIDI A1000 ..... 49.95
ECE MIDI PLUS A500/A2000/A3000 .. 49.95
MIDI GOLD INSIDER 64.95
PERFECT SOUND 3.1 A500/A2000 ..... 69.95
PHANTOM MIDI INTERFCE 239.00

EXPANSION/PORTS

BOMAC TOWER 289.00
DENISE EXTENDER BUS 85.00
DUAL SERIAL BOARD 269.00
HARD DRIVE CASE 5.25" EXTERNAL .. 119.00
PRINTERFACE IVS 79.95
SHUFFLE BOARD 29.95
TRUMPCARD META 0/4 ..... 159.00

EMULATORS

A MAX II EMULATOR MAC EMULATOR SYSTEM 135.00
AT BRIDGEBOARD (SEE CBM LISTING)

POWER SUPLIES

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 ... 99.00
IC AGNUS: SUPER FAT 2MB A3000 AGNUS CHIP 99.00
KICKSTART 1.3 ROM 39.00

MODEMS

AE DATALINK 2000 W/ MNP 5 AND SEND FAX 89.00
AE DATALK EXP MNP/FAX 99.00
GALAXY UFO 9600 MODEM 359.00
SUPRA 2400 BAUD MODEM 89.95
SUPRA 2400 MNP PLUS 135.00
SUPRA 9600 BAUD MODEM 479.00
SUPRA MODEM 2400ZI PLUS 155.00

PAL SPECIFIC HARDWARE

DIGI VIEW GOLD V4.0 PAL 134.00
MINIGEN PAL GENLOCK 239.00

MEMORY EXPANSION

RAM CHIPS

MOST RAM CHIP SIZES AVAIL AT ECONOMICAL PRICES (CALL)

A500 INTERNAL RAM BOARDS

ADRAM 540 0/4 MEG INT 99.00
ADRAM 560D 2 MEG RAM EXP FOR ADRAM 540 ..... 239.00
BASEBOARD A500 0/4 MB 99.00
SUPRARAM 500 1/2 MEG 47.00

A500/A1000 EXTERNAL RAM BOARDS

SUPRARAM 500RX 1MB 125.00
SUPRARAM 500RX 2MB 189.00
SUPRARAM 500RX 8MB 429.00

A2000 RAM BOARDS

SUPRARAM 2000 2MB RAM 189.00
SUPRARAM 2000 4MB RAM 235.00
SUPRARAM 2000 8MB RAM 299.00
SUPRARAM 2000 8MB RAM 369.00

VIDEO SOLUTIONS (SOFTWARE AND HARDWARE)

GENERAL/SOFTWARE

CREDIT TEXT SCROLLER 23.95
LIGHTWAVE TUTORIAL TAPE 32.95
PERFORMER (ELAN) 64.95
ROLL 'EM TELEPROMPTER 87.95
SHOW MAKER 215.00

IMAGE PROCESSING SOFTWARE

ART DEPARTMENT 52.95
ART DEPARTMENT PROFESSIONAL 139.00
ART DEPARTMENT PROFESSIONAL V 2.0 179.00
ART DEPARTMENT CONVERSION PAK . 52.95
ART DEPT LOADER TGA ASDG 36.95
ART DEPT LOADER TIFF 5.0 X 36.95
BUTCHER 2.0 ..... 25.95
RASTER LINK 119.00
PIXMATE 40.95

VIDEO UTILITIES

NERIKI VIDEO TOOLS ON TAP 52.95
PHOTON TRANSPORT CONT 195.95
PRO/MOTION 58.95
VIDEO TOOLS 179.00

DESKTOP VIDEO

BROADCAST TITLER II 229.00
DELUXE VIDEO III 49.95
DELUXE VIDEO III PHOTOLAB BUNDLE .. 99.95
PRO VIDEO POST 199.95

DPS Personal TBC II

Now with proc amp control and color balancing

$849.00

Epson ES-300C Scanner

600 DPI, 24-Bit full page color scanner $1199.00
With ASDG Driver Bundle .. $1299.00

The ICD Advantage

for Your Amiga Computer!

ICD POWER Peripherals

AdSpeed™ $209.00
Best overall performance of any accelerator in it's price range.

Flicker Free Video™ $295.00
Eliminates interlace flicker for any Amiga computer.

Novia 20i™ $549.00
The smallest hard drive and interface in the world for your Amiga 500. Fits internally.

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

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

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

AdIDE™ $99.00
Smallest Amiga hard drive interface made. For IDE (AT) drives.
IDE 44 for your 2.5 inch hard drive. $119.00

Shuffle Board™ $29.95
Reroutes DFO: to the external floppy connector. Boot from an external floppy. For an Amiga 500 or 1000.

The Kitchen Sync

$1695.00

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

HAM-E Plus

- Paint, render, convert and image processing software
- 18/24-Bit "pure" modes
- 256/512 color register modes
- RGB pass through
- Screen overlay/underlay
- Screens pull up/down & go front/back
- View with any IFF Viewer
- Animate via ANIM or Page Flipping

Call

OFFER VALID December 1,1991

Creative™ COMPUTERS

U.S. ORDERS ONLY: **800-872-8882**
CANADA: 1-800-548-2512

CUSTOMER SERVICE OR **213-214-0000**
ORDER STATUS

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

SCREEN MAKER 239.00
SCREEN MAKER STARTER SET 34.95
TV SHOW 2.0 ..... 58.95
TV*TEXT PROFESSIONAL 99.95
VIDEO EFFECTS 3D 112.00
VIDEOTITLER 3D 89.95

VIDEO ENHANCEMENT HARDWARE

CHROMA KEY 315.00
COLOR SPLITTER 109.00
COLORBURST 689.00
DMI RESOLVER W/1MB 979.00
FIRECRACKER 24 2 MEG VERSION 829.00
FLICKER FIXER 249.00
FLICKER FREE VIDEO 295.00
HAM-E PLUS ..... CALL
VIP VIDEO INTERFACE 97.95

FRAMEGRABBER HARDWARE

FRAMEGRABBER 419.00
FRAMEGRABBER/256 GRAY 499.00

GENLOCKS

MINIGEN GENLOCK 189.00
SUPERGEN 2000S 1350.00
SUPERGEN GENLOCK 849.00

EDITING HARDWARE

BCD 2000A 829.00
BCD 5000 ..... 1995.00
NUCLEUS SINGLE FRAME CONTROLLER 379.00
PERSONAL TBC TIME/BASE CORRECTOR 849.00
TCRG 102 TIME CODE READER/GENERATOR 625.00

HOT INTEGRATED VIDEO HARDWARE

DCTV 399.00
VIDEO BLENDER 1179.00
VIDEO TOASTER ..... CALL

PAL SPECIFIC VIDEO HARDWARE AND SOFTWARE

FLICKER FIXER PAL 300.00
FRAMEGRABBER 256 GREY PAL 499.00
FRAMEGRABBER PAL VERS 449.00
VIDEO MASTER PAL 1149.00
PRO VIDEO POST PAL 199.95
VIDEO EFFECTS 3D PAL 139.95

BUSINESS SOFTWARE

ACCOUNTING

DESKTOP BUDGET 40.95
HOME FRONT 64.95
PHASAR 4.0 ..... 59.95
SERVICE INDUSTRY ACC. 199.00

DESKTOP PUBLISHING

BUDDY SYSTEM PAGESTREAM 2 TUTORIAL 29.95
PAGESTREAM 2.1 ..... 179.00
PROF. PAGE TEMPLATES 35.95
PROFESSIONAL PAGE 2.1 ..... 185.00

INTEGRATED BUSINESS SOFTWARE

BEST BUSINESS MGMT 192.00
WORKS PLATINUM 89.95

SPREADSHEET

ADVANTAGE 119.00
MAXIPLAN PLUS ..... VERSION 2.0 69.95
SUPERPLAN 84.95
TEMPLICITY ANALYZE 20.95
TEMPLICITY MAXIPLAN 20.95
TEMPLICITY SUPERPLAN 20.95
TEMPLICITY VIP PROF. 20.95
VIP PROFESSIONAL 58.95

DATABASES

FAMILY TREE VERSION 2 ..... 46.95
MICROFICHE FILER PLUS 116.95
NORGEN GENEALOGICAL VERSION 2 ..... 59.95
SUPERBASE PROFESSIONAL 4 VERSION 1 ..... 329.00

WORD PROCESSING

EXCELLENCE VERSION 2 ..... 89.95
FLOW 3.0 ..... 57.95
PROPER GRAMMAR 57.95
PROSCRIPT 32.95
PROWRITE 3.2 ..... 99.95
QUICK WRITE WORD PROCESSOR 44.95
SCRIBBLE PLATINUM 97.95
TRANSWRITE 39.95
WHO WHAT WHERE WHEN 51.95
WORD PERFECT 159.00
WORD PERFECT LIBRARY 79.95

HOME/PRODUCTIVITY

CYGNUSED PROF. REL. 2 ..... 58.95
HYPERBOOK GOLD DISK 64.95
NAG PLUS 3.1 ..... 64.95
OFFICE GOLD DISK 159.00
PAGESTREAM BUSINESS FORMS 28.95
TOP FORM 52.95

EDUCATIONAL SOFTWARE

GENERAL EDUCATIONAL

GOLD DISK'S ALL IN 1 ..... 54.95
BIBLEREADER STUDY 31.95
CROSSWORD CONST SET 22.95
DESIGNASAURUS 28.95
DISTANT SUNS DEEPSKY OBJECTS 18.95
DISTANT SUNS SKYMAP LVL 1 STAR CATALOG 15.95
DISTANT SUNS VERSION 4.0 ..... 57.95
DISTANT SUNS YALE BRIGHT STAR CATALOG 12.95
ELECTRIC THESAURUS 29.95
MASTERING CLI 25.95
MATH ODYSSEY 31.95
MATH-AMATION 49.95
MAVIS BEACON TYPING 34.95
PUZZLE STORYBOOK 27.95
WHERE IN EUROPE IS CARMEN SAN DIEGO 29.95
WHERE IN THE U.S.A. IS CARMEN SAN DIEGO 29.95
WHERE IN THE WORLD IS CARMEN SAN DIEGO 29.95
WHERE IN TIME IS CARMEN SANDIEGO 29.95
WORLD ATLAS 32.95

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

MegAChip 2000/500

2 Megs of Chip RAM for the A2000 and A500 Doubles your Graphics memory for Desktop Video, 3D Rendering & Animation, Multimedia or Desktop Publishing.

$219.00 w/o Agnus
$309.00 with Agnus

D K B

Amiga owners! Workbench 2.0 is now available, so if you still want to use those 1.3 programs you *need* this product!

Multistart II .. $64.95

-Provides for Amiga 500's & 2000's to operate under Workbench 1.3 & 2.0!

Insider II

1.5 Meg of internal RAM for the A1000 with clock/calendar

0K $189.00
512K $219.00
1MB $249.00
1.5MB $279.00

SecureKey

The SecureKey is a hardware security device that installs in any A2000 or A3000. The SecureKey will not allow access to your Amiga without the right security code. $99.00

Trumpcard 500 AT

NEW low cost, high speed hard disk/RAM expansion for the Amiga 500

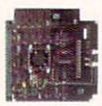
$219.00

NEW!

Progressive Peripherals '040 Boards

A2000 Version
$1695.00

A3000 Version
$1495.00



CSA

New, lower priced Mega-Midget Racers!

25 Mhz $399.00
33 Mhz $499.00
Ram Board with 2mb $279.00
Ram Board with 4mb $779.00
68882 - 25 Mhz $189.00

These Economy boards do not have an MMU

Animation 101

$24.95

ROCTEC Floppy Drive

$89.95

OFFER VALID December 1,1991

Educational, Corporate and Aerospace purchase orders accepted. Call (213) 542-2292 for details.

USE OUR TOLL-FREE INTERNATIONAL PHONE LINES

Australia 0014-800-125-712 ; Canada 1-800-548-2512; Denmark 0434-0297; France 19-0590-1099; Italy 1678-74086; Japan 0031-11-1351; Netherlands 06-022-8613; Norway 050-12029; Switzerland 046-05-3420; United Kingdom 0800-89-1178.

CHICKEN LITTLE ROBOT READERS 17.95
KATIES FARM 25.95
KINDERAMA 29.95
LETTERS FOR YOU 13.95
MATCH IT 25.95
MATH A MAGICIAN 25.95
MATH BLASTER PLUS 32.95
MATH WIZARD 29.95
MCGEE 25.95
NUMBERS COUNT 13.95
OPPOSITES ATTRACT 13.95
READ-A-RAMA 29.95
SPELLAFARI 23.95
THREE LITTLE BEARS (ROBOT READERS) 18.95
UGLY DUCKLING (ROBOT READERS) 18.95

LANGUAGE INSTRUCTION

JAPANESE I 25.95
LINKWORD FRENCH 19.95
LINKWORD GERMAN 19.95
LINKWORD ITALIAN 19.95
LINKWORD RUSSIAN 19.95
LINKWORD SPANISH 19.95

GRAMMAR SCHOOL/ ADVANCED

ALGEBRA I 31.95
ALGEBRA PLUS VOLUME I 31.95
ARITHMETIC 29.95
CALCULUS 31.95
DISCOVERY 2.0 ..... 23.95
DISTANT SUNS 3.0 ..... 40.95
DISTANT SUNS PAL VERSION 3.0 ..... 42.95
EZ GRADE 35.95
MATHVISION 119.00
PRE CALCULUS 31.95
TRIGONOMETRY 31.95

FONTS

DTP/GENERAL FONTS

CALLIGRAPHER 89.95
KARA ANIMFONTS 1 ..... 29.95
KARA ANIMFONTS 2 ..... 29.95
KARA ANIMFONTS 3 ..... 29.95
KARA FONTS HEADLINES 44.95
KARA FONTS HEADLINES2 ..... 39.95
KARA FONTS STARFIELDS 34.95
KARA FONTS SUBHEADS 39.95
MASTERPIECE FONTS 159.95
PROF. FONT LIBRARY 48.95
600 AMIGA FONTS 19.95

DTP/PAGESTREAM FONTS

PAGESTREAM FONT PACK 1 ..... 46.95
PAGESTREAM PLUS PACK 46.95

DTP/PROWRITE FONTS

PRO FONTS VOL I 22.95
PRO FONTS VOL II PROWRITE FONTS .. 22.95

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/PRO VIDEO FONTS

PRO VIDEO + FONTS 1 ..... 84.95
PRO VIDEO + FONTS 2 ..... 84.95
PRO VIDEO + FONTS 3 ..... 84.95
PRO VIDEO + FONTS 4 ..... 84.95

VIDEO/TOASTER FONTS

1ST PRIZE TOASTED FONTS SET 1 ..... 40.95
BREAD AND BUTTER VIDEO TOASTER FONTS 84.95
CINNAMON TOAST FONTS VOL I 84.95
CINNAMON TOAST FONTS VOL II 84.95
KARA TOASTER FONTS VOL I 62.95
KARA TOASTER FONTS VOL II 62.95
MASTERPIECE TOASTER FONTS 89.95

GRAPHICS SOFTWARE AND HARDWARE

ANIMATION SOFTWARE

ANIMAGIC 87.95
ANIMATION STATION 59.95
BROADCAST 3D FONT - IMAGINE 84.95
CELLPRO 52.95
DIRECTORS TOOLKIT 23.95
DISNEY ANIMATION STUDIO 79.95
THE DIRECTOR V2.0 ..... 74.95
THE TALKING ANIMATOR 42.95
3D PROFESSIONAL 199.00

RENDERING/ANIMATION SOFTWARE

DIGITAL LANDSCAPE 79.95
DIGIWORKS 3D 84.95
DRAW 4D 164.00
FRACTAL PRO 50.95
IMAGINE W/FREE TUTORIAL VIDEO .. 179.00
INTERCHANGE TURBO SILVER MODULE 18.95
MAP MASTER FOR IMAGINE 45.95
MAP MASTER FOR LIGHTWAVE 84.95
MODELER 3D 84.95
SCENE GENERATOR 27.95
SCENERY ANIMATOR 84.95
SCULPT 3DXL 109.00
SCULPT ANIMATE 4-D 299.00
SCULPT ANIMATE 4-D JR 89.95
SURFACE MASTER FOR IMAGINE 25.95
TURBO SILVER 3.0 ..... 69.00
TURBO SILVER TERRAIN DISK 5.00
VIDEOSCAPE 3D 119.00
VISTA 1.2 ..... 37.95
VISTA CALIFORNIA DATA DISK 48.95
VISTA FLAMING GORGE-DATA 2 ..... 48.95
VISTA GRAND CANYON DATA 1 ..... 48.95
VISTA GRAND CANYON DATA 2 ..... 48.95
VISTA JACKSON HOLE- DATA 1 ..... 48.95
VISTA MARS SCAPES VALLES MARINERIS 48.95
VISTA PROFESSIONAL REQ 3 MEG 87.95
VISTA WESTERN U.S. DATA DISK 48.95

CLIP ART DISKS

AIRCRAFT PICS 31.95
AIRSHIPS 20TH CEN SCP SCULPT 23.95
AIRSHIPS 20TH CEN TSL TSILVER 23.95
ART GALLERY 1 & 2 ..... 25.95
CHRISTMAS CLIP ART 17.95
FREDS BUTTERFLIES 1 ..... 31.95
FREDS FLOWERS DISK 1 ..... 31.95
MATERIALS TEXTURE VOL I STONE SURFACES 23.95
PRO FILLS 17.95
PROF. PAGE STRUCTURED CLIP ART 38.95
SOFTCLIPS VOLUME I CLASSIC 44.95
SOFTCLIPS VOLUME II PEOPLE 44.95
SOFTCLIPS VOLUME III COLLECTORS .. 44.95
SOFTCLIPS VOLUME IV ANIMALS 44.95

SPECTRACOLOR for Ham-E $64.95

All the features of SpectraColor, including key frame animation, brush wraps, luminosity, density and light-source direction controls, plus the easy-to-use Color Manager using 262,144 colors.

Scenery Animator

New! Create 3-D animations of real world or imaginary fractal scenery in 24-Bit color. Requires two megs $64.95

SuperJam! $79.95

The easy way to write music. Make your Amiga play up to 16 internal sounds simultaneously!

January Special:

Bars&Pipes Professional and Multi-Media Kit for the one-time price of $229.00

Bars&Pipes Professional $209.00

State-of-the-Art MIDI sequencing, mixing and scoring

Bars&Pipes $99.95
A simple yet powerful way to write music.

Internal Sounds Kit $32.95
Everything you need to compose without MIDI including sounds and a keyboard.

Multi-Media Kit $32.95
Tools to control or be controlled by other Amiga programs.

The PatchMeister $55.95
Universal patch librarian

Triple Play Plus $165.00
A MIDI interface that includes 3 separately addressable MIDI outs.

Pro Studio Kit $34.95
Provides complete control for your MIDI studio.

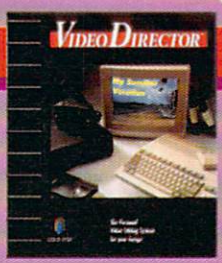
Music Box A or B $32.95
A variety of tools and Accessories to enhance Bars&Pipes and Bars&Pipes Professional.

Rules for Tools $32.95
Over 100 pages of source code and Bars&Pipes documentation.

Creativity Kit $34.95
Designed to provide fresh musical ideas and new ways of composing.

THE BLUE RIBBON SOUNDWORKS LTD

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!

TTR Development

Teacher's Toolkit $34.95

RX Tools $32.95

Brigade Commander $29.95

Mr.Backup Professional $32.95

OFFER VALID December 1,1991

Creative™ COMPUTERS

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

CAD

ACAD TRANSLATOR	139.95
BOARD MASTER	84.95
DYNA CADD	729.00
FLO FLOORPLAN CONSTRCT	39.95
INTROCAD	34.95
INTR2CAD PLUS	84.95
INTROPARTS FLOWCHART SYMBOLS	25.95
PRO BOARD PERSONAL	89.95
PRO BOARD/NET PACKAGE	289.00
PRO BOARD/NET PACKAGE PAL VERSION	289.00
PRO NET PERSONAL	99.95
ULTRA DESIGN	149.00
XCAD PROFESSIONAL	149.00
XSHELL	124.95

PAINT/DRAW SOFTWARE

BUDDY SYSTEM IMAGINE	29.95
DELUXE PAINT IV	119.00
DESIGN WORKS	79.95
DIGI PAINT 3	54.95
DRAW 4D PROFESSIONAL	199.00
MY PAINT 2.0	29.95
MY PAINT DATA DISK 1 ALPHABET W/ SOUNDS	19.95
MY PAINT DATA DISK 2 MAJELIX CHARACTERS	19.95
PROFESSIONAL DRAW	119.00
PROVECTOR 2.0	189.00
SPECTRA COLOR	64.95

GENERAL VIDEO SOFTWARE

CINELINK FOR IMAGLINK	175.00
COMIC SETTER	58.95
COMICSETTER FUNNYDATA	20.95
COMICSETTER HERO DATA	20.95
COMICSETTER SF DATA	21.95
INTERCHANGE	29.95
INTERFONTS	69.95
INVISION PLUS	179.95
PIXEL 3D 2.0	69.95
RESEP	51.95
TGALINK FOR IMAGELINK	175.00

PAL SPECIFIC VIDEO SOFTWARE

3D PROFESSIONAL PAL	199.00
DIGIPAINT 3 PAL	58.95
IMAGINE PAL	209.00
VISTA PAL	59.95
VISTA PROFESSIONAL PAL REQ 3 MEG	87.95
XCAD PROFESSIONAL PAL VERSION	289.00

UTILITY/MISC.

GENERAL UTILITY SOFTWARE

DISK LABLER	10.95
DJ HELPER	29.95
IMAGE FINDER	42.95
MICROLAWYER	37.95
PELICAN PRESS	64.95
PRINTMASTER PLUS	25.95
SUPER DJ V2.0	15.95
WORKBENCH 2.0	99.95

BACKUP/COPY SOFTWARE

FLASHBACK HARD DISK BACKUP UTILITY	45.95
RAW COPY 1.3	33.95
X-COPY PROFESSIONAL	45.95

TELECOMMUNICATIONS SOFTWARE

ATALK III	49.95
BAUD BANDIT	27.95
MINDLINK TELECOM	28.95
ONLINE PLATINUM	35.95

DOS TOOLS/UTILITIES

AMI ALIGNMENT SYSTEM	29.95
BAD DISK OPTIMIZER 4.0	29.95
BLITZ BASIC	109.00
CROSS DOS	25.95
D.U.D.E. UTILITY	29.95
DIRECTORY OPUS	34.95
DISKMASTER	29.95
DISKMASTER II	42.95
DOCTOR AMI	29.95
DOS TO DOS	32.49
DUNLAP UTILITIES	46.95
FACC II	21.95
HYPER HELPERS	35.95
MAC 2 DOS	90.95
MAVERICK 3.0	26.95
PROJECT D	33.95
QUARTERBACK 4.2	40.95
QUARTERBACK TOOLS	52.95
THE DISK MECHANIC	52.95

MUSIC

GENERAL MUSIC SOFTWARE

BARS AND PIPES PROFESSIONAL	209.00
BARS AND PIPES	117.00
INTERNAL SOUNDS KIT	32.95
MULTI MEDIA KIT	32.95
MUSIC BOX A	32.95
MUSIC BOX B	32.95
RULES FOR TOOLS	32.95
C-ZAR	59.95
DR. TS COPYIST DTP	190.00
DR. TS KCS LEVEL II V3.5	229.00
M INTELLIGENT MUSIC DR. T'S	124.95
MASTER TRACKS PRO	259.00
MUSIC X	99.00
PIXOUND	56.95
SONIX	51.95
SOUND QUEST/MIDIQUEST	148.00
SOUNDTRAX VOL 1	14.95
SOUNDTRAX VOL 2	14.95
TIGER CUB	58.95
TRAX MIDI STUDIO	58.95

EDITOR/LIBRARIANS

AUDITION 4 DIGITAL SOUND EDITOR	64.95
DR. TS 4-OP EDITOR LIBRARIAN	87.95
DR. TS D-50 EDITOR LIBRARIAN	90.95
DR. TS KORG M-1 EDITOR LIBRARIAN	87.95

SAMPLING SOLUTIONS

SOUNDMASTER AUDIOMASTER BUNDLE	129.00

PROGRAMMING SOFTWARE

AC BASIC	129.95
AC FORTRAN	195.00
AC FORTRAN 77	399.00
ADAPT 680 X 0	69.95
AMIGA VISION	99.00

New Version!

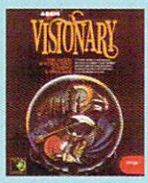
ProWrite 3.2

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

$99.95

Visionary



$64.95

"If you are interested in writing your own adventures, this is the language to buy. Nothing else comes close to Visionary, either in simplicity or in power." — John Olsen, Enchanted Realms Magazine

Draw 4D Pro

Finally! Professional, USER FRIENDLY 3D rendering & animation for the Amiga! Renders any Amiga mode plus 24-Bit. EASY texture mapping! Great Manual. Direct DCTV support! Output 3D PDraw Clips! Video and Publishing!

- Unlimited Lights that animate
- Parallel Spaces to work in
- Double buffered real-time editor
- Phong/Gouraud/Facet
- Built-in Font Editor
- Unlimited points per poly
- IFF/IFF24/Anim/Clip output

$199.00

PIXEL 3D 2.0

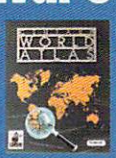
The most powerful 3D object utility for the Amiga computer!

$69.95

Convert bitmaps to 3D objects, get rid of redundant points and convert from one format to another!

Centaur Software Inc.

Fantastic Voyage
The Computer Game
$34.95



World Atlas
4 Disks of info on over 170 countries + 255 maps
$32.49

B.A.D. Ver.4.0
Best-selling disk optimizer for all Amigas. Speeds floppy and hard drives by up to 5 times! $29.95

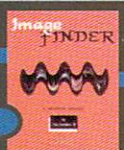
MindLink
The hottest, newest, super-powerful modem package
$28.95

Distant Suns 4.0!

$57.95

Image Finder

by Zardoz Software

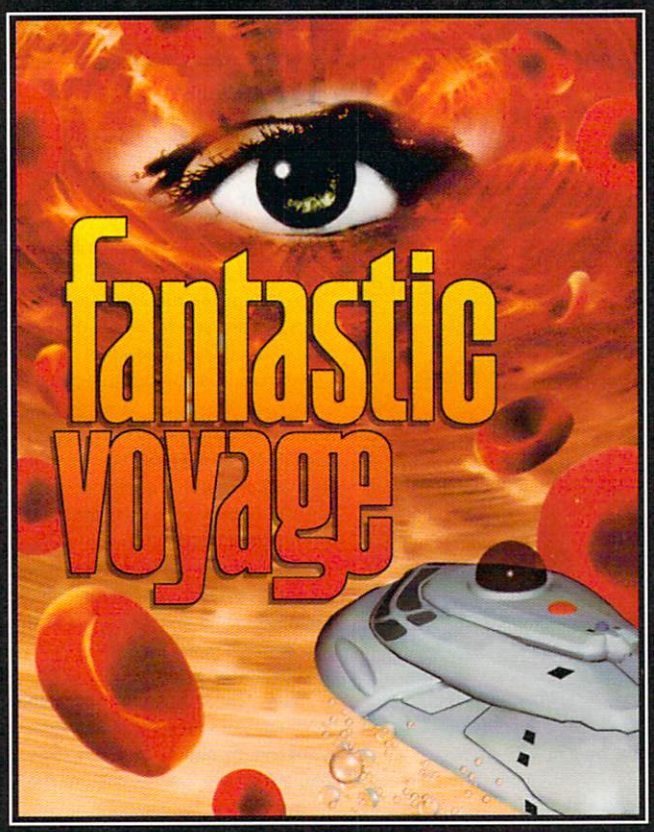


$42.95

Kara Toaster Fonts 1 & 2
$62.95 each

OFFER VALID December 1,1991

A Fantastic and Spectacular Voyage... Through the Human Body... Into the Brain.



fantastic voyage™

The Computer Game

A Centaur Software Production
Programmed by Marc Hawlitzeck
Graphics by Fleckenstein Art Studios
Art Direction by Christian F. Laursen
Music by Bjorn A. Lynne
Produced by John Sievers

Based upon the film "Fantastic Voyage" Academy Award® Winner 1966 Special Visual Effects

You alone command the experimental submarine Proteus which has been miniaturized and injected into the body of a dying scientist. In order to save his life, you must skillfully navigate your way through a maze of blood vessels to his brain, fighting white blood cells, antibodies and other dangerous hazards every step of the way. The body's powerful immune system challenges you, the foreign invader, the unwelcome intruder who must be destroyed.

Experience awesome music and sound effects, arcade-like 8-way scrolling, multiple skill levels and incredibly detailed animations. Developed to take full advantage of the Amiga, the game features unique "organic" graphics unlike anything you've ever seen before.

Centaur Software, Inc.
P.O. Box 4400, Redondo Beach, CA 90278
Phone:213-542-2226 - FAX: 213-542-9998

Fantastic Voyage™ & ©1991 Twentieth Century Fox Film Corporation. All Rights Reserved
"Academy Award" is a registered trademark and service mark of the Academy of Motion Picture Arts and Sciences

THE GAME PRESERVE

Silent Service II

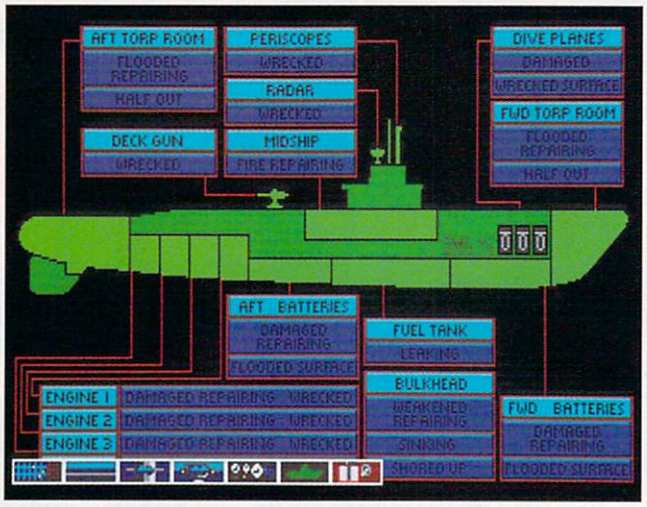
By Jeff James

***MicroProse*'s Silent Service II** ($59.95), the sequel to Silent Service, may be the new standard by which World War II submarine simulators are judged.

Like the original, Silent Service II casts you as the skipper of a U.S. submarine in the Pacific during World War II. Play options abound, including nine sub types (all with historically accurate performance data), four difficulty levels, and a plethora of mission types.

Novice submariners can practice in simplified training missions, shooting torpedoes at stationary rust-buckets that don't shoot back. Then it's on to the more advanced single-battle and war-patrol options, the former including re-creations of several harrowing missions actually undertaken by American sub crews in WWII. Finally, the war-career option invites you to sail through the entire war in the Pacific (1941-1945), earning promotions and commendations in the process.

If you plan to tackle the entire tour of duty, it's a good idea to master each of your sub's several operating stations first. The chart screen shows an overhead view of the sub and any detected enemies, while damage-control and engine-room screens monitor the sub's health. All ship controls are accessed by keyboard or by mouse; you jump from station to station by either pressing the relevant function key or by clicking on one of seven tiny icons in the lower-left corner of the screen.



"We've been hit! Damage control, how bad is it?"

The game's wealth of keyboard and mouse controls can overwhelm a novice user, so MicroProse has included a pair of keyboard overlays (one for the A1000 and one for the A500/A2000/A3000) to facilitate your ship-sinking operations. More assistance is available from the skillfully written 130-page instruction manual, packed with strategy tips, tutorials, and historical ephemera. Enjoyable reading, the manual engrossed me almost more than the game itself.

Silent Service II's graphics were ported from the 256-color IBM VGA version and seem to have survived the transition well. Screens of the sub firing torpedoes and being depth-charged are beautifully animated. MicroProse claims that the images of Japanese ships were taken directly from original photographs and scaled plastic models, and I found no reason to dispute that claim.

The horizon (when viewed through the periscope or from the bridge) is pleasingly dithered, with somber purple and dark blue hues during nighttime operations. The sound effects are excellent, including the gurgling whoosh of firing torpedoes and the rhythmic chugging of the sub's engines.

The game is not disk copy-protected, and runs politely on accelerated Amigas with AmigaDOS 2.0. It requires 1MB RAM, or 1.5MB for hard-disk ►

Crib Notes

By Peter Olafson

I'm fresh out of pirate cliches to parrot. (Ah, there goes the last of 'em, flying out the window.) So, without further ado, here's the tail end of the Secret of Monkey Island (*Lucasfilm*, $59.95) walkthrough.

We left Guybrush Threepwood beside LeChuck's ship. Why just beside it? Because he can't go very far up on deck with the ghostly orchestra. (Do pop in and listen to them for it a bit, though.) They keep chasing him out, and with good reason, as they can see he's human. He'll need to borrow something from the navigator's head first. Be polite, and be persistent.

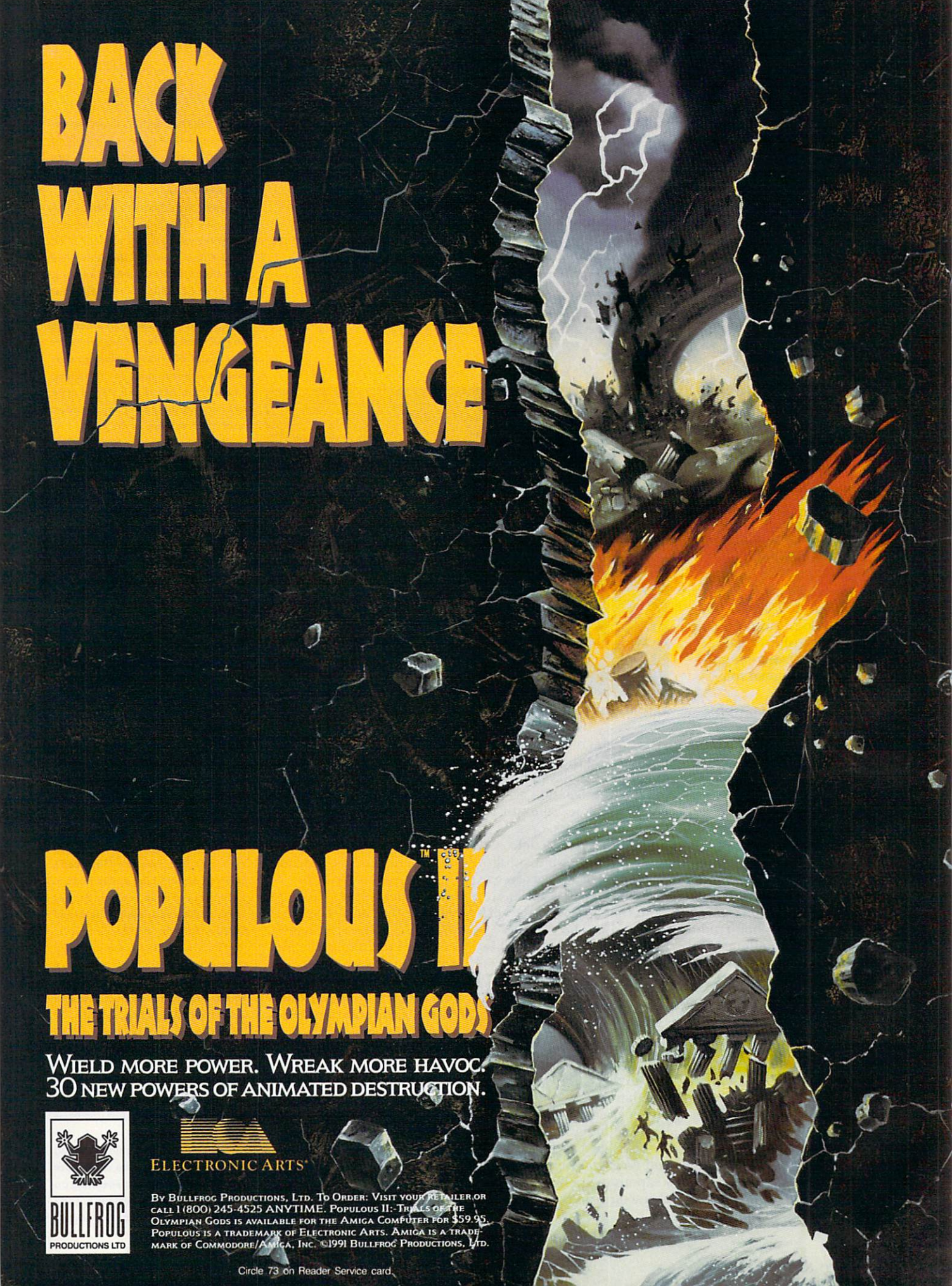
Now, Guy can search the ship with relative impunity, much as he searched his own on the way over. No, there's no way to explore the fore and aft decks, so leave 'em be. (Cute ghost dog, though.) However, there are two doors and a hatch. Let's try the one on the left.

Yikes! It's LeChuck! And even though Guybrush is invisible, the pirate detects his presence the moment he moves. Well, he doesn't have to move. Stan, the ship salesman, gave him something that should prove attractive here.

The aft door is squeaky, and LeChuck's right-hand man will keep closing it until Guy quiets the squeak, so try the hatch for the time being. After the bunk room, he'll find some ghost chickens and should be able to come up with a ghost-chicken feather.

Has there ever been a computer-game feather that wasn't used for tickling duty? Clearly, Guy needs to use the feather on the sleeping ghost to persuade him to drop the booze. But he can't seem to find a spot, right? Well, if you wait around, you'll notice that the ►

To locate developers of the games reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 112.



Circle 73 on Reader Service card.

installation. The hard-disk installation program (just like the one with MicroProse's F-15 Strike Eagle II and Railroad Tycoon) has a hard time dealing with nonstandard hard-disk configurations.

I have only two further gripes: The animations of the sub firing torpedoes or being depth-charged are nice to watch, but they quickly become tedious. I also had hoped that Silent Service II would include an option to see things from the Japanese submariner's point of view, but it does not offer this.

Nevertheless, these are only minor blemishes on an otherwise superlative simulation of submarine warfare in World War II. A definite must-buy for World War II buffs, Silent Service II won't disappoint you.

LORD OF THE RINGS

By Peter Olafson

It's always tough to translate a book into a visual medium. Everyone who's read it has an idea how the characters and environment should look, and the movie or software version is bound to bump up against that personal vision. So, here's the good news about ***Interplay***'s **The Lord of the Rings** ($54.95): It captures the essence of the first volume of J.R.R. Tolkein's great fantasy trilogy without either cleaving slavishly to the storyline or abandoning it for more traditional role-playing fare.

The hobbits need your help.

The Tolkien trilogy provides much of the basis for today's fantasy role-playing games, and there have been several faulty attempts to bring it to the monitor screen. Lord of the Rings is the first game to achieve the intimate "feel" of the books.

This first of three planned games takes you through roughly the first book of the trilogy, *The Fellowship of the Ring*. It follows hobbit Frodo Baggins and his retinue on their quest to unmake a ring of power sought by the dark lord Sauron and his ring-wraith minions.

It's a huge game. After settling affairs in Frodo's home, the Shire, (a leisurely and cozy way to break into the game), the party heads into a forest, the treacherous burial mounds of the Barrow Downs, the walled community of Bree, the huge dwarven mine of Moria, the elvish realm of Lorien, and more. Along the way there's much to see, folks to talk to, puzzles to solve, side avenues to explore, allies to enlist, and wolves, orcs, trolls, and worse to fight.

All this is shown in a full-screen, overhead perspective and controlled via seven icons that appear at the click of a mouse. The graphics are nice, and while the stills of the characters don't quite match my vision of them, they're a good compromise.

Combat is central to most role-playing games, but, delightfully, that's not the case here. In fact, it's important to this game's faithful feel that it isn't. You'll find no experience points or levels (although each character does have a set of stats), and no grand repertoire of weapons or spells (although characters can acquire spell-like words of power). There's fighting, naturally, but the game doesn't live or die by it, and, if you keep your wits and just observe ordinary caution, your characters will be hard to kill.

The emphasis is, instead, on exploration. You can always stick to the road, but the graphic "tiles" from which the game is built are vast, and you'll miss the fun if you just stay on the road.

Lord of the Rings would be dull if it simply followed the course of the book, and that's where Interplay's creative forces come into play. The developer has provided any number of side missions—some important, some minor, some just fun. There's always more around than immediately meets the eye.

Indeed, there's so much

ghost shifts position every so often...and that certain portions of his anatomy become available when he's in certain positions. Be a patient soul.

Okay, he's got the booze. The squeaky door gets the grease, but how do you get the grease? He'll find some down in the hold—via the hatch in the chicken and pig room (use LeChuck's key here), but there's a mammoth ghost rat in the way. You'll notice that the other rats are all dead to the world, evidently the result of whatever was in that saucer. Use the grog in the saucer, watch the rat make like a tree stump, use the grease on the door, and there you are in the brig.

Some people seem to think they should be able to get by the guard and save the governor here and now. Leave him alone; he's only there to confound you. Do, however, take the ghost tools on the wall, and then split. They will let you into that heavily-locked crate upstairs in the chicken room and win you the voodoo root.

Now back to the cannibal village to have that root turned into seltzer, and then back to LeChuck's ship to...er, what ship? Seems LeChuck has headed back to Melee to marry the gov! Nevertheless, it's Grand Central Station down here, what with the ghost henchman LeChuck left behind and your crew members, who apparently have run out of sunblock, turning up again. (Guy can kill the ghost, by the way. Anyone know if the crew still shows up if you bomb your ship with the artifact?)

You know where the church is, right? It's the one place Guy hasn't been to do anything so far (except listen to the nice music). So get there and do your best imitation of Dustin Hoffman in *The Graduate*. You'll have a little trouble spritzing the cap'n right off the bat, and you'll get your keister kicked all over Melee Island as a result (there's no way to avoid this).

Just wait until LeChuck makes the mistake of punching you into the soda machine at Stan's shipyard, and grab that loose root beer and give him a taste. You'll need to be quick off the mark, but you'll get it eventually.

Then sit back and enjoy the long game ending. There are some cute twists along the way, depending on how you handle the dialogue, and I suggest saving the game some- ►

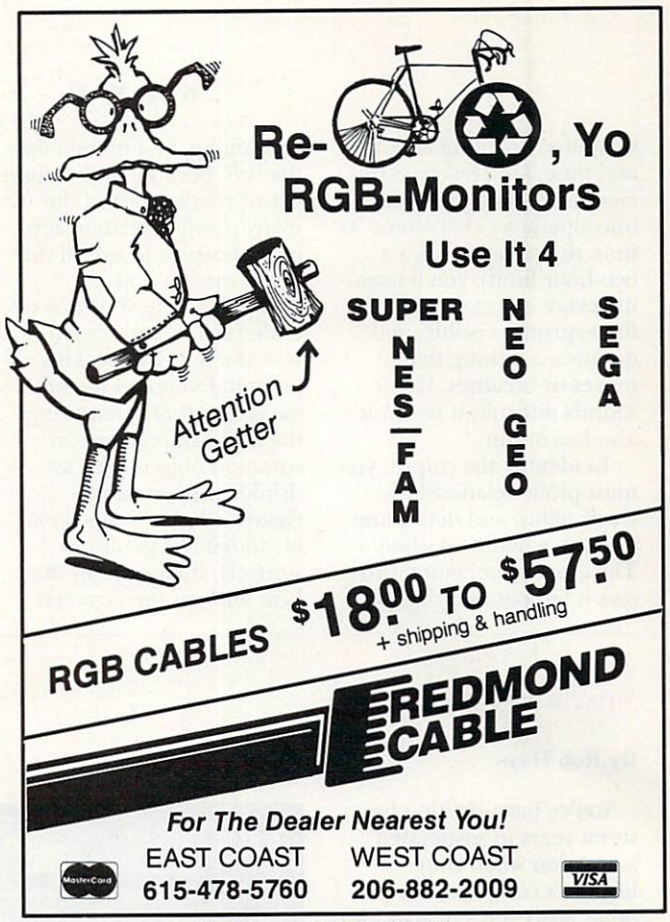
going on in the Shire, it's tempting to hang around longer than Frodo should, as the Black Riders are already on his trail. A time limit, even a generous one, would lend a needed sense of urgency to those early scenes.

In terms of play mechanics and Amiga-specific embellishments, this isn't one of Interplay's better efforts. I haven't heard complaints from folks with faster machines (the game runs on all Amigas with one megabyte of memory), but on a 68000-based Amiga, play is decidedly slow. You have to wait for the program to draw even menu windows, and the scrolling is bumpy at best. Keyboard response is poor, and, while the mouse control (recommended) seems marginally better, the party members negotiate doorways as though they're drunk.

Moreover, the menu system is too time-consuming; for instance, you can't flip through character inventories one after the other, but must back out of each character before digging into the next. Also, two saved-game positions simply aren't enough for a game this big, and duplicate nonplayer characters turn up in places. While roads run to the eight points of the compass, characters can be aimed only in the four cardinal directions, and it's awkward to keep changing direction.

The music that accompanies the introduction is splendid, but it shuts down when the game starts, and you play in a disappointing silence, broken only by "boops" and "beeps" from the Amiga. Finally, the three floppy disks can be installed on hard disk, but all I got was visits from the guru until I assigned fonts: to the play directory.

I do recommend Lord of the Rings. It's pleasantly different from most other games of its type, and imbued with the spirit of the source material, while not bound to it. However, it's not a strong Amiga game, and I hope that by the time The Two Towers appears, Interplay will have made the control system as amiable as the wonderful feel.



Circle 172 on Reader Service card.

MURDER!

By Joe DiCara

To some degree, each of us is a detective at heart. Unfortunately, we usually track down nothing more exciting then a lost sock or misplaced tool. Is it any wonder, then, that the adventures of Sherlock Holmes, Charlie Chan, and Colombo are so popular?

***U.S. Gold*'s Murder!** ($44.95) makes you a supersleuth, too, applying your powers of observation, deduction, and cunning to unravel a heinous homicide in a huge mansion. This time, if justice is to prevail, it's up to you!

Get your notebook ready, you have two hours to catch the murderer.

At the opening screen of this graphic adventure, headlines on the front page of the *Daily Chronicle* proclaim the dastardly deed and you, the sleuth, are on the scene to solve the crime. Changing any pertinent information on the newspaper page results in a new scenario, and U.S. Gold claims that almost 3 million scenarios are possible. Repeating all the set-up parameters replays a case, so, if at first you don't succeed, try, try...

Your view is a 3-D isometric of the crime scene—usually a room in the mansion. A set of action icons on the side let you interrogate a character, view a map of the house, refer to the all-important clue book, check for and remove fingerprints, pick up objects, and, finally, accuse the murderer.

As play starts, all you know is who was murdered, where, when, and how. Scattered throughout the 51 rooms and corridors of the three-story mansion are more than 20 potential ►

weapons. Roaming about, in real time, are 18 very suspicious and sometimes very uncooperative characters. As time slips away (there's a two-hour limit), you'll examine every object, take all the fingerprints possible, and question anything that moves or breathes. If this sounds difficult, it is, but it's also lots of fun!

To identify the culprit, you must probe relationships, check alibis, and determine who was where and when. The cross-examination process is tedious and time-consuming, and therein lies the rub. Because of the number of characters and the many possible relationships, it's impossible to ask all the questions you'd like.

Here's where your powers of deduction and reason save the day. By checking all potential weapons for fingerprints, then comparing them to prints found on common objects such as drinking glasses and cigarette lighters, it's possible to narrow the list of suspects, then turn up the heat and get the answers you need. Elementary my dear Watson... elementary!

I have no significant complaints about this game. Murder! comes on one disk, runs on any Amiga with a 1.2 or higher operating system, and requires a mouse and 512K of memory. It's not hard-disk installable as claimed in the manual, but runs completely from memory, so this is no problem. With its endless scenarios and levels of play, Murder! provides endless hours of "intriguing" entertainment.

SPACEWRECKED

By Rob Hays

You've been drifting for seven years in suspended animation when your lifeboat's computer detects other spaceships nearby and awakens you. The trouble is, this is not a rescue fleet, but a biological survey mission that has become crippled while transporting specimens back to Earth.

To reach Earth, you must repair malfunctioning systems in all the fleet's ships, because they were built with an interlocking navigation system. Along the way, you must deal with escaped biological specimens, deranged crew members, and deteriorating power and life-support systems.

Spacewrecked (*Konami*, $49.95) is a standard structured adventure, meaning that in order to advance, you need the proper items in the right place at the right time. The programmers have also thrown in the usual red herrings, figuratively and literally.

Play is completely mouse-controlled, and games can be saved at any point. The main screen shows a 3-D view of the action, data on your character's health, and the elapsed time. The sound effects are well integrated and varied, with different background noises for each type of compartment you enter.

Can you find your way back to Earth?

Although this game is much like others of its genre, such as Dungeon Master and Eye of the Beholder, it has some unique components. Probably the most unusual are robots you can program to explore and perform repairs on their own.

Spacewrecked requires 512K of memory, comes on three disks, uses both disk and documentation copy-protection, and runs properly on the Amiga 3000 with Workbench 2.04. It also has some problems that should be fixed.

First, although the MS-DOS version can be installed on a hard-disk, the Amiga version can't. Second, the program doesn't consistently recognize external disk drives or the fact that the disk it's asking for is already in a drive. Third, when you finish playing, you must turn the computer off, because part of the program survives and interferes with a warm boot (except on the A3000).

All things considered, however, if you like adventure games and can live with the floppy shuffle, Spacewrecked will keep you lost for hours.

where shortly beforehand, so you can try them all.

• Several spots in The Immortal (*Electronic Arts*, $49.95) are taking years off people's lives. The most common seems to be the triangle puzzle at the end of level 2. Actually, the answer is given in the game—by the dying goblin king ("right, left, center"), but only if you've given him your water. If you used it yourself, you greedy thing, you're facing a lot of trial and error.

You need get to the opposite end of the level, where you'll find a room with three circles on the floor, a triangle in each circle, and indentations on the three sides and in the center of each triangle. Put one gem in the right-hand hole in the left-hand circle, the next in the left-hand hole in the center circle, and the third in the central hole in the right-hand circle. Welcome to level 3.

The other hot spot is with the dragon down on level 8. You must use six Blink spells there, each of them just as the beast is about to let fly, then a Fire Protection spell. Finally, use the amulet.

• Speaking of dragons, a number of folks seem to be burning themselves out near the start of *Dynamix*'s Rise of the Dragon ($59.95). One problem is leaving the ID card behind in Blade's apartment and hence being locked out. Ain't technology grand? There *is* a way back in, and I don't mean the ledge. See that steam valve up by the corridor ceiling? Steam and electronic hardware don't mix.

And some are having trouble at the Pleasure Dome door. They checked their gun at the behest of the bouncers and now can't get it back. Well, if you'd listened to Slen instead of playing the tough detective, you might have seen the implied threat when you turned the gun over. You need to bribe him with something sweet from your little kitchen. And don't forget to get your claim ticket from the woman in the booth. These two guys are unforgiving.

If you're having trouble with an adventure or role-playing game, or just have something interesting or weird you want to get off your chest, you can write to me at 25 Belmont Ave., Madison, NJ 07940, or via electronic mail on GEnie (P.OLAFSON1) or on Portal (PETEROO).

Flames of Freedom

By Peter Olafson

Flames of Freedom (*MicroPlay/MicroProse*, $49.95) is Mike Singleton's brilliant follow-up to 1990's Midwinter. That role-playing wargame from England was an imposing classic. Flames of Freedom is an accessible one—bigger, deeper, more detailed, and more playable.

Midwinter postulated a partisan-like defense of an ice-bound island in the not-too-distant future. In Flames of Freedom, Midwinter has vanished beneath rising seas, and the scene has shifted to an archipelago of 42 islands (the Slaves) off the coast of Africa, all but one (Agora) occupied by the forces of the Saharan Empire. The empire is assembling an invasion fleet pointed at Agora, and you're cast as an agent trying to bolster Agora's chances by helping liberate the subject islands.

Midwinter was an environment; Flames of Freedom is a filled-polygon world. There are roads with military traffic, palm trees growing beside them, waves lapping at the beaches beside the palms, and plants growing on the sea bottom. There's a spectacular variety of people—you can even design your own character's appearance—with all sorts of agendas. There are more ways to get around than I have room to describe, and more enemies than you care to know.

If you felt the original game lacked direction, Flames of Freedom is as open-ended or as focused as you care to make it. You can launch specific raids (destroying power plants or radio stations, for instance) against each island, undertake a whole campaign, or practice driving vehicles (or fighting in the flying sub).

You may find that a raid keeps you busy for hours at a time, as the folks you must recruit may have their own assignments for you to fulfill before they're won over. Some of them are traitors who'll throw you into jail, then you must escape by finding a jailer vulnerable to your character's strengths. (I typically waited for a woman and used, um, sex appeal. Hey, it was my character's strong point!)

Getting places could be a chore in mountainous Midwinter. There are plenty of mountains in the Slaves, but now movement can be automated, time compressed, and a huge array of speedy vehicles enlisted (provided you find them) for travel in the air, on land, and on or under the sea.

In Midwinter, character relationships were involved, but actual interaction was simple; other people would either help you or they wouldn't. Here, there are several levels of interaction. NPCs may provide information, offer to notify their friends to help you or to take you to other people, run missions themselves, or provide transportation, identification or first aid (not necessarily of top-notch quality). And sometimes you have to persuade them first.

The manual is far superior to Midwinter's, properly emphasizing rules over background. The music, which can be toggled off, is good (notably the driving piece that plays over the titles), and the in-game fractal maps are gorgeous and overflowing with data.

The hellish copy-protection scheme is gone, thank goodness. You still have to identify two pictures from the manual, but now all the pictures are compressed onto six consecutive pages, rather than one per page. And the three AmigaDOS disks can be copied onto a hard disk.

Along with these improvements come some new problems. While speedy and smooth in most respects, the game is prone to slowdowns when more than a few objects appear on the screen. (It might have helped if they'd opted for less complex explosions.)

Combine the variable speed with rather awkward control (Flames of Freedom badly needs an auto-centering option), and you have a game that's most difficult to play at the times when you most need to be its master. It's easy to get caught in endless circles when using the joystick. (The mouse is the best of the three control methods.)

Allowing a player to take over whatever vehicle is near—including the Tiger tank that was just firing at that player—doesn't quite ring true, and some kind of hand-to-hand combat routine should be included here.

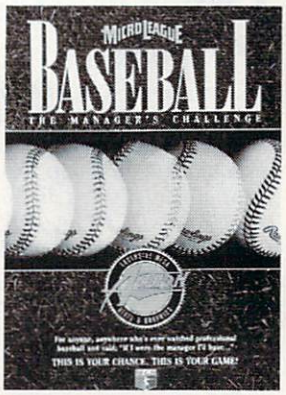
Finally, there's that hard-disk installation routine. The option is a welcome one, but the actual routine is the pits. A text file describing the procedure is truncated in mid-example; you have to edit the installation file manually if you want to put the game anywhere other than DH0: or SYS:; and Flames of Freedom apparently can run only if installed in a partition's root directory.

It's frustrating, it's time-consuming, and, yes, it's worth the trouble. Flames of Freedom has some bad habits, but I have no intention of putting it aside. Indeed, I have no choice. ■

'27 YANKS VS. '90 REDS. TONIGHT. ONLY ON MLSPN.

(YOUR MICROLEAGUE SPORTS NETWORK)

Tune in to MicroLeague Baseball—The Manager's Challenge—new from MicroLeague Sports, your Computer Network for the finest in true-to-life sports simulation software. You control all the action—for all aspects of the game. Manage 26 major league rosters—past and present. How would the '27 Yanks do against the '90 Reds? Could the Mets beat Boston again? Find out. You get graphic displays of 3 big league stadiums (other stadium disks available), 30-player rosters, complete stats and box scores, Stat Compiler for season and league play, Quick-Series option, Quick-Play option—*plus:* GM/Owner disk for making trades—or create your Dream Team, Season disks available, Pitch & hit vs. Lefty or Righty, Stealing & base running, Pull, spray, or hit straight away, Fatigue and power factors, Season tiring for league play, Full-color Action 3-D Graphics, and much more.



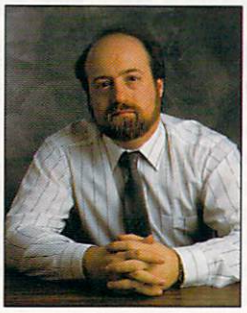
For: Commadore/Amiga **$49.95.** Coming soon for Macintosh. Can't find MLB-MC at your local retailer? Call **1-800-334-MLSA,** or mail check or money order to: MicroLeague Sports Association, 2201 Drummond Plaza, Newark, DE 19711.

MICRO LEAGUE Sports®

New for Amiga!

© 1991, MicroLeague Sports. Referenced products and companies are registered trademarks of their respective holders.

Circle 64 on Reader Service card.



HELP KEY

Wanted: 3-D clip art, a talking word processor, and a system to handle huge display and storage demands. Lou finds.

By Louis R. Wallace

A Huge Problem In Playback

Q: *How soon will an affordable hardware configuration exist for the Amiga that will allow playback of broadcast-quality, 24-bit animations at 30 frames per second from RAM or hard disk? Is 30 frames per second possible with DCTV and a 68040 card? It seems that if the Amiga is to be a truly useful desktop video platform, playback at 30 frames per second must be one of its necessary capabilities.*

M. Caldwell
Knoxville, Tenn.

A: What you are describing is an extremely difficult problem to solve. Images of broadcast resolution that are created with 24 bits per pixel are huge—on the order of one megabyte per frame. Without compression, this would require you to have around 30 megabytes per second for your digital video, an amount of data that would demand an enormous amount of display RAM and storage space. But efforts to reach this goal *are* being made.

For example, many people who have attended Amiga shows during the last year have been treated to exhibits of DCTV displaying real-time digital animations. My favorite was done by Interactive Video Systems (IVS), which used an Amiga equipped with IVS's Trumpcard Pro and DCTV to play a multiminute sequence of "Back to the Future" from a hard disk—with audio—in real time.

However, IVS used its own proprietary software and animation file format to accomplish this, and so far the technique to do this remains a secret. But what really made it possible was the fact that DCTV's image format uses a fairly good form of compression, one that can reduce the amount of memory by a factor of 8 to 10, meaning that one-megabyte, 24-bit files become a more useful 100K or so in size.

In the near future (one or two years), the MPEG full-motion chips will become available. MPEG technology promises compression (and real-time decompression) on the order of 20:1 all the way down to 100:1. When this happens, full-motion video from disk, floppy, hard disk or CD-ROM will become a reality on the Amiga (as well as on other computer platforms).

A Word Processor That Talks Back?

Q: *I am an A2000 owner who is dyslexic, and I am searching for a word processor that offers some special features to help me in my word processing. The best solution would be one with which I could speak and spell-check the words while I am typing. A speaking dictionary that could distinguish between identically spelled words for which different pronunciations carry different meanings would also help a lot. Simply put, as well as all the features you would expect in any word processor, I need something where I can point to a word and the computer will speak the word to me. Any suggestions?*

M. Boar
White River Jct., Vermont

A: Well, it would seem that ProWrite (New Horizons) is the answer to most of your needs. ProWrite offers a real-time spell-checking mode that beeps when you enter a word that is not in its dictionary. It will also speak (using the Amiga's voice synthesizer) the entire document or a single word or phrase that has been highlighted with the mouse. It even has a mode that will speak (in real time) what you type, although it works on the character level, not the word level. So if you were typing in "Dear," it would speak "D" "e" "a" "r" as individual letters, but would not speak the entire word. Unfortunately, neither ProWrite (nor any other word processor I know of) offers a "speaking dictionary" that can tell how to correctly speak a word when several pronunciations are possible.

A Search for 3-D Objects

Q: *I have just recently begun to get into 3-D animation on the Amiga, and I am having a ball creating animations with Sculpt and Imagine. The only real problem I have is in the creation of objects to use in my scenes. As I am not an artist (or very patient, I might add), my efforts have been quite primitive. So, can you offer any suggestions as to sources for well-crafted, ready-to-render 3-D clip art?*

J. Planck
Houston, Texas

A: There are quite a few sources for 3-D objects. If you have a modem, you might try the major telecommunication networks such as GEnie, CompuServe or BIX. All have many object files in their libraries ready for downloading. Or, you might try some BBSs in your own area, as they, too, frequently have 3-D objects.

One of the most interesting sources of objects is a specialized BBS called Studio BBS (817/467-3658). Studio BBS (generously operated for the public by Jody Reimers) is entirely dedicated to 3-D objects that are in the public domain. Its libraries include object files for Sculpt, Imagine, LightWave, Videoscape, Turbo Silver and Real3D. Studio BBS asks for an optional donation, and its libraries are constantly being added to by other users.

There are also many commercial 3-D object libraries available. For example, Impulse, the publisher of the 3-D animation package Imagine, plans on releasing an entire series of high-quality 3-D objects to coincide with the release of Imagine 2.0. Polar Arts has a couple of disk sets, including aircraft and spaceships. And *AmigaWorld*'s special products division has commissioned the creation of a large number of 3-D objects that are offered for release through our 1992 Animation & Video Special Issue. ■

If you're on-line with Compuserve® or Prodigy,® you're simply getting less value than GEnie℠ users. There is, of course, a rather obvious solution.

Switch to GEnie*Basic and get unlimited non-prime-time use of over 100 services for just $4.95 a month.* Everything from bulletin boards, electronic mail, news, and stock closings to exciting games, an encyclopedia and travel services. You can also enjoy software libraries, information services, computer support, multiplayer games,on-line classes with live instructors, and more for $6 per non-prime hour* for all baud rates up to 2400. GEnie*Basic is guaranteed -- if you're not completely satisfied, we'll refund your first month's $4.95 fee.†

Sign up for GEnie today. Set modem for half duplex (local echo), at 300, 1200 or 2400 baud. Dial 1-800-638-8369 (or in Canada, 1-800-387-8330). Upon connection, enter HHH At the U#=prompt, enter XTX99396,AMIGA92 then press <RETURN>. Have a major credit card ready, or in the U.S., your checking account number. **For more information, call 1-800-638-9636.**

*Applies only in U.S. Mon.-Fri., 6PM-8AM local time and all day Sat., Sun., and select holidays. Prime-time hourly rate $18 up to 2400 baud. Not applicable when accessed at 9600 baud. Some features are subject to surcharge and may not be available outside the U.S. Prices and products listed as of Jan.1, 1992 and are subject to change. Telecommunications surcharges may apply. †GEnie*Basic guarantee is limited to one per customer and applies only to first month's use.

We bring good things to life.

Circle 18 on Reader Service card.

AMW 2-92

800-558-0003 ComputAbility Consumer Electronics 800-558-0003

Since 1982

ComputAbility Would like to Thank You for Helping Us Celebrate our 10th Anniversary by Providing our Customers with even Lower Prices!

AMIGA EXTRAS

AD Speed (all Amiga Computers)	$189	Personal SFC (Nucleus)	$345
AT Once - PC Emulator - 500 only	$239	Perfect Sound	$65
Air Drive Int 3.5"-A3000	$89	Roctec Internal 500 Drive	$79
AMAXX II	$137	Taco Single Frame Animator Cntrlr	$1,739
BCD Internal SFC - A2000	$749	Vidi Complete Color Solution	$235
Big Foot Power Supply	$95	Wiz Tablet 2 button 9.5" x 11.8"	$249
Bodega Bay	$279	**DMI Resolver**	
Cardinal 9600 Ext. V.32/V.42	$345	010-A, 1024 x 768	$999
Chroma Key/ Switcher	$315	010-B, 1024 x 768 w/ Overlay /Buffer	$1,199
Colorburst	$659	010-C, 1280 x 1024 w/Overlay/Buffer	$1,479
Color Splitter	$105	**GOLDEN IMAGE:**	
Data Flyer RAM Card 0K	$89	Replacement Mouse	$35
Digiview Gold	$115	Cordless Mouse w/Deluxe Paint II	$69
Digiview Media Station	$147	Cordless TrackBall w/Deluxe Paint II	$79
Digital Sound Studio	$85	1/2 MB RAM Expansion for Amiga 500	$36
ECE Midi Interface	$48		
Flicker Fixer	$235		
Flicker Free Video 500/1000/2000	$279		
Firecracker	$825		
HAM/E Plus	$389		
Internal Drive 2000	$69		
K-Start Selector	$35		
Light-24	Call		
Mega Chip 2000 w/Super Agnus	$299		
MIDI Gold A500 / Insider A2000	$55/$59		
Mini Gen	$185		
Multistart II	$59		

Microbotics VXL-30-68030 Accelerator Board for the A500/2000

25MHz w/68882 Math Coproc. $459
40MHz w/68882 Math Coproc. $649

The Miracle Keyboard

A piano teaching system, which enables you to create dazzling music with or without your Amiga **$349**

Hi-Speed IDE Hard Drive Packages for the A500

	Seagate 351-A 40 MB	52 LPS Quantum A500	105 LPS Quantum A500
Internal ICD-AD IDE 40 Kit	$309	$329	$439
Int. ICD-AD IDE 40 w/AD Speed	$489	$509	$619
Trumpcard 500 AT External ØK expandable to 8 MB	$399	$419	$549

Includes: cables, Software, Drive, Mounting Hardware

VIDEO PACKAGE

• PANASONIC 1410 CAMARA •
• COPYSTAND WITH LIGHTS •
• DIGIVIEW GOLD 4.0 •

price includes 16mm lens with Variable Iris: **$349**

Pro Write 3.2 $91.95

- - - NEW VERSION - - -
In Stock Now! Quantities Limited!

SYQUEST Drive Package

NEW

	44MB for 2000 Int. / Ext.	88MB for 2000 Int. / Ext.
	$429/529	$599/699

Package includes: SyQuest drive,1 media cartridge, Amiback utilities, & cable. External models include case.

GVP Series II A500 HD+

OK Expandable to 8MB

A500 with 52 MB	A500 with 105 MB
$509	$679

680830 Acc. Series II for 2000 with SCSI Controller

22MHz w/1MB exp. to13 & Math-Copro. ..$749
33MHz w/4MB exp. to16 & Math-Coproc.$1239

Call for Quantum AT/IDE Drive Configurations!

Impact Series II for A2000 SCSI Hard Disk+RAM Exp.

52LPS	105LPS	210LPS
$385	$519	CALL

IMPACT VISION 24...*$1899 (free del.*

AMIGA 500 UPGRADE KIT

880K Disk Drive + 512K RAM Expansion **$115**

See Grid Below for Complete Hard Drive Packages

CALL! VIDEO TOASTER | PERSONAL TBC II | DC TV | KITCHEN SYNC

PRINTERS

Panasonic

KX-P 1180	$149
KX-P 1123	$195
KX-P 1124i	$273
KX-P 2624	$365
KX-P 1654	$525
KX-P 4420	$689
KX-P 4450i	$1,099

star

NX 1001 Multifont NEW	$139
NX 1020 Rainbow NEW	$179
NX 2420 Rainbow	$285
NX 2430 Black	$239
Star Jet 48	$289
Laser Printer 4	$819
Laser Printer 4 Star Script	$1,159

CITIZEN

200GX / with Color Kit	$159 / $199
200GX-15 / with Color Kit	$295 / $339
GSX-130 / with Color Kit	$239 / $279
GSX-140 PLUS	$295
GSX-140 PLUS with Color Kit	$339
GSX-145 Wide 24 pin	$375
GSX-145 Wide 24 Pin with Color Kit	$435

QMS POSCRIPT

As Reviewed in Amiga World...

PS 410	$1,669
PS 815 / 825	$2769 / $3349
PS 815MR	$3819
PS 825MR(dual bin)	$4509
Model 10P / 10	$4819 / $5889
Model 30i	$8249

Seagate AMIGA 500/2000 HARD DRIVE PACKAGES

DRIVES	DRIVE ALONE	TRUMPCARD 2000	TRUMPCARD PRO2000	TRUMPCARD 500	TRUMPCARD PR 500	GRAND SLAM 500 OK Exp to 8MB	GRAND SLAM 2000 OK Exp to 8MB	SUPRA WORD-SYNC 2000	SEE OUR GVP AD!	DataFlyer 2000	DataFlyer 500	Malibu Board 2000
ST 157N-1 49MB/28MS	$215	$279	$339	$369	$429	$485	$435	$295		$285	$345	$319
ST 296N 80MB/28MS	$259	$329	$389	---	----	-----	-----	$349		$335	------	-----
ST 1096N 80MB/24MS	$275	$345	$405	$435	$495	$565	$499	$365		$349	$399	$389

PRICES SLASHED! on Trumpcard 2000 Packages

Quantum Drives

LOW PRICES!

DRIVES	DRIVE ALONE	TRUMPCARD 2000	TRUMPCARD PRO2000	TRUMPCARD 500	TRUMPCARD PR 500	GRAND SLAM 500 OK Exp to 8MB	GRAND SLAM 2000 OK Exp to 8MB	SUPRA WORD-SYNC 2000	SEE OUR GVP AD!	DataFlyer 2000	DataFlyer 500	Malibu Board 2000
52LPS	$205	$285	$349	$379	$439	$485	$435	$309		$289	$345	$319
105LPS	$325	$409	$475	$479	$559	$609	$549	$425		$405	$455	$439
210MB	$639	$729	$765	$799	$889	$919	$849	$729		$719	$759	$765

800-558-0003 ComputAbility Consumer Electronics 800-558-0003

Since 1982

AMW 2-92

GOLDENIMAGE®

NEW LOW COST!

Jin Mouse
A500/2000 Replacement Mouse
$23

Hand Scanner
with Migraph Touch-Up Software & Deluxe Paint III
$209

Optical Mouse
with Special Mouse Pad
$45

2/4 MB RAM Card
w/2MB installed for A500
$169

Master 3A-1
3.5" Micro Floppy Ext.
$79

SupraFax Modem V.32
V.32/V.42/V.42bis 9600 BAUD - Send AND Receive FAX plus a high-speed modem all in one!
• • • **$239** • • •

SupraDrive 500XP
20MB drive w/ 1/2MB RAM $325
20MB drive w/2MB RAM $405
52MB drive w/1MB RAM $465
52MB drive w/2MB RAM $545
120MB drive w/ 1/2 MB RAM .. $579
120MB drive w/2MB RAM $665
240MB drive w/2MB RAM $909

SupraDrive with WordSync for A2000
52MB / 120MB ..... $319 / $489
240MB $809

SupraRAM 500RX
1MB / 2MB ..... $125 / $185
8MB $395

SupraRAM 2000
2MB / 4MB ..... $165 / $225
6MB / 8MB ..... $285 / $349

SupraRAM 500
1/2 MB with Clock $39

SupraModem 2400
External $79

SupraModem 2400 Plus
MNP5 & V.42bis External $129

SupraModem 2400 zi Plus
MNP5 & V.42bis Internal $149

Power PC Board Run MS DOS Software on your A500 ..... $269

Supra Corporation

Commodore AMIGA 500
STARTER KIT

INCLUDES:
- Amiga 500 Personal Computer
- Amiga Mouse • Joystick
- Amiga Power Adaptor
- 9 Disks: •Workbench 1.3, •Workbench 1.3 Extras, •KindWords (3 Disks), •Fusion-Paint, •Indiana Jones & the Last Crusade,
- F40 Pursuit, •F/A-18 Interceptor
- Manuals: the Comprehensive Software Instuctions & Amiga Owner's Guide

Call for Low, Low Price!

• • • RECREATION • • •

4-D Boxing w/Tru-Motion	31.95
500cc Racebike Simulation	30.95
A-10 Tank Killer V.1.5 Upgrd	36.95
Abyss	24.95
Action Stations	30.95
All In One	43.95
Amiga Classics Trilogy:	36.95
Arachnaphobia	24.95
Armour Geddon	30.95
ATAC	30.95
Awesome	36.95
Atomino	31.95
Back To the Future II or III	24.95
Ball Game	24.95
Bane/Cosmic Forge 1Meg	36.95
Barbarian II	30.95
Bard's Tale III	31.95
Battle Chess II	30.95
Battle Isle	31.95
Big Deal Bundle	36.95
Bill Elliot Nascar Challenge	30.95
Birds of Prey	31.95
Black Crypt	31.95
Blitzkrieg	30.95
Blood Relations	31.95
Blue Max	31.95
Breach 2	31.95
Bridge 6.0	24.95
Cadaver	24.95
Carmen San Diego/Each	30.95
Carmen San Diego - America	36.95
Castles	36.95
Centurion	31.95
Champions of Krynn	31.95
Chaos- Dungeon Master 2	24.95
Chessmaster 2100	31.95
Chuck Yeager AFT 2.0	25.95
Civil War	37.95
Conan the Cimmerian	30.95
Conflict: Middle East	36.95
Conquest of Camelot	21.95
Continuum	30.95
Crime Does Not Pay	30.95
Crusaders Dark Savant	41.95
Curse/Azure Bonds	31.95
Cybercon III	36.95
Dark Man	25.95
Das Boot Submarine	31.95
Death Knights of Krynn	31.95
DeluxePaint IV	107.95
Demoniak	30.95
Dick Tracy	24.95
Discovery 2.0	24.95
Disney Animation Studio	74.95
Dog Eat Dog	30.95
Dragon's Lair II/Time Warp	34.95
Dragon Wars	30.95
Dungeon Master	24.95
ECO Phantoms	24.95
Eagle's Rider	30.95
Elf	31.95
Elvira I or II	36.95/41.95
Eye of the Beholder I or II	37.95
F-15 Strike Eagle II	36.95
F-19 Stealth Fighter	36.95
Falcon	30.95
Fantastic Voyage	27.95
Fighter Dual	30.95
Flames of Freedom	30.95
Flight of the Intruder	35.95
Flight Simulator II	30.95
Gateway Savage Frontier	31.95
Germ Crazy	24.95
Godfather	30.95
Gold of the Aztec	30.95
Halls of Montezuma	30.95
Hardball II	30.95
Hard Nova	31.95
Hare Raising Havoc	30.95
Harpoon	37.95
Battleset 2 or 3	20.95
Battleset 4	25.95
Scenario Editor	25.95
Harpoon Challenger Pak	57.95
Heart of China	36.95
Holyes Book of Games 1 or 2	21.95
Hoverforce	30.95
Immortal	31.95
Imperium	25.95
Indy Jones 4: Fate of Atlantis	37.95
Indianapolis 500	31.95
Jack Nicklaus Unlimited	36.95
Add-On Disks	Call
James Bond: Stealth Affair	34.95
J. Conners's Pro Tennis Tour	31.95
Jones in the Fast Lane	24.95
Keys To Maramon	31.95
Killing Cloud	30.95
King's Quest 2 or 3	30.95
King's Quest 4 or 5	36.95
Knight Force	28.95
Knights of the Crystallion	36.95
Knights in the Sky	36.95
Leander	30.95
Leisure Suit Larry I	36.95
Leisure Suit Larry 2 or 3	36.95
Leisure Suit Larry 5	36.95
Lemmings	30.95
Light Quest	31.95
Lord of the Rings	34.95
Lost Patrol	31.95
M-1 Tank Platoon	36.95
Mantis:Experimental Fighter	36.95
Matrix Cubed	31.95
Mavis Beacon Typing	31.95
Mega Fortress	37.95
Mega-Traveller 1	36.95
Mercenaries	37.95
Medieval Warrior	30.95
Might & Magic III	37.95
Millenium	24.95
Mixed -Up Mother Goose	30.95
Monopoly	30.95
Monty Python	32.95
Navy Seals	25.95
Ninja Gaiden II	24.95
Nobunga's Ambition	36.95
Nova 9	22.95
Oh No! More Lemmings	30.95
Lemmings Add-On Disk	21.95
Operation Combat	30.95
Over the Net	24.95
Overlord	30.95
PGA Tour Golf	31.95
Paper Boy 2	25.95
Perfect General	36.95
Pick 'n Pile	25.95
Police Quest 2 or 3	36.95
Pools of Darkness	37.95
Pools of Radiance	31.95
Populous	31.95
Populous II	37.95
Powermonger	31.95
Data Disk WWI Edition	20.95
Prehistoric	30.95
Prince of Persia	24.95
Quest for Glory 1 or 2	36.95
Railroad Tycoon	36.95
Red Baron	36.95
Red Storm Rising	34.95
Renegade Legion	37.95
Riders of Rohan	30.95
Rise of the Dragon	36.95
Robin Hood/Conq. Long Bow	36.95
Romance of 3 Kingdoms	42.95
Rules of Engagement	37.95
Secret of Monkey Island	37.95
Secret of the Silver Blades	31.95
Shadow of the Beast II	36.95
Shadow Sorcerer	31.95
Silent Service II	36.95
Sim City	30.95
Sim Earth	41.95
Sleeping Gods Lie	30.95
Sliders	30.95
Space 1889	36.95
Space Ace II: Borf's Revenge	36.95
Space Quest 2	30.95
Space Quest 3 or 4	36.95
Spacewrecked	30.95
Speedball 2	24.95
Spellbound	24.95
Stanford Wong Video Poker	30.95
Star Control	30.95
Starflight I or II	31.95
Stellar 7	21.95
Stratego	30.95
Strikefleet	25.95
Strip Poker 3	30.95
Stunt Track Racer	24.95
Swap	30.95
Team Suzuki	24.95
Team Yankee	36.95
Teenage Ninja Turtles: Arcd	30.95
Terrain Envoy	28.95
Test Drive III	CALL
Their Finest Hour	20.95
Thunderstrike	30.95
Tie Break Tennis	24.95
Time Machine	34.95
Tracon II	41.95
Twilight 2000	36.95
Ultima 5	36.95
UMS: Nations at War	36.95
UMS II: Planet Editor	30.95
Universe 3	31.95
Vette	30.95
Volfied	24.95
Warhead	31.95
Warlord	30.95
Willie Beamish	36.95
Western Front	36.95
Where in the ...Carmen each	30.95
White Death	30.95
Wolf Pak	34.95
World Atlas	35.95
Worlds at War	30.95
Yeager's Adv. Train 2.0	25.95
Zone Warrior	25.95

We Have Hundreds of Titles - Call Us!

• • • PRODUCTIVITY • • •

A Talk IV	59.95
Ami Back Moonlighter	44.95
AMOS	57.95
AMOS Compiler	34.95
AMOS 3D	44.95
Arexx	27.95
Art Department Pro 2.0	156.95
Audio Master 4	57.95
Audition 4	57.95
Auto Basic	52.95
Aztec C Developer V.5.0	157.95
Aztrec C Pro V.5.0	104.95
BAD 4.0	28.95
Bars & Pipes	109.95
Bars & Pipes Pro	194.95
Baud Bandit	28.95
Broadcast 3D Fonts for Imagine	79.95
Broadcast Titler 2.0	194.95
Can Do	82.95
Pro Pack 1	24.95
Comic Art Disks ea.	20.95
Comic Setter	41.95
Copyright	28.95
Cross DOS 2.0	24.95
Deluxe Music Construction	61.95
Deluxe Paint IV	107.95
Deluxe Photo Lab	94.95
Deluxe Print II	51.95
Deluxe Productions	128.95
Deluxe Video III w/Del Photolab	107.95
Design Works	72.95
Digidroid	59.95
Digimate 3	24.95
Digipaint 3.0	58.95
Digiview Gold	114.95
Director 2.0	75.95
Directory Opus	36.95
Discovery 2.0	24.95
Discovery Educational Pak	41.95
Disk Labeler	24.95
Disk Master 2	39.95
Disk Mechanic	54.95
Disney Animation Studio	74.95
Distant Suns Version 4.0	54.95
Dos 2 Dos	30.95
Draw 4D Professional	184.95
Dynacadd	669.95
Elan Performer 2.0	87.95
Excellence V2.0	104.95
Final Copy	56.95
Font Pack 1Broadcast Titler	107.95
Font Enhan for Broadcast Titler	107.95
GFA Basic 3.5	87.95
Gold Disk Office	166.95
Image Finder	41.95
Image Master	112.95
Imagine	165.95
Invision +	174.95
Kara Headline Fonts 1	41.95
Kara Headline Fonts 2	36.95
Kara Toaster Fonts 1 or 2	51.95
Lattice C DEV 5.01	187.95
Macro Paint	78.95
Map Master for Lightwave 3D	57.95
Material Textures Library Vol 2	30.95
Math Blaster Plus	30.95
Maverick	24.95
Mavis Beacon Typing	31.95
Maxiplan Plus	54.95
MediaShow	77.95
Mega Paint	174.95
Movie Setter	41.95
MR Backup Professional	34.95
Music X	169.95
Music X Jr.	87.95
On Line Platinum	39.95
Page Renderer 3.0	94.95
Page Setter 2	67.95
Page Stream V.2.2	165.95
Buddy System	29.95
Classic Font Set	114.95
Designer Font Set	114.95
Newsletter Fonts	59.95
Starter Fonts	59.95
PC Globe 4.0	38.95
Pelican Press	62.95
Pen Pal	85.95
Personal Write	30.95
Personal Fonts Maker	62.95
Phantom SMPTE Interface	209.95
Phasar 4.0	54.95
Photon Paint 2.0	87.95
Pix Mate	37.95
Pix Sound 2.5	52.95
Pixel 3D	74.95
Power Windows 2.5	54.95
Pro Textures	35.95
Pro Video CGII	112.95
Pro Video Gold	139.95
Pro Video Post	189.95
Alternate Font Sets	34.95
Video Fonts II	57.95
Bread & Butter Fonts	57.95
Cinnamon Toast Fonts	57.95
Pro Write 3.2	91.95
Professional Calc	144.95
Professional Draw	112.95
Professional Page 2.1	164.95
Structured Clip Art	36.95
Templates	63.95
Project D V2.0	35.95
Proper Grammar	57.95
ProVector	187.95
Quarter Back	39.95
Quarter Back Tools	49.95
Raw Copy	34.95
Real 3D Beginner	112.95
Real 3D Professional	269.95
RX Tools	35.95
Saxon Publisher	209.95
Saxon Script Pro	74.95
Scala	Call
Scene Generator	29.95
Scenery Animator	57.95
Screen Maker - 36 Disk Pkg	219.95
Screen Maker Syquest Cart.	269.95
Screen Maker Starter Kit	27.95
Showmaker	215.95
Soft Clips Vol. 1,2, 3 or 4	44.95
Sound Master	134.95
Spectracolor	57.95
Sterling Service BBS	84.95
Super JAM!	77.95
Texture City Pro 15, Set 1 or 2	86.95
Texture City Pro 40, 24 bit	157.95
Texture City Pro 40, Syquest	267.95
Texture City Pro 40, DCTV	107.95
Tiger Cub	74.95
Title Page	104.95
Toaster Fonts V.1-5 each	41.95
Transwrite	39.95
Turbo Silver w/Terrain	56.95
T.V. Show V2.0	64.95
TV Text	64.95
TV Text Professional	99.95
Video Effects 3-D	106.95
Video Titler V1.5	92.95
Video Tools	172.95
VideoDirector	127.95
VideoFonts: Decorative, Designer	
Publisher, Videographer, each	34.95
VideoScape 3D V2.0	119.95
VIP Video Interface	104.95
Visionary	57.95
Vista	64.95
Vista Professional	81.95
Viva	122.95
Word Perfect	157.95
Works, Platinum	99.95
World Atlas 2.0	28.95
W.Shell 2.0	54.95
X Copy Professional	47.95
X Copy v2.9	34.95
Your Family Tree	39.95
Zoetrope	44.95

We Have Hundreds of Titles - Call Us!

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 $4.00.** 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 compatability & 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.

Circle 10 on Reader Service card.

HISTORY OF THE AMIGA

A Video of Monumental Proportions

An intriguing, fun-filled look at the history of the Amiga computer. From the earliest days, examine the trials, tribulations and triumphs to today's latest models from Commodore. Meet the people, view the products and visit the places that have helped make the Amiga and the amiga user unique in the history of computing.

CALL TOLL FREE or mail this coupon. **1-800-343-0728**

YES! ☐ Send me _____ copies of The History Of The Amiga videotape at the price of $19.95 each plus $2.95 shipping and handling. $5.00 handling for two or more.

☐ M ☐ L ☐ XL Send me _____ History Of The Amiga heavyweight T-Shirts at the price of $14.95 each plus $2.95 shipping and handling.

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

Make checks payable to TechMedia Video.

Canadian orders add 7% GST (GST reg. #126038405)

California residents add 7.25% sales tax

HA292 Total Amt. $_____

Exp. Date _____

Acct. # _____

Signature _____

Name _____

Address _____

City/State/Zip _____

TECHMEDIA VIDEO
80 Elm Street, Peterborough, NH 03458

Available in VHS. Please allow 4-6 weeks for delivery. Copies in PAL format available through dONAR, the worldwide international distributor. Telephone or fax your PAL orders to dONAR. Telephone: 32-11-22-50-76; Fax: 32-11-22-53-52. TechMedia Video is the licensed North American distributor of AmigaWorld Videos. Amiga is a registered trademark of Commodore Amiga Inc.

Order your own History of the Amiga T-Shirt! $14.95

You asked for it. We're delivering!

NOW, learn even more about Desktop Video production with this exciting second volume of the successful Desktop Video Volume I. This edition will provide valuable tips on the production process and teach you how to develop your own guidelines to follow when producing your own videos.

Volume I provided an easy-to-understand overview of Desktop Video. Volume II takes you further!

You'll learn:

- *Which format is for you?*
- *How to edit without time code*
- *A production shoot, what happens?*
- *Using the Video Toaster as a switcher*
- *How to use sound effects*
- *Includes the latest Video Toaster info*
- *And MUCH, MUCH MORE!*

Desktop Video Volume II

CALL TOLL FREE or Mail This Coupon. **1-800-343-0728**

YES! ☐ Please send me Volume II at the special price of $29.95 plus $2.95 shipping and handling.

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

Make checks payable to TechMedia Video.

Canadian orders add $5.00 for each video, plus 7% GST (GST reg. #126038405)

California residents add 7.25% CA sales tax

Total Amt. $ _____

Acct. # _____ Exp. Date _____

Signature _____

Name _____

Address _____

City/State/Zip _____

TECHMEDIA VIDEO
P.O. Box 802, 80 Elm Street, Peterborough, NH 03458
An IDG Communications Company

Also see your local Amiga Dealer for this video.

Copies in PAL format available through dONAR, the worldwide international distributor. Telephone or fax your PAL orders to dONAR. Telephone: 32-11-22-50-76; Fax: 32-11-22-53-52.

PAL versions licensed WORLDWIDE to dONAR DISTRIBUTORS

Available in VHS. Please allow 4-6 weeks for delivery. TechMedia Video is the licensed North American distributor of AmigaWorld Videos. Amiga is a registered trademark of Commodore Amiga Inc.

RAZZA VIDEO

DV292

Just the Facts!

What *really* is "Jaggie-Free" printing?

ProWrite 3.2® - $174.95		Final Copy™ 1.2 - $99.95
Sans-serif font printed in Workbench 1.3. Serif font printed in Workbench 1.3. abcdefgh ABCDEFG abcdefgh A Sans-serif font printed in Workbench 2.0. Serif font printed in Workbench 2.0. (Results required 2.0 outline fonts.) A	9 Pin Dot Matrix	Sans-serif font printed in Workbench 1.3. Serif font printed in Workbench 1.3. abcdefgh ABCDEFG abcdefgh A Sans-serif font printed in Workbench 2.0 Serif font printed in Workbench 2.0 abcdefgh ABCDEFG abcdefgh A
Sans-serif font printed in Workbench1.3 Serif font printed in Workbench 1.3. abcdefgh ABCDEFG abcdefgh A Sans-serif font printed in Workbench 2.0. Serif font printed in Workbench 2.0. (Results required 2.0 outline fonts.) A	24 Pin Dot Matrix	Sans-serif font printed in Workbench 1.3. Serif font printed in Workbench 1.3. abcdefgh ABCDEFG abcdefgh A Sans-serif font printed in Workbench 2.0 Serif font printed in Workbench 2.0 abcdefgh ABCDEFG abcdefgh A
Sans-serif font printed in Workbench 1.3. Serif font printed in Workbench 1.3. abcdefgh ABCDEFG abcdefgh A Sans-serif font printed in Workbench 2.0. Serif font printed in Workbench 2.0. (Results required 2.0 outline fonts.) A	InkJet 300 dpi	Sans-serif font printed in Workbench 1.3. Serif font printed in Workbench 1.3. abcdefgh ABCDEFG abcdefgh A Sans-serif font printed in Workbench 2.0 Serif font printed in Workbench 2.0 abcdefgh ABCDEFG abcdefgh A
ProWrite comes with enough fonts to access 13 of the 35 typefaces in a Post-Script® laser. Text sizes are limited to the bitmap fonts on a disk (9-24 pts.). More fonts and sizes must be purchased separately.	Laser 300 dpi PostScript®	Final Copy comes with the ability to access 33 of the 35 typefaces that are in PostScript® lasers. Text can be created in any size from 4 to 300 points. Final Copy's PostScript® output is *true* WYSIWYG.

	Outline Fonts Included	Crop Graphics	Load Simple HAM graphic	Thesaurus Synonyms	Speller Words	Snaking Columns	Graphic Text Flow	Automatic Hyphenation
Final Copy 1.2	34	Yes	3.5 sec.	470,000	116,000	1-6	Yes	Yes
ProWrite 3.2®	0	No	1 min 20 sec.	400,000	100,000	1-5	No	No

	Price	Frame Graphics	24 Bit ILBM support	Thes. with Definitions	Page Views	Print 1 pg. document	ARexx	Use Amiga Clipboard
Final Copy 1.2	$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

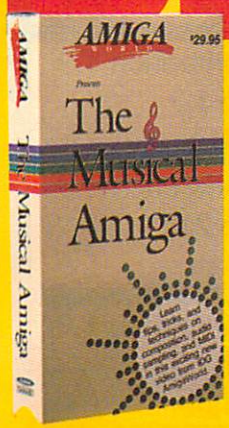
To beat a winner you've got to be a whole lot better. Final Copy is the ***first*** and ***only*** word processor on the Amiga that gives high-quality printing on any 1.3 or 2.0 Workbench supported printer. It comes with a 116,000 word spelling detector and corrector, 470,000 synonym thesaurus with definitions, 34 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."

Final Copy 1.2 **1-800-247-8314** **SoftWood, Inc.**

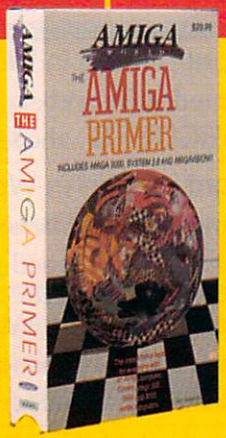
System requirements: Amiga with at least 1 megabyte of RAM, Workbench 1.3 or 2.0, 2 floppy drives or a hard drive.
Products mentioned in this ad are trademarks of their respective owners.

SEEING IS BELIEVING



THE MUSICAL AMIGA

Every aspiring musician should have this video! Includes theory, software, and an introduction to MIDI, plus interviews with experts. Features Sonix, Deluxe Music, AudioMaster and others.

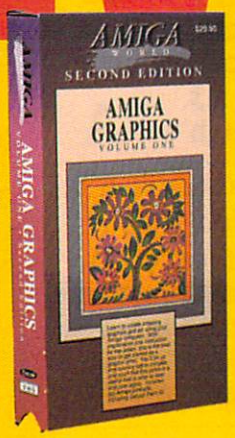


THE AMIGA PRIMER

Get the facts on getting started. Learn about setup, Workbench, CLI, Shell, running programs, hardware expansion, and more. Covers all Amiga models, including Amiga 3000 plus an intro to AmigaDOS 2.0.

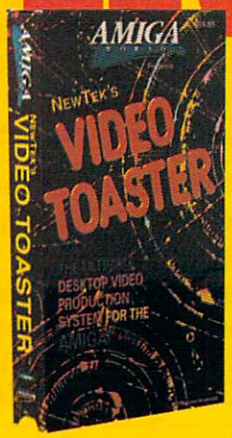
HOT ROD YOUR AMIGA

Expansion tips for all Amiga models, accelerators, RAM, Genlocks and more! Features GVP, NewTek, Digital Creations and others, plus interviews with Gerard Bucas of GVP and Lou Wallace of Amigaworld.



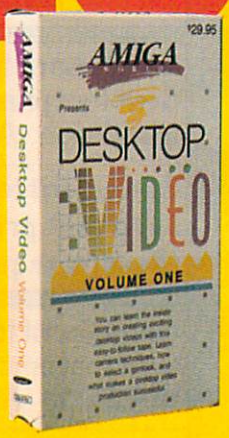
AMIGA GRAPHICS, VOL. I

Learn the ethics of style and how to get your graphics career into high gear. Includes interviews with experts. Features Deluxe Paint IV, HAM, NewTek products. Digitizing tips, using fonts, clip art and much more. (2ND EDITION)



THE NEWTEK VIDEO TOASTER VIDEO

The most popular overview of the Toaster available! Compares components to broadcast studio equipment, details assembly of a project, includes hot Lightwave animations.

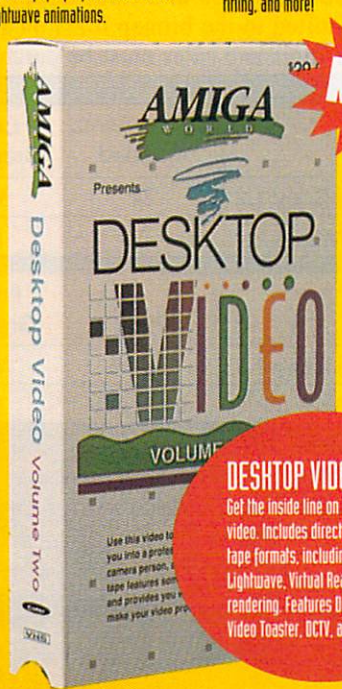


DESKTOP VIDEO, VOL. I

The best source for getting started with DTV. Excellent advice from experts, including an Academy Award winning director. Features camcorders, editors, peripherals, techniques for top results, titling, and more!

Take a behind-the-scenes look at some of the hottest software and hardware products available for the Amiga in this exciting series of videos, now available from TechMedia Video. Each tape is packed with instruction, graphics, music, and interviews with experts.

CALL TOLL-FREE or mail the coupon below **1-800-343-0728** **Or visit your local Amiga dealer and ask for these videos**



RAZZA VIDEO

DESKTOP VIDEO, VOL. II

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!

YES! *I want to become an expert! Please send me the following videos:*

TECHMEDIA VIDEO An IDG Communications Company

dONAR

☐ Amiga Primer	$29.95
☐ Amiga Graphics, Vol. I	$29.95
☐ Desktop Video, Vol. I	$29.95
☐ Desktop Video, Vol. II	$29.95
☐ The Musical Amiga	$29.95
☐ Hot Rod Your Amiga	$24.95
☐ NewTek's Video Toaster	$24.95
Shipping and Handling	
CA/Canada add 7% tax	
Total Amount	

NAME:

ADDRESS:

STATE/PROV.: ZIP CODE:

PAYMENT BY:
☐ Check/ Money Order
VISA MasterCard AMERICAN EXPRESS DISCOVER
(CIRCLE CREDIT CARD YOU ARE USING)

ACCOUNT #:

EX. DATE: SIGNATURE:

Please include $2.95 per video shipping/handling; $6.00 for three tapes or more. Canadian orders add 7% GST (GST reg. # 126038405). Make checks payable to TechMedia Video, P.O. Box 802, 80 Elm St., Peterborough, NH 03458. Available in VHS only. Please allow 4-6 weeks for delivery. Copies in PAL format available through dONAR, the European master distributor. Telephone your PAL orders to dONAR at 32-11-22-50-76; (fax) 32-11-22-53-52. TechMedia Video and dONAR are licensed distribution agents of Amigaworld videos. RZ492

ORDER ONE TODAY. YOU HAVE TO SEE IT TO BELIEVE IT!

© 1989, 1990, 1991 by Razza Video USA. All rights reserved. Amiga is a registered trademark of Commodore Business Machines, Inc. Video Toaster is a trademark of NewTek, Inc.

THE COMPLETE COLOUR SOLUTION

$379.95

Vidi ... No 1 in UK & Europe (Leading the way forward)

Image capture from video without filters

Get the most out of your Amiga by adding:

"The Complete Colour Solution"

The Worlds ultimate creative leisure product for your Amiga. Capture dynamic high resolution images into your Amiga in less than one second.

And Look No Filters

Images can now be grabbed from either colour video camera, home VCR or in fact any still video source. The traditional method of holding three colour filters in front of your video camera is certainly a thing of the past. Because Vidi splits the RGB colours electronically there are no focussing or movement problems experienced by some of our slower competitors. Lighting is also less of an issue as light is not being shut out by lens filters. Put all this together with an already proven Vidi-Amiga/VidiChrome combination and achieve what is probably the most consistant and accurate high quality 4096 colour images ever seen on the Amiga.

The colour solution is fully compatible with all Amiga's from a standard A500 to the ultimate A3000. No additional RAM is required to get up and running.

You will see from independant review comments that we are undoubtedly their first choice and that was before the complete solution was launched. If you have just purchased your Amiga and are not sure what to buy next, then just read the comments or send for full review and demo disk.

Actual unretouched digitised screenshot

Features ...

- Grab mono images from any video source
- Capture colour images from any still video source.
- Digitise up to 16 mono frames on a 1meg Amiga.
- Animate 16 shade images at different speeds.
- Create windows in both mono & colour.
- Cut & Paste areas from one frame to another.
- Hardware and software brightness & contrast control.
- Choice of capture resolutions standard & Dynamic interlace.
- Full Palette control.
- Add text or draw within art package.

Amiga Computing: The best Amiga digitiser has had the technicolour treatment. Vidi must be one of the most exciting peripherals you can buy for your Amiga.

Micro Mart: When I first saw Vidi "in the flesh" as it were, at the CES show last September it looked to be the answer to a frustrated Digi View owner's dreams – in fact to see pictures appearing on screen without the customary two minutes wait seemed almost too good to be true. I have consistently produced more good quality pictures in the short time I have had Vidi than I ever did with Digiview.

Zero: Now under normal circumstances cheap usually means poor quality but this is not the case with Rombo. Why? cos Vidi-Amiga is the best digitiser for under £500 and I've tried them all.

Amiga Format: Where quality is concerned, Vidi produces some of the best results I've seen on any digitiser at any price.

Amiga User International: The latest addition to the Rombokit is called Vidi-RGB and brings this already impressive package to the realms of totally amazing. CONCLUSION: Who will find Vidi-Amiga useful? The answer to this is almost anyone with a video recorder or camera and a passing interest in graphics.

VISIT US AT COMDEX
STAND No. 716/4

Circle 43 on Reader Service card.

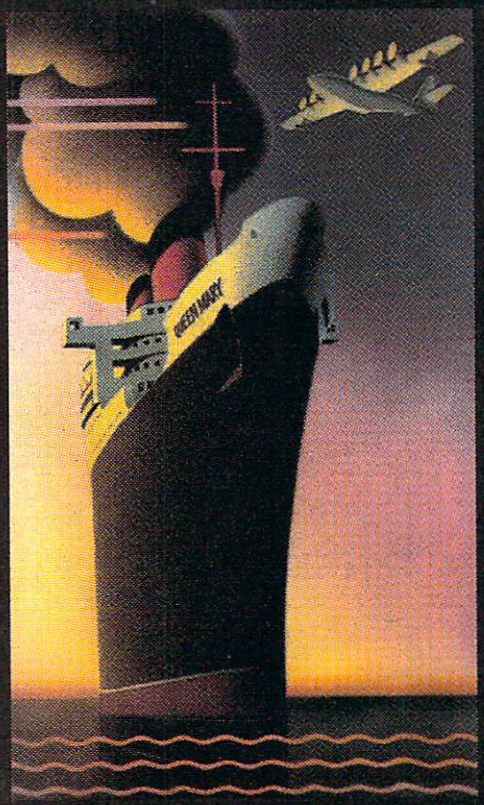
Place Your Orders Now With Any of the Following Distributors:

Pacific Software Supply Tel: (805) 543 1037 Fax: (805) 549 0549
American Software Tel: (217) 384 2050
MicroPace Tel: (217) 356 1885 (Dealer Calls Only) Fax: (217) 356 0097
Rio Computers Tel: (702) 734 9100

** * Full colour demonstration disk available for only $3.30 to cover P&P * **

ROMBO

Spend Valentine's Day With Your Amiga!



The Amiga Event!
February 14-16, 1992
The Queen Mary
Long Beach, California

Prepare to come aboard the Amiga Event of the Year! AmiEXPO, The Amiga Event is three full days of all Amiga Activity. The Queen Mary is your one place for the latest in Amiga technology:

- ✦ A Full 3 Level Exhibit Hall featuring the Latest in Amiga Hardware and Software
- ✦ The Lowest Prices on all Amiga hardware and software
- ✦ An Amiga World Premiere every day, including Gold Disk's Professional Page 3.0.
- ✦ FREE Seminars in Video Production, Animation, Image Processing, New Technology Preview and much more
- ✦ Intensive, low-cost Classes in Amiga Video, Animation, ARexx and Graphics for the beginner and professional - and Novice Classes in both Workbench 1.3 and 2.0.
- ✦ Amiga Spotlight Classes in ADPro, CanDO, Imagine, PageStream, ShowMaker and even CDTV development!

Don't miss this exciting three-day event aboard The Queen Mary in Long Beach, California

Single Day Tickets - $20 Multi Day Tickets - $25

Pre-Register by calling 800-32-AMIGA (914-741-6500) with your Visa or MasterCard. Or bring the coupon below to the show - without it, prices are $5 more at the door.

PRE-REGISTRATION DEADLINE - FEBRUARY 1ST!

All Aboard The Queen Mary!

Join us aboard the most luxurious ocean liner ever to have sailed the seas - now moored in Long Beach, California and ready for three days of All Amiga Activity. The Queen Mary offers AmiEXPO visitors a low rate of $88 per night for either a single or double room. Call for reservations at 310-432-6964. HOTEL DEADLINE IS JANUARY 12th, 1992! Registered guests receive a 50% discount on all The Queen Mary and Spruce Goose attractions.

SHOW HOURS

Friday	Saturday	Sunday
Feb. 14	Feb. 15	Feb. 16
12-5	10-5	12-5

MASTER CLASSES
Beginning & Advanced • $60 per 3 hour class

Fri. Only	**CDTV Development • PageStream**
Fri. & Sat.	**Amiga Video Beginning & Pro.**
Sat. & Sun.	**Amiga Animation • Imagine**
Sat. Only	**AD Pro • CanDo • Video Toaster**
Sun. Only	**Amiga ARexx • ShowMaker**

NOVICE CLASSES
Workbench & CLI • $30 per 3 hour class

Fri. Only	**AmigaDOS 1.3**
Sat. & Sun	**AmigaDOS 2.0**

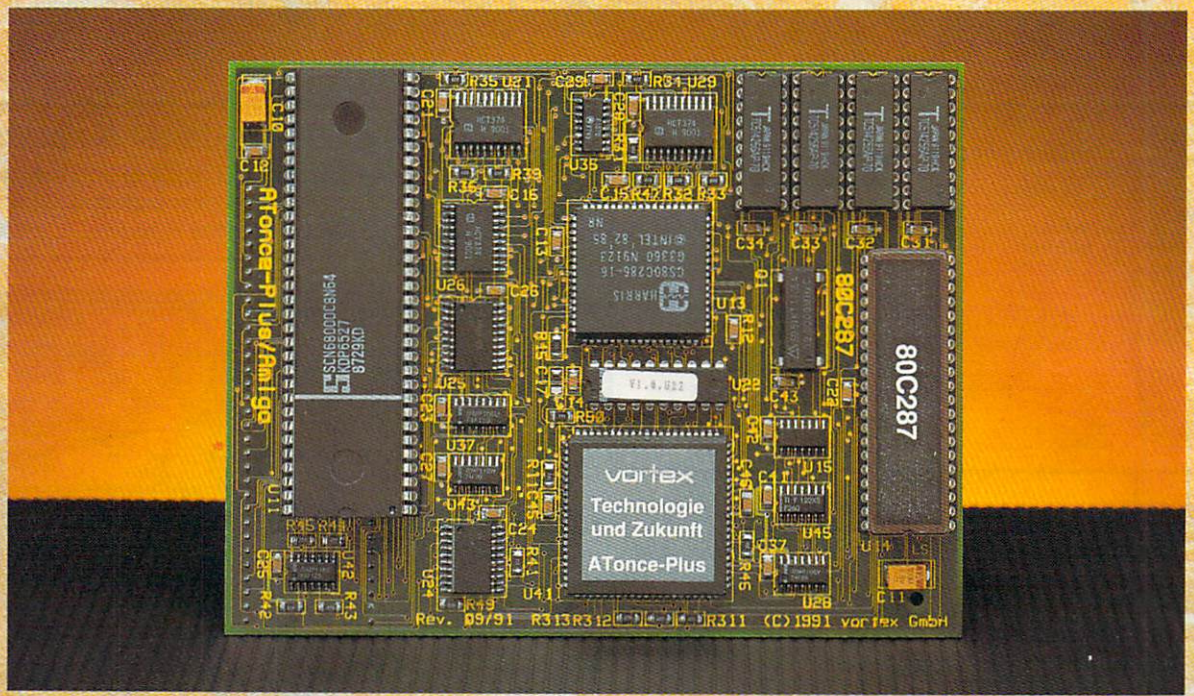
SAVE $5
Call 800-32-AMIGA or Bring This Coupon
AmiEXPO, The Amiga Event
February 14-16
The Queen Mary, Long Beach, CA

AmiEXPO

Circle 3 on Reader Service card.

AmiEXPO is a registered trademark of AmiEXPO, Inc.

VORTEX ATONCE-PLUS



The 16 MHz PC/AT-Emulator For $ 448
For Amiga 500, A 500 plus, A 2000

vortex ATonce-Plus is the high performance 16 Bit CMOS 80286 AT emulator for the Amiga 500, A500 plus and A2000. It converts your Amiga into an AT compatible computer with multi-processor and multi-operating system facilities. It provides a 16 MHz clock frequency and offers a Norton SI of 16,2.

Each ATonce-Plus is supplied with 512 KB vortex FAST-RAM and a socket for an optional 80C287-12 arithmetic co-processor. Without any further RAM you get full 640 KB DOS memory. Memory above 1 MB can be used as Extended or Expanded Memory. Windows 3.0 runs unrestrictedly in the Protected Mode.

ATonce-Plus runs as a task within AmigaDOS. It does not affect the normal operation of your Amiga and is totally transparent when not in use. You may work with PC/AT programs under MS-DOS or DR-DOS as well as with your Amiga under AmigaDOS.

ATonce-Plus accesses the entire environment of your Amiga: Commodore compatible hard disk systems as well as internal and external disk drives, the serial (mouse) and parallel interface, sound, RTC and CMOS RAM.

Video emulations such as EGA and VGA in a monochrome graphic mode, CGA with 16 colors, Hercules, Olivetti and Toshiba3100 are available.

The ATonce-Plus Gate Array, the Chip-Level Emulation and the ATonce-Plus AT-BIOS guarantee an AT emulation with the utmost degree of compatibilty and provide your Amiga with full system reliability.

ATonce-Plus is delivered with installation and emulation software (no DOS) and a detailed user's manual.

The compact SMT-PCB plugs directly into the socket of the 68000 CPU without any soldering, so all expansion slots remain free.

ATonce-Plus for only **$ 448.**

For further information please contact your local Amiga dealer or call Compuserve at 100015,330.

All company or product names are trademarks or registered trademarks of their respective holders. ATonce is the registered German trademark of vortex Computersysteme GmbH.

GO AMIGO!

800-BE-AMIGA (800-232-6442)

$219.00 without Agnus

$309.00 with Agnus

DKB MegAChip

2 Megs of Chip RAM for the A2000 and A500
Doubles your Graphics memory for Desktop Video, 3D Rendering & Animation, Multimedia or Desktop Publishing

DKB Insider II

1.5 Meg of internal RAM for the A1000 with clock/calendar

0K	$189.00
512K	$219.00
1MB	$249.00
1.5MB	$279.00

DKB SecureKey

The SecureKey is a hardware security device that installs in any A2000 or A3000. The SecureKey will not allow access to your Amiga without the right security code. $99.00

The Art Department Professional

Art Department Pro gives you the most powerful image processing system ever offered for the Amiga $139.00

Chroma Key

Video Overlay Device
$315.00

COLORBURST

24-Bit Video/Graphics Engine
16.8 Million Colors/Pure RGB output
WORKS WITH ALL Amigas.

HOT PRICE! $689.00

FireCracker 24

2 Meg Version

- High-resolution
- 16.8 Million Colors
- 24-Bit graphics display card
- Works on the Amiga 2000 and 2500

$829.00

Seiko CM-1440

$519.00

- 14" Super fine pitch Trinitron
- Resolution up to 1024 x 768
- Anti-glare silica coating
- Works on all Amigas
- Includes a free cable

Printers

HP PaintJet	699.00
HP DeskJet C (Color)	CALL
HP DeskJet 500	429.00
LaserJet IIP	799.00
QMS-PS 410	1989.00

Epson Scanner

$1199.00

600 DPI, 24-Bit full page color scanner.
With ASDG Driver Bundle $1299.00

ES-300C

Newtek Video Toaster

CALL

DPS Personal TBC II

$849.00

Supra Corporation

SupraRam 2000 2/8mb Board
$169.00

SupraRam 2000 4mb RAM	235.00
SupraRam 2000 6mb RAM	299.00
SupraRam 2000 8mb RAM	369.00
SupraRam 500 512k	47.00
SupraRam RX 1MB	125.00
SupraRam RX 2MB	189.00

Due to industry fluctuation, RAM prices are subject to change without notice

DCTV From Digital Creations

Full NTSC Color Display and Digitizer.
$399.00

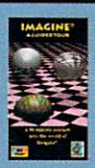
DCTV: A guided tour

This easy-to-follow, comprehensive VHS tutorial will tell you all you need to know about DCTV.

$26.95

Imagine $179.00

Hot New 24-bit 3D Rendering and Animation Software



Buy Imagine and get the video FREE!!

The World's Second Largest Distributor of Amiga™ Products

Centaur Software Inc.

Fantastic Voyage The Computer Game
$34.95

World Atlas
4 Disks of info on over 170 countries + 255 maps
$32.49

B.A.D. Ver.4.0
Best-selling disk optimizer for all Amigas. Speeds floppy and hard drives by up to 5 times! $29.95

Boing! Mouse
Best-selling optical mouse for the Amiga with Free D.U.D.E. software (a $39.95 value).
$79.95

Hard Cards

Series II A2000 SCSI Hard Disk and RAM Card: State-of-the-Art integration packs GVP's high-performance SCSI controller, 8MB Fast RAM expansion and a 3.5" hard drive into a single A2000 Expansion Slot!

A2000-HC8+0/52Q-LPS
(Quantum 52Mb) $399.00
A2000-HC8+0/105Q-LPS
(Quantum 105Mb) $525.00

Grand Slam Expansion Card Milestone!

Up to 8 megs RAM expansion, a parallel port and a high speed SCSI controller!

$239.00

INTERACTIVE VIDEO SYSTEMS

GVP

A500 HD+

The Series A500 HD8+ uses the same technologies of it's powerful A2000 cousins and additional features like: Exclusive Game Switch, Fast RAM Expansion up to 8MB, External SCSI Port, Free dedicated universal power supply! Ask about our Amiga 500 DS Computer/GVP Hard drive bundles.

A500-HD+/52Q
(Quantum 52Mb) $519.00
A500-HD+/105Q
(Quantum 105Mb) $719.00

RAM Expansion

The best things come in small packages!

The smallest and most compact 8MB RAM Expansion board for the A2000. Once again GVP proves to be the technology leader.

GVP SII RAM 2/8MB 159.00
GVP SII RAM 4/8MB 239.00
GVP SII RAM 6/8MB 309.00
GVP SII RAM 8/8MB 389.00

Capacities over 2 megs come with seperate SIMM modules.

The ICD Advantage

AdSpeed™ $209.00
Best overall performance of any accelerator in it's price range.

Flicker Free Video™ $295.00
Eliminates interlace flicker for any Amiga computer.

Novia 20i™ $549.00
The smallest hard drive and interface in the world for your Amiga 500. Fits internally.

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

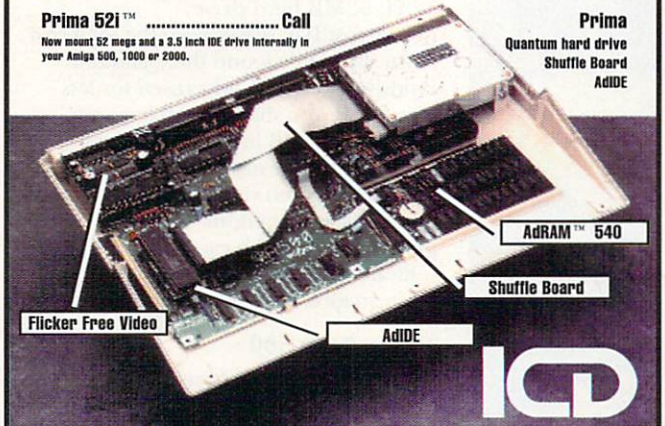
Prima 52i™ ..... Call
Now mount 52 megs and a 3.5 inch IDE drive internally in your Amiga 500, 1000 or 2000.

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

AdIDE™ $99.00
Smallest Amiga hard drive interface made. For IDE (AT) drives.
IDE 44 for your 2.5 inch hard drive. $119.00

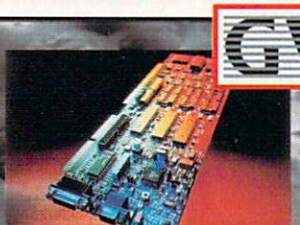
Shuffle Board™ $29.95
Reroutes DF0: to the external floppy connector. Boot from an external floppy. For an Amiga 500 or 1000.

Prima
Quantum hard drive
Shuffle Board
AdIDE



ICD

GVP



Impact Vision 24

16 Million colors, 24-Bit Frame Buffer + Genlock + Framegrabber + Flicker-Eliminator + PIP + Video Titler + 3D Modelling System.

A3000-IV24 ..... $1899.00
A2000-IV24
Adapter $49.00

Accelerators

The New Faster and more Expandable A3050 50MHz Accelerator will Turbo-charge your Amiga 2000 beyond your wildest dreams! Now expandable to 32MB of 32-Bit RAM!

A2000-Combo 22/1 . $799.00
A2000-Combo 33/4 $1399.00
A3050-4/0 ..... $1899.00

International orders call: (213) 370-9550

Call for all other shipping information. Educational, corporate and aerospace purchase orders accepted. No surcharge for Visa/MasterCard; 4% surcharge for American Express; 1% surcharge for Discover. **RETURN POLICY:** Call Customer Service at (213) 214-0000 for return authorization. All returns without authorization number (RMA#) will be refused. Returned products must be in original condition and packaging and must be sent back within 30 days of our invoice date. No refunds, please. Defective product exchanges only. We make no 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. 23.

15×5¾×2½ inches, with several inches extending past the back of the computer. The green LED located near the front of the enclosure indicates hard-drive activity. Inside the enclosure, I found a single 100-pin, A2000-type expansion slot and the DataFlyer SCSI host adapter, a half-length card. The unit comes with a half-height Quantum 40MB hard drive mounted at the back of the enclosure. The system I reviewed came with a DataFlyer RAM option ($129), a DataFlyer power supply option ($69), and a SCSI pass-through option ($14.95) that provides a 25-pin SCSI connector on the back panel.

You can obtain DataFlyer RAM configured with .5 , 1, or 2MBs by using 256K SIMMs. With 1MB SIMMs, the possible memory configurations are 2, 4, or 8MBs. DataFlyer RAM plugs into a 100-pin header located on the DataFlyer SCSI host adapter.

The DataFlyer 500 power supply installs inside the enclosure and powers the entire system. This switching power supply does not need an on/off switch, as it automatically powers up when the A500 is turned on. The DataFlyer RAM power supply option ($29) is an external supply that you use only to power DataFlyer RAM. In this case, the A500 powers the DataFlyer SCSI host adapter and the associated hard drive.

The DataFlyer 500's set-up software consists of a command-line window presenting a series of questions for response. This setup successfully leads you by the hand through both low- and high-level formatting, partitioning, and Workbench and AmigaDOS installation.

The basic DataFlyer 500 is a low-cost, no-frills hard-drive system that performs most competently. Performance with a Quantum 40MB hard drive was very good, although its speed did drop off somewhat with DMA and CPU contention turned on. Installing additional peripherals will somewhat offset the initial low price of the system.

The Trumpcard Experience

Interactive Video Systems' (IVS) Trumpcard line of products is designed to offer a variety of options. What's more, IVS's hard-drive set-up software, common to all of their hard-drive systems, is the best I have seen. Its point-and-click user interface lets you create and size hard-drive partitions by simply dragging the mouse. It supports all known file systems, including the old file system, the fast-file system and AMax.

Trumpcard 500 AT

The Trumpcard 500 AT ($275.95) has a plastic housing that matches the A500's styling, coloration, and profile. About 5¼ inches in width, the enclosure's sloping front panel sports a red power LED and a green hard drive-activity LED. Its rear panel is fitted with a five-pin DIN connector for an optional external power supply. To disassemble the unit, simply remove the eight screws from the bottom of the case and lift the cover off. You can then pull the main circuit board right out.

The unit's full-length circuit board utilizes all surface mount components, located underneath. Eight SIMM sockets, the hard drive, and the associated connectors are all mounted topside. A half-height, 3½-inch hard drive mounts on four nylon standoffs to the top of the board. The on-board memory expansion uses 1MB SIMMs that can be configured as either 2, 4 or 8MBs of Fast RAM. An autoboot enable/disable jumper is provided if you are still using Kickstart 1.2. You will have to set a RAM-disable jumper if you want to run the included RAM test program.

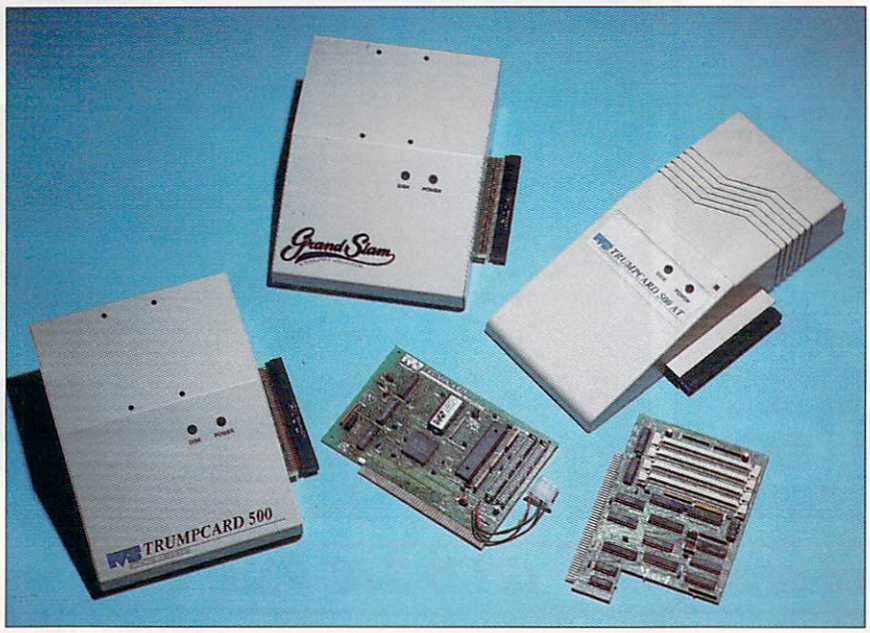
As with all of IVS's hard-drive host adapters, you can disable the autoboot simply by putting a bootable floppy disk into drive DF0:. The system then boots from the floppy, and the hard drive is not mounted, remaining unrecognized by the system. You can also hold down the left mouse button while the system boots from a floppy disk. In this case, your system recognizes the hard drive, and all its partitions will be mounted; however, the system will boot and run from the floppy drive.

Trumpcard 500 AT differs from all the other systems in this report in that it utilizes an IDE (Intelligent Device Electronics) disk drive. Most other Amiga hard-drive host adapters support the SCSI system. Like SCSI drives, IDE drives provide on-board intelligent controllers. While the Trumpcard 500 AT does not provide for an external drive cable, you can modify its enclosure to support a second drive. Additionally, IDE hard drives are inherently slower than SCSI drives, although the Trumpcard 500 AT still puts in a respectable performance on the speed tests with its supplied Quantum LPS 52AT, 52MB hard drive.

Low-cost IDE drives keep the total cost down. I recently found the Quantum Prodrive LPS 52AT advertised for less than $180. You should be able to put together a 50MB hard-drive system based on Trumpcard 500 AT for less than $400. When you consider that the system includes built-in 8MB RAM expansion, comes with excellent support software, and has better-than-average performance, it merits a best-buy rating.

Trumpcard 500

IVS's original hard-drive and memory-expansion system for the A500, the Trumpcard 500 ($189.95), is an all-metal boxy enclosure with sloping front. It measures 9×7×3 inches, making it slightly taller than the computer. The hard drive mounts upside down directly onto the top cover, which comes off easily upon the removal of



The IVS line of hard disks and RAM expansion for the A500.

four screws. Like the 500 AT, the sloping front panel sports a red power LED and a green hard drive-activity LED, and the rear panel has a five-pin DIN connector for an optional external-power supply. It also has a cutout fitted with a plastic insert for an optional 25-pin external SCSI connector.

Trumpcard 500 uses the same hard-drive set-up software as all of IVS's host adapters, with the same booting options. Inside the housing is a two-slot expansion chassis that accepts a pair of half-length, A2000-style, 100-pin expansion boards. One of these boards, IVS's Trumpcard, comes with the system. The second slot is intended for Meta4, IVS's 4MB RAM-expansion board that accepts SIMM modules. Meta4's memory configurations are 512K or 1MB with 256K SIMMs. With 1MB SIMMs, Meta4 comes with 2 or 4MBs of fast RAM. Based on current memory prices, I recommend 1MB SIMMs.

Trumpcard is IVS's bottom-of-the-line SCSI host adapter. Nevertheless, it does a competent job. Trumpcard 500's performance with the A500 and a Quantum 40MB hard drive was quite respectable. The Trumpcard 500 provides for an external, 25-conductor SCSI cable to the enclosure's rear port. Like all SCSI host adapters, you can daisy-chain as many as seven SCSI devices to the system. In addition to fixed SCSI hard drives, Trumpcard 500 also supports removable media drives such as the Syquest system.

Trumpcard 500 is a good do-it-yourself system that maintains upward compatibility with the A2000. With its moderate price tag, good performance and supporting software, Trumpcard 500 is well worth considering.

Trumpcard Professional

Trumpcard Professional 500 ($279.95) utilizes the same metal enclosure as Trumpcard 500, with a built-in, two-slot expansion chassis. It differs from Trumpcard 500 in that it comes with IVS's Trumpcard Professional SCSI host adapter. As a result of its high-speed design, Interactive Video Systems does not recommend the use of the 25-pin external SCSI cable. Instead, Trumpcard Professional makes use of a matched set of on-board, 50-pin SCSI connectors. You can daisy-chain additional SCSI devices via 50-conductor flat-ribbon cable. The board has room for a Meta4 fitted with up to 4MBs of expansion memory. I consider the Trumpcard Professional 500's performance with a Quantum 40MB hard drive to be the best of this group. ►

A500 Hard-Drive Test Results

I used MKSoft's DiskSpeed 3.1 to test these hard-drives. With Workbench 1.3 and its sundry files installed on each drive, I attempted to find out how many kilobytes each host adapter could create, read, and write in one second when using a 256K buffer. In the Table 1 columns, the figure to the left of the slash represents the results with no other disk activity, while the right-hand figure reflects a multitasking environment.

The data in Table 2 shows how many files each of the system's drives was able to create, open and close, scan, delete, and seek/read in one second. As in Table 1, the inital figure listed tells you the results without DMA and CPU contention, and the second figure shows you what happens with these extra demands.

Finally, the results of two "real-world" tests appear in Table 3, the first column showing how long each system takes to autoboot from a cold start, and the second column how long it took to build a new index on one field within a large database file.

Table 1. Kilobytes per second, using a 256K buffer.

System	Create	Read	Write
Comspec SA with 48MB Seagate ST-157N	55/30	152/42	61/41
DataFlyer 500 with 40MB Quantum	148/60	428/167	191/76
Trumpcard 500 with 40MB Quantum	238/99	392/152	393/152
Trumpcard AT with 52MB Quantum	299/194	435/264	464/268
Trumpcard Pro 500 with 40MB Quantum	272/138	559/292	549/261
GrandSlam 500 with 40MB Quantum	273/137	562/300	546/261

Table 2. Number of files per second.

System	Create	Open/ Close	DirScan	Delete	Seek/ Read
Comspec SA	5/1	11/3	52/9	13/2	13/2
DataFlyer 500	8/5	31/14	133/54	30/15	195/77
Trumpcard 500	9/5	32/15	102/41	29/15	196/73
Trumpcard AT	12/8	29/15	111/51	62/29	177/78
Trumpcard Pro	8/5	38/16	132/51	29/17	191/73
GrandSlam	9/5	39/18	132/54	29/18	191/80

Table 3. Time taken to autoboot and build a new index.

System	Cold Boot	New Index
Comspec SA	25 sec.	52 sec.
DataFlyer 500	24 sec.	41 sec.
Trumpcard 500	29 sec.	37 sec.
Trumpcard AT	24 sec.	37 sec.
Trumpcard Pro	29 sec.	41 sec.
GrandSlam	29 sec.	41 sec.

GrandSlam 500

GrandSlam 500 ($369.95) inhabits the same metal enclosure as Trumpcard 500. The difference is that GrandSlam 500's built-in expansion chassis only has one A2000, 100-pin slot, which is equipped with IVS's Grand Slam SCSI host adapter. GrandSlam evolved from three IVS products, Trumpcard Professional, Meta4, and Printerface. It is actually a Trumpcard Professional SCSI host adapter, an 8MB RAM-expansion card, and an auxiliary Amiga parallel port on a single, half-length, A2000-type expansion card.

Since it uses the same high-speed design as the Trumpcard Professional SCSI host adapter, IVS applies the same restriction against the use of a 25-pin SCSI cable, using instead a pair of 50-pin SCSI connectors. GrandSlam 500's performance with the A500 and a Quantum 40MB hard drive was comparable to that of Trumpcard Professional 500, which was the best of this group.

All of GrandSlam's operational features, autobooting, hard-drive installation, support software, and SCSI network support are the same as for Trumpcard Professional. You can install up to 8MBs of Fast RAM, and memory comes in 2, 4, 6, or 8MB increments with 1MB SIMMs.

GrandSlam 500 adds a second parallel port to the A500. Although from an electrical point of view its parallel port could operate bidirectionally, the Amiga's operating-system design limits its operation to output only. With the GrandSlam 500's extra parallel port connected to a printer, the Amiga's original parallel port is available for use by devices such as video digitizers, sound samplers, and scanners.

GrandSlam 500 is a good do-it-yourself, high-performance system that maintains upward compatibility with the A2000.

Teacher's Toolkit

TTR Development

No more pencils, no more books.

By Neil Randall

TEACHERS SPEND A LOT of time on administrative and organizational tasks. There are grades to record, lessons to prepare, lists to keep, reports to compile, and all of these detract from the teacher's main job, which is, after all, to teach. ***TTR Development***'s Teacher's Toolkit ($54.95), a teacher-oriented record-keeping package, lets your Amiga assume some of the burden.

In its favor, Teacher's Toolkit is teacher designed and programmed, and it's clear from the result that the author continually had himself as teacher in mind. The potential problem with a one-person design and development team is that the package may suffer from a kind of personalized tunnel vision, but the author has largely risen above these concerns.

Time Released

Let's begin by concluding. Teacher's Toolkit will unquestionably assist teachers in organization and record keeping. It is flexible, usable, and far from overburdened with marginal features. There are, however, two caveats here. First, the program is slow, even if you have a hard drive. On an A500, some of the reports and graphs take ages to appear, and waiting for new screens to show up is aggravating. Second, and more important, the Toolkit assumes regular and continual use.

As its name suggests, Teacher's Toolkit is more than just a grade-recording program. The grades module (called Gradebook) is certainly the most important part of the package (it can be booted by itself from disk #2), but there is also a text editor, an appointments calendar, a telephone directory, and, most interestingly, a lesson planner. The text editor is a rudimentary word processor (but it works), the calendar is more than sufficient for most needs, and the telephone directory is really a small database with an autodial function.

The Lesson Planner is an extremely good idea, more sophisticated than the smaller utilities, but just as easy to use. Its strength, like the rest of the program, is in forcing you to make concrete decisions about what you're going to do, then helping you stick with those decisions. This utility won't plan lessons on its own, but by the time you've worked your way through it, the lesson should be clear in your mind. It also lets you combine strategies from earlier successful lessons, helping you avoid continually reinventing the wheel.

Toolkit divides each lesson into eight stages: Objective, Equipment, Motivation, Overview, Presentation, Check,

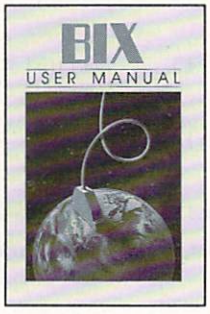
Continued on p. 98.

Who helps Amiga Pros...

✓ Get quick answers to tough coding questions ✓ Interact with other Amiga Developers ✓ Download source code, utilities and other programs for the Amiga ✓ Keep up with the latest Amiga developments ✓ Send and receive private e-mail with binary attachments ✓ Chat with other Amiga users in real time

BIX - the online service for people who know Amiga.

For just $39 every three months plus $3 per connect hour weeknights and weekends or $6 per connect hour weekdays you can tap the resources of BIX.



Don't miss out! Just have your computer and modem call 800-225-4129 or 617-861-9767 and subscribe on-line. It's easy, at the login prompt enter **bix** and at the Name? prompt enter **bix.amiga.**

800-227-2983 or 603-924-7681

BIX

Circle 54 on Reader Service card.

dataTAX

Tax Preparation software

Its that time again... Use dataTAX to prepare you 1040/1040A tax return this year. dataTAX prints Form 1040 in a graphic format and other forms in a text format approved by the IRS. Just print on your printer on plain printer paper and mail to the government. Or if you own our dataMAIL software you can get your refund quicker by electronically filing your tax return. Note: Transmitters charge $15 per return for their transmission service.

Features:

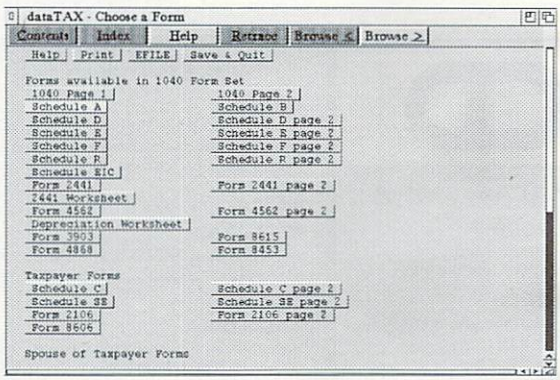
- Scrollable on screen lookalike forms
- On screen tax instructions
- Load and save multiple returns
- Run saved returns from an icon
- Expand or itemize any value
- Add notes to cells
- Override to test "What-if" scenarios

New for 1992 in V6.0

- Full Arexx support
- Lotus compatible file format
- Direct Electronic Filing.
- New larger manual
- Hard Drive install utility

Only $75
Annual updates $29.95
(+ $5 S&H)

You may upgrade from any version of dataTAX/ Tax-Break to the current version.



dataTAX works with Workbench 2.0 and 1.3. If you have not yet upgraded to 2.0 you will need ARexx. dataTAX will not work without ARexx. Included in dataTAX is a special offer for ARexx for only $24. ARexx is only needed if you are using Workbench 1.3. We recommend that you upgrade to WB2.0. Hardware Required: Amiga 500 / 1000 / 2000 / 2500 / 3000 with 1 megabyte of memory and 2 floppy drives or hard drive.

Other forms sets:
Also available are State tax forms for NY and CA for $20. These forms work with your dataTAX program disk.
A Canadian version of dataTAX is also available for C$ 59.95.

Datamax Research Box 5000 Bradford ON Canada L3Z 2A6
or 240 Portage Rd, Lewiston NY 14092 Tel:416-775-2225 Fax:416-775-5238

Circle 55 on Reader Service card.

MANTA
COMPUTERS & SOFTWARE

Order Toll Free
1-800-477-7706
Call for current price quotes & latest releases!
Many more items in stock at the lowest prices!

NEW

Multifunction Card
SCSI Controller
Add up to 8 mg RAM • Printer face parallel port

Grandslam	A500	$299
	A2000	$229
Trumpcard	A500	$179
	A2000	$ 89
Trumpcard Pro	A500	$245
	A2000	$159

Trumpcard 500AT $215
- FAST IDE Interface
- 8 Meg Expansion
- An affordable upgrade solution

Graphics and Video Department

Video Toaster
Let MANTA upgrade your Amiga system to take full advantage of New Tek's Video Toaster... • GVP Accelerator Boards 22-50 MHZ • Memory Upgrades • Hard Drive Packages • Removable Media • T.B.C. • Training Tapes...

MANTA's video consultants will tailor a package for your needs

CALL FOR BEST PACKAGE PRICES

DPS Personal TBC II
Finally a Low End TBC Solution... • Fits inside an Amiga • Proc-Amp Control • Full NTSC and SVHS • Full Frame Storage • Fully compatible with all VCR's & NewTek's Video Toaster • Genlocks to any stable video source. **CALL!**

Coming Soon Personal V-Scope!

Videos & Books

Abacus Desktop Video Book	$17	C for Beginners	$14
Amiga for Beginners	15	Desktop Video 2nd Edition	19
Amiga World Toaster Tape	20	Desktop Video WorkBook	29
Amiga DOS 2.0 Companion	20	Dos In and Out 1.3/2.0	17
Amigavision Handbook	20	Lightwave 3D Video	35
Animation Video #2	20	Toaster Microwave	32
C for Advanced	29	Ultimate Guide to Video Toaster	34

Toaster Fonts

Bread & Butter Fonts	$55
Cinnamon Toast Fonts	55
Masterpiece Fonts	129
Kara Font 1&2	59
Video Fonts 2	64

Fonts

Font Enhancer	$99
Font Pack	99
Interfont	75
Kara Fonts	49
Pro Video 1-5	39
Video Clipse	49

BCD - 2000A *Call for best price*
Amiga Video Animation Controller

Graphics & Video

Amigavision	$89	Pixel 3D 2.0	$69
Art Department 2.0	159	Pro Conversion Pak	50
Color Splitter	105	Pro-Video Gold	147
Disney Animator	97	Pro-Video Post	169
Digimate 3	23	Real 3D	CALL
Digipaint 3	62	Scene Generator	28
Digiview Gold 4.0	119	Scenery Animator	55
Director 2.0	73	Showmaker	219
Draw 4D Pro	179	Spectra Color	64
Foundation	135	Titler II	219
Image Finder	40	Turbo Silver	59
Image Master	CALL	T.V. Show 2.0	58
Imagine	149	T.V. Text Pro	98
Imagine Guided Tour	35	Video Clipse	49
Imagine 2.0	CALL	Video Director	149
Mapmaster for Lightwave	59	Vista Pro	85.

Deluxe Paint IV $99.95

Paint and animate in HAM using 4096 colors
NEW Animation Features
NEW Paint Tools
PLUS All the power of Deluxe Paint III

Micro Tek True Laser *Only $1349*
- 3 MB RAM • 6 PPM • 35 Resident Fonts
- Postscript Compatible • 16 MHZ RISC Processor
- 1 year Warranty 6/month on Site
- Adobe Type 1 & 3 compatible
- Appletalk & PCL Compatible

HP Laser & Paintjets Available Call For Prices

Sharp JX-320 Scanner
24 Bit Color • 300 DPI • Full Page Scanner
Call Low Price

Hardware

Monitors

Commodore 1084S	CALL
Nec Multisync 3FGX	CALL
Seiko CM 1440	$499
Seiko CM 1450	$649

Citizen Printers
GSX 200 9 pin
New GSX 130 & 140+ 24 pin
Color Option Available • CALL

Genlocks

MiniGen	$185
SuperGen	$599
SuperGen 2000s	$1299
Videomaster	$999

DMI Resolver	CALL
DCTV	CALL
Firecracker 24/2 Mg	$819
Int. Floppy A500/2000	CALL
Ham-E Plus	CALL
Kitchen Sync	CALL
Personal SFC	$349
JX-100 Scanner	$549
Sketchmaster 12x12	399
Sketchmaster 12x18	589
Showline TBC's	CALL
Video Blender	CALL
VXL-30	CALL

Memory

1x4 SIMMS	Call
256 k x 4 80ns DRAM	Call
1MG x 1 80ns DRAM	Call
3000 Memory Upgrade	Call
GVP SIMM32 Memory for Accelerators	Call

Hard Drives

Syquest 44 Mb Drive	$319	IDE AT 120	$619.95
Syquest 88 Mb Drive	435	Quantum 52 LPS SCSI	219
Low Prices On Cartridges		Quantum 105 LPS SCSI	329
IDE AT 52	205	Quantum 210 SCSI	635
IDE AT 105	319.95	Maxtor 213 Mb	619

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 interlace 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.

Special **AdSpeed $205**
Flicker Free Video $279
Call For Other Prices

Supra Corporation

SupraDrive 500XP

20 MB 512 K	$325
52 MB 1 mg	CALL
120 MB 512 K	589
240 MB 2 mg	919

$129

Supra 2400 Zi Plus $149 • ***2400 Bd External*** $79

Supra Wordsync....$99 **Supra FAX Modem V32....$239**

Supra RAM 500 RX

1 MB	$119
2 MB	169*
8 MB	399

Supra RAM 2000

2 MB	$149*
4 MB	235
6 MB	299
8 MB	369

** Limited Quantities • PC Power Board Call*

AUTHORIZED AMIGA SALES & SERVICE CENTER

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

GVP

GREAT VALLEY PRODUCTS, INC

CALL Super Pricing

Enhance your Amiga Systems with GVP's Outstanding Quality & Performance

Manta carries the full line of GVP products!

Optical Drives • Removable Media • Digital Sound Studio
Accelerators: 68030 22 MHZ • 33 MHZ • 50 MHZ
Series II Controllers • A500 HD • 52 • 100 mg
Impact Vision 24 Graphics Board • A500 AT Bridge Board
G-Force 040 Accelerator for A3000

Is Your Amiga Sick?

MANTA is a Full Amiga Service Center

We have the parts to put you back on track:
- Power Supplies
- Fatter Agnus
- Rom Chips
- Keyboards
- Drives

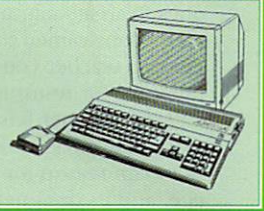
Power Up Program Available

2.0 operating system call for price & availabilty

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!



GOLDEN IMAGE™

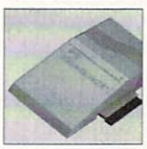
CORDLESS TRACKBALL & MOUSE

Cordless Mouse $69

Cordless Trackball $79

NEW ITEM

RC1000



4 Mb Ram Board for A500 with 2Mb

$179.00

HAND SCANNER with touchup, high resolution	$209
OPTICAL MOUSE	$49
OPTO MECHANICAL MOUSE	$36
AMIGA RC-500 512K RAM with clock for A500	$36

1 Year warranty on all Golden Image products.

MISCELLANEOUS

Amax II	$150
Amiga Action Replay	99
Amtrack	63
Apro Draw	459
Arexx	28.95
At Once Plus	CALL
AudioMaster 4	64
Audition	62
Bars & Pipes Pro	224
Cross DOS	25.95
Distant Suns 4.0	55
ECT Mid 500/2000	49
JSTK Power Play	9
Keyboard Skin	17.49
Miracle Piano	359
Mouse Mat	7
Perfect Sound	69
Quarterback	39.95
Quarterback Tools	52
SAS/Lattice C 5.1	189
Soundmaster	CALL
Stereo Speakers	CALL
Super Jam	CALL
W. Shell 2.0	49.95

DKB

MegAChip 2000/500 • $229

Two megabytes of Chip Ram. Doubles your graphic memory for desktop video, publishing, 3D rendering and multimedia. Compatible with Video Toaster!

Call for 2mg Agnus Price

MultiStart II • $69

Install 2.0 and 1.3 ROMS in your Amiga 500 or 2000. Switch between 2.0 and 1.3 ROMS with the keyboard.

Call for 2.0 operating system

Insider II A1000 • øK $179

Battery backed clock and calender with up to 1.5 mg RAM.

Call for RAM prices

KwiKStart II • $79

Puts Kickstart 2.0 and 1.3 in your Amiga 1000 Boots faster and auto boots most harddrives.

SecureKey • $95

System Security for the Amiga 2000 or 3000. Keep your system safe from unauthorized use with this hardware security device.

Games. Reference. Music. Education. And a whole lot more. Introducing ther next gerneration in home electronics.

CDTV™ INTERACTIVE MULTIMEDIA Commodore®

Call for Pricing on CDTV and Accesories

Titles Available

Advanced Military
Classic Board Games
Fred Fish Collection
Electronic Encyclopedia
Electronic Cookbook
Lemmings
Snoopy: The Case of the Missing Blanket
World Vista Atlas
Wrath of the Demon
Many More Available Call For Complete Listing

International Orders Welcome

Call for Complete Software and Hardware Listing

Progressive Peripherals 040

- Expandable to 32 Megs
- Running at 28 MHZ
- Perfect for Graphics and Video Toaster Workstations

2000/3000 Versions Available

VIDEO BLENDER
CALL FOR NEW LOW PRICE

PRODUCTIVITY

Advantage	$119	Pagestream	$169
All in One	51.95	Pelikan Press	$64
Buddy System DOS	35	Pro Page 2.1	169
Buddy System Pagestream	35	Pro Write 3.2	90
Can Do	84	Project D 2.0	39
Compugraphic Fonts	119	Proper Grammar	57
Cygnus Ed Pro	61	Screenmaker	CALL
Deluxe Paint IV	99.95	Showmaker	209
Deluxe Print II	50.95	Softclips People, Classics	49
Design Works	75	Structured Clip Art	39
Desktop Budget	44	Superbase IV	289
Diskmaster 2	40	Wordperfect	155
Final Copy	CALL	X-Cad 3D	279
NAG Plus 4.1	62	X-Cad Professional	99

Entertainment Software Available

European Imports & Magazines

WordPerfect for the Amiga $99.95 Limited Quantities

Full featured Word Processor
115,00 Word Spell Checker
Footnotes, Mailmerge and More!

FAX
(908) 542-3654
In NJ Call
(908) 542-1251

ORDER TOLL FREE
1-800-477-7706
TECH SUPPORT CALL
1-908-542-8767
Walk in Traffic Welcome

115 Route 35
Eatontown, NJ
07724
OPEN 7 DAYS

• Terms VISA/MASTERCARD, Discover, certified checks and money orders welcome. School & Corporate Purchase accepted. Most items shipped 1-2 Business days. • Returns: all items returned must have RMA # before returning. Defective products exchanged for same item only. Hardware items will be replaced or repaired. All returned items subject to a restocking fee. Shipping non-refundable. Call for complete details. • 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.

From p. 94.

Practice, and Review. Each stage is given a corresponding button on the Lesson Planner screen. Click on the button, then type whatever you want in the bottom half of the screen. At any stage, you can call up the corresponding stage from an earlier lesson, for copying or editing. If your motivation for a lesson from last month worked well, for instance, you can use it again, or modify it slightly.

The Lesson Planner illustrates the Toolkit's intended long-range use. By storing lesson plans over several years, you can re-use the best, modify the next best, and combine several successful ones to create a brand new one. You aren't constrained to use past lessons, but as a teacher you are well aware of the need for re-using successful plans, and the Planner lets you do so. The extremely effective Planner may well be the main reason for buying this package, and its designer would do well to develop it even further.

Keeping Score

The core of Teacher's Toolkit, however, is its Gradebook module. As with all record-keeping packages, the question is whether or not you will use it. The package must be easy enough to *invite* repeated usage, and it must do so by making the results worth the effort.

At this, I give Teacher's Toolkit a grade somewhere in the B range, perhaps as high as B+. One of the problems, mentioned above, is that the program moves from screen to screen slowly. Another is that learning to use a good spreadsheet will ultimately provide greater flexibility, easier data entry, and more useful charts and reports. Toolkit's positioning, half-way between the drudgery of manual record-keeping and the intimidation of a full-fledged spreadsheet, demands an interface that is easy to use yet yields significant results.

The basic Gradebook screen shows a collection of rows and columns. In the left-most column are the students' names, sorted alphabetically. The next columns (as many as you want, but only five appear at once on a given screen) show the assignments and their associated grades. The final column shows the total raw or average score for each student. At the bottom of the screen are interface buttons to move to the Graph, Records, or Student Info screens, and arrows for moving around the spreadsheet.

You can customize the spreadsheet according to individual class requirements. The Class Selection screen lets you add new classes, and (a nice touch) use names and information from previous classes. Then you customize the marks requirements with the Setup menu to weight each type of assignment. By clicking on the Score button, or on an empty title cell, you can enter the name, date, and weighting information for specific assignments. On the spreadsheet itself, you enter the grades for each student, as well as absentee information. All of this information interacts when Gradebook creates its charts and reports.

Teacher's Toolkit's 11 report types provide information on the entire class, on individuals, and on particular assignments. Summary reports offer the averages in each assignment category for either the whole class or for one student, yielding letter grade, absences, and tardiness. Attendance reports reveal only absences and latenesses, while Everything reports list all test results, attendance information, extra credit, and any other recorded result. At parent-teacher interview time, you can use the Class Everything report to print information about the entire class.

The Graphs option takes the class, student, or test information and displays it in line or bar graphs. With graphs, you can compare one student's results against class averages, or you can show the grade patterns occurring per class or per assignment. The graphs seem limited in what they do, but hidden beneath them are more specific results. On a class-based Grade Pattern graph, for instance, which shows how many students earned each grade (from A+ to F), you can click on a specific grade to get a list of which students earned that grade. This kind of detail is useful for internal reporting.

Graphs and reports tend to be slow (some class reports are painfully so), but obviously you're not going to use them all that often. Like the rest of this package, the interface lacks some smoothness. In future versions, I recommend interface streamlining second only to improved program speed.

High Marks

That said, Teacher's Toolkit is impressive. For teachers willing to learn the program and commit themselves to its use, it will almost certainly prove invaluable. It is essentially crash-free (I crashed it only twice, and always when I was roaming around, clicking repeatedly and at random), and it delivers what it promises.

The Rejuvenator

Expert Services

By Gary Ludwick

BY DEFINITION, TO REJUVENATE something is to restore its youthful vigor or appearance. A better name for The Rejuvenator ($419.95), ***Expert Services***' A1000 upgrade board, might be the ReAnimator...because for many of us, it brings our old standby back from the dead.

As the proud owner of three A1000's, I had been content over the years to smugly watch the A2000 series increase in popularity, safe in the knowledge that there was really very little that those machines could do that mine couldn't. Then the hardware cards started appearing: the flickerFixer (MicroWay), hard drives and controllers, the Video Toaster (NewTek), and finally the A3000, with its Extended Chip Set (ECS) and Kickstart ROMs. The writing was on the wall: My beloved A1000s were becoming obsolete.

While planned obsolescence is a fact of life with many computer companies, the Amiga community is fortunate in having more than just a few hardware mavens who live to challenge the words "it can't be done." That's how Greg Tibbs came to design The Rejuvenator, and why your A1000's life expectancy can increase.

A1000 in A2000's Clothing

What will The Rejuvenator do for your A1000? It will, in most respects, make it the operating equal of any A500 or A2000. The board adds several capabilities and features to your A1000. With it, you get the new one- or two-megabyte ECS Agnus chip, a battery-backed clock, an A2000 video slot, one or two megs of additional chip RAM, a 1.3/2.0 ROM socket, and compatibility with the new ECS Denise chip. In short, whatever support and upgrades become available for the A500 or A2000, they will also be available for your A1000, as long as you install The Rejuvenator.

The Rejuvenator replaces the A1000's daughterboard, which, for those of you who have never opened your machine, is a small board mounted above the main (mother) computer board and connected to it by about 20 to 25 hard pins that slide into the daughterboard's molex connectors. Because of the way The Rejuvenator has to be mounted on the motherboard, it is necessary to

completely dismantle your A1000, removing the disk drive, the daughterboard, and the motherboard from the case.

While installation is not an especially difficult job, it is not one for a person who is all thumbs mechanically or a complete novice electronically. Although there is no soldering (or desoldering) involved, installing the board correctly can be a little frustrating. Patience and care will see most people through. Be warned, however, that a lack of either could destroy both The Rejuvenator and the motherboard. If in doubt, pay an experienced technician to do it.

It's Alive!

My first experience with The Rejuvenator kindled mixed feelings. With the brand-new 2.0 Kickstart ROM in the socket provided, I was thrilled to see the new, animated Kickstart screen asking for the Workbench disk. Moments later, however, after it had digested Workbench, a warm reboot (Ctrl/Amiga/Amiga) locked up the machine. A thorough search turned up no installation errors, and letting the machine cool off for 10 or 15 minutes made the system functional.

Eventually, I installed the board in a different A1000, and the problem ceased to exist. Apparently some component in the first A1000 had changed value just enough over the years to make it intolerant of warm chips on The Rejuvenator. Unfortunately, this could conceivably happen to anyone. Fortunately, Expert Services offered excellent support—an important consideration when you are troubleshooting hardware long distance.

Makes Friends Easily

Over the years, there have been some strange memory-expansion devices developed for the A1000, both internal and external. The Rejuvenator is compatible with some of them, but not all. For instance, the presence of my Pacific Peripherals expansion cage on the expansion bus causes The Rejuvenator to lock up. Expert Services is aware of the problem, but has not found a solution.

On the other hand, internal expansion, such as the Insider I & II and the Spirit boards, seems compatible. Similarly, my Xetec SCSI host adapter living on the expansion bus presented no problems. The Rejuvenator provides two sets of jumper pins that let you reset memory addresses to avoid contention between devices. Expert Services also provides custom PAL chips designed to your own specifications.

Finally, there are several ways that The Rejuvenator can deal with the two current versions of Kickstart. The board is shipped with a jumper that lets you boot with an internal Kickstart ROM, or, by installing a small SPST micro switch on the A1000's case, with a Kickstart disk. Add $60, and Expert Services will provide a double ROM-socket adapter that provides space for both 1.3 and 2.0 ROMS, again with an external toggle switch for selection purposes.

Although The Rejuvenator comes with a built-in edge-card connector for video devices, you should wait before ordering a Video Toaster. Essentially, the connector comes wired for use with flickerFixer-type boards and genlocks. Fitting other devices is a possibility, but you will have to run special jumpers from the slot to the required signal sources on the motherboard. Expert Services can tell you where to find many of these signals, but you are essentially on your own here.

The Eternal A1000

For A1000 owners, The Rejuvenator board is perhaps the most exciting piece of hardware to come along since the hard disk. It promises a much longer and moreproductive life for the A1000, and it "rejuvenates" with relative ease.

If there is a weak point to The Rejuvenator, it has to be the installation manual. While the text is relatively clear, both the number and quality of the photographs leave a lot to be desired. More photographs and diagrams would go a long way towards easing the installation process.

In the final analysis, however, The Rejuvenator is a superbly designed and engineered piece of equipment that is worth every cent of its price. It provides a new lease on life for the thousands of tenacious A1000s out there and ensures a firm foothold for the future. For less than $500, that's a bargain any way you look at it. ►

The Experts — We Speak AMIGA
World's Largest Seller of Amiga Specific Chips

The Speed Shop At Memory World

CSA Memory Nobody Cheaper!
68030 20 mhz.....389.00
68030 25 mhz.....539.00
68030 33 mhz.....599.00
All of the above with MMU
RAM & Math Chip Additional
Unbelievable package deals.

Mega Midget Racer Upgrades

Static RAM
128 x 8 70ns **$41.95 ea.**

Memory Boards — 2 meg On Sale
4 Mg — **$599.00** — CALL —
8 Mg — **$799.00**

Save 20% off reg. price any coprocessor with purchase of MMR.
Exclusive at **Memory World**
Wholesale & Retail
APO / FPO, AK & HI, FOREIGN
FAX or Call for Shipping Charges

CSA Mega Midget Racer
38 Special
030 - 50 mhz/38 mhz
68882 – 50 mhz
with MMU **$799.00** Back by Popular Demand!
only 20 pcs. to sell

CSA Mega Midget Racer
030 - 20 mhz with MMU
68881 - 20 mhz math chip
Nobody cheaper! **$399.99**

Memory Board
for HP Laser Printer
1 meg – $89.00 2 meg – **$139.00**
4 meg — **$199.99**
Call for memory boards on other brand laser printers. Oki – Panasonic – T.I. – Epson – others

WOW! **AMIGA 1000 Memory** With Clock
IN 1000 by Spirit
Internal 1½ meg **$225.00**

XRAM by Spirit
External 2 meg — **$299.00**
expandable to 8 meg
for 500 or 1000

A3000 Memory
1 x 4 - 80 $20.95 ea.
70ns — Call
Static Column Zips
1 x 4 DIPS — $21.95
1 x 4 Page ZIPS — $21.95

SPECIAL PURCHASE
1 x 8 - 80ns SIMMS
$39.95 ea.
4 x 8 - SIMMS **Call**
1 x 8 - 70ns **$42.99 ea.**

GVP Accelerators In Stock
Accelerator Memory
4 meg — **$299.00**
1 x 8 - 70ns Nibble Mode SIMMS
SIMM/32 Memory — Nobody Cheaper

Combo 22 **$799.00**
Combo 33 **$1149.00**

GVP
A2000 Memory Brd.
Series II Impact
w/2 meg **$149.00**
w/4 meg **$245.00**

MEMORY WORLD
Street Rd. & Bristol Pike
Plaza II, Suite 134
Bensalem, PA 19020
Attn: Amiga Dept.

215-244-7930
FAX 215-244-7932
Add $4.00 S/H Add $4.00 COD
Visa / MC / Check / COD

Circle 93 on Reader Service card.

KwikStart II

DKB Software

Give your A1000 a split personality.

By Gary Ludwick

IF YOU COULD care less about Super Agnus chips and large amounts of chip RAM, but want to run AmigaDOS 2.0, take a look at KwikStart II ($99.95), DKB Software's nifty little add-on board.

KwikStart II gives you the ability to run your A1000 from Kickstart ROMs. It not only eliminates the Kickstart disk, but also provides sockets for both 1.3 and 2.0 ROMs. With both versions of Kickstart available and switchable from the keyboard, there should never be a compatibility problem between the software you're using and any version of Kickstart.

Have Gun, Should Travel

Installing KwikStart II requires opening the A1000 and removing the internal disk drive and the daughterboard. While plugging the board into the 68000 socket and transplanting the 68000 chip to a socket on the board are relatively simple, the rest is not.

KwikStart II comes with its own custom PAL chip, which replaces the one on the daughterboard. Unfortunately, the Amiga's PAL chips are hard-soldered to the board (no sockets) and must first be desoldered. Even with the proper tools, this is a difficult job—one that makes it easy to damage the daughterboard. DKB strongly suggests, and I concur, that you pay an expert to do it. It is most definitely time and money (maybe $10 to $20) well spent.

Once the old PAL chip is removed, a new socket is soldered in its place and the custom PAL chip is installed. Then there are just two small wires to solder, and the job is done.

The KwikStart II board provides sockets for two Kickstart ROM chips. You can install 1.3 and 2.0 immediately, or, if you prefer, install only one. KwikStart II affords a jumper that allows you to toggle between two ROM chips, or between one ROM and disk-based Kickstart.

Decisions, Decisions

In just seconds after a cold start, the screen displays the request for Workbench (unless you already have a Workbench disk in DF0: or an autobooting hard disk on line, in which case it goes right into your startup-sequence.)

Want to change Kickstart versions? Simply perform a warm boot (Ctrl/Amiga/Amiga keys), holding the three keys down more than five seconds. KwikStart II will toggle either to the alternate ROM or to disk-based Kickstart, depending on the jumper setting you select.

Even though DKB recommends professional installation, the manual accompanying the board is clear and well written, providing all the necessary diagrams. There's even a good troubleshooting section for those who know how to use a volt/ohm meter. Telephone support is good, for the phones are manned by technical people who know the board.

For A1000 owners, KwikStart II provides the cheapest, easiest way to get into the 2.0 operating system without the hassle of Kickstart disks. Additionally, because there is software out there that will never run with 2.0, having instant access to 1.3 and disk-based Kickstarts makes KwikStart II a real godsend.

BACKTALK

CANDID RESPONSES TO *AMIGAWORLD* REVIEWS

An Unreasonable Facsimile

We were distressed to see our ClickFAX product reviewed with the implication it was less than it should be (see Dec. '91, p.88). ClickFAX is a high-quality, high-performance system; the review is misleading, often to the point of being absurd. We'll address just a few of the errors.

Regarding price, the Amiga business market is tiny, and the price is low for the cost of the system and its performance. The reviewer apparently knows little or nothing of economies of scale or the cost of development.

The reviewer was told to use a desktop-publishing program to generate the best-quality faxes. He used DPaint, which is not a DTP tool, and he then complained when the result was less than optimum.

The reviewer couldn't get text formatting to do what he wanted, and he didn't understand the "truncate" option, which allows wide-formatted ouput, such as spreadsheets, to encode properly. He said he added "hard returns" in his word processor. This indicates that he wasn't using ASCII output, but word-processor files, which also gives a clue as to why he couldn't get his formatting right. The formatting works fine. The reviewer should have asked us when he had questions; we certainly have answers!

His statement that ClickFAX was "barely adequate for sending pictures and totally inadequate for sending text" is nonsense, as clearly shown by faxes we've sent to *AmigaWorld* using multiple fonts, graphics, imported text, and cover sheets.

We felt that the reviewer was "stuck in the past," where highly integrated software is the norm; his PC-related remarks confirmed this. ClickFAX is designed to work with the many excellent DTPs and text editors already available. It would be absurd for us to burden ClickFAX with weak substitutes.

We're inviting anyone who doubts the ability of ClickFAX to make beautiful faxes incorporating text and graphics, provide attractive cover sheets, or otherwise work well to call us and ask to have a demo faxed to them. Please call us and get the facts before you draw any conclusions based on the ClickFAX review run in *AmigaWorld*.

Ben Williams
Black Belt Systems

Out of Context

Regarding the review of Context Bible (see Dec. '91, p. 92), I have a few corrections. First, there has always been a help file included with Context Bible. Also, connections between a diagram and the Context Bible are done in an ARexx requester. Furthermore, Neuralink's correct zip code is 79490 (the wrong ZIP was published in the manufacturers' address list).

Jack Seay
Neuralink ■

TO ORDER
CALL 800-544-6599
MON.-FRI. 9-6, SAT. 9-3 CST

MasterCard
VISA
CODs WELCOME

Software

Ambassador 47.99
AmiDOS 2.0 500/2000 .....85.00
Amnios.....31.99
ARexx.....31.10
Art Department Prof 2.0....170.99
AudioMaster IV 59.99
Audition 4 .....64.00
B.A.D. 4.0.....31.99
Barbarian II 32.99
Bars & Pipes Prof 215.00
Baud Bandit.....31.99
Buddy System/DPaint IV.....31.99
Buddy System/Imagine..... 31.99
Buddy System/DOS 2.0 .....31.99
Can Do 1.5 .....85.00
Cross DOS 4.0 .....24.99
Cybercon III 28.99
Deluxe Paint IV.....109.00
Design Works 72.99
Eye of the Beholder..... 43.99
Flight of Intruder.....35.99
Gateway/Savage Frontier 31.99
Hare Raising Havoc 31.99
Harpoon BattleSet 4 ..... 23.99
Imagine.....169.00
Leander..... 31.99
Lord of the Rings 33.99
MI Font 61.99
MI Outline 73.99
Macro68.....135.00
Map Master/Imagine..... 49.99
Map Master/Lightwave.....59.99

BOOKS

Amiga Companion 2.0 .....19.99
Amiga Desktop Video Guide .18.00
Amiga for Beginners 15.99
AmigaDOS Manual 3rd Ed.... 21.00
Desktop Video 2nd Ed. 18.99
Desktop Video Power 24.99
DOS Inside & Out 2.0 .....20.00
Hardware Ref Manual 23.00
Includes & Autodocs..... 27.50
ROM Kernal: Devices 24.99
Using ARexx on the Amiga ...26.99
Visionary Handbook..... 22.99

Material Textures Libs.....31.99
MediaStation.....149.99
Navy Seals 25.99
Oh, No! More Lemmings .. 31.99
Paper Boy 2 ..... 26.99
Perfect General 36.99
Phasar 4.0 .....55.99
Pixel 3D 2.0 .....64.00
Populous II 37.99

Commodore® AMIGA® 500DS

INCLUDES

- 3.5" Internal Floppy Drive
- 512K RAM
- Joystick
- Kindwords
- Fusion Paint
- Indiana Jones and the Last Crusade
- F40 Pursuit
- F/A-18 Interceptor

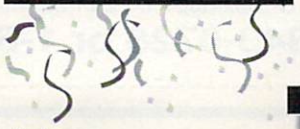
Call for Pricing!!!!

Professional Page 2.1 .....169.00
ProVector 175.00
ProWrite 3.2.....99.00
Real 3D Professional.....312.00
ReSource (Puzzle Factory) 135.00
Rules of Engagement 43.99
Scenery Animator 59.99
Shadow Sorcerer 31.99
Silent Service II 39.99
Space Ace II.....36.99
Teacher's Toolkit 29.99
Texture City .....Call
Turbo Text 59.99
Visionary 59.99
Vista Pro 85.00
W Shell 2.0 .....53.99

Hardware

68040/2000/0 Prog 1749.00
68040/2000/4 Prog 1899.00
68040,GVP G-Force 2389.00
VXL*30 25MHz w/68882 .459.00
Ad IDE/40.....109.00
AdFlicker Free Video.....295.00
AdRAM 540 .....109.00
AdSpeed.....209.00
AirLink 45.99
Audio Eng Plus.....220.99
ChromaKey 319.00

We wish you a safe and happy 1992!
—Judy, Laurie, Dale, Dennis, Scott, Tim, Steve, Ruth, and Mary



DSS Sound Digitizer (GVP) 95.00
Floppy Drive, Internal 2000 89.00
Floppy Drive, Internal 3000.99.00
Floppy Drive, Internal 500...89.00
Floppy Drive, Supra 95.00
Genlock, Alter Image 185.00
Genlock, RocGen Plus.....345.00
Harddrive, Impact 500/52Q 535.00
Harddrive, Impact 500/105Q 695.00

■ 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

Harddrive 105Q LPS SCSI 379.00
Harddrive 52Q LPS SCSI...249.00
Impact Vision 3000.....1899.00
KB-Talker 53.00
Kitchen Sync.....1689.00
Miracle Keyboard 349.00
Modem, Supra 2400 .....85.00
Modem, Supra 2400+ 130.00
Modem, Supra 9600 .....469.00

Modem, Supra 2400zi+.....149.00
Mouse, Golden Image.....39.99

For a complete product listing, information or support, call (414) 548-8125.

TOP 10

❶ AMOS 59.99
❷ AMOS Compiler 36.99
❸ AMOS 3D 42.99
❹ Ami Back.....47.99
❺ DCTV 379.00
❻ Directory Opus 36.99
❼ Final Copy.....59.99
❽ Imagine Companion 23.99
❾ Modem, Cardinal 9600.369.00
❿ Lemmings.....31.99

Mouse/Joystick Multiport ...25.99
MultiStart II Board (DKB)....69.00
Perfect Sound 3.0 .....69.00
Phantom SMPTE.....215.00
Power PC Board 500 (Supra) .275.00
Power Supply, Big Foot.....99.00
SCSI Controller Supra 500XP..199.00
SCSI Controller Supra 2000...110.00
SupraDrive 500XP 52/1 ....489.00
SupraDrive 500XP 52/2 ....565.00
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.....195.00
SupraRAM 500/512K 39.00
Syquest 44MB (Bare).....329.00
Syquest 44MB (Ext System) .579.00
Syquest 88MB (Bare).....449.00
Syquest Cartridge 44 .....79.00
Syquest Cartridge 88 .....119.00
Video Director.....139.00
Video Toaster 2.0.....2195.00
WIZ Tablet 235.00

Call us for CDTV Titles.

Supra Corporation

A NEW line of Super FAST Quantum drives with 256K read / write cache for the 500 & 2000!

REAL VALUE

■ SupraDrive 500XP 120Q w/ 2 MB **$675.00**
■ SupraDrive 500XP 240Q w/ 2 MB **$935.00**
■ SupraDrive HC/120Q **$499.00**
■ SupraDrive HC/240Q **$819.00**

SAFE HARBOR COMPUTERS

2120 E.MORELAND BLVD. SUITE L, WAUKESHA, WI 53186

Circle 44 on Reader Service card.

Exclusive Offer From AmigaWorld

TOOL CHEST

ONLY $9.95 EACH
2 disk set

Quality Software at an Affordable Price!

#TC11. DiskSalvage will fix corrupted disks and recover accidently deleted files. IconMeister is an advanced Icon editor with a complete set of drawing tools. AlienDuals is a fast action, shoot 'em up arcade style game. The scenario is aerial combat. Crystal Cavern is a colorful, graphic adventure game with many levels of game play. Plus an animation, sound samples, 3-D dinner table objects, and Hi-Res monster clip art.

#TC12. TJFormat formats disks that AmigaDOS chokes on. ChartMaster is a powerful graphing tool that allows you to generate different graph types from a dataset and then save the results as IFF pictures or as ChartMaster .CM files. MoreCandy generates an assortment of colorful graphic patterns called Moires (similar to Mandelbrot images). The program allows you to save your pictures to disk. Shark, a game where you are the shark and have to eat all the little perch you can catch to stay alive. Good graphics and sound. Plus B&W clip art, spaceship 3-D vector objects, an animation, and SpeakEasy (C source code for the programmer who wants to add speech to C programs).

#TC13. StrucGen lets you create gadget, text, bitmap, and window structures and write the C source code to disk. Plot your biorhythms. Make drive-head cleaning easier. Create spectacular images with Mandelbrots. 3-D objects perfect for ray traced animations. A CLI utility to help you find files quickly and easily. Plus 3-D objects, holiday clip art, an AmigaFlight animation, and a technical discussion on how AmigaDOS stores information to disk.

#TC14. A 3-D graphics special issue, containing vector objects, TicTacToe, a graphing program, and 3-D ray traced animation. Keep names and addresses organized with a friendly database and address book. Perform an analysis of digitized sound and display it in a graphic manner. Get B&W clip art food images suitable for desktop publishing.

#TC15. Labelmaker is a very easy to use label program. SurroundCycles is a high-speed arcade game, loosely based on the light cycle races from the movie Tron. Dot2Dot is an adaptation of the classical connect-the-dot game. This two-player game comes with nice graphics and digital sound. The animation by Brad Schenck is both an elegant animation and a tutorial on animation techniques. The clip art is a collection of screens showing a cartoon man walking, walking fast and running. The sound samples on this disk are animal sounds.

#TC16 Generate complex 3-D vector objects of a wide variety of terrain, from flat plains to rocky mountains. Plot out mathematical equations. Format your text files to print on both sides of the paper. Plus six digitized sounds perfect for animations and multimedia presentations and a mouse-driven graphic adventure game with excellent digitized sounds. Also includes Tinyball, "The World's Smallest Baseball Arcade Game."

#TC21. Battle your computer to take over the planet Circe. Assign RGB values to printer and screen output. Get a powerful database manager suitable for home and small business. Create animated sprites by editing up to 100 frames at once. Execute CLI programs, batch files and ARexx scripts with the simple click of a gadget.

#TC22. Design instruments and waveforms for use in other programs. Play your Amiga keyboard like a piano. Change the width, height, location, title, colors and depths of the CLI window with a single command. See how a piston works with a Turbo Silver animation. Plus a slick checkbook manager and a file encryption and decryption tool.

#TC23. Create small windows from CLI scripts. Find the letter, file or program you misplaced on your drive. Play the strategic game of Dyno-Wars. MatheMagic lets you find the day of the week for any date in this century; provides the mean, standard deviation, skew and kurtosis for selected data; finds a polynomial to a set of XY data; and solves a set of algebraic equations.

#TC24. TableMaker is a useful tool for building tables of all sorts. Lots of examples are included in the Sample Tables drawer. "Koooties" is a fun game where you have to assemble a bug before the computer beats you to it. HT (HyperText) lets you put links in a text file to other text, graphics, sound, animation, music, ARexx, and other applications. A demo on the disk shows how powerful HT really is. The Little Black Book is a telephone and address book with some great features. It lets you print address labels or an alphabetical roster. It also lets you keep track of birthdays, anniversaries, or other important events. Color Logic is a Master Mind like game. The computer picks the colored pegs that you have to guess the positions of. Plus four disk and memory utilities, and digitized animal sounds.

#TC25. Save your screen to an IFF file. One or two can play "Warrior", a fun shoot-'em-up adventure game. See how fast your Amiga does solid-polygon animations. Change the colors of your screen. Examine memory at any location in the Amiga. Also includes Hi-Res IFF brushes of all 50 states and 10 Canadian Provinces, nine digitized sounds, and two small disk utilities and one printer utility.

#TC26. Generate word search puzzles. Join the war between the Allied Navy and the Empire Fleet. Search binary and/or text files for a particular word or string. Get rid of cigarettes, alcohol, pills and needles with DrugBusters. Plus, fun machine sounds, and Early American vector objects.

#TC31. Calendar Publisher allows you to personalize and print calendars for home, office, school, or any occasion where there is a need to organize your monthly schedule. CrossCircuit is a one- or two-player action logic game that calls for fast reflexes and fast thinking. Apr is a printer utility that allows you to put line numbers in your document, double space, set tab stops, set margins, change line widths, and more. Pizza Delivery Man is a fast maze game where you have to deliver a quota of pizzas within 99 seconds before the blue munchie monster gets them. MultiPlayer displays any IFF picture or brush as well as any IFF sound sample. Plus RAMGauge, 3-D vector objects, and Hi-Res IFF brushes of all maps and flags in Europe.

#TC32. Computer Coloring Book is a stand-alone application with 15 pages of pictures ready to be colored in. Listmaker lets you make, edit, combine, and print lists of words. The program comes with a sample grocery list and an office supply list. Moresmooth! displays text files on the screen. It has five scrolling speeds, three printer outputs, plus a few other options. Pocket Billiards lets you choose from several of the most popular pool games. Up to four players can play (including the computer). Great graphics makes this a very realistic game. Texture lets you create, manipulate, and save realistic fractal textured surfaces. It comes with different textures and palette sets to experiment with. Plus Plague (monster maze game), banjo and guitar 3-D objects, Screen Fader, SnowBench, and FlipBench.

ORDER FORM

Write your selection below and enclose this form with proper payment. Only $9.95 each.

#_____ #_____

#_____ #_____

#_____ #_____

#_____ #_____

Total disks _____ x $9.95 each $ _____

Add $3.50 postage/handling for each order $ _____
(Canada & Mexico $5.00, Foreign orders $11.50)

Canadian orders add 7% GST (GST reg. #126038405) $ _____

California Residents add 7.25% Sales Tax $ _____

Total enclosed $ _____

☐ Check enclosed

Charge my: ☐ MasterCard ☐ Visa ☐ Amex ☐ Discover

CARD# EXP. DATE

SIGNATURE

NAME

ADDRESS

CITY STATE ZIP

Tool Chest • P.O. Box 802 • 80 Elm Street • Peterborough, NH 03458

1-800-343-0728 or 1-603-924-0100

2CBB2

SIDELINE SOFTWARE

ORDERS ONLY:
1-800-888-9273
INFORMATION:
1-305-491-0398

840 Northwest 57th Court, Ft. Lauderdale, Fl 33309 % **1-800-888-9273** Orders

Bringing The World's Best Amiga Software To Your Door

3 Stooges	$14.95
Altered Beast	$14.95
Anarchy	$14.95
Arkanoid 2	$14.95
Atomic Robo Kid	$14.95
Baal	$13.95
Back to the Future 3	$17.95
Badlands	$16.95
Ballgame	$23.95
Ballistyx	$14.95
Barbarian 2	$14.95
Bard's Tale 2	$14.95
Batman the Movie	$14.95
Bionic Commando	$14.95
Blasteroids	$14.95
Blockout	$14.95
Bloodmoney	$14.95
Bloodwych	$14.95
Bloodwych Data Disk	$12.95
Brat	$17.95
Budokan	$18.95
Cadaver	$21.95
California Games	$16.95
Carrier Command	$14.95
Champion of the Raj	$17.95
Championship Run	$16.95
Collossus Chess X	$16.95
Colonel's Bequest	$21.95
Commando	$16.95
Conflict in Europe	$14.95
Crystals Of Abborea	$17.95
Curse of Ra	$12.95
Cyberbowl	$16.95
Day's Of Thunder	$16.95
Demon's Tomb	$16.95
Double Dragon 2	$16.95
Dragon Force	$16.95
Dragon's Breath	$18.95
Dragonbreed	$14.95
F/A 18 Interceptor	$14.95
Ferrari Formula 1	$14.95
Fire & Brimstone	$14.95
Flood	$18.95
Forgotten Worlds	$14.95
Frenetic	$16.95
Games Summer Edition	$14.95
Gauntlet 2	$14.95
Gold of the Aztecs	$17.95
Golden Axe	$24.95
Gunship	$16.95
Hard Driving 2	$17.95
Heart of the Dragon	$17.95
Hoyle's Book of Games 1	$18.95
Hoyle's Book of Games 2	$21.95
Immortal	$18.95
Impossible Mission 2	$14.95
International Ice Hockey	$17.95
It Came From the Desert	$24.95
It Came From the desert 2	$16.95
Iron Lord	$16.95
Jack Nicholas greatest 18	$18.95
James Pond	$16.95
Journey	$14.95
Khalaan	$14.95
Killing Cloud	$19.95
King of Chicago	$14.95
King's Quest 4	$21.95
Klaxx	$16.95
Kult	$14.95
Legend of Faragahl	$19.95
Magic Fly	$18.95
M.U.D.S.	$16.95
Master Blazer	$16.95
Match Pairs	$17.95
Mean Streets	$16.95
Menace	$16.95
Midwinter	$19.95
Might and Magic 2	$21.95
Narco Police	$16.95
Nightbreed	$16.95
Nightshift	$16.95
Ninja Spirits	$14.95
North & South	$14.95
Operation Snowstrike	$16.95
P-47 Thunderbolt	$14.95
Pacland	$16.95
Pacmania	$16.95
Paperboy	$16.95
Photon Paint 1.0	$14.95
Photon Video	$19.95
Pictionary	$14.95
Pirates	$14.95
Plotting	$16.95
Populous	$18.95
Populous Data Disk	$9.95
Projectile	$17.95
R-Type	$14.95
Red Storm Rising	$19.95
Resolution 101	$14.95
Rick Dangerous	$14.95
Road Blasters	$14.95
Rocket Ranger	$12.95
Satan	$14.95
Savage!	$12.95
Shadow of the Beast	$18.95
Sherman M-4	$14.95
Shogun	$16.95
Silent Service	$13.95
Silkworm	$14.95
Ski or Die	$16.95
Speedball 2	$24.95
Star Control (Accolade)	$17.95
Starflight	$18.95
Starglider 2	$16.95
Steller 7	$21.95
Strider 2	$18.95
Stunt Car Racer	$16.95
Super Hangon	$14.95
Super Ice Hockey	$14.95
Super Off-Road	$16.95
Sword of Sodan	$9.95
Swords of Twilight	$14.95
T.V. Sports Football	$18.95
Teenage Turtles	$17.95
The Spy Who Loved Me	$16.95
The Third Courier	$14.95
Theme Park Mystery	$14.95
Thunderblade	$14.95
Times Of Lore	$17.95
Torvak the Warrior	$16.95
Tunnels-Armaggeddon	$14.95
Turrican 1	$6.50
Turrican 2	$21.95
Typhoons of Steel	$16.95
Vaxxine	$16.95
Vegas Gambler	$14.95
Viz	$16.95
Wargame Construction S	$16.95
Warhead	$18.95
Warzone	$18.95
Waterloo	$14.95
Weird Dreams	$14.95
Windwalker	$12.95
Wings	$24.95
Wings of Death	$14.95
World Leaderboard	$14.95
Xenon 2	$16.95
Xenophobe	$12.95

Here's What's HOT!

4D SPORTS BOXING	$37.00
MEGLOMANIA	$42.00
UTOPIA	$40.00
MAGIC POCKETS	$37.00
GODS	$35.00
SILENT SERVICE 2	$35.00
FLAMES OF FREEDOM	$28.00
ROBOCOD	$37.00
HUNTER	$40.00
CRUISE FOR A CORPSE	$42.00
THE SIMPSONS	$37.00
HEINDALL	$45.00
CHAOS ENGINE	$37.00
KNIGHTMARE	$40.00
LOTUS TURBO 2	$37.00
VROOM!	$37.00
DEATHBRINGER	$37.00
FINAL FIGHT	$40.00
DEUTEROS	$40.00
PITFIGHTER	$37.00
SMASH TV	$37.00
DOUBLE DRAGON 3	$37.00
W.W.F. WRESTLING	$37.00
GAUNTLET 3	$37.00
FIRST SAMURI	$37.00
BIRDS OF PREY	$42.00
FINAL BLOW BOXING	$37.00
EPIC	$40.00
MICROPROSE GOLF	$40.00
FORMULA 1 RACING	$40.00
SIMEARTH	$42.00
ROBINHOOD	$37.00

FAX 305-491-6134

Price, Availability Subject To Change

Double Double Bill

You get all this for $54.95

T.V. Sports Football
T.V. Sports Basketball
Lords Of The Rising Sun, and Wings

NEW COMPILATIONS!!

Wheels Of Fire $19.95
Includes: Turbo Outrun, Powerdrift, Hard Driving, Chase H.Q.

Winning Team $29.95
Includes: Klax, Vindicators, A.P.B. Escape Planet Robot Monsters, Cyberbowl

Air-Sea Supremacy $49.95
Includes: Gunship, Silent Service Wings, P-47 Thunderbolt, Carrier Command

Monster Pack $34.95
Includes: Shadow Of The Beast, Nitro-Infestation

Amiga Classics $34.95
Includes: Carrier Command, Starglider 2, Midwinter

Power Pack $24.95
Includes: T.V. Sports Football, Xenon 2, Bloodwych, Lombard Road Ralley

EUROMAGS

Amiga Format	W/Disk	$10.00
Amiga Action	W/Disk	$10.00
Amiga Power	W/Disk	$10.00
C.U. Amiga	W/Disk	$10.00
Amiga User	W/Disk	$10.00
Amiga Comp.	W/Disk	$10.00
Amiga Games	W/Disk	$10.00
Zero	W/Disk	$10.00

SHIPPING CHARGES:

MasterCard / Visa / UPS ground:
$5 for up to 3 pieces.
C.O.D. (cash only) / U.P.S. ground:
$9 for up to 3 pieces.
NEXT DAY AND SECOND DAY AVAILABLE!

Add $1.00 For Each Piece Above 3
Compilations Count As 1 Piece

LIST OF ADVERTISERS

Reader Service Number		
190	A&M Computer Repair, **114**
98	Aamiga Warehouse, **115**
3	AmiEXPO, **88**
12	Amigaman, **106–107**
*	AmigaWorld
	AW Special Issue, **64**
	Desktop I & II, **84**
	History of the Amiga, **84**
	Tool Chest Back Issues, **102**
	Videos, **86**
96	Ampex Systems, Inc, **114**
4	ASDG, **43**
161	AV Productions, **114**
85	Bare Bones Software, **116**
54	BIX, **94**
7	Briwall, **117–119**
83	Centaur Software, **73**
196	Clearlight Software, **114**
10	Computability, **82–83**
13	Creative Computers, **65–72**
193	Data Foundations, **114**
55	Datamax Research Corp., **95**
182	Deland Editorial Services, **116**
14	DevWare, Inc., **110–111**
16	Digital Creations, **49**
*	Digital Micronics, **15**
74	Domark, **39**
17	Dr. T's, **53**
95	Easyscript! Software, **115**
73	Electronic Arts, **75**
181	European Import Software, **116**
33	Expansion Systems, **48**
100	Fairbrother & Soeparmann, **115**
166	Foxy Tec., **116**
18	GEnie Information Services, **81**
13	Go Amigo, **90–91**
154	Gold Disk, Inc., **1**
19	Gold Disk, Inc., **33**
20	Grapevine Group, Inc., The, **105**
174	Grapevine Group, Inc., The, **114**
174	Grapevine Group, Inc., The, **116**
67	Graphic Impressions, **114**
21, 22	Great Valley Products, Inc., **4**
23, 24	Great Valley Products, Inc., **5**
25, 26	Great Valley Products, Inc., **7**
155, 156	Great Valley Products, Inc., **8**
29, 30	Great Valley Products, Inc., **9**
169, 170	Great Valley Products, Inc., **11**
194	Hammond Photographic Services, **114**
189	Hyper Data, **114**
31	ICD, Inc., **59**
75	INOVAtronics, Inc., **CIII**
*	Kasara Microsystems, **114**
34	Manta, **96–97**
93	Memory World, **99**
187	Memory World, **114**
94	Memory World, **115**
99	Micro R&D, **116**
6	Microbotics, Inc., **20**
64	Microleague Sports, **79**
66	Microprose Software, **47**
35	Montgomery Grant, **108–109**
192	National Diskettes, Inc., **114**
179	Natural Graphics, **113**
65	New Horizons Software, **13**
38	NewTek, Inc., **CII**
37	NewTek, Inc., **CIV**
165	PDS Resource, **116**
150	Progressive Peripherals, **60–61**
62	Pysgnosis, **37**
188	Ramco Computer Supplies, **116**
40	ReadySoft, Inc., **2**
172	Redmond Cable, **77**
177	Roctec Electronics, Inc., **21**
178	Roctec Electronics, Inc., **23**
43	Rombo, **87**
44	Safe Harbor, **101**
45	Sideline Software, **103**
90	SMC Software Publishers, **115**
46	SoftLogik Corp., **29**
88, 89	Software Hut, **115**
48	Softwood, Inc., **85**
167	Stylus, **45**
*	Supra Corporation, **17**
39	Utilities Unlimited, **113**
58	Virtual Reality Laboratory, **22**
86	Visionsoft, **115**
50	Visionsoft, **116**
52	Vortex Computersysteme GmbH, **89**

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.

AmigaWorld is a publication of International Data Group, the world's largest publisher of computer-related information. International Data Group publishes over 150 computer publications in 49 countries. Over 25 million people read International Data Group's publications each month. International Data Group's publications include: ARGENTINA's *Computerworld Argentina*; ASIA's *Asian Computerworld*; AUSTRALIA's *Computerworld Australia, PC World, Macworld*; AUSTRIA's *Computwelt Oesterreich*; BRAZIL's *DataNews*, PC *Mundo*; CANADA's *Computer Data*; CHILE's *Informatica, Computacion Personal*; COLUMBIA's *Computerworld Columbia*; DENMARK's *CAD/CAM WORLD, Computerworld Danmark, PC World, Macworld, Unix World*; FINLAND's *Mikro PC, Tietoviikko*; FRANCE's *Le Monde Informatique, Distributique, InfoPC, Telecoms International*; HUNGARY's *Computerworld SZT, Mikrovilag*; INDIA's *Computers & Communications*; ISRAELS's *People & Computers*; ITALY's *Computerworld Italia, PC World Italia*; JAPAN's *Computerworld Japan, Infoworld, Publish*; KOREA's *Hi-Tech Information/Computerworld*; MEXICO's *Computerworld Mexico, PC Journal*; THE NETHERLANDS' *Computerworld Netherlands, PC World, AmigaWorld*; NEW ZEALAND's *Computerworld New Zealand, PC World New Zealand*; NIGERIA's *PC World Africa*; NORWAY's *Computerworld Norge, PC World Norge CAD/CAM, Macworld Norge*; PEOPLES REPUBLIC OF CHINA's *China Computerworld, China Computerworld Monthly*; POLAND's *Computers*; SPAIN's *CIM World, Communicaciones World, Computerworld Espana, PC World, AmigaWorld*; SWEDEN's *ComputerSweden, Mikrodatorn, PC/Nyhetherna, PC World, Macworld*; SWITZERLAND's *Computerworld Schweiz*; TAIWAN's *Computerworld Taiwan, PC World*; UNITED KINGDOM's *Graduate Computerworld, PC Business World, ICL Today, Lotus UK, Macworld U.K.*; UNITED STATES' *AmigaWorld, CIO, Computerworld, Digital News, Federal Computer Week, GamePro, inCider, InfoWorld, Network World, PC Games, PC World, Portable Computing, Publish!, RUN, SunTech Journal*; USSR's *World USSR, Manager, PC Express, Network*; VENEZUELA's *Computerworld Venezuela, Micro Computerworld*; WEST GERMANY's *Computerwoche, Information Management, PC Woche, PC Welt, AmigaWelt, Macwelt*.

FYI If you have any questions or concerns about advertisers in *AmigaWorld*, please contact: **Margot L. Swanson, Customer Service Representative, *AmigaWorld* Magazine, 80 Elm St., Peterborough, NH 03458.** As a service to its readers, *AmigaWorld* will periodically publish the names of companies who are having difficulties meeting their customer obligations or who have gone out of business. Through our customer service representative, *AmigaWorld* assists readers with problems they may have with advertisers. However, *AmigaWorld* does not assume any liability for advertiser's claims. Readers are advised that **PULSAR, C Ltd.**, and **Ingenuity, Inc.** are out of business. You are also advised to contact *AmigaWorld* before dealing with these companies: **Micro Computer Services**; **Computer Mart**.

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.: Margot L. Swanson, Customer Service Representative.

The GRAPEVINE GROUP Inc.

ONLY AT GRAPEVINE

DIAGNOSTICS

STU (System Test Utility) Terrific complete diagnostic trouble-shooting software. An absolute must for all Amiga users. Professionally written by Custom Services, Inc. **$29.95**

Amiga Diagnostician. Diagnose up to 28 common problems. Comes with software and booklet. Save a lot of money by locating faulty chips yourself **$14.95**

The Final Test. JUST RELEASED: This diagnostic diskette tests out keyboard, display, graphics, new Workbench, sound, timing, real time clock, RAM test (both chip & fast) by Global Upgrades, Inc. (Included free with 8372 Agnus) **$9.95**

SUPER DENISE UPGRADE $44.95

New 8373 ECS Denise chip adds new screen modes: **productivity** mode for flicker free display and enhanced picture, **superhires** mode for ultrasharp video titling, **scan** mode and new **genlock** mode allowing greater flexibility. (This is the same chip used in the A3000.)Comes with Super Denise instructional diskette. If you have 2.0, you will absolutely, positively want this enhanced Super Denise Upgrade.

Printhead Problems?

Don't throw out your old worn printhead. For a fraction of the cost of a new one, we will refurbish or remanufacture it to factory specs for you and give you a year warranty, which you don't get when you buy a new unit. SAVE UP TO 70%. 5 day turnaround (400 types done). Call us.

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 instructional diskette (just released) **$44.95**

2 MEG SUPER FAT AGNUS (8372B)—This is the high technology chip used with DKB's MegAChip. (Gives 2 megs of chip RAM.) Quantity limited **$79.95**

1 MEG FATTER AGNUS CHIP (8372A)—Comes with FREE Rockwell Agnus chip puller (a necessity). "Final Test" diskette (12 diagnostic programs), and complete instructions.... **$59.95**

AMIGA A500/A2000 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/A2000 PC BOARD PURCHASE

***A500 PCB** contains all chips **$199.95**

***A2000 PCB** includes the 1.3 ROM, 8372A 1 meg Agnus and Super Denise chip 8373..... **$529.95**

A500/A2000 BOARD EXCHANGE PROGRAM

Stop paying expensive repair costs. Send us your broken motherboard for an exchange price that can't be beat. Also ask about our exchange upgrade packages. All boards received are subject to inspection. NO dealers.

***A500 PCB EXCHANGE** (populated & tested) **$124.95**

***A2000 PCB EXCHANGE** (populated & tested, includes "Final Test" diagnostic diskette) **$289.95**

AMIGA EMERGENCY STARTUP KIT

Stop sending out your Amiga for repairs. Save a lot of time and money by repairing your own computer in a simple manner. Our kit includes all you need. All chips provided in the kit are direct socket plug-ins and do not require soldering. Originally "blister" packaged for government PXs worldwide and now available to the general public. **Total cost savings far exceeds purchasing chips on an individual basis.** 28 different symptoms (faulty parts) with their remedies are layed out. **KIT CONTAINS:** Two 8520A CIA Chips, 8362 half Bright Denise, 8370 Agnus Chip, 5719 Gary Chip, PLCC Chip Puller, Basic Schematic, Amiga Diagnostician Booklet and Special Test Diskette with the following tests: Keyboard, Hi Res, half Bright, Double Buffered Animation, Mouse & Agnus Tests. (12 diagnostic tests in all). A $210.20 value for **$99.50**

* With 8373 Super Denise add $39.95 *

MONTHLY SPECIALS

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 and "Final Test" diagnostics. No soldering..... **$599.95**

AMIGA A500 KEYBOARD: Unit is new, exact replacement with 90 day warranty. Dealer inquiries invited. Fantastic price. Available only at Grapevine **$67.50**

CBM #1802 Color Monitor-Composite/Sound **$109.95**

8373 SUPER DENISE - New ECS Release **$44.95**

8520 CIA CHIP - The most problematic chip in the Amiga computer. Controls 12 major functions **$12.95**

AMIGA UPGRADE CHIPS

Fatter Agnus (1 and 2 Meg) ..... **See above**
8362 Denise ½ Bright/8364 Paula **$24.95**
8373 New Super Denise ..... **See above**
5719 Gary chip **$12.95**
8520A CIA chip. Controls 12 major functions **$12.95**
1.3 Kickstart ROM **$27.95**
2.0 Kickstart ROM Upgrade Kit (just released) **$79.95**
Includes 4 floppy disks, instructions & ROM

AMIGA POWER SUPPLIES

A500 45 watt (heavy duty) exact replacement..... **$67.50**
200 Watt "Big Foot" A500 Universal Switching Power Supply with fan and external cabling for hard disks, etc. An absolute must for those adding on more memory/peripherals (e.g. Prima). Used worldwide with various voltage inputs... **$83.95**

MEMORY EXPANSION

Rejuvenator (for A1000). Includes memory, 1 Meg Agnus, 1.3 ROM and "Final Test" diagnostic software **$488.00**
1x4/80 SC Zip for A3000 ..... **$24.95**
1x1/80 ..... **$4.69**
4164/20 pull..... **$.29**
27128/27256..... **$4.95**
1x1/100NS **$4.69**
256x4/100 all ICD, GVP, etc **$5.25**
1x8/80 SIMM **$38.95**
4x8/80 SIMM **$157.95**
HP Laser Memory (II/IID, IIP, & HPIII)
2 Megs/4 Megs ..... **$137.95/$197.95**

Serving the Commodore/Amiga community for 12 years

MISCELLANEOUS PRODUCTS

Printer Port Adapter (runs any CBM printer to PC) **$29.95**
Video Interface Professional by Digiflex, Inc. (converts Amiga RGB to composite output)..... **$99.95**
Kickboard ROM selector switch for 1.3 or 2.0 (by Utilities).
Keyboard controlled switch..... **$49.95**
Toggle switch controlled..... **$33.50**
Video Crisper. Makes your Amiga display sharp/vivid colors. No soldering. Really works! **$44.95**
KB Talker—Amiga interface (use any AT-PC keyboard)..**$53.95**
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**

ICD THE ICD ADVANTAGE

AdSCSI 2000. Hard drive interface with unmatched speed and flexibility..... **$125.50**

AdSCSI 2080. Hard drive interface with up to 8 megs of FAST RAM **$169.95**
Each meg of memory add..... **$38.95**

AdSpeed. Best overall performance of any accelerator in its price range..... **$199.95**

Flicker Free Video. Eliminates interface flicker for any Amiga computer..... **$267.50**

AdRAM 510. Just released for the new A500 PLUS. Take your Amiga 500 PLUS up to 2MB of fast RAM. Includes RAM and battery..... **$87.95**

AdRAM 540. Add up to 4 megs of RAM internally in your Amiga 500
with 1 meg..... **$127.95**
with 2 meg..... **$162.95**
Each additional meg of memory add..... **$35.00**

AdRAM 2080. 8 meg internally in your 2000/2500 ... **$109.50**
Each meg of memory add..... **$35.00**

AdIDE. Smallest Amiga hard drive interface made.
For IDE (AT) drives
IDE 44 (for 2.5" hard drive) **$104.95**
IDE 40 (for 3.5" hard drive) **$94.50**

Novia 20i. The smallest hard drive and interface in the world for your A500. Fits internally **$325.00**

Prima 52i. Now mount a 3.5" IDE drive internally in your 500, 1000, 2000..... **$495.00**

Shuffle Board. Reroutes DFO: to the external floppy connector. Boot from an external floppy for A500/1000..... **$28.50**

DKB PRODUCTS

MegAChip 2000™ With 2 Meg Agnus Chip Included

2 MB of Chip RAM for A500/2000 Sizable Rebate on 1 Meg Agnus
Always In Stock! Now Available for the Amiga 500

STOP RUNNING OUT OF CHIP RAM. If you use your Amiga for *Desktop Video, 3D Rendering & Animation, Multimedia or Desktop Publishing*, then you need the MegAChip 2000. Fully compatible with Workbench 2.0, the ECS Denise chip, GVP's and Commodore's 68030 accelerators. Why upgrade to 1 meg of RAM when you can have the same high tech 2 meg chip RAM as the A3000? **Includes FREE** Rockwell chip puller (a necessity), Final Test diagnostic Agnus diskette program (see Diagnostics section) and 2 meg Agnus **$299.99**
Buy the MegAChip from us and we'll give you the new 8373 Super Denise (ECS) for $39.95

SecureKey™ Access Security for the A2000/3000

Do you need to keep your system safe from unauthorized use? The SecureKey will not allow access to your Amiga without the right security code. Furthermore, you can't boot off of a floppy or bypass it in any manner. No one can delete files from your hard drive or steal your work. Requires 1.3 or above..... **$98.50**

Insider II™

Allows A1000 owners to add up to 1.5 meg of Fast RAM internally. User expandable in 512K increments using 256K x 4 Drams. Includes battery backed clock calendar. Simple installation. No soldering required. Compatible with the KwikStart II and most processor accelerators..... **$176.50**
With 1.5 meg..... **$239.95**

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..... **$67.50**

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. **$63.95**

SEND FOR OUR FREE 36 PAGE CATALOG

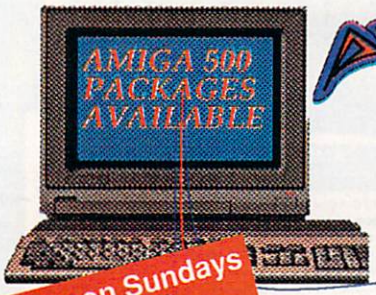
MasterCard VISA DISCOVER AMERICAN EXPRESS

3 Chestnut Street, Suffern, New York 10901
Customer Service (914) 357-2424 Fax (914) 357-6243
Order line only 1-800-292-7445
We have a terrific catalog with hard-to-find Amiga items.

9-6 M-F, 10-2 Sat (EST)
PRICES SUBJECT TO CHANGE
WE SHIP WORLDWIDE

Add UPS charges to above.
ALL COMMODORE CHIPS
AND PARTS AVAILABLE

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.



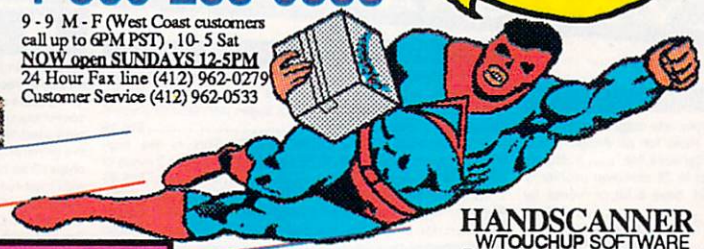
AMIGAMAT

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

My low shipping prices guarantee you the best delivered price!

Order on Sundays 12-5 PM



Complete *Video Toaster Work Stations*
Starting at $3799

Toaster Hardware

Video Toaster	Call
Personal TBC II	$879
Personal SFC	$379
AmiLink C/I	Call
Kitchen Sync	$1699

Toaster Fonts

1st PrzToasted Fonts	$159
Cinnamon I or II	$62
Bread & Butter	$69
Kara Toaster I or II	$62
Masterpiece	$89
Video Fonts 2	$62

CSA's *Mega Midget Racer*
The Max-Speed Alternative for those on a budget
for your Amiga 500, & 2000
25MHz Economy **$419**
33MHz Economy **$529**
Math co-processor 25MHz $219 33MHz $295
Mega Memory Board(32Bit)
2MB - $299, 4MB - $669, 8MB - $1129

VXL30 ACCELERATOR
FOR A500 & A2000
25MHz $329
40MHz $525

Amiga compatible **Mouses**
Opto-Mechanical **$35**
Optical **$55**
Cordless Mouse **$75**
Cordless TrackBall **$85**

HANDSCANNER
W/TOUCHUP SOFTWARE
FOR A500, A2000, A3000
$239

DKB
Multi-Start II
Dual ROM Board assembly
Run 1.3 or 2.0 on your Amiga 500/2000 at the push of a key.
$64 w/2.0 ROM **$149**

KwiKStart II
Dual ROM Board for A1000
Run 1.3 and 2.0 on your A1000
$79
Insider II RAM Board
for the A1000 0k$169
w/.5MB $194 w/1.5MB $239

GVP
#1 Name in AMIGA Power

All-in-One A2000 Add-on Board
68030 Power
Up to 16MB 32-Bit RAM
SCSI Controller
22MHz/1MB **$799**
33MHz/4MB **$1299**
4MB 32Bit extra RAM $330

50MHZ 68030 POWER
Expandable to 32MB of 32-bit RAM
50MHz w/4MB RAM
$1699
4MB 32Bit extra RAM $330

NEW
G-FORCE 040
For the A3000
$2449

NEW
IMPACT VISION 24
16 million Colors, 24-Bit Frame Buffer, Genlock, Framegrabber, Flicker eliminator, PIP, Video Titler, 3-D modelling
$1899

NEW
DSS
Digital Sound Studio
Record - Edit - Compose
$99

HARD DRIVE CONTROLLERS FOR A2000'S
EXPANSION SYSTEMS

OUR LEAST EXPENSIVE HD Controller

DataFlyer 2000
Budget hard drive solution for your A2000
Controller only **$85**
W/52 MB Quantum HD$319
W/105MB Quantum HD$459
***DataFlyer* RAM**
For DataFlyer2000
0K $95
2MB $190
4MB $285

GVP SERIES II
With up to 8MB RAM

W/ 52MB HD	$399
W/105MB HD	$549
W/200MB HD	$949

Hard drives Factory Installed
Now with 2YR Factory Warranty

Complete
Digi-View *System*
$399
Includes:
Digi-View Gold 4.0
plus:
Copy Stand, Panasonic 1410 camera, AutoDroid, video switch and all cables.

Only complete system offered

1410 Camera w/lens	$179
Copy Stand	$62
Auto Droid	$48
Digiview Gold	$119
Cable / Switch Set	$35

Modems

SupraModems

2400 External	$89
2400Plus External	$139
2400Plus ZI Internal	$169
9600 Plus External	$519
FAX Modem	Call

Zoom Modems

2400 Ext.	$75
2400 w/MNP5 & v.42 bis	$145
9600 v.32 bis	$399
Modem Cable	$5

Full Power for your Amiga 2000 or 3000
Progressive Peripherals'
68040 *Accelerators*
A2000 $1699
23 times faster than A2000
A3000 $1499
4 times faster than 25MHZ A3000
(requires 2.0 ROMS)
ProRAM 3000 CALL
32Bit 4 - 64MB RAM Board for A3000

EDUCATION

Adventures in Math	$25
Algebra	$31
Algebra II	$31
Barney Bear Camping	$22
Barney Bear at the Farm	$22
Barney Bear in School	$22
Barney Bear in Space	$22
Calculus	$31
Carmen San Diego Time	$31
Carmen San Diego USA	$31
Carmen San Diego World	$31
Crossword Const. Kit	$25
Dinosaur Discovery Kit	$25
Discovery Math/Spelling	$25
Distant Suns 3.0	$35
Distant Suns 4.0	$55
Katie's Farm	$25
Math Talk	$25
Math Blaster Plus	$31
Mavis Beacon Typing	$34
McGee Fun Fair	$25
My Paint 2.0	$31
Puzzle Storybook	$25
Rhyming Notebook	$25
Speller Bee	$25
Talking Animator	$41
Talking Coloring Book	$19
Teachers' Toolkit	$35
Trigonometry	$31
World Atlas	$37

Distant Sun 4.0
A planetarium of unsurpassed visual realism
$55

GAMES

Altered Destiny	$37
Amnios	$31
Armour-Gedden	$28
Arachnophobia	$25
Atomino	$31
Awesome	$37
Bandit Kings of Ancient China	$37
Bane of Cosmic Forge	$37
Barbarian II	$31
Battle Chess 2	$31
Bo Jackson Baseball	$31
Brigade Commander	$28
Carthage	$28
Castles	$37
Cybercon III	$33
Death Knights of Krynn	$34
Dick Tracy	$31
Dragon's Lair 2 (Time Warp)	$37
Drakkhen	$37
Dungeon Master 2	$25
Elf	$34
Elvira: Mistress of the Dark	$37
Eye of the Beholder	$39
Eye of the Beholder 2	Call
F15 Strike Eagle II	$37
F19 Stealth Fighter	$37
Falcon	$31
Falcon Missions 1 or 2	$19
Fantastic Voyage	$31
Flames of Freedom	$31
Flight of the Intruder	$37
Full Metal Planet	$31
Gateway Savage Frontier	$34
God Father	$31
HardNova	$34
Hare Raising Havoc	$31
Heart of China	$37
Hoverforce	$31
Ishido	$34
Immortal	$34
Indy 500	$34
Jack Nicklaus Unlimited	$37
Killing Game Show	$28
Kings Quest V	$37
Knights of the Sky	Call
Leander	$31
Lemmings	$31
Lemmings, Oh No! More...	$22
Lord of the Rings	$34
M1 Tank Platoon	$37
Millenium	$25
Monopoly	$31
Murder	$28
Obitus	$37
Overdrive	$37
Overlord	$31
Perfect General	$37
PGA Golf	$34
Pools of Darkness	$39
Populous II	$37
PowerMonger	$34
Prehistoric	$31
Predator 2	$16
Prince of Persia	$25
Quest for Glory 2	$37
Railroad Tycoon	$37
Rise of the Dragon	$37
Rules of Engagement	$39
Search for the King	$37
Secret of Monkey Island	$39
Secret of the Silver Blades	$34
Shadow of the Beast 2	$37
Silent Service II	$37
Sim City	$31
Sim City Graphics 1 or 2	$23
Sim City Terrain	$12
Space Ace II	$37
Space Quest IV	$37
Spacewrecked	$31
Speedball 2	$25
Star Control	$31
Star Flight 2	$34
Stratego	$31
Strike Fleet	$28
Strip Poker III	$31
Team Yankee	$37
Terminator	$34
Their Finest Hour	$25
Volfied	$25
Wayne Gretzky 2	$34
Wide World of Boxing	$31
Wolf Pack	$34

EUROPE'S HOTEST GAMES

Battle Isle	$43
Cadaver	$31
Cruise for a Corpse	$41
Deuteros	$40
First Samurai	Call
Gods	$38
Heimdall	$44
Lotus Turbo 2	$39
Magic Pockets	$39
Megafortress	Call
Meglomania	$43
Microprose Golf	$46
Mig29 Super Fulcrum	Call
Moonstone	$43
Pit Fighter	Call
RobinHood	$37
Robocod: James Pond 2	$39
Sim Earth	Call
The Simpsons	$39
Utopia	$40
W.W.F. Wrestling	$40
4D Sports Boxing	$43

SHIPPING - WITHIN 2 BUSINESS DAYS
UPS GROUND (continental US)

- $99	5%	MIN $4
$100 TO $199	4%	MIN $5
$200 TO $499	3%	MIN $8
$500 -	2%	MIN $15

2nd Day add $5 to UPS Ground
Next Day add $10 to UPS Ground
APO,FPO add $10 to Ground
CANADA add $10 to Ground
PR, HI, ALASKA add $15 to Ground

No surcharge for MASTERCARD, VISA and DISCOVER.
3% surcharge for AMERICAN EXP.

Prices subject to change without notice.

Returns accepted 10 days from date of purchase.
Call for RA# before returning.
Defectives replaced with same item.
15% Restocking fee for items returned and not exchanged for same.

International Orders (not APO, FPO) send copy or FAX of front & back of Charge Card w/signature. Call or FAX for shipping quote.

Mailing Address:
Computer Basics, Inc.
1490 N. Hermitage Rd.
Hermitage, PA 16148

AMIGAMAN

Orders Only
USA & Canada
1-800-258-0533
New longer hours
9AM - 9PM M-F, 10AM - 5PM SAT
NOW open SUNDAY 12 - 5PM

- Authorized Sales
- Authorized Service
- Fast Service
- Low Prices

COMING SOON
MODEL 10
AMIGA Compatible*
Notebook
$1999

AMIGA Compatible
7.16MHz 68000
2MB RAM
3.5 Disk Drive
Monochrome
3 lbs.
Color Video RGB out

*The Model 10 is manuf. by Newer Tech. Inc and is not a product of Commodore Business Machines

ICD

The ICD Advantage

AdSpeed $189
68000 at 14.3 MHz. Best Overall performance of any accelerator in its price range.

Flicker Free Video $259
Eliminates interlace flicker for any Amiga Computer. Use with VGA or Multisync Monitors

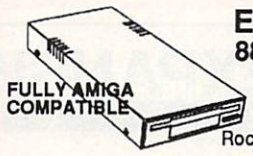
AdRAM 540 $95
Add up to 4 meg of RAM internally in your Amiga 500

Novia 20i $249
2.5", 20MB hard drive and interface for your Amiga 500. Fits internally
Novia 40i includes 40MB drive $399

AdIDE40 for 3.5 inch hard drives $99
Smallest Amiga hard drive interface made for IDE(AT) drives

AdIDE Kits (Prima) $139
Now mount a 3.5 inch IDE harddrive internally in your Amiga 500. Includes IDE 40, Shuffle Board and mountings for hard drive. Uses 52 or 105 Quantum IDE drives, (not included)
Prima 52 (includes 52Q Drive) $369

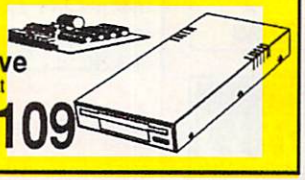
Shuffle Board $29
Reroutes df0: to the external floppy connector. Boot from external floppy drive.



FULLY AMIGA COMPATIBLE

EXTERNAL 880K DRIVES
as low as **$79**
A.I.R. - $89
Roctec Ultraslim - $95

AMIGA 500 EXPANSION SET
512K RAM & 880K Drive
w/Clock/Calendar/Bat
NEW LOW PRICE **$109**



MORE RAM FOR YOUR AMIGA 500

512K RAM Expander
$36
512K RAM w/Clock, Calendar, Bat.

EXPANSION SYSTEMS
BASE BOARD

Expand your Amiga 500 RAM
512K to 4MB
0K - $95
512K - $120 1MB - $145
2MB - $195 4MB - $275

SupraRAM RX
External RAM
Expand your A500 up to 9MB

Pass-through design
1MB up to 2MB **$129**
2MB up to 8MB **$219**

Barrel Bag
White on Blue
$14

Mouse Mats
RED or BLUE **$9**

Polo Shirt $19
WHITE ON BLUE

AMIGA CAP
Blue on White Corduroy **$8**

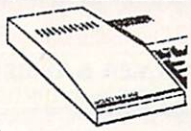
T-Shirts
Sweat Shirts Only **$19**
RED or BLUE
RED or BLUE Only **$9**

Top Quality

Limited Supply
AMIGA MUG
$8

User Group Discounts on "Show Offs" - CALL

EXPANSION SYSTEMS ***DataFlyer 500***
Hard drive
Budget solution for your Amiga500
Controller only **$139**
W/52MB Quantum **$375**
W/105MB Quantum **$515**



GVP SERIES II

A500 HARDDRIVES
EXPAND UP TO 8MB
W/52MB Quantum **$525**
W/105MB Quantum **$689**
1x8 Sims (1MB) $48

BIG FOOT
A500 Power Supply
Heavy Duty
200 Watts **$95**

MISC. HARDWARE

Midi's	
ECE Midi	$49
Midi Gold 500	$56
Midi Gold Insider	$65
Midi Connector w/ cables	$59
Phantom SMPTE MIDI	$229
Midi cable 6ft	$8
Audio	
Audiomaster 4	$62
Audition 4	$62
Perfect Sound 3.1	$69
SoundMaster	$139
Video	
Chroma Key	$329
Alter Image Genlock	$199
MiniGen	$209
RocGen Plus	$359
Supergen Genlock	$649
Video Blender	Call
Video Master	$999
Joysticks & Trackballs	
Slik Stik Joystick	$7
Boss Joystick	$15
Tac 50 Joystick	$17
BatHandle Joystick	$25
Amtrac Trackball	$69
Kraft Trackball	$59
Misc.	
Double-Talk Network	Call
Flicker Fixer	$249
A2000 Internal Drive	$89
AMAX 2 PLUS	Call
Mouse Switch	$29
JX100 Scanner w/Software	$599
Power PC Board	Call
Brush Mouse	Call

2.04 ROMS In Stock
for A500/2000 or A3000

PRODUCTIVITY SOFTWARE

Art & Animation		***Tele-Communications***	
Art Department Pro 2.0	$164	A-Talk III	$62
Deluxe Paint IV	$107	Baud Bandit	$30
Designworks	$75	***Utilities***	
Disney Anim. Studio	$79	Arexx	$31
Draw 4D Pro	$199	Directory Opus	$37
Ham-E Plus	$389	DiskMaster II	$44
Imagine 2.0	Call	Labeldex!	$47
Pixel 3-D 2.0	$75	Project D 2.0	$37
Spectracolor	$62	RX Tools	$35
Turbo Silver 3.0	$59	Visionary	$62
Databases		Workbench Management	$35
Microfiche Filer	$62	***Video & Presentation***	
Microfiche Filer PLUS	$112	AmigaVision	$89
SuperBase Personal 2	$94	Broadcast Titler II	$229
SuperBase Prof. 4	$329	Foundation	$156
Music		Pro Video CG	Call
Bars and Pipes Pro	$219	Pro Video Post	$209
Delx Music Const. Set	$69	Scala	$275
Dr. T's Copyist Apprntice	$94	Screen Maker	$249
Dr. T's Copyist DTP	$218	Showmaker	$229
Dr. T's KCS Level 2v3.5	$249	TV Text Professional	$99
Dr. T's Tiger Cub	$87	Video Director	$139
Dr. T's XOR	$203	***Word Processors & DTP***	
Super Jam	$89	Final Copy	$59
Music Box A	$38	Office	$179
Music Box B	$38	Page Stream 2.2	Call
Spreadsheets		Pelican Press	$62
Advantage	$125	ProWrite 3.2	$89
Maxi Plan Plus 2.0	$62	Professional Page 2.1	$169
Professional Calc	Call	Proper Grammar	$59

DELUXE PAINT IV $107
PROF. PAGE 2.1 $169
DATA TAX-91 $49
PROWRITE 3.2 $89

CDTV

American Vista	$64
Barney Bear School	$27
Barney Bear Goes Camping	$27
Battle Storm	$33
Case of Cautious Condor	$33
CD Remix	$37
Classic Board Games	$33
Defender of the Crown	$33
Falcon	$64
Fred Fish Collection	$47
Gretzky Hockey	$37
Illustrated Dictionary	$47
Illustrated Holy Bible KJV	$37
Illustrated Shakespeare	$37
Lemmings	$33
Mind Run	$34
My Paint	$33
New Basics Cookbook	$39
Paper Bag Princess	$33
Peter Rabbit	$37
Power Pinball	$29
Sim 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
Lots of New Titles	*CALL*

Protect Your CD's
CD Caddy $15ea
Pack of 5 Caddies $59

CDTV Keyboard
Infra Red Mouse & Disk Drive
$199

BOOKS

Amiga for Beginners	$13
Amiga Dos Quk Ref. Guide	$8
Amiga Dos Inside & Out	$19
Amiga Basic Inside & Out	$19
Machine Language	$15
Graphics Inside & Out	$26
Amiga C for Beginners	$15
Amiga C for Advanced	$26
3DGraphic Prog. in BASIC	$15
Desktop Video Power	$23
Best of AmigaTricks&Tips	$23
Amiga Printers Inside Out	$26
Using Arexx	$26
Imagine Companion	$24

EUROPEAN MAGAZINES

AMIGA Format w/Disks	$10
AMIGA Action w/Disks	$10
C.U. AMIGA w/Disks	$10
AMIGA Power w/Disks	$10
1 for AMIGA w/Disks	$10

VIDEO TAPES

Amiga Primer	$24
Animation 101	$29
DCTV: A Guided Tour	$33
Desktop Video Volume #1	$24
Desktop Video Volume #2	$24
Imagine: A Guided Tour	$29
Pro. Techniques w/ DPaint	$24
Toaster Microwave	$34
Ultimate Guide Video 1	$34
Ultimate Guide Video 2	$34
Ultimate Guide Toaster 1	$44

Circle 12 on Reader Service card.

FOR ORDERS ONLY IN USA & CANADA **800-759-6565** OR CALL: (718) 965-9077

Order Hours Mon-Thurs: 9-7/Fri:9-3:30/CLOSED Sat/OPEN Sun:9:30-6(ET)

est. 1967

CELEBRATING OUR 25th ANNIVERSARY

MONTGOMERY GRANT

TM AMIGA WORLD 2-92

OR WRITE TO
MONTGOMERY GRANT
MAIL ORDER DEPARTMENT
33 34TH STREET DEPT. A,
BROOKLYN, NY 11232

RETAIL OUTLET
PENN STATION, MAIN CONCOURSE, NYC, 10001
(Beneath Madison Square Garden)
OPEN: Mon-Thurs 9:30-7/Fri 9:00-3:00/
CLOSED Sat/OPEN Sun 9:30-6(ET)

FOR CUSTOMER SERVICE & ORDER STATUS CALL
(718) 965-9285
CUSTOMER SERVICE HOURS
Monday-Thursday, 10AM-5PM/
Friday:10AM-3PM

FAX #718-965-0664/TELEX 422132 MGRANT

• NO SURCHARGE FOR CREDIT CARD ORDERS • NEXT DAY & 2nd DAY DELIVERY AVAILABLE•

RCS MANAGEMENT

68040 ACCELERATOR w/4MB

CALL

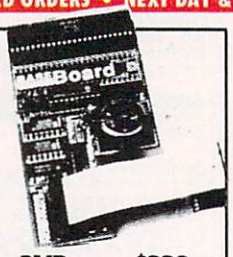
EXPANDABLE TO 32MB

EXPANSION SYSTEMS

BASEBOARD

MEMORY EXPANSION FOR A-500

OK	$99	1MB	$139
512K	$129	2MB	$199
3MB	$239	4MB	$289



Introducing!!

DATAFLYER IDE

800K SPEED **$79**

DATAFLYER
LOW COST INTERFACES
EXPANDABLE TO 8MB

A-2000 SCSI	$85
A-2000 IDE	$79
A-500 SCSI	$139
A-500 IDE	$149

A-1000 VERSIONS ARE ALSO AVAILABLE

DATAFLYER 8/0 MEMORY CARD (FITS ON ANY INTERFACE) **CALL**

MICRO PROSE

SIMULATION • SOFTWARE

KNIGHTS OF THE SKY **$39.95**

GREEN (THE ULTIMATE GOLF SIMULATION).....$37.95
FLAMES OF FREEDOM..$29.95
RAILROAD TYCOON.....$32.95

ASDG

ART DEPARTMENT PRO VERSION 2 **$189**

EPSON ES-300 C DRIVER for ADPRO **$135**
Inc. Stand Alone Scan to Disk Driver & ADPro module. No special board needed!

EPSON ES-300 SCANNER w/DRIVER **$1399**
Color Scanner w.AD Pro Driver & Cables

SupraDrive 500XP

HARD DRIVE KITS

52MB, 1MB	$539
52MB, 2MB	$569
120MB, 512K	$709
120MB, 2MB	$769
240MB, 2MB	$1049

SOFTWARE BLOWOUT

LIMITED QUANTITIES WHILE SUPPLY LASTS

ABYSS	$19.95	OVERRUN	$11.95
ATF II	$23.95	PAGESTREAM	$139.95
BARDS TALE I	$9.95	PICK 'N PILE	$22.95
BARDS TALE III	$29.95	POPULOUS	$26.95
BARS & PIPES	$99.95	PRO VECTOR	$129.95
BATTLE CHESS	$23.95	ROMANCE OF 3 KINGDOMS	$33.95
BLACK JACK ACADEMY	$14.95	ROMANCING THE THRONE	$19.95
BLOCKOUT	$24.95	SCENE GENERATOR	$23.95
CHAMBER OF SCI-FI MUTANT PRIESTESS	$19.95	SECRET OF SILVER BLADES	$28.95
CHRONOQUEST	$9.95	SEX VIXENS f/SPACE	$19.95
DAS BOOT	$22.95	SILENT SERVICE	$19.95
DIRECTOR 2.0	$59.95	SPACE QUEST II	$25.95
DELUXE VIDEO III	$79.95	STERLING SILVER BBS	$62.95
DESIGNWORKS	$45.95	STREET ROD II	$23.95
DIGIMATE III	$17.95	SUPERBASE II	$57.95
DIGIWORKS 3D	$64.95	TENNIS CUP	$19.95
EASY FM	$28.95	TIE BREAK TENNIS	$19.95
EXCELLENCE	$84.95	TURBO TEXT	$49.95
EXPRESS COPY	$21.95	TURRICAN	$16.95
FLASHBACK	$33.95	TV SPORTS FOOTBALL	$24.95
FRACTAL PRO	$44.95	TV TEXT	$49.95
FULL METAL PLANET	$24.95	VISTA	$27.95
HARPOON CHALLENGER PAK	$29.95	WELLTRIS	$19.95
HYPERBOOK	$44.95	WINGS OF FURY	$21.95
IMMORTAL	$29.95	WORLD CLASS SOCCER	$19.95
KINDERAMA	$19.95	X-CAD PRO	$119.00
KINGS BOUNTY	$26.95	X-COPY	$29.95
MACROPAINT	$59.95	ZONE WARRIOR	$22.95
NINJA TURTLES	$19.95		
NITRO	$19.95		

CALL FOR OUR COMPLETE SOFTWARE CATALOG

Zuma TV SHOW ver. 2 **$56.95**

TV TEXT PRO	$95.00
ZUMA FONT PACK 1	$54.95
ZUMA FONT PACK 2	$54.95

ICD AdSpeed

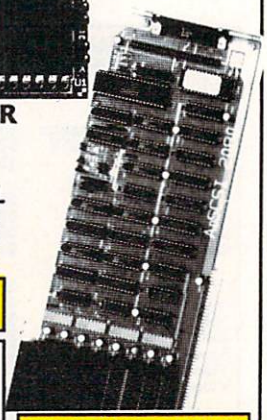
AD-SPEED ACCELLERATOR for all AMIGA computers $115

ADIDE 40 KIT.....CALL

ADSPEED/IDE COMBO BOARDS

COMBO ADIDE 40 KIT	$399
COMBO ADIDE 44 KIT	$379

AdSCSI 2080
Expandable to 8MB.....$189



ICD AD-RAM 540 ØK $99

ICD AD-RAM 540 1MB	$145
ICD AD-RAM 540 2MB	$189
ICD AD-RAM 540 3MB	$229
ICD AD-RAM 540 4MB	$279

FLICKER FREE VIDEO $289

Free Spirit Software

SEX OLYMPICS $23.50

GOLD DISK

SHOWMAKER $215

Free Spirit Software

ADVENTURES IN MATH $21.95

GOLD DISK

PROFESSIONAL PAGE 2.1 $189

GOLD DISK OFFICE	$159
HYPERBOOK	$69
PAGESETTER II	$69
TRANSWRITE	$39
PRO DRAW 2.0	$119

ADIDE INTERNAL HARD DRIVE PACKAGES FOR A-500

QUANTUM 52MB LPS **$419** | QUANTUM 105MB LPS **$559**

Packages Include: ADIDE, Shuffleboard, Software, Cables and Mounting Hardware

---

Certified check, Bank Check , Money Orders, Approved P.O.s, Visa, Mastercard, Amex, Optima, Diners Club, COD's & Wire Transfers accepted. Please call before submitting P.O's. Non- certified checks must wait 2-4 weeks for clearance. Prices and availability subject to change without notice. Not responsible for typographic errors. Return of defective merchandise must have prior return authorization number or returns will not be accepted. Please add 5% shipping & handling (minimum $6). Orders over $1200 are discounted to 3% shipping & handling. Orders over $3000 are discounted to 2% shipping & handling. Canadian orders please call for shipping rates. APO/FPO orders please add 10% shipping & handling, minimum $15. (Over $1200-8%, Over $3000-6%). All APO/FPO orders are shipped first class priority air. 2nd day and next day Air available at extra cost. We check for credit cards theft. DCA #800233. Amiga is a registered trademark of Commodore Amiga, Inc.

MasterCard VISA AMERICAN EXPRESS Card

30 DAY MONEY-BACK GUARANTEE

When you decide to purchase a product mail order it should be a pleasant experience. There should be no concern as to whether you are purchasing the right product for your needs. With our money-back guarantee you can buy with confidence. If the product does not meet your complete satisfaction you can return it back to us within 30 days for a refund.

All items must be in original condition with all packaging materials intact and unfilled warranty cards. You must call our customer service department to obtain a return number before returning any product. Shipping charges are non-refundable. 30 day money-back offer does not apply to software. Refunds are limited to $4000 per customer. Offer expires on 3/10/92.

AMIGA™ **AMIGA 500 CALL**

AMIGA™ **AMIGA 2000 CALL**

AMIGA™ **AMIGA 3000 CALL**

AMIGA™ **AMIGA 2000HD CALL**

Commodore CDTV $679

ALL MODELS PRICED SO LOW WE ARE NOT PERMITTED TO PRINT THE PRICES

AMIGA 500 & AMIGA 2000 COMPATIBLE HARD DRIVE PACKAGES

INCLUDES CABLES & SOFTWARE

SCSI CONTROLLERS

DRIVE	DRIVE PRICE	AdSCSI 2080 A-2000 (exp. to 8MB)	CALIF. ACCESS MALIBU BOARD 2000	DATA FLYER A-2000 (exp. to 8MB)	GVP Series II HC8/0 A-2000	RAPID ACCESS TURBO A-2000 (exp. to 8MB)	TRUMP CARD 2000 (exp. to 8MB)	DATA FLYER A-500 (exp. to 8MB)	RAPID ACCESS TURBO 500 (exp. to 8MB)	TRUMP CARD A-500 (exp. to 8MB)	DATA FLYER A-1000 (exp. to 8MB)
		$199	$129	$85	—	$279	$79	$139	$379	$195	$249
SEAGATE ST-157N-1 (49MB,28MS)	$229	$419	$369	$309	—	$499	$319	$365	$599	$425	$469
SEAGATE ST-1096N (80MB,3.5")	$305	$485	$439	$389	—	$579	$395	$435	$669	$495	$549
QUANTUM (52MB,Low Profile)	$269	$455	$389	$349	$469	$539	$359	$405	$639	$465	$499
QUANTUM (105MB, Low Profile)	$399	$579	$519	$479	$629	$669	$489	$535	$769	$595	$629
QUANTUM (120MB Low Profile)	$519	$699	$639	$599	—	$789	$589	$639	$889	$699	$759
QUANTUM (240MB Low Profile)	$849	$999	$969	$929		$1269	$919	$939	$1219	$999	$1089

MONITOR SPECIALS

COMMODORE 1084 RGB COLOR MONITOR **$299**

COMMODORE 1950 MULTISCAN MONITOR **$599**

WE CARRY A FULL LINE OF TBC's and TOASTER TAPES

AMIGA PARTS & CHIPS

8372 FATTER AGNES	$79
8372B SUPER AGNES	$99
8373 SUPER DENISE	$49
8520A CAI	$13
1.3 ROM CHIP	$40
2.0 ROM CHIP	CALL
AMIGA 500 KEYBOARD ASSEMBLY	$99
AMIGA 500 MOTHERBOARD	CALL
AMIGA 2000 KEYBOARD	$99
AMIGA 2000 MOTHER BOARD	CALL
AMIGA 2000 POWER SUPPLY	$249
INTERNAL DRIVE f/A-500	$79

SPECIAL! COMPATIBLE AT BRIDGEBOARD

WE REPAIR AMIGA EQUIPMENT -CALL FOR LOW, LOW RATES!!

WE CARRY A FULL LINE OF AMIGA CHIPS, & PARTS! CALL FOR PRICING!

AMIGA COMPATIBLE ACCESSORIES & SOFTWARE

AMIGA 500 EXPANSION KIT
- 3.5" EXTERNAL DRIVE
- 512K RAM EXPANDER

$109

A-1000 RF MODULATOR	$19
ART DEPARTMENT PRO	$141
ATONCE EMULATOR	$259
ATONCE PLUS 16 MHz AT EMULATOR	$329
BARS & PIPES PRO	$229
BIGFOOT P/S	$99
BODEGA BAY	$249
CHINON INTERNAL DRIVE 2000	$79
COLOR SPLITTER	$105
DAKOTA SKETCHMASTER 12x12	$519
12x18	$689
DELUXE PAINT IV	$122
DIGIVIEW GOLD 4.0	$130

GENLOCKS

MINIGEN	$189
SUPERGEN	$559
SUPERGEN 2000S	$1399

FLICKER FIXER	$239
GVP A-500 HARD DRIVES	CALL
GVP COMBO 22	$729
GVP COMBO 33	$1429
IMAGINE	$179
LEMMINGS	$31
NEC 3D-S MONITOR	$519
PROWRITE 3.2	$106
SAFESKIN A-500, A-2000, A-3000	$17
SHOWMAKER	$257
SYQUEST 44MB Removable HD with Cartridge	$449
SYQUEST 88MB Removable HD with Cartridge	$669

JOYSTICKS

GRAVIS CLEAR JOYSTICK	$35.50
SWITCH JOYSTICK	$32.00
GRAVIS MOUSESTICK	$64.00
MAX YOKE JOYSTICK	$79.95
SPEEDKING 500JX	$16.00

AMIGA HARDWARE BLOWOUT!

QUANTITIES LIMITED WHILE SUPPLY LASTS

AMTRAK TRACKBALL	$59
SUPERGEN	$559
VIDEO BLENDER	$1049
FLICKER FIXER DEB 2000	$65
FLICKER FIXER Genlock Option	$19
SUPRA 9600B MODEM	$459
SUPRA 2400 ZI + MODEM	$139
SUPRA SCSI CONT-2000	$59
ICD PRIMA 52L	$429
GVP 3001 ACCELLERATOR KIT	$999
GVP COMBO 22	$729
GVP 3050 KIT	$1679
FRAMEGRABBER	$379
SUPRA A-500 XP80/512K	$499
HP IIP+ PRINTER	$799
EPSON LQ-510	$249
SEIKOSHA SL-80I LQ PRINTER	$179
COMMODORE MPS 1200	$99
STAR NX-1001	$139
AIR 3.5" INTERNAL DRIVE f/A-3000	$79

30 Day Money Back Guarrantee does not include these products.

DevWare

$5.95 ea 1-9 Disks

$4.95* ea 10-24Disks

$3.95* ea 25+ Disks

*** Anti-Virus Free on all orders with 15 or more disks!**

Public Domain Library

Guarantee
We believe so strongly in our product that we offer a full lifetime, complete satisfaction guarantee. No questions asked.

We have been the official Public Domain Library of all of the best Amiga magazines. Find out why these magazines choose us! Each of our disks are jam packed with only the best programs. The first two letters on each disk indicate the orientation of the disk; DD# advanced--requires thorough knowledge of AmigaDOS and programs often contains source, VO# video related programs/utilities, WB# general interest - most programs can be run from the workbench, and FD# games and entertainment. Order our disk based catalog and receive a coupon for a complimentary volume with your next purchase.

Featured Disk

WB71A&B: The A64 Package - A very complete Commodore 64 Emulator. Supports any CPU and is fully compatible with WB2.0. Now that you've traded in your C64, don't loose all that software that took you years to compile. This software emulator actually runs faster than a 64! Amaze your C64 friends! Two disk set, counts as two.

New Disks

V04: 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.
V03: Image Utils - let VideoToolsOnTap let you tap into the video power of your Amiga for fades, color and greybars as well as a plethora of other indespensable video functions. TitleGen will do professional crawling titles. JPEG converts JPEG<->24-bit IFF with *amazing* compression. ImageLab performs special effects on IFFs.
V02: Stillstore - Used to create the "over the shoulder" graphic inserts ala the 11:00 news.
V01: 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.
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! Two disk set, counts as two.
FD70: SpaceGames - Contains AmiGoids, >finally!< an Asteroids game that takes advantage of the Amiga--totally configurable with great sound and grpahics. 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 blasting games? Relax and let these 21 games exercise your mind instead of your wrist.
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 Llamatron a well-done 'Robotron' clone. Hate is a "terrific" commercial grade Zaxxon clone with multiple levels/worlds and smooth diagonal scrolling...a 10!
FD65: GameDemo1 - Contains playable demos of Atomino and Turrican II
FD64: Games - Wizzy's Quest - a "great" 50 level game with great graphics, Cubus - a 3-dimensional Tetris type game (rotate and move in 3 dimensions). Husker Du - Colors and pattern rather than shape in this Tetris-esque game; 5 screens and 3 levels of difficulty. Requires Fat Agnus (1 Meg of Chip)
FD62: PomPom Gunner. An extremely smooth and well done World War II gunner simulation. Requires 1 megabyte of memory.
WB107A&B: Educational - Drawmap is a program that generates representations 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!
WB106: Home Manager - This is a great all-in-one address book with an autodialer/notepad/to-do list/appointment scheduler/home inventory database and an important phone number dialer. *Slightly* cripped demo version.
WB105A&B: Workbench 2.0 Extras #2 - See the top right of page 2 for more info on these priceless utilities to make Workbench 2.0 fly!
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.
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.
WB102: Communications - Contains the tour-de-force programs NComm 1.921 and VT100-29B. Automatic 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.
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.
WB100: CaligariPRODemo - Can't afford $3,000+ to see if the granddaddy of 3D rendering software is for you? Then try the demo version of this renowned modeler that the pro's rely on! No built-in save function, requires 68020+ processor.
WB99: Lifestyles - Includes AGene--family tree program that tracks up to 600 people/marriages/etc, Landscape is a backyard CAD program to create gardens/landscapes, Loom simulates an 8 harness loom; experiment with pattern design in an instant feedback environment.
WB98: Business - Includes BBasell a nice, powerful database; BizCalc--a personal or mortgage loan calculator with amortization capabilities, Loop--a flowchart maker, Formmaker - design professional looking forms on your Epson LQ-2500 compatible printer.
WB96: Dupers - Contains XcopyIII & Nib which will backup copy-protected programs. FreeCopy removes copy protection from several programs, and SuperDuper will crank-out fast AmigaDOS copies.
WB95: Checkbook Accountant 2.1 This program is definitely commercial grade; we've seen many checkbook programs and this is absolutely the best. Full budgeting, transaction recording and report generation.
WB93: Workbench Extras #2 This disk contains the utilities that Commodore should have shipped with the Amiga; VirusX4.0, Snap, FixDisk (recover corrupt/deleted files), Disk Optimizer (floppy & hard), MachIII (screen blanker, hotkey, mouse accel., macro, clock utility), QMOUSE (a gurubuster)and PrintStudio.
DD82: Unix - Contains a working demo of Minix - a Unix workalike. Minix is system call compatable with V7 of Unix, supports multitasking and multiple users and many more features too numerous to list here.
DD81: ARexx Tutorial - Includes several sample Arexx scripts and sample programs. Also includes APig; a library that gives you access to Intuition from within Arexx scripts.

Overstocked Disks

FD5: Tactical Games - BullRun - a Civil war battle game, Metro you play the role of a city planner. Build wisely and your system will be a success, but poor planning will lead to disaster and financial ruin. Very very habit forming.
FD6: GAMES! - This disk is chock full of games including; Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.
FD7: PACMAN - This disk contains several pacman type games including; PacMan87, MazMan and Zonix.
FD9: Moria -. This has great graphic controls, multiple spells, similar to Larn and Hack. Play time several weeks!
FD10: HackLite - A dungeon adventure game. Considered a must-have classic. This is the second release of this game on the Amiga. Great graphic interface. Play time several weeks!
FD11: Las Vegas and Card Games - Las Vegas Craps - The best Las Vegas Craps simulation every written for any computer. Contains extensive HELP features, Also Thirty-One,VideoPoker and more.
FD12A,FD12B: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).
FD13: Board Games - contains multiplayer Monopoly, Dominoes, 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, this is a truly commercial quality game. Similar to a Lucas game named PipeDreams, excellent playability and entertainment, Mutants , a small version of the arcade game of the same name, also SuperBreakout a pong/arkanoids type game.
FD27: Arcade Games - This disk is loaded with some great games. Includes, Raceorama a great racing car game with ten different courses, MiniBlast a helicopter gunship type clone, Shark in the same class as froger, 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 you mission, SpKiller - try and penetrate enemy lines with this game, and Retaliator - another great game.
FD31: Games! - Air Traffic Control - a good ATC simulation game, Black Jack Lab - a full featured set of card games, ChessTel - play chess with your friend in distant and remote places with this game and a modem, labyrnth - a well done text adventure game (like an infocom game), and MouseTrap - a 3d maze game.
FD32:Flight Simulator - Includes an instrument flight simulator for a DC10.
FD33: Arcade Games - Ffreddy a mario brothers type of game, Gerbils 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, rouge, and moria. This version is considerably faster and better that all previous versions. Play time several weeks or months.
FD37a & b:Tactical Games - Empire (2.2w) This great game comes highly recommended. With a full-graphic front end.
FD38:Games - Cribbage Master - A great cribbage game and tutor, Spades - a well done card came, ChineseCheckers - A computer version of this classic, Puzz - 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 memory.
FD44: Game - Mechfight 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 - Sealance, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.
FD52: Classics Games - PetersQuest a well done Mario brothers type of game, Jymbc a two player missile command clone, and Vstank a tank commander game.
FD53: Great Arcade - On this disk is a wonderful implementation of the ever popular classic arcade game Defender. Also contain Air Race a WWII flying ace arcade game, and Psycoblast new creation idea game.
FD56: Arcade - Includes SpaceWar, HueyRaid a well done helicopter arcade game, and PowerPong a great expanded pong game.
FD57: Arcade Games - Includes 2 true commercial quality games. MegaBall is the successor to Ball; features 5 full musical scores, multiple levels and addicting gameplay. Gravity Attack is a psychadellic 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 shootemup. Crossword will take lists of words & automatically generate word-search puzzles for any Epson compatable printer.
FD60: Games - In Nebula, race over a 3d world to destroy enemy installations. Interferon; a great Dr. Mario clone. Enigma; is it a gameor a puzzle?
FD61: Games - Solitaire; great graphics, plays two versions. Klide; an interesting piece of eye candy. Extreme Violence; 2 player kill or bekilled game. YATC; A Tetris clone with Artifical Intelligence. Genesis; create realistic 3d fractal worlds.
WB4:Telecommumnication - This disk contains several excellent pd communication programs designed to get you on line quickly and easily, Access (1.42) - A very nice ANSI term program based on Comm v1.34, but with the addition of transfer protocols, Comm (1.34) - Last version of one of the best public domain communications programs ever made on the Amiga, Handshake (2.12a) Handshake is a Full featured VT52/100/102/220
WB5 - Fonts #1- Several fonts (35) for the Amiga, also included are five PageStream fonts,and ShowFont - a font display program.
WB6: Video Fonts #2 - ShowFont(4.0) This program allows you to quickly and painlessly view all 256 characters in a typical font. Large AmigaDos system fonts (many up to 56pts).
WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.
WB9:Icons - Truly a multitude of various types and kinds. Also includes IconMiester, IconLab, and others great utilities to help generate icons.
WB10:Virus Killers - The latest and best VirusX(4.0), Kv(2.1), and ZeroVirus 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 PrtDrvGen you can make your own.
WB15: Business - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).
WB16: Business - This disk contains an inventory manager, a loan analysis program, a great calendar/scheduler, a rolodex program, and pennywise a good "Cash Book" accounting for home or office.
WB18: Word/Text 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 iff image files onto any surface that it can draw. Now compatible with most 3D packages, and VScreen - makes a virtual screen anywhere, great for DTP .
WB25:Educational - On this disk are two programs that can generate maps of differing types, World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.
WB26: Disk Utilities #2 - MrBackup, KwickBackup - two well done utilities to help with harddisk and floppy disk backups, FileMast - a binary file editor, Labelprinter - Disk label printer with very powerful features.
WB27: Nagel - 26 Patrick Nagel pictures of beautiful women.
WB29: Graphics and Sound - This disk has several different Mandelbrot type programs for generating stunning graphics. Includes, MandelMountains - a realistic terrain generator, Fracgen - generated recursive fractals from user input, Mandelbrot and Tmandel - two fast mandelbrot generators, also Mostra - the best IFF display program to date, will display ALL IFF's including Dynamic HAM, and Sound - a great IFF sound player, will play anything. Try this disk!
WB33:Circuit Board Design - several terrific routines for the

electronic enthusiast, Including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for insertion into schematics.

WB34: Utilities - Several well done utilities, some will require moderate knowledge of a CLI or Shell for setup, Chatter Box - this one will play any user defined sound after any event (ie. disk insert, mouse click, disk removal...), , Artm - The Amiga real time monitor, gives you full control of the Amiga OS, very powerful program, Helper - help program to make learning the CLI easier, and more!

WB35: 3d Graphics - This disk contains several neat programs to use with your 3d modeling/raytracing programs 3dFonts - Full vector font set for use with 3d programs, FontMaker - make 3d fonts from any system font, Make3DShape - create 3d shapes from any image, DumptoIFF - create 3d animations preserves pallet, and World3d - a demo program of a front end for use with DKBRender.

WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images that a symmetrically similar to a rose, SimGen - display those spectacular images as part of your workbenck screen, and RayShade - a very good raytracing program, create your own beautiful 3d graphic models with this one!

WB37: Educational - Educational games and puzzles that cover math, geography, spelling, and books. Ages 6 - 15

WB38: Plotting and Graphics - Plotxy is the most powerful full featured plotting package. Used by many colleges and universities. A welcome addition to our library! Highly recommended. Plans - a incredibly well done Computer Aided Drafting program, very full featured. Tesselator - a program that helps generates fantastic looking, recursive M.C. Ecsher type pictures.

WB39: Music - Intuitracker is a German offering of an exquisitely well done program that allows you to play music on your Amiga with CD like controls. Lets you strip out music from your favorite games or others and include them in your music library.

WB40: Music - "CD on a disk", 90 minutes of modern music on this well presented collection. Requires 2 drives or HD.

WB41: Music - MED an incredibly well done, full featured music editor. Create your own stunning music directly on your the Amiga. Similar to SoundTracker but better. Very powerful easy to use program. Ver. 3.10.

WB43:Business - This disk contains AnalytiCalc - probably the most powerful spreadsheet program on the Amiga. A full featured spreadsheet with many features expected in a commercial package. Requires 1.2 MB of memory!

WB46:Clip Art - HighRes clip art with the following motifs - embellishments (borders, dodads ,...), people, and transportation.

WB48: Clip Art - HighRes clip art with the following motifs - Holidays, music, medical, and misc.

WB49abc:Animation Sampler - On this three disk sampler set (counts as two disks) are some of the best animations that have been created over the last three years. Several examples of "Movie" type animations some with spectacular raytraced reality (coolroby, watch, spigot and egg). Also several european style or "Demo" animation with incredible graphics and outstanding electronic music (akrilight, copersine, doc, dps2010, impact, and logodemo). These truly show off the creative edge of an Amiga!

Virus

Anti-Virus
Now Only $19.95
☆☆☆☆ , INFO Sep 89
✔✔✔✔ , Amiga Resource Oct89
Anti-Virus(c) is not Public Domain

WB50: Animation - Seven of the best european style animations or "Demos", including - scientific 451, subway (a U.S. entrant, also our favorite), sunride, thrstdemo, tnight, waves, and woow.

WB53:Graphics - Raytracing programs generate absolutely stunning realistic looking planes, rockets, buildings..., and surreal images often consisting of highly polished spheres and objects. C-Light is the most powerful EASY-TO-USE of it's kind we have seen to date. This is easily better, and more full featured, than similar commercial programs costing in the hundreds of dollars. Also, sMovie - a full featured video text titler similar to ProVideo, Broadcast Titler. Great video scrolling, wipes, special effects, and more...

WB54:Printing - This disk contains several routines to help with the chore of printing. Includes Gothic - Finally a Banner printer for the PD! PrintStudio -a well implemented all-purpose printer-utility with a very comfortable graphic interface and many advanced features, Lila - with ease, print ASCII files to a PostScript printer, and many more.

WB55:Application - XCopyIII - a full featured disk copier, make backups of write protected disks. RoadRoute - find the quickest route from one city to another, highway description included, Diary - a diary program like "Dougy Howard M.D", Cal - a calendar program, Magman - a database tailored to maintain records on articles and publications.

WB57:Animation - This disk has several "Demo" style animations, Including, Blitter, Lolly, Sun5, vertigo, vortex, and xenmorph.

WB59:Business - contains a great, very full featured stock market technical analysis and tracking program, also an appointment calendar, and more.

WB61:Intermediate Utilities - Includes programs to help to drasticaly decrease flicker in interlace and hi-res modes (antiflick), an Atari-st emulator, an eprom programmer, turn your amiga into an eight channel digital data analyzer or ocilloscope, 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.

WB66: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, soundtraker, 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 you Amiga.

WB70:Desk Top Pub - Atcp - transfer Macintosh screen fonts, Mac or IBM format .AFM metric files, to Amiga screen fonts and PPage .metric files. With this program open door to the libraries of Adobe and PostScript type!, Calendar - month templates in PS form, Post - a full featured post script 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 calender, Tarot - fortune teller, and Grammar - grammar checker.

WB78: AV - On this disk are two Amiga Vision programs (bubbler, sync) written by Lou Wallace, chief technical editor of Amiga World. These programs are marvelous examples of how too's with AV.

WB79: Home & Business Accounting - Includes Ckbacct - 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, Grammar - a grammar checker, and Worldtime - 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.

SONY
Blank Disks
DSDD
10 for $ 8.90 (.89 cents ea)
25 for $18.90 (.76 cents ea)
50 for $34.90 (.70 cents ea)
100 for $68.00 (.68 cents ea)
No shipping charge on USA blank disk orders, Canada and Mexico add $.15 each, Other foreign add $.50 ea.

WB82:Animations - Four full length, well done "movie" style animations. Including, Coyote, JugglerII, GhostPool, and Mechanix. Two disk set, counts as one!

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: Amiga Vision - Contains the Centurion Press, An Amiga newspaper by Lou Wallace.

WB88abc: The Complete Bible - A three disk set, with the entire text of the New Testament and Old Testament. Great search utilities. 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 can require moderate knowledge of the CLI.

DD45: AREXX Programs - This disk contains several useful arexx programs and examples, PopCLI4 - The latest of a must have utility.

DD47: Pascal - This disk contains everything needed to program in Pascal. Includes, A68k (1.2) 68000 assembler, Blink linking software and PCQ (1.0) a modest Pascal sub-set compiler.

DD49: C Compiler - contains zc(1.01) fully K&R, zcc(1.0) front end, A68k(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 - Aspice (2.3) A full featured program for electric circuit analysis.

DD52: Scientific - Includes Elements - an incredibly well done periodic table program with source, Scientific plotting - over 600k of Lattice C source routines that can be included in your own programs.

DD54: Compression - This disk is loaded with all of the best file compression programs and aids for the Amiga. Many of the programs can be used by the new user. Includes Arc(2.3), Lharc(1.0), Lhwarp(1.03), Pkax(1.0), PowerPacker(2.3a) a must have by all, Zip(1.0), Warp(2.04), and Zoo(2.0). Also IFFcrunch an excellent compression for IFF files.

DD55: ARP - On this disk you will find the complete ArpRel3.0 release including the full user docs, the full Developers guide. 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, sbasic and ftext - several wonderful routines to help in basic programers, and Xscheme - an interpreted object oriented language.

DD64: Amiga Programmers Manual - The fully comprehensive Amiga programming manual with source code examples and easy to understand tutorials!

DD65: C Tutorials - Several well done tutorials on how to program the Amiga. Includes tutorials and working examples on Device drivers, IFF reads and writes, Sound implementation, Arcade game design and implementation, Double Buffering, and others. A must have for Amiga Programmers.

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 WFrag 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 environmental development system. Also contains EzAsm a strongly macro dependent 68000 assembler.

DD78: Menus & System Enhancements - Several neat programs to aid in launching programs from special icons (Next computer style), adding WorkBench menus and more. Also contains many useful programs to determine operation system configuration, memory usage, load and many other important utilizations.

D79abcd: Amiga C Tutorial - This is the most comprehensive C language, Amiga orientated set of tutorials available. Includes full working examples, source code and an incredible set of lessons. Included are full discussions and examples of every topic on Amiga programming. Four disk set, counts as three.

DD80: VFont System - A font rendering system that extends the Amiga so that it will be able to use vectorized outline fonts. Fast rendering, rotating, and sizing. Use in your own programs!

AmigaDOS Release 2

It's Here! It's Here!
Release 2.04 of AmigaDOS for the A500/A2000!!! Includes ROMS, disks and full-documentation. Requires installation.
$95.00

WB105A&B: Workbench 2.0 Extras #2

This set contains the programs that should have been included with WB 2.0. 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, much more! A true must have utility!!!--ALL of our Amigas rely *heavily* on this utility.

Icon - Enhances Workbench's "Show All" to display over 40 distinct icons for different types of files (text, graphic, source files, sound samples, libraries, etc., etc.)

Font Editor - Create/edit bitmap fonts with full color support!

Screen Blankers - ala fractals and spliners! 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.

CPUBlit - speeds up text displays for owners of 68020+ CPUs.

Wallpaper - put workbench on top of any IFF picture!

SafeReboot - adds a safe way to reboot your computer...can *greatly* reduce disk validation errors!

SysInfo - see what's under the hood of your Amiga and see how fast they are.

Public Screen Utils - allow several separate programs to share the same screen.

Two disk set, counts as two disks.

Dealer Inquiries welcome.

Please send me the following:
Enter disk id (Ex. DD17, FD5, WB3)

____	____	____	____
____	____	____	____
____	____	____	____
____	____	____	____
____	____	____	____
____	____	____	____

[ ] Payment Enclosed
Please charge my:
[ ] Visa
[ ] MasterCard

Total disks___ @ $_____ each= $_____
Disk based catalog (add $2.50) $_____
Anti-Virus (add $19.95) $_____
Sony Blank Disks# _____ $_____
CA residents add 8.25% sales tax $_____
Foreign Shipping $_____
Handling $ 3.00
Total Due $_____

CC#_____Exp_____
Signature_____
Name_____
Address_____
City_____ST___Zip_____
Phone ( )_____

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. **A minimum of $20.00 required on credit card orders.**

DevWare, 12528 Kirkham Court, Suite 11-A23, Poway, CA 92064
Orders Only Please !-800 879-0759 **Support** 619 679-2825 **Fax** 619 679-2887

Circle 14 on Reader Service card.

Manufacturers'/Distributors' Addresses

21st Century Entertainment
56B Milton Park
Abington, Oxfordshire
England OX14 4RX
0235-832939

Accolade
550 S. Winchester Blvd.
Suite 200
San Jose, CA 95128
408/985-1700

Agfa
90 Industrial Way
Wilmington, MA 01887
508/658-5600

AirStream Graphics
PO Box 291090
San Antonio, TX 78229
512/436-1354

American Software Distributors
502 E. Anthony Dr.
Urbana, IL 61801
217/384-2050

Amiga Centre Scotland
4 Hart Street Lane
Edinburgh EH 1 3RN
Scotland
44-0-31-557-4242

ASDG
925 Stewart St.
Madison, WI 53713
608/273-6585

Black Belt Systems
398 Johnson Rd.
Glasgow, MT 59230
406/367-5513
800/TK-AMIGA

Blue Ribbon SoundWorks
1293 Briardale N.E.
Atlanta, GA 30306
404/377-1514

Brown-Wagh Publishing
130-D Knowles Dr.
Los Gatos, CA 95030
408/378-3838
800/451-0900

Commodore Business Machines
1200 Wilson Dr.
West Chester, PA 19380
215/431-9100
215/436-4200

Compute Publications
324 W. Wendover Ave.
Suite 200
Greensboro, NC 27408
919/275-9809

Computer Imagery
49 Walnut Ave.
Shelton, CT 06484
(No telephone listed)

Comspec
74 Wingold Ave.
Toronto, Ont.
Canada M6B 1P5
416/785-3553

Digita International
Distributed by American Software

Digital Arts
20515 S.W. 114 Court
Miami, FL 33189
305/378-8734

Digital Design Group
PO Box 593
Whiteville, NC 28472
919/642-6295

Digital Graphics Library
1382 Third Ave.
Suite 333
New York, NY 10021
212/978-8508

Digital Processing Systems
55 Nugget Ave., Unit 10
Scarborough, Ont.
M1S 3L1 Canada
416/754-8090

Discis Knowledge Research
45 Sheppard Ave. East, Suite 410
Toronto, Ont.
Canada M2N 5W9
416/250-6537

Display Systems International
147 W. Main St.
Dayton, PA 16222
814/257-8210

DKB Software
832 First St.
Milford, MI 48042
313/685-2383

Domark Software
Ferry House 51-57
Lacy Rd., Putney
London SW1S 1PR, England
081-780-2224
Distributed by Accolade

Dynamix
99 W. 10th, Suite 224
Eugene, OR 97401
503/343-0772

Electric Crayon
3624 N. 64th St.
Milwaukee, WI 53216
414/444-9981

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

Expert Services
5912 Centennial Circle
Florence, KY 41042
606/371-9690

FrostByte Systems
PO Box 481, Station D
Toronto, Ont.
Canada M6P 3K1
416/769-7516

Future Publishing
30 Monmouth St.
Bath, Avon, BA1 2BW
England

Future Video Products
28 Argonaut
Laguna Hills, CA 92656
714/770-4416

GameTek
2999 NE 191 St.
N. Miami Beach, FL 33180

Gold Disk
5155 Spectrum Way, Unit 5
Mississauga, Ont.
Canada L4W 5A1
416/602-4000
800/GOLD DSK

Gold Leaf Publishing
700 Larkspur Landing Circle
Suite 199
Larkspur, CA 94939
415/381-7717

Great Valley Products
600 Clark Ave.
King of Prussia, PA 19406
215/337-8770

Gremlin Graphics Software
Distributed by Konami

HiSoft
Distributed by Gold Leaf Publishing

HyperMedia Concepts
5200 Washington Ave.
Suite 226
Racine, WI 53406
414/632-3766

Imagetects
72 Bollanger Rd., #802
San Jose, CA 95129
408/252-5487

Impulse
6870 Shingle Creek Parkway, Suite 112
Minneapolis, MN 55430
612/566-0221

Interactive Video Systems
7245 Garden Grove Blvd.
Suite E
Garden Grove, CA 92641
714/890-7040

Interplay Productions
1061 N. Kraemer Place
Suite B
Anaheim, CA 92806
714/666-2911

KFS Software
PO Box 897
Corning, CA 96021
916/824-2944

Konami
900 Deerfield Pkwy.
Buffalo Grove, IL 60089
708/215-5100

Lucasfilm Games
PO Box 10307
San Rafael, CA 94912
800/STAR-WARS

Lucky Fish Software
4830 Briarwood, Suite D4
Royal Oak, MI 48073
313/288-3753

Marksman Technology
Distributed by Psygnosis

MegageM
1903 Adria
Santa Maria, CA 93454
805/349-1104

Megatoon Productions
PO Box 1781, Terminal
Quebec, Ont
Canada G1K 7K7

Memphis Computer Products
Gartenstr. 11
6365 Rodheim v.d. Hohe
Germany
0049-06007/7789,8690

Merlin's Software
Amazing Computers S.E.
1441 E. Fletcher Ave.
Suite 1450
Tampa, FL 33612
813/977-6511

Microdeal
PO Box 68, St. Austell
Cornwall PL25 4YB
England
0726-68020

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

MicroPace Distributors
604 N. Country Fair Drive
Champaign, IL 61821
217/356-1885

MicroPlay
A division of MicroProse Software

MicroProse Software
180 Lakefront Drive
Hunt Valley, MD 21030
301/771-1151

MicroSearch
9896 Southwest Freeway
Houston, TX 77074
713/988-2818

Migraph
200 333 St. S., #220
Federal Way, WA 98003
206/838-4677

Mindscape
60 Leveroni Court
Novato, CA 94949
415/883-3000

Natural Graphics
PO Box 1963
Rocklin, CA 95677
916/624-1436

Manufacturers'/Distributors' Addresses, cont.

Neuralink
PO Box 16311
Lubbock, TX 79490
806/793-0423

New Horizons Software
206 Wild Basin Rd., Suite 109
Austin, TX 78746
512/328-6650

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

Ocean Software
Distributed by Electronic Arts

Oxxi
PO Box 90309
Long Beach, CA 90809
213/427-1227

Psygnosis
29 St. Mary's Court
Brookline, MA 02146
617/731-3553

Quma Software
20 Warren Manor Court
Cockeysville, MD 21030
410/666-5922

Rapid Eye Technology
2313 5th St., #1
Santa Monica, CA 90405

ReadySoft
30 Wertheim Court, Unit 2
Richmond Hill, Ont.
Canada L4B 1B9
416/731-4175

Realism Entertainment
6 N 522 Pine St.
Bensenville, IL 60106
708/595-7487

Right Answers Group
PO Box 3699
Torrance, CA 90510
213/325-1311

Robert Young
PO Box 167
Whittier, CA 90608

Rombo
Distributed by American Software

Saddleback Graphics
12812 Garden Grove Blvd.
Unit P
Garden Grove, CA 92643
714/741-7093

Shocking Software
3535 N. Nevada St.
Chandler, AZ 85225

Soft-Logik Publishing
11131 South Towne Sq.
Suite F
St. Louis, MO 63123
314/894-8608

SOGWAP Software
115 Bellmont Rd.
Decatur, IN 46733
219/724-3900

Spectrum Holobyte
2061 Challenger Dr.
Alameda, CA 94501
415/522-0107

Studyware
476 Murphy Canyon Rd.
Suite A
San Diego, CA 92123
619/495-0190

Stylus
PO Box 1671
Ft. Collins, CO 80522
303/484-7321

Supra
7101 Supra Dr. S.W.
Albany, OR 97321
503/967-2400
800/727-8772

Talon Technologies
243 N. Hwy. 101, Suite 11
Solana Beach, CA 92075
619/792-6511

Texture City
3215 Overland Ave., #6167
Los Angeles, CA 90034
213/836-9224

Think Ltd.
Prudential Buildings
46C High St.
Erdington, Birmingham
West Midlands B23 6RH
England
44-021-384-4168

TTR Development
6701 Seybold Rd.
Madison, WI 53719
608/277-8071

UBI Soft
Distributed by Electronic Arts

US Gold
Distributed by Accolade

Vidia Media Tools
PO Box 1180
Manhattan Beach, CA 90266
213/379-7139

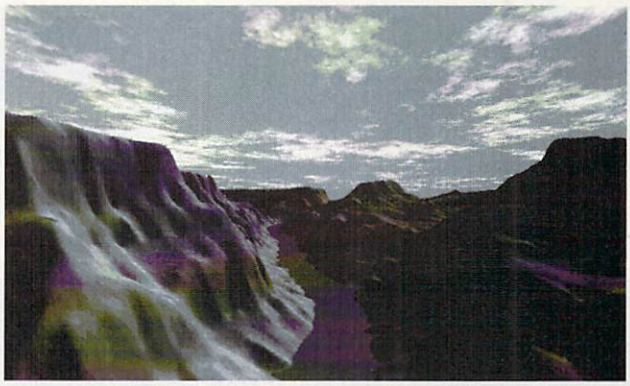
Virgin Mastertronic
18061 Fitch, Suite C
Irvine, CA 92714
714/833-8710

Virtual Reality Laboratories
2341 Ganador Court
San Luis Obispo, CA 93401
805/545-8515

Vortex Computer Systems
Distributed by American Software, MicroPace, or Talon Technologies

Walt Disney Computer Software
500 S. Buena Vista St.
Burbank, CA 91521
818/567-5360

Xetec
2804 Arnold Rd.
Salina, KS 67401
913/827-0685 ■



Animate the real world!

New! With **Scenery Animator** you can create incredibly realistic animations of real world or imaginary fractal landscapes. It's a powerful tool for artists, animators, and desktop video. It's easy to use and has many innovative features not found in other software. See it at your local dealer today!

* 3-D control of camera path
* Includes animation editor
* Color and lighting control
* Unlimited landscape size
* 24 landscape disks available
* Instant preview window
* All resolutions and IFF24
* NTSC and PAL compatible
* Requires 2 megs. memory
* Suggested retail $99.95
* Accelerator not required with version 1.01

Natural Graphics
P.O. Box 1963, Rocklin CA 95677
(916) 624-1436

Circle 179 on Reader Service card.

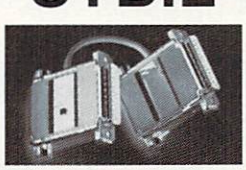
UTILITIES UNLIMITED OF OREGON, INC.

P.O. Box 532 • North Plains, Oregon 97124 • (503) 647-5611 • FAX (503) 648-8992
Technical Support (503) 647-9022

CANADIAN ORDERS:
P.O. Box 311 • Stratford, Ontario, Canada N5A 6T3 • (519) 272-1528

SYBIL

SYBIL is a multi-talented hardware/software package. Just look at a few of SYBIL's amazing abilities:



$125.00

AMX II Patch - Turns one or more of your Amiga drives into a MAC compatible drive while using AMAX! Allows Reading and Writing REAL MAC format with normal Amiga drives! This patch also disables drive clicking, allows the use of AE High Density drives, allows control panel configuration to be saved, eliminates the need for the cartridge to be installed (saving power), and more!

Disk Compress - Compress entire disks into AmigaDOS files! These files can be transferred to hard drives, tape backup units, modems, or any other means of data transfer. When needed, the file can be de-compressed back on to a floppy so the program can be used. Works with ALL disk formats, copy protected or not!

Extra Storage - Tired of having only 880K of storage? With MegaBench™ you can end your storage problems! Using SYBIL, you can format a standard DS/DD floppy to 1.12 megs! SYBIL is required to WRITE data to these special formatted disk, however, ANY Amiga can READ them! Imagine having a 1+ meg WorkBench!

Disk Copier - A special version of the Super-Card Ami II software was created to use SYBIL's superior copying abilities. Eliminates ALL drive speed conflicts!

Ordering Information: We accept VISA and MASTERCARD, C.O.D., Money Orders, and Personal Checks. Add $5.00 per order for shipping & handling. Add an additional $4.00 per order for C.O.D. Add and additional $3.00 for ALL foreign orders. Add an additional $5.00 for UPS Blue (2nd Day). ALL prices in U.S. funds! **Call our support BBS: (503) 256-1217**

Circle 39 on Reader Service card.

InfoMarket

COMMODORE AMIGA SERVICE CENTER

AMIGA 500 (Repair) $75.00 includes parts/labor

We service the entire Amiga product line and carry replacement parts & power supplies. Call for prices.

A&M Computer Repair • 20 Guernsey Dr., New Windsor New York 12550 • (914) 562-7271
24 Hour Turnaround • Dealers Call For FREE Catalog
1-800-344-4102

Circle 190 On Reader Service Card.

A500 Keyboard	$110	A500 Power Supply	$109
A1000 Keyboard	130	A2000 Power Supply	139
A2000 Keyboard	120	A3000 Power Supply	249
		Check for all other parts	

A-500 / A2000 Repair $37.95 plus parts
Discounts for Dealers & Schools

AMPEX SYSTEMS, INC
5344 Jimmy Carter Blvd.
Norcross, GA 30093
(404) 263-9190

Authorized Commodore / Amiga Service Center
(800) 962-4489 • Info: (404) 263-9190

Circle 96 On Reader Service Card.

AMIGA Files to Slides

GRAPHIC IMPRESSIONS

- 2000 Line Resolution Maintains RGB Quality & Anti-aliasing
- IFF, IFF24, RGB, HAM, Toaster, Ham-E, Sculpt, RGB, Turbo Silver, DCTV, Imagine
- No Mosaic Pixel Appearance
- 16.7 Million Colors & All Overscan Sizes Supported
- 48 Hour Inhouse Turn Around

For pricing & samples call: 1-715-856-5627 Or write to:
GRAPHIC IMPRESSIONS PO Box 254 Wausaukee, WI 54177

Circle 67 On Reader Service Card.

NEW!

HyperData QuickReference® Guides

Disk Based Multimedia For Your AMIGA™ Computer

America In Space Vol. 1	*World Of Whales*	*The Solar System*
Illustrates and describes the men and machines that pioneered the U.S. Space Program. Covers Mercury through Apollo.	Beautifully examines the planets most intriguing creatures. With full descriptions of habits, migrations, and more! Over 40 color images.	An in depth look at our local region of space. Includes facts, figures and photos of the planets and their major satellites.

Only $19.95ea Send Check or Money Order to: HyperData PO Box 326 Cambria Heights, NY 11411

Plus $2.00 S&H N.Y. Res. add sales tax.

Circle 189 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

HI-RES VIDEO CLIP ART

Volume 1: WEDDINGS & SPECIAL EVENTS

Volume 2: SPORTS & HOLIDAYS

Each 3 disk set only $29.95

Productions PO Box 424 Oak Forest, Il 60452 Visa/MC (708) 687-8200

Circle 161 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.

MORE MEMORY FOR LESS

NEW for Amiga 3000 STATIC ZIPS 1 meg x 4 — 80 n.s. (70 n.s. add $2.00) **$20.95 each**

32K Buffer Chip Panasonic Printer 1124, 1524, 1624, 1180, 1191 **Only $20.00 w/instructions**
32K avail. for Citizen Printer **$35.00**

FPU Math Co-processor **SALE**
68881 — 20 MHz **$50.00**
68882 — 50 MHz **$250.00**
8087-3 for bridgeboards **$50.00**

Memory Board / Any Laser Printer — Call
HP Laser Printer — (Specify Model)
1 meg $89.00, 2 meg $139.00, 4 meg $199.99

MEMORY WORLD
Street Rd. & Bristol Pike · Plaza II, Suite 134 · Bensalem, PA 19020
Attn: Amiga Dept.

215-244-7930
Fax 215-244-7932
Add $4.00 S&H Add $7.00 2nd Day Add $4.00 COD
VISA / MC / Check / COD

Circle 187 On Reader Service Card.

---

* EXCLUSIVE AMIGA SPECIALS *

• Super Denise 8373
Productivity, scan & Hi-res modes.
Comes with Super Denise instructional diskette **$44.95**

• A500 PC Motherboard
New, populated and tested – 90 day warranty **$199.95**

• A2000 PC Motherboard
New with all chips including 1.3 1 meg Agnus and Super Denise
(list price $920.00) **$529.95**

• A500 Keyboard (Factory new) **$67.50**

We Ship Worldwide

THE GRAPEVINE GROUP, INC.
3 Chestnut St., Suffern, NY 10901
1-800-292-7445 or 914-357-2424

Fax: 914-357-6243

Circle 174 On Reader Service Card.

NATIONAL DISKETTES

SONY 3.5" DSDD .51
GENERIC 3.5" DSDD .39
(MIN. 100)
800-345-8619 OR 510-490-4163
CALL FOR BEST PRICING ON ALL DISKETTES

Circle 192 On Reader Service Card.

SIZZLING SOFTWARE

We offer the Best in Public Domain and Adult-Oriented Software.

Over 250 Disks in Stock, Prices as Low as $3 per Disk.
Free Brochures. Visa, MasterCard Accepted. Our Disks are Loaded!
3-Disk Adult Sampler: Send $10, Signed Statement of Age (21+) to:

CLEARLIGHT SOFTWARE
PO BOX 1411, DEPT. A
MILWAUKEE, WI 53201

196 On Reader Service Card.

Adult Graphics, Vol. 1

THE ULTIMATE AMIGA GRAPHICS DEMO

Public domain collection of attractive adult graphics. 1 disk: $10; 3 disks: $25; 10 disks: $39; 15 disks: $44. Shipping and handling is INCLUDED! State that you are over 18. Call 216-678-5365 for free catalog or send Check or Money Order to:

Data Foundations • Dept. 100B, PO Box 9324, Akron, OH 44305

Circle 193 On Reader Service Card.

InfoMarket

• FREE •
7 ASSORTED PACKAGES OF OUR BEST SOFTWARE FOR AMIGA®

1. VIDEO TOOL
2. ANIMATION
3. GAMES
4. EDUCATION
5. RELIGION
6. CLIP ART
7. UTILITES

PAY ONLY $5.00 SHIPPING & HANDLING PER PACKAGE
• credit cards only •
EACH PACKAGE HAS 6/3.5" DISKS

SMC SOFTWARE PUBLISHERS
619 931-8111 EXT. 511

Circle 90 On Reader Service Card.

Special Offer on Amiga 1000 Computers

Amiga 1000 Computer	$349.95
1300 Genlock (new)	$ 59.95
1010 Disk Drive	$ 64.95
1680 Modem (new)	$ 24.95
Kwik Start II	$ 79.95
Amiga 500 w/512K	$395.00
Supra 501 RAM Exp.	$ 49.95
1084S Monitor	$295.00
520 Video Adapter	$ 39.95

Minimum shipping on all orders $3.00.

We also carry the following products for the A1000:
Insider II (1.5MB Pop. w/clock) $259.95
MultiStart II Board 79.95
Special—With the purchase of an Amiga 1000, you may buy a 1010 Disk Drive and 1680 Modem for $59.95.

Software Hut, Inc.
2534 S. Broad St.
Philadelphia, PA 19145

To order call
(800) 848-0079
In PA or for info.
call (215) 462-2268
Fax (215) 339-5336

Circle 88 On Reader Service Card.

MEMORY FOR LESS
D RAM BLOWOUT!!

256 x 1 150n.s.	$1.19 ea.
256 x 1 120n.s.	1.39 ea.
1 meg x 1 80n.s.	4.99 ea.
256 x 4 100n.s.	4.69 ea.
256 x 4 80n.s.	4.99 ea.
256 x 4 70n.s.	5.50 ea.
256 x 4 80n.s. zips	5.50 ea.
256 x 4 100n.s. zips	5.25 ea.
CIA (8520A).	14.95 ea.
New Denise	49.95 ea.
1 megx8 Simm 80ns	39.95 ea.
1 x 4 DIPS in stock	21.95 ea.
1 x 4 Page ZIPS.	21.95 ea.

SALE
Fatter Agnus $59.99 (1 Meg)

For Amiga 3000
1 x 4 Static Zips 80n.s. 20.95

CPUs

68000 16 Mhz	$35.00
68010 8/10 Mhz	19.95
68020 16 Mhz	75.00
20 Mhz	99.00
33 Mhz	199.00
68030 25 Mhz	279.00
33 Mhz	345.00
50 Mhz	375.00

Math Co's

68881 12 Mhz	50.00
16 Mhz	75.00
20 Mhz	50.00
25 Mhz	125.00
68882 20 Mhz Special	99.99
68882 25 Mhz	225.00
33 Mhz	275.00
50 Mhz	350.00
All Crystals	10.00 ea.

SPIRIT BOARDS
IN 1000 1½ meg — $225.00
XRAM/500/1000 - 2 meg — $299.00
GVP/A2000 RAM8 2 meg — $149.00
4 meg — $245.00

APO/FPO, AK & HI, Foreign
Call for shipping charges

MEMORY WORLD
Street Rd. & Bristol Pike
Plaza II, Suite 134
Bensalem, PA 19020
Attn: Amiga Dept.

215-244-7930
FAX 215-244-7932
Add $4.00 S&H Add $4.00 COD
VISA / MC / CHECK / COD
Other chip/speeds avail. — CALL

Circle 94 On Reader Service Card.

AUDIO GALLERY

Talking Picture Dictionaries
*SPANISH * GERMAN * CHINESE * JAPANESE*
* All Words and Phrases Fully Digitized Speech
* Seven-Disk Set w/ Manual, On-line Dictionary, Quizzes
* 25-30 Topics such as Weather, Numbers, Food, etc.
For the Amiga™
Romance Languages: $89.95 Oriental Languages: $129.95

FairBrothers, Inc.
5054 S. 22nd St.
Arlington, VA 22206
(703) 820 1954

Please specify language when ordering. Free Brochure available. Send $5 for demo disk (rebated on regular purchase).
To purchase, send check or money order. All orders shipped UPS Ground. Add $5 for COD or UPS Second Day Air.

Circle 100 On Reader Service Card.

AAMIGA WAREHOUSE
The Memory Specialist

MEMORY

DRAMS
256x1 - 80 $1.95
256X1 - 10 $1.70
256x1 - 15 $1.40
256X4 - 80 $5.00
1x1-100 $4.65
1X1-80 $5.00

SIMMS
1x8-100 $36.45
1X8 - 80 $39.40
4X8 - 80 $157.00

A3000 MEMORY STATIC ZIPS
1X4 - 80 $22.45
256X4 - 80 $6.99

500RX
1x4-80 pg $23.45
256x4-10 $5.00

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

SUPRA
500RX
W/2megs $191.00
w/4megs $327.00
w/8megs $498.00
2400 $ 89.00
2400 Plus $135.00

Misc Accessories
Bigfoot $88.95
Mouse $19.95
Midi $39.95
Rom Swit. $35.00
Beetle mouse $26.95

Roctec Slimline
External disk drive
$86.95

EXPANSION SYSTEMS
DATAFLYER SCSI
500 $138.00
1000 $175.00
2000 $85.00
DATAFLYER RAM
500/2000
2megs $169.00
1000 2mb $269.00

1000 Hard Drive Bundles Available $Call

IDE and IDE/Scsi coming soon!

DKB
INSIDER II
1000 internal memory w/1 1/2megs $248.00
KWICKSTART II
W/O ROM $69.00
MULTISTART II
W/O ROM $69.00
MegAChip 2000/500
2MB OF CHIP RAM!
W/PULLER $309.00

MICROBOTICS
VXL-30
68030 ACCELERATOR
500 / 1000 / 2000
68EC030 25mhz $348
68EC030 40mhz $498
Limited Supply
68030 50mhz $595

Optional C0 & RAM!

Amiga 500's
Refurbished 500
$244!
Limited Supply
Each Amiga 500 has 1meg of memory, 1 int. 880K drive, pwr Sply and 1.3 Enhancer Software.

BonusPack: $319!
Includes a brand new External disk drive.

Complete 500 System $665!
This includes the Bonus Pack: plus a New Acer Multisync Monitor

Dear Amigan
Looking for a Hard Drive system? Tired of piecing it together? When you purchase a complete HD System from us, We include an Installed, formatted Hard Drive with over 2 Megabytes of Public Domain Software.....

At no **extra charge!!!!!**

Aamiga Warehouse
ORDERS ONLY **800-942-9505**
TECH SUPPORT
714-283-0499
VISA COD AM/EX

Circle 98 On Reader Service Card.

VISIONSOFT
PO Box 22517 · Carmel, CA 93922

MEMORY	UNIT	2MB	4MB	8MB
1 x 4-80 SC ZIP	**$22.00**	—	**176**	**344**
1 x 4-70 SC ZIP	**24.50**	—	**196**	**384**
1 x 4-80 PAGE DIP	23.00	100	200	384
1 x 4-80 PAGE ZIP	22.00	92	184	352
1 x 1-80, 70	5.00	80	160	304
256 x 4-80, 70	5.00	80	160	304
1 x 8-80 SIMM	39.00	78	156	308
4 x 8-80 SIMM	155.00	—	155	310
ICD ADRAM 540	95	165	231	—
BASEBOARD	95	165	231	—
IVS META 4	—	190	265	—
DATAFLYER RAM	92	167	242	392
AdSCSI 2080	169	244	319	469

DATAFLYER 500 SCSI	139	QUANTUM 120 IDE	379
DATAFLYER 1000 SCSI	159	BIGFOOT A500	89
DATAFLYER 2000 SCSI	85	A3000 INT FLOPPY	115
QUANTUM 105LP SCSI	359	C-NET BBS	125

ORDERS ONLY: 800-735-2633 Visa / MC
INFO & TECH: 408-626-2633
Fax: 408-626-0532 BBS: 408-626-0302

Circle 86 On Reader Service Card.

Make the most of your advertising investment! Reserve your space in the *AmigaWorld* InfoMarket today! Call Heather Guinard at 603-924-0100 or 1-800-441-4403.

LabelDex!™
Cataloging, Mail Maintenance and Label Creation on the Amiga was never so easy !
"Easy to use... Full-featured... Very professional"
Bill Frazier, Amazing Computing, Oct 91
Create, search, sort and print all types of labels using your DeskJet, LaserJet, DotMatrix or PostScript Laser Printer. Automatically creates professional looking labels. LabelDex! evens dials the phone for you!
Only $74.95

BibleScholar!
KJV
NIV
NASV
NKJV
Among the *BEST* Bible Study Programs!
Exhaustive Concordance, Chapter or Verse Context (Boolean) Searches, Phrase Search, Margin Notes, Bindable Multiple Windows, Optional Strong's Transliteration & Definitions, Smart Maps, Instant Access, Built in Word Processor, Topic References and Much More!
BibleScholar! $149.95, Demo Disk $10.00 (Deductable)
Greek & Hebrew Transliterations $79.95 each.

EasyScript! Software
10006 Covington Drive
Huntsville, AL 35803
(205) 881-6297

Circle 95 On Reader Service Card.

Authorized Amiga Service Center

2.0 Operating System and E.C.S. in stock.
Super Denise 8373 Chip in stock — **CALL**
Kickstart 2.04 w/Workbench disks & manual
Special bundles available — **CALL**

1.3 ROM Chip	$ 29.00	Fattest Agnus Chip 2MB	$90.00
8520 CIA Chip	14.00	Denise Chip	29.00
Fatter Agnus Chip 1MB	64.95	Quantum 105S H.D.	379.00
A500 Replace. Drive	109.00	A500 Motherboard with swap out	150.00
All RAM Chips in Stock	Call	A2000 Motherboard	
Paula Chip	29.00	Rev. 6.x w/swap out	225.00
A2000 Internal Drive	89.00	A2000 Motherboard	
Quantum 52S H.D.	269.00	Rev. 4.x w/swap out	350.00
A2000 Kbd from Com	95.00	Gary IC Chip	17.00
A500 Keyboard	79.95	A2000 Case (new)	55.00
A2000 Power Supply	189.00	A1000 Case (new)	45.00
A2000 P.S. w/ swap out	119.00	A500 Case (new)	45.00
Big Foot P.S. A500	109.00	Multistart II	79.95
A500 Repl. Drive w/ s/o	89.00		
DKB 2 Mg Chip RAM Brd	249.95		

Over 600 products in stock for immediate shipping. Please call us. We probably have what you need. We do repairs on Amiga computers with 2–4 day turnaround. A500 — $125+S/H. A2000 — $190+S/H. Call for shipping on other items. Min. shipping on all orders $3.00.

Software Hut, Inc.
2534 S. Broad St.
Philadelphia, PA 19145

To order call
(800) 848-0079
In PA or for information
call (215) 462-2268
Fax (215) 339-5336

Circle 89 On Reader Service Card.

InfoMarket

Blowouts $11.97 or 5 / $49.97 Blowouts

Abyss	Barney Bear Farm	Craps Academy	Kristal	Sex Olympics
Adventures in Math	Basktball Pro Game	Crash Garrett	Laser Squad	Sex Vixens Space
Airball	Better Dead than Alien	Darkside	Legend of the Lost	Spellbound
Ami Alignment Sys	Blitzkrieg Ardennes	Doctor Ami	Matrix Marauders	Street Hockey
Apprentice	Botics	E-Swat	Murders in Space	Stryx
Barney Bear Camp	Bride of the Robot	Faery Tale Adventure	No Excuses	Tetra Quest
Barney Bear School	Bugbash/Nucleus	Final Battle	Operation Harrier	Thunderstrike
Barney Bear Space	Championship Run	Goldrunner 2	Photon Storm	Torch 2081
Barney Bear Santa	Colorado	Insanity Flight	Rennaisance	Wind Walker

1-800-638-1123
10-9 Mon-Thurs 10-5 Fri & Sat EST
Bare Bones Software

Call for free brochure of many other blowouts plus our extensive line of Amiga titles. All titles listed are new and fully guaranteed. We accept Visa, American Express, Discover, Mastercard, and COD orders.

Circle 85 On Reader Service Card.

Slingshot™
Lifetime Warranty
$39.95
NEW!
The Slingshot provides the A-500 owner with 1 A-2000 compatible expansion slot. Works with hard drive interfaces, RAM expansion cards etc.
Toll Free:
1-800-527-8797

BIGFOOT POWER! A-500 Necessity!
$129.95

Now 200 Watts!
Adaptors Available For All Hard Drives
Micro R. & D.
P.O. Box 130
Loup City, Nebraska 68853

Universal Joystick/Mou Switch
$29.95

Connect 2 devices to one port and switc between the two with a flick of the wris
Visa/MC/COD
Dealer/Distributors/Welcome
(308) 745-1246 FAX

Own a Bridgeboard™?
You're not alone anymore! Subscribe to **CROSSINGS**, the newsletter devoted to Amiga/PC compatibility. Published monthly since December 1989. $US40 U.S./Canada, $US50 overseas air mail. (212) 369-8131 for more info.
➤ **New! BridgeAccess "book on a disk" about the Bridgeboard.** (Requires AmigaVision) $US19.95 + $2.00 S&H—check or money order. (NY state residents include applicable sales tax.) Please allow 4-6 weeks for delivery.
Deland Editorial Services, Ste 26E, 345 E. 93 St., New York NY 10128

Circle 182 On Reader Service Card.

Public Domain Software Resource
Choose only the Amiga public domain programs you want using our custom ordering service. PDSResource offers hundreds of the best Amiga freeware and shareware programs. Send for our free catalog. Each custom disk is only $6.00. Remember, with PDSResource. . .
"You have a choice!"
PDSResource
P.O. Box 7175 Loma Linda, CA 92354

Circle 165 On Reader Service Card.

EUROPEAN IMPORT SOFTWARE
The Best European Demos
All PD
The Best Amiga Music
VISA/MC
◆ FREE CATALOG ◆ LOW PRICES ◆ HUNDREDS AVAILABLE
2103 Harrison, Suite 317
Olympia, WA 98502
206-951-1503
BBS: 206-866-7875
Multi-Node 2400/HST/V32bis
FAX: 206-352-5074

Circle 181 On Reader Service Card.

COLOR RIBBONS & PAPER
Colors: Black, Red, Blue, Green, Brown, Purple, Yellow

Ribbons:

Price Each	Black	Color	T-Shirt
Brother M1109	4.95	5.95	7.00
Citizen GSX 140	4.00	5.00	7.50
Citizen GSX 140 4C	*	13.25	18.00
Okidata 192	5.00	7.50	—
Panasonic 1124	5.00	7.50	—
Seikosha SP1600	4.50	6.00	7.50
Star NX1000	3.50	4.50	6.75
Star NX1000 4C	—	6.25	10.00

T-Shirt (Heat Transfer Ribbon)
Colors: Black, Red, Blue, Green, Brown, Purple, Yellow
Minimum orders $25.00. Minimum S&H $4.50. Call for other ribbons and supplies. Price & spec. are subject to change without notice.
RAMCO COMPUTER SUPPLIES
PO Box 475, Manteno, IL 60950 USA
USA (800) 522-6922 or (815) 468-8081
Canada (800) 621-5444

Circle 188 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.

Just Released
SUPER DENISE 8373
Enhanced Chip Set (for A500 / A2000)
$44.95
The latest ECS upgrade for productivity, scan and hi-res modes. A must with 2.0 ROM. Comes with Super Denise instructional diskette.
ONLY AT THE GRAPEVINE GROUP
1-800-292-7445 or 914-357-2424 FAX: 914-357-6243
We Ship Worldwide
Hours: 9–6 EST

Circle 174 On Reader Service Card.

C-NET BBS SOFTWARE V2.0
- COMPATIBLE W/AMIGA DOS 1.3 & 2.0
- SUPPORTS TO 24 MODES
- INFINITE FILES & MESSAGE BASES
- ONLINE GAMES (DOORS)
- REMOTE ACCESS W/SECURITY PASSWORD
- BBS SUPPORT

ORDERS: 408-626-2633
BBS: 408-626-0302 **FAX:** 408-626-0532
VISIONSOFT • PO BOX 22517 • CARMEL, CA 93922

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.

BRiWALL

Total Solution Mailorder

ACCELERATORS

Adding speed to your system gives you more time working, and less time waiting. Once you experience it, you'll never go back! Let us help you experience this satisfaction.

AdSpeed	$189
GVP Combo 22Mhz w/1MB	$819
GVP Combo 33Mhz w/4MB	$1,359
GVP3050 50Mhz w/4MB	$1,899
GVP GForce 68040/3000	$2,499
Fusion Forty 25MHz w/4MB	$1,749
MegaMidget 030EC 25Mhz	$399
MegaMidget 030EC 33Mhz	$499
MegaMidget '38 Special'	$1,499
Progressive 68040/2000	$1,749
Progressive 68040/3000	$1,529
VXL30 25MHz EC	$349
VXL30 40MHz EC	$499
1MB and 4MB SIMMS	$call

PRINTERS

You need a printer that shows off your ideas on paper. But resolution, printer drivers, and software all effect the right choice. Tell us your needs and we'll be happy to help.

Canon BJ300 Bubble Jet	$499
Canon BJ330 Bubble Jet	$699
HP DeskJet 500	$469
HP DeskJet 500 Color	$749
HP PaintJet (color)	$759
NEC SilentWriter 2 Model 90	$1699
Panasonic KXP1124i	$319
Panasonic KXP4420 Laser	$899
Okidata Laser 400	$669
Star N2420R Rainbow	$339

All Citizen printers...see next page

MODEMS&SOFTWARE

Fast, accurate file transfers are now affordable. With file sizes increasing and modem prices dropping, slow modems just don't make sense. If you have questions, we'll be glad to help.

AM24 Mini Modem	$79
ATI 9600etc/e MNP v.42bis	$439
Baud Bandit MNP2-5	$139
Courier HST 38.4	$599
Courier HST Dual Standard	$899
DataLink Express MNP5 w/s. Fax	$229
Supra 2400 FAX/9600 w/v.32	$239
SupraModem 2400	$99
SupraModem 2400+ MNP v.42bis	$149

Telecom. Software

Atalk III	$39
Baud Bandit	$35
Online Platinum	$39
Sterling Service BBS	$89

Call our BBS at (215) 683-7499. 300/1200/2400 baud, 24-hours, with a full catalog including descriptions available for downloading!

INPUT DEVICES

Simplify your work. From new mouses to scanners, always use an input device that matches your needs. Don't know what these products do? Call us and we'll be glad to explain.

Alphadata Cordless Mouse	$75
Alphadata Optical Mouse	$69
Alphadata Trackball(3 button)	$69
Amiga Wiz Draw Tablet	$259
Amtrac Trackball	$68
Boing Optical Mouse	$89
Epson ES-300C w/driver	$1299
GI Hand Scanner	$269
GI Cordless Mouse	$79
GI Cordless Trackball	$89
GI Mouse	$36
GI Optical Mouse	$65
Gravis Mousestick	$69
Mouse/Joystick switchbox	$29
Roctec Mouse	$39
Sharp JX100 w/Scanlab	$589
SketchMaster 12x12	$459

HARD DRIVES

Free yourself from mountains of floppies. You need the freedom and safety of a spacious hard drive. We offer the best hard drives available and controllers that make sense for your system. Your selection arrives ready to run because we pre-test and format it!

SCSI Hard Drives

Maxtor 080MB LP	$339
Maxtor 213MB HH	$679
Maxtor 340MB HH	$1099
Maxtor 676MB HH	$1499
Quantum 052MB LP	$269
Quantum 105MB LP	$399
Quantum 210MB HH	$699
Quantum 425MB 5.25"	$1399
Syquest (see next page)	
Xetec CD-ROM (int.)	$599
Xetec CD-ROM (ext.)	$679
Tape Backup Units	$call

SCSI Controllers

Dataflyer	$79
GrandSlam	$239
GVP Series 2 HC8	$209
IVS Trumpcard	$89
IVS Trumpcard Pro	$159
Malibu	$129

AT Hard Drives

Maxtor 080MB LP	$329
Maxtor 213MB HH	$659
Maxtor 340MB HH	$1099
Quantum 052MB LP	$269
Quantum 105MB LP	$399
Quantum 210MB HH	$699

AT Controllers

AdIDE 40	$109
DataFlyer	$75

A500 Drive Packages

GVP 52MB Quantum	$559
GVP 105MB Quantum	$739
DataFlyer 500	$149*
DataFlyer *AT* 500	$159&
IVS *AT* Trumpcard	$239&
IVS GrandSlam	$309*
Roctec *AT*	$259&

* add any SCSI hard drive
& add any *AT* hard drive

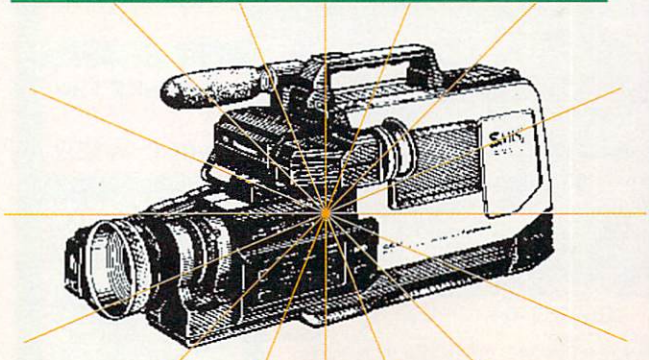
Drive cases, SCSI cables, Brackets -- Just Call.

1-800-766-5757
Call for Complete System Prices

VIDEO

Create. Merge computer, video and still images in ways never before imagined. An Amiga, a camcorder or VCR and the right tools are all it takes. The technology is expanding so rapidly it's hard to keep up, but we can help you make the right selections.

16mm Lens w/variable iris	$49	Frame Grabber	$439
Amigen Titling Kit	$179	GVP Impactvision	$1,899
BCD2000A	$869	HAM-E	$289
BCD5000	$1,959	Kitchen Sync Dual TBC	$1,699
CBM1300 Genlock (A1000)	$69	Panasonic AG1960	$1,159
CBM2320 Display Board	$239	Panasonic AG7650	$3,999
Chroma Key Switcher	$339	Panasonic AG7750	$6,299
Colorburst	$679	Panasonic 1410 Camera	$179
Color Splitter	$119	Polaroid Digital Palette	$3,599
DCTV	$389	RGB Splitter	$299
DMI Resolver B	$1,449	RocGen Plus Genlock	$369
DPS Personal TBC v2.0	$839	SFC/Personal	$389
DQ-TACO	$2,195	Showline TBC's as low as	$769
Firecracker 2400	$819	Supergen	$659
Flicker Fixer A2000	$259	Video Blender	$989
Flicker Free Video	$269	VideoToaster v2.0	$2,299



MEMORY EXPANSION

More memory means bigger files, longer animations and higher resolutions. All of your applications will appreciate it. We can explain your options and help you add the most efficient memory to your system.

501 Clones	$49
Baseboard w/512K	$125
Baseboard w/2MB	$189
Supra 500RX w/1MB	$139
Supra 500RX w/2MB	$209

A2000	2MB	4MB	8MB
GVP*	$189	$279	$459
Supra8**	$209	$299	$429
Dataflyer*	$189	$279	$459

(will work in Dataflyer 500)
* Uses SIMMs/ ** Uses DRAM

A3000	1MB	4MB	8MB
SCRAM's	$89	$299	$499

Combo SIMM's, SIMM's, DIP's, ZIP's we carry it all -- just call!

FLOPPIES

Eliminate disk-swappers' cramp! Sure, you can get excercise from a computer. But who wants to? You just need another floppy.

A500 3.5" internal	$89
A3000 3.5" internal	$99
Air 3.5"	$90
Master 3A-1D 3.5"	$99
Chinon A2000 int. 3.5"	$85
Roctec 5.25 external	$149
Roctec Ultralite 3.5"	$94
Roctec Ultralite black 3.5"	$97

MONITORS

Ease your eyes. It's no fun when it hurts to look at your monitor. RGB, Composite, or Multiscan. Whatever your needs, call us.

CBM1084S Stereo	$309
CBM1950 Multiscan	$579
DiamondScan AUM 1391A	$569
DiamondScan 20L	$2,199
Goldstar 1450+ VGA 14"	$369
Magnavox 1CM135	$289
Magnavox PMV 14VC+ VGA	$419
NEC MultiSync 3D-S	$649
Seiko CM-1440	$539

DTP/DTV SOFTWARE

Produce perfection. In print, on screen, and in video, your work is a reflection of you, and it must be as you visualize it. Make it so. The tools you need are here today.

3D Professional	$179
Amiga Vision	$89
Art Department Pro v2.0	$189
Broadcast Titler II	$229
Caligari V2.0	$239
CanDo v1.5	$89
Digi-View 4.0 Gold	$122
Digi-View MediaStation	$159
Disney	$79
Draw 4D Pro	$219
DynaCADD	$689
Elan Performer v2.0	$65
Fonts	$call
Foundation	$159
Genesis	$89
Image Master	$129
Imagine	$159
Interfont w/Interchange	$78
Pagestream 2.1	$179
Pagesetter v3.0	$79
Pelican Press	$62
Pixel 3D v2.0	$79
Presentation Master	$189
Professional Page 2.1	$189
Rasterlink	$125
Real 3D Turbo Pro	$319
Scenery Animator	$59
Screen Maker 36	$239
Sculpt/Animate 4D	$359
VidGen 2.0	$99
Vista Pro	$89

Turn the page for additional products and specials from Briwall

Circle 7 on Reader Service card.

Total Solutions...Knowledgable Sales Consultants...In-House Tech. Staff

BRiWALL

Solid Products and Solid Support

Call for other education & entertainment software, books, and videos.

SELECTED SOFTWARE

Here's just a sampling of the software and books what we carry! Please call us when you're looking for *any* titile.

Productivity

Best Business v3.0	$129
Bible Search	$69
Electric Thesaurus	$33
Excellence v2.0	$99
Family Tree	$49
Final Copy	$59
KFS Accounting v2.0	$189
MaxiPlan Plus	$59
Office	$129
PHASAR v4.0	$57
Proper Grammer	$62
Prowrite v3.2	$99
Security Analyst	$39
Superbase V4.0	$329
Superplan	$89
Wordperfect v4.1.11	$169
Works -- Platinum	$99

Utilities

Ami...Alignment	$29
AmiBack	$49
AMOS - The Creator	$65
AMOS 3D	$45
Arexx V1.15	$32
CrossDOS v4.0	$26
Diskmaster v2	$44
Doctor Ami..	$25
DOS-2-DOS	$35
Image Finder	$47
Lattice/SAS C v5.1	$199
Maverick	$28
Opus	$39
Project D v2.0	$39
Quarterback v4.3	$43
Quarterback Tools v1.3D	$53
TurboText	$65
Visionary	$59

Music

A-Sound elite	$79
AudioMaster IV	$62
Audio Engineer Plus 2	$239
Bars & Pipes Pro	$229
Digital Sound Studio	$95
Dr T Copyist DTP	$198
Dr T Tiger Cub	$85
Miracle Keyboard	**$369**
Perfect Sound 3.1	$65
Sound Master	$129
Super Jam!	$79

Education

Adventures in Math	$22
Algebra Plus vol. 2	$33
Any Barney Bear	$22
Distant Suns v4.0	$59
Fun School v4	$33
Math Blaster Plus	$33
Mavis Beacon Typing	$34
Studyware for SAT or GRE	$32
Any Carmen SanDiego	$33
World Atlas 2.5	$38

Books

Amiga for Beginners	$15
AmigaDOS Inside & Out	$17
Arexx on the Amiga	$27
Desktop Video 2nd ed.	$19
Harware Reference Review	$22
Imagine Companion	$24
Kids and the Amiga	$19
ROM Kernal:Exec	$25
ROM Kernal:Includes	$27

Bravo Romeo Delta

New From Free Spirit Software

Become the Chief Target Planner at SAC in this realistic simulation of a controlled nuclear conflict. Your job is to maintain escalation control (as specified in Presidential Directive 59), with complete command of US Strategic forces. This includes ICBM's, SLBM's, SSBN's, Bomber Bases, as well as tactical warning and assesment from NORAD.

And when you've perfected the US strategy, you can switch sides and become the Commander of the Strategic Rocket forces for the U.S.S.R.!

Briwall Price $39

EXPANSION SYSTEMS

The Best Quality at the Best Price

Common question--What hard drive system can I, an average consumer afford?

Solution! **Dataflyer** w/52MB Quantum (no we don't recommend a 20MB drive) And no...you are not giving up quality for price. See article in July 1991 Amiga World.

Dataflyer w/52MB Quantum

For the A500	$399
For the2000	$349
Memory board w/2MB	$189

Dataflyer A1000 - *Brand New!*

Dataflyer w/52MB Quantum	$479
Memory board w/2MB	$189

Dataflyer External Memory A1000

2MB-$329 4MB-$369
6MB-$469 8MB-$559
Add a SCSI controller for $79

All Dataflyer SCSI and Memory boards are A2000 compatible. Talk about upgradeability!

Model 10 Amiga Portable!

From Newer Technology

Now there is a 100% software compatible true laptop Amiga computer! The Model 10 boasts 2MB of RAM, 1.3 or 2.0 AmigaDOS ROMs, a 3.5" internal floppy, standard 86-pin expansion bus and a bright monochrome LCD display.

Available peripherals include an external 40MB hard drive, internal 20MB hard drive, RAM upgrades to 8MB, battery charger, and a high-speed SCSI-II Dart RAM drive.

All this in a package that weighs only 3 to 6 pounds (depending on configuration) and measures just 11.7 X 8.3 X 2 (closed.)

Call now and find out all the details on this amazing new Amiga computer!

DKB

Innovative solutions to your needs

Megachip

You call, as a serious Amiga User, and order an Accelerator Board, 32-bit RAM, a huge harddrive. Serious system complete? Please don't forget to expand your graphics capacity with 2MB of chip RAM! You need Megachip to get it into your 500 or 2000 (sorry 1000's).

Megachip 2000 or 500 complete with the 2MB Agnus - $319

Kwikstart/Multistart

You want to get that 2.0 ROM...but what about the stuff that doesn't work? Or you want your 1000 to autoboot off the harddrive. DKB offers the solution. An easy-to-install board that allows you to switch easily between 1.3 and 2.0.

Kwikstart A1000 - $79
Multistart A2000 or A500 (v5 or less) - $79
Call for prices on 1.3 and 2.0 ROM packages

Insider II

The A1000 is not forgotten! Upto 1.5MB of internal fast RAM with a battery-backed clock & calendar.

Insider II w/1.5MB - $259

EXTRAS

Expand and Enhance. It's part of the fun of owning a computer. Call us when you want to try something new.

A500 BigFoot 200w	$95
Bomac Tower A2000	$269
CBM Speakers	$38
CBM2232 Multiserial card	$319
Covers, Cables, Disks	Scall
ECE A500/2000 ext. MIDI	$49
Extec Hard drive Case	$85
External SCSI Case	$129
Gold Insider A2000 MIDI	$59
Switchbox A/B db25	$19
Switchbox A/B/C/D	$29

KB-TALKER-- Keyboard Solutions

Why be limited to replacing your keyboard with an Amiga one?
Why be stuck with your A500's fixed keyboard?
Why have an A1000 with no keyboard? (remember the trade-in?)
Why struggle with an Amiga keymap with the Bridgeboard?

Solution: KB-Talker from Co-Tronics Engineering! Attach any true PC/AT 101 keyboard to any Amiga. Small adapter box, no software installation, keycap labels included.

KB-Talker (A1000/2/0003000) w/our favorite keyboard $119
KB-Talker A500 Kit w/our favorite keyboard* $139
* Kit requires easy, but necessary drilling of 2 holes in back panel.

Mac Emulation Package

Mac128K ROMS, Mac Drive, and Mac Emulator

Briwall 'TSM' Price $539
limited quantity

We carry a full line of CDTV titles and accessories!

AMIGA 1000

Continue expanding your Amiga 1000 with any of these exciting expansion products. Add memory, storage, speed, or all three. We support your A1000!

Adspeed	$189
CBM1300 Genlock	$69
DataFlyer w/case	$229
ECE External MIDI	$49
Fastrak SCSI + Case	$289
Insider II (1.5MB)	$259
Keyboard	$119
Kwikstart II A1000	$79
MegaMidget Racer 25mhz	$409
MegaMidget Racer 33mhz	$529
Rejuvenator 1000w/Agnus	$419
Rejuvenator w/2MB Agnus	$469

XETEC

CD-ROM for the Amiga

The cutting edge of optical technology is now available!

Xetec CDx-650 SCSI drive systems provide access to vast amounts of information (up to 650MB per CD-ROM disc), are capable of playing audio CD's, and are compatible with CDTV titles (when running under the included CDTV emulation software.)

CDx-650E -- External CD-ROM drive system including case, SCSI cable, and caddy **$679**

CDx-650I -- Internal CD-ROM drive system including audio and SCSI cables, and caddy **$599**

Both systems include a **free** *copy of the Fish & More CD with over 500MB of PD software including Fred Fish disks #1-370*

We're Multi-Lingual

We have sales consultants fluent in **French**, **German** and **Spanish!**

HP DESKJET 500 *COLOR!*

Intro Price $739

ROCTEC

GREAT PRODUCTS AT LOW PRICES!

Ultralite Slimline Drive $94

This drive is absolutely gorgeous!! Ultralite (24 ounces), Ultraslim (7/8" high), ultra-quiet, pass-thru. Comes in either Amiga biege or black (real classy--add $3)

ROCGEN Plus $369

(specify PAL or NTSC)

Finally, a low-cost Genlock packed full of features! Something you can really use for Consumer/Prosumer applications.

Composite video or External keying input, composite video output, video thru and RGB video output. Dual dissolve dials for overlay and fade. Chromakey option available

MSDOS

Just for those Bridgeboard and MSDOS fans out there!

Adaptec SCSI w/software	$179
Excel Magic I/O board	$59
PC/AT-101 Keyboard	$59
Roctec 5.25" Floppy	$149
ATOnce 80826 A2000	$358
ATOnce 80826 A500	$279

CDTV Titles (call for pricing)

All Dogs Go To Heaven	Barney Bear Goes to School
Barney Bear Goes Camping	Hound of the Baskervilles
Business Time Table	Discis Reading Books
Science Time Table	Women in Motion

...and many more!

DeluxePaint IV

The #1 selling paint and animation program just got better! Now with HAM, LighTable, new animation interface, metamorphosis and much more!

Briwall Price $115

. . . .Full Product Descriptions On-Line... Complete Disk-Based Catalog

BRiWALL

Solid Products and Solid Support

SUPER SYQUEST SALE!

Removeable-media Hard Drives.
Perfect for backups, mass storage, DTP and animations

44MB 5.25" Internal $369
88MB 5.25" Internal $499

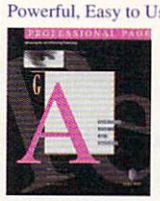
AMI-BACK
Backup and restore to hard drives, floppies, and SCSI tape drives. It's fast (5Mbytes/min), easy to configure, and has many options. **$49**

SYQUEST EXTERNAL
We'll add a case, SCSI cable, and setup for just $129
Please specify the SCSI controller you own

CARTRIDGES
44MB $79
88MB $129
Clean Kit $29
Get Ami-Back for just $29 when you buy 4 or more cartridges!

Professional Page 2.1

Powerful, Easy to Use, Desktop Publishing!



- Landscape printing on dot matrix and laser printers!
- Up to 2X faster than 2.0
- Interactive on-line help disk
- Built-in Word Processor & Spell checker!

ONLY $189

BRIWALL's Choice for all our in-house DTP needs!

Video Blender

Professional Desktop Video

Here's a low-cost alternative that includes; genlocking, wiping, switching, luma keying, fading sequencing, scripting, mixing, audio, GPI and much more!

The Video Blender is PAL and NTSC compatible, and beacause it is completely self-contained, it works with **any Amiga** (1MB RAM required.)

Briwall 'TSM' Price $989

Tape Backup Solutions

w/ Amiback

Not everyone needs high-capacity tape backup, but you prosumers and professionals do! And we have the lowest price, highest quality solution.

Wangtek 250MB w/Tape Cartridge and Amiback $629

Add $150 for an external solution

Fusion-Forty

RCS Management's Motorola MC68040 accelerator board for the Amiga. With a clock speed of 28MHz the **Fusion-Forty** boasts incredible processing power of 18-25 MIPS and 3.5-8.0 MFLOPS.

Features include:
- ❑ 4MB of 32-bit RAM, expandable to 32MB
- ❑ Hardware select switch to disable accelerator
- ❑ One year warranty
- ❑ 6-layer board with separate power and ground planes to minimize noise

Briwall Price -- $1749

Mega-Midget Racer

The upgradable alternative from CSA

If you're going to invest in an accelerator, why lock yourself into a non-upgradable 'solution'? The Mega-Midget gives you the option to upgrade with:

- ▲20-33MHz 68030 using the same board
- ▲20-50MHz 68881/2 using the same board
- ▲Up to 8MB of 32-bit RAM (while maintaining all 9MB of your existing system RAM!)
- ▲Up to 2MB of fast, static 32-bit RAM (for the ROM Kernal, and super-fast screen updates.)

Mega-Midget Racer runs in the A500, A2000 and A1000 (call on the A1000), and is compatible with the Toaster, DTP programs, ray-tracing packages, and all other 68030-compatible software.

Prices starting at $399
Great deal -- "38 Special" -- $1499

Many other configurations available. Call for details

CITIZEN PRINTERS

Outsells all other dot-matrix printers combined!
Our In-house choice! One is perfect for your needs!

Model	Pins	Width	CPS	Price	Colorkit
130	24	10"	180	$269	$49
140+	24	10"	220	$329	$49
145	24	16"	192	$399	$65
200	9	9"	213	$179	$49
200/15	9	15"	213	$329	$65

All feature; 2 year warranty, easy user-replaceable printhead top, rear & Bottom feed, paper park & load multiple built-in fonts, easy-to-use LCD control panel

Citizen PN48 portable laptop $369
Just 2 1/2 lbs, 1 page/minute, 369x360 dpi, thermal fusion laser

WHY BUY FROM BRIWALL?

1. Technical expertise to help you make the right decision. Buying the right product isn't easy. We don't just take your order; we work with you to match your needs with the right products. With over 6 years of experience in this business, we have the technical expertise to make solid recommendations.

2. Pretested products to help ensure that your purchase works. Our in- house, trained technicians pre-test memory boards, hard drives and many other products before they leave our door.

3. Satisfaction guarantee. Buying mail order can be intimidating but we make it easy and safe. We guarantee that if your purchase doesn't run on your system, we'll help you work with the manufacturer until you are satisfied.

Our personal services help you pick the right product and get it running on your system quickly.

Don't get caught in the 'Delivery Charge' trap!

If you comparison shop, (and you should), always ask for the '**delivered price**' of the item you want to order. You'll find our prices are real, and our shipping charges are fair.

There is so much we want to tell you, and so little room in this ad. Just call us!

Get our Catalog-On-A-Disk, packed full of info. Free with every order!

Gold Disk

VIDEODIRECTOR

- 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!

DKB 2632

Add up to 112MB of 32-bit Expansion RAM to your Amiga 2500/030!

Free your A2500 of the 4MB, 32-bit RAM limit, and add the memory you need for faster renderings, and longer animations! The 2632 board allows memory upgrades in 1, 2, 4, 8, 16, and 32MB increments (up to 112MB!) using 32-bit SIMM modules.

The DKB 2632 installs directly onto the CBM 2630 accelerator board, requires no soldering, and has a full one year warranty.

Starting under $650 for 4MB

BODEGA BAY

Your A500 can now be A2000 compatible. Add 4 A2000 slots, (3 are also PC slots), 3 Drive Bays a 200W Power Supply and more. Imagine putting all those little boxes into one A2000 type box. And we have the packages to meet your needs.

Bodega Bay $259
Bodega Bay w/Malibu SCSI and 52MB Quantum $635
3.5" Internal Drive Kit $99
Catalina Memory Board $79

Briwall is California Access's exclusive mailorder house

CALIFORNIA ACCESS™

Roctec RocHard

External hard drive system for the Amiga 500

Why limit yourself to a single drive format? The RocHard allows you to connect to 2 IDE (*AT*) hard drives to your A500, and with the SCSI option, up to 7 SCSI hard drives as well! There's also room for up to 8MB of Expansion RAM, a game switch, and a quiet fan cooling unit.

RocHard AT drive system $259
RocHard SCSI option $45
call for drive and memory configurations

1-800-766-5757

(USA and CANADA)

Outside USA: (215) 683-5661 Tech Support (215) 683-5699
Customer Service (215)683-5433 FAX (215) 683-8567

- ❑ Any Visa and MasterCard accepted with NO surcharge
- ❑ Hardware shipping charges vary depending on weight and value.
- ❑ Software shipping charges are $5.00 per total order via UPS ground to anywhere in the continental USA
- ❑ All orders over $300 are insured at customer's expense.
- ❑ We prosecute credit card fraud to the fullest extent of the law!
- ❑ **All returns require an RA#.** Please call before returning anything!

Federal Express®
Charges for all orders under 20 pounds
2nd Day Delivery $13
Next Day Delivery $17

DHL
Canadian and Overseas customers are shipped DHL. Rates as low as $15 to Canada!

BRIWALL

P.O. Box 129/58 Noble St.
Kutztown, PA 19530

School and corporate purchase orders are welcome.
We specialize in overseas orders!

Order lines are open 24 hours (Briwallians are in 9-8 EST)
Store hours: *Monday - Friday 9AM-6PM, Saturday 10AM-2PM*

The Last Word

Kudos, complaints, comments, concerns, and contributions from our readers.

CDTV Impressions From the Far East

I've just installed a Commodore CDTV and am very impressed with it. However, I have a couple of queries and comments. No manual came with the machine, but one is absolutely essential. It's ridiculous to say that anything you want to know is on the instruction disk—one can't change disks and wait five minutes for a piece of information one could get instantly from the pages of a manual!

I imagine that several authors are rushing out books on this new machine. Have any been published yet? I don't yet have a keyboard...I hope that someone is developing a "palmtop" version incorporating all the essential functions.

Actually, I have not had much time to play with the CDTV because I've been diverted to my A3000 by the Vista program, which was featured in your September issue. It really is a fantastic program.

Arthur C. Clarke
Columbo, Sri Lanka

WordPerfect, We Need You

In a recent telephone conversation with a WordPerfect representative, I learned that version 5.01 for the Amiga is currently on the back burner during development of "WordPerfect for Windows." (I can't blame them for trying to improve their PC market potential.) The bottom line is that if Amiga users are serious about getting v5.01 back into development, they'll have to start a letter-writing campaign to show their support and need. Address your letters to: WordPerfect Corporate Communications, Attention Liz Tanner, 1555 Technology Way, Orem, UT 84057; FAX: (801)-222-2577.

John Comerford
Woodland Hills, Calif.

Pretty Knitting Patterns

In reference to your Sept. '91 editorial, one feature users said they wanted was sewing and knitting patterns on disk. Suzan Lazear of Encinitas, California, has done a remarkable amount of work in this field. She has a wonderful pattern program and also sells hardware and back-up software that does a fantastic job of interfacing with standard computerized knitting machines. Her address: Cochenille Computer Knit Products, PO Box 4276, Encinitas, CA 92024; (619)-942-1957.

William Adams
Seattle, Wash.

Many people with invisible handicaps could earn by using computers at home.

Empowering the Housebound

Thank you for your fine editorial (Dec. '91) regarding people with handicaps and the need to adapt personal computers so more such people could become gainfully employed. While your emphasis was on those with recognizable physical limitations, many people with invisible handicaps could earn by using computers at home. While they may not require special equipment, they do need the understanding of business people that they are capable of performing the same tasks with the same degree of skill as they would in an office miles away.

I am one of those. I am agoraphobic with post-polio weakness, which, combined, make it essentially impossible for me to work outside my home. About three years ago, I started my own desktop-publishing business with an Amiga 2000 system. Although my earnings are still modest, they have steadily increased, and I feel the venture is successful. Taking a cue from Joseph Campbell, I am following my bliss and loving every minute of it.

Educating the community is essential, and you have performed a vital service by calling attention to the fact that computers can be used to put house-bound people to work, give them an income, and let them become or resume being contributing members of society.

(Ms.) M.J. Barnes
Houston, Texas

The Working Amiga

Hats off to Jason Ivy (The Last Word, Oct. '91) for speaking out and demanding the recognition due the Amiga. I work for a Chicago UHF TV station that was the first one around and the first to commit itself to the Amiga, which we have been using for about five years. I understand that some local cable stations now use it, and the University of Illinois Circle recently purchased the Video Toaster for its new TV studios.

We use the Amiga for everything: newspaper ads, magazine covers, folders, tickets, brochures, sales presentations, posters, billboards, bus ads, invitations, multimedia presentations, 2-D and 3-D animation, news graphics, commercials, telethons, and even the live ticker on our stock-market show! The Amiga has saved the station a lot. Printers and output services continue to be amazed at what "that little machine can do." The networks are amazed at its graphics and secretly love it.

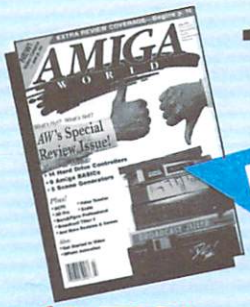
L. Jaime
Chicago, Ill.

ORDER NOW and receive a FREE

Sampler Disk!

12 issues for ~~$47.40~~

$24.97



12 ISSUES FOR ~~$47.40~~

Special Offer $24.97

YES! RUSH me my FREE Sampler Disk and enter a one-year subscription (12 issues) to AmigaWorld for only $24.97. **I save 47%** off the annual single copy price.

❑ Bill me ❑ Payment enclosed

Please make checks payable to AmigaWorld. Canada $41.97, Mexico $34.97, Foreign Surface $47.97, Foreign Airmail $82.97 (U.S. funds drawn on a U.S. bank). Prepayment is required on all Foreign Surface and Foreign Airmail orders. Basic 1 year (12 issue) subscription rate is $29.97. All prices are 1 year only. Please allow 6-8 weeks for delivery. Canadian rate includes GST. California residents please add 7.25% sales tax.

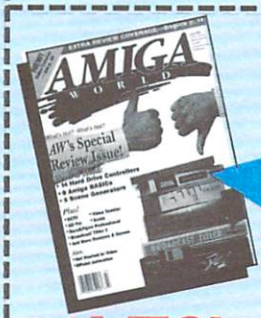
Name

Address

City State Zip

AMIGA WORLD

42BB6



12 ISSUES FOR ~~$47.40~~

Special Offer $24.97

YES! RUSH me my FREE Sampler Disk and enter a one-year subscription (12 issues) to AmigaWorld for only $24.97. I save 47% off the annual single copy price.

❑ Bill me ❑ Payment enclosed

Please make checks payable to AmigaWorld. Canada $41.97, Mexico $34.97, Foreign Surface $47.97, Foreign Airmail $82.97 (U.S. funds drawn on a U.S. bank). Prepayment is required on all Foreign Surface and Foreign Airmail orders. Basic 1 year (12 issue) subscription rate is $29.97. All prices are 1 year only. Please allow 6-8 weeks for delivery. Canadian rate includes GST. California residents please add 7.25% sales tax.

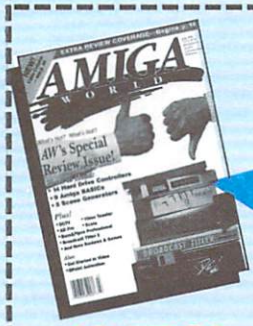
Name

Address

City State Zip

AMIGA WORLD

42BB6



12 ISSUES FOR ~~$47.40~~

Special Offer $24.97

YES! RUSH me my FREE Sampler Disk and enter a one-year subscription (12 issues) to AmigaWorld for only $24.97. I save 47% off the annual single copy price.

❑ Bill me ❑ Payment enclosed

Please make checks payable to AmigaWorld. Canada $41.97, Mexico $34.97, Foreign Surface $47.97, Foreign Airmail $82.97 (U.S. funds drawn on a U.S. bank). Prepayment is required on all Foreign Surface and Foreign Airmail orders. Basic 1 year (12 issue) subscription rate is $29.97. All prices are 1 year only. Please allow 6-8 weeks for delivery. Canadian rate includes GST. California residents please add 7.25% sales tax.

Name

Address

City State Zip

AMIGA WORLD

42BB6

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED
STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 1247, BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

AmigaWorld
P.O. Box 50365
Boulder, CO 80321-0365

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED
STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 1247, BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

AmigaWorld
P.O. Box 50365
Boulder, CO 80321-0365

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED
STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 1247, BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

AmigaWorld
P.O. Box 50365
Boulder, CO 80321-0365

ORDER NOW and receive a FREE

Sampler Disk!

12 issues for ~~$47.40~~ $24.97

Free Product Info

DIRECT TO YOU
AT NO COST OR OBLIGATION

Want to Know More About Products Or Services Advertised In This Issue?

Here's How.

- Print your name and address where indicated.
- Tell us about yourself by answering the questions.
- Circle the numbers on the card corresponding to the reader service number on the ads for products or services that interest you.
- Tear out and mail the card.
- Please allow 6-8 weeks for delivery of your subscription.

NO OBLIGATION. Literature on products and services will be sent to you directly from advertisers, free of charge.

AmigaWorld
READER SERVICE CARD

Name _____ Phone ( ) _____

Address _____

City _____ State _____ Zip _____

1. What kind of Amiga do you own?

a. ☐ Amiga 500
b. ☐ Amiga 1000
c. ☐ Amiga 2000
d. ☐ Amiga 2500
e. ☐ Amiga 3000
f. ☐ Don't own an Amiga

2. Hypothetically, if *AmigaWorld* could provide coverage of only 6 of these subjects every month, which 6 would you choose?

g. ☐ Business/accounting
h. ☐ Database management
i. ☐ Desktop publishing
j. ☐ Education
k. ☐ Games/entertainment
l. ☐ 2-D graphics/animation
m. ☐ 3-D graphics/animation
n. ☐ Home productivity and finance
o. ☐ IBM/Mac emulation/conversion
p. ☐ Multimedia production/presentation
q. ☐ Music/sound
r. ☐ Operating system software
s. ☐ Programming
t. ☐ Science/engineering (CAD, Unix, etc.)
u. ☐ System upgrade/expansion (hardware)
v. ☐ Telecommunications
w. ☐ Video
x. ☐ Word processing

3. Which 4 regular monthly sections (not articles) of *AmigaWorld* do you find most valuable?

y. ☐ Accent on Graphics
z. ☐ Back Talk
1. ☐ Chief Concerns
2. ☐ Crib Notes
3. ☐ Game Reviews
4. ☐ Help Key
5. ☐ The Last Word
6. ☐ Overscan
7. ☐ Reviews (General)
8. ☐ Video Suite

4. Which 4 regular monthly sections (not articles) of *AmigaWorld* do you find least valuable?

9. ☐ Accent on Graphics
a. ☐ Back Talk
b. ☐ Chief Concerns
c. ☐ Crib Notes
d. ☐ Game Reviews
e. ☐ Help Key
f. ☐ The Last Word
g. ☐ Overscan
h. ☐ Reviews (General)
i. ☐ Video Suite

February Issue Card Valid Until April 30, 1992

1	26	51	76	101	126	151	176
2	27	52	77	102	127	152	177
3	28	53	78	103	128	153	178
4	29	54	79	104	129	154	179
5	30	55	80	105	130	155	180
6	31	56	81	106	131	156	181
7	32	57	82	107	132	157	182
8	33	58	83	108	133	158	183
9	34	59	84	109	134	159	184
10	35	60	85	110	135	160	185
11	36	61	86	111	136	161	186
12	37	62	87	112	137	162	187
13	38	63	88	113	138	163	188
14	39	64	89	114	139	164	189
15	40	65	90	115	140	165	190
16	41	66	91	116	141	166	191
17	42	67	92	117	142	167	192
18	43	68	93	118	143	168	193
19	44	69	94	119	144	169	194
20	45	70	95	120	145	170	195
21	46	71	96	121	146	171	196
22	47	72	97	122	147	172	197
23	48	73	98	123	148	173	198
24	49	74	99	124	149	174	199
25	50	75	100	125	150	175	200

☐ If you would like a one year subscription to *AmigaWorld* (12 issues) please check here. All orders must be prepaid. The cost is $29.97. Canada and Mexico, $41.97; Foreign surface, $47.97; Foreign Airmail, $82.97 (must be US funds drawn in a U.S. bank).

42BR1

AmigaWorld
READER SERVICE CARD

Name _____ Phone ( ) _____

Address _____

City _____ State _____ Zip _____

1. What kind of Amiga do you own?

a. ☐ Amiga 500
b. ☐ Amiga 1000
c. ☐ Amiga 2000
d. ☐ Amiga 2500
e. ☐ Amiga 3000
f. ☐ Don't own an Amiga

2. Hypothetically, if *AmigaWorld* could provide coverage of only 6 of these subjects every month, which 6 would you choose?

g. ☐ Business/accounting
h. ☐ Database management
i. ☐ Desktop publishing
j. ☐ Education
k. ☐ Games/entertainment
l. ☐ 2-D graphics/animation
m. ☐ 3-D graphics/animation
n. ☐ Home productivity and finance
o. ☐ IBM/Mac emulation/conversion
p. ☐ Multimedia production/presentation
q. ☐ Music/sound
r. ☐ Operating system software
s. ☐ Programming
t. ☐ Science/engineering (CAD, Unix, etc.)
u. ☐ System upgrade/expansion (hardware)
v. ☐ Telecommunications
w. ☐ Video
x. ☐ Word processing

3. Which 4 regular monthly sections (not articles) of *AmigaWorld* do you find most valuable?

y. ☐ Accent on Graphics
z. ☐ Back Talk
1. ☐ Chief Concerns
2. ☐ Crib Notes
3. ☐ Game Reviews
4. ☐ Help Key
5. ☐ The Last Word
6. ☐ Overscan
7. ☐ Reviews (General)
8. ☐ Video Suite

4. Which 4 regular monthly sections (not articles) of *AmigaWorld* do you find least valuable?

9. ☐ Accent on Graphics
a. ☐ Back Talk
b. ☐ Chief Concerns
c. ☐ Crib Notes
d. ☐ Game Reviews
e. ☐ Help Key
f. ☐ The Last Word
g. ☐ Overscan
h. ☐ Reviews (General)
i. ☐ Video Suite

February Issue Card Valid Until April 30, 1992

1	26	51	76	101	126	151	176
2	27	52	77	102	127	152	177
3	28	53	78	103	128	153	178
4	29	54	79	104	129	154	179
5	30	55	80	105	130	155	180
6	31	56	81	106	131	156	181
7	32	57	82	107	132	157	182
8	33	58	83	108	133	158	183
9	34	59	84	109	134	159	184
10	35	60	85	110	135	160	185
11	36	61	86	111	136	161	186
12	37	62	87	112	137	162	187
13	38	63	88	113	138	163	188
14	39	64	89	114	139	164	189
15	40	65	90	115	140	165	190
16	41	66	91	116	141	166	191
17	42	67	92	117	142	167	192
18	43	68	93	118	143	168	193
19	44	69	94	119	144	169	194
20	45	70	95	120	145	170	195
21	46	71	96	121	146	171	196
22	47	72	97	122	147	172	197
23	48	73	98	123	148	173	198
24	49	74	99	124	149	174	199
25	50	75	100	125	150	175	200

☐ If you would like a one year subscription to *AmigaWorld* (12 issues) please check here. All orders must be prepaid. The cost is $29.97. Canada and Mexico, $41.97; Foreign surface, $47.97; Foreign Airmail, $82.97 (must be US funds drawn in a U.S. bank).

42BR1

Free Product Info

DIRECT TO YOU
AT NO COST OR OBLIGATION

Please Use First Class Letter Postage

AmigaWorld
P.O. Box 8751
Boulder, CO 80329-8751

Please Use First Class Letter Postage

AmigaWorld
P.O. Box 8751
Boulder, CO 80329-8751

Want to Know More About Products Or Services Advertised In This Issue?

Here's How.

- Print your name and address where indicated.
- Tell us about yourself by answering the questions.
- Circle the numbers on the card corresponding to the reader service number on the ads for products or services that interest you.
- Tear out and mail the card.
- Please allow 6-8 weeks for delivery of your subscription.

NO OBLIGATION. Literature on products and services will be sent to you directly from advertisers, free of charge.

YOU'RE A PRETTY GOOD PROGRAMMER ALREADY. BUT YOU PROBABLY DON'T KNOW IT YET.

Object Oriented Program Construction for Regular Ordinary People.

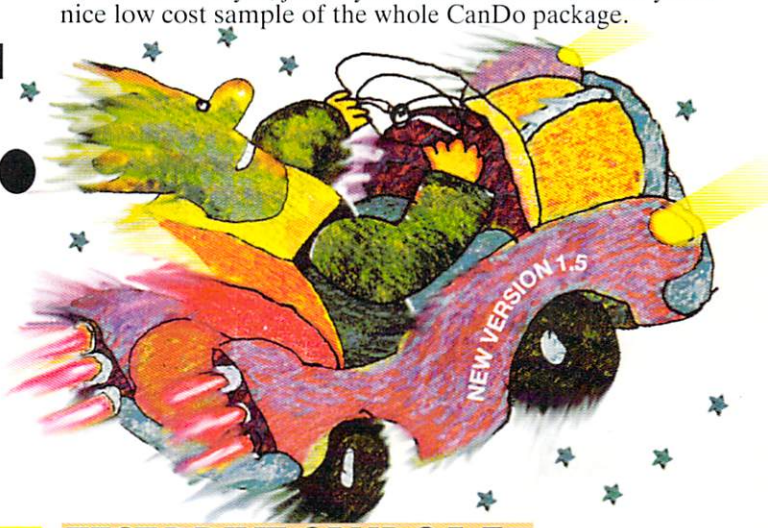
While you weren't watching, we turned you and the rest of the world's Amiga users into programmers.

With CanDo's intuitive interface and simple but powerful toolkit, ordinary people all over the country have been creating stand-alone utilities, data bases, word processors, vertical market applications, animated multimedia presentations, and all sorts of games.

Experienced programmers (many of them not ordinary at all) have been prototyping applications in CanDo for the sake of expediency and finding as often as not that there's little left to do when they get through. We get rave letters every day.

Give us a call. We'll read you some.

Better yet, just say the word and we'll send you a nice low cost sample of the whole CanDo package.



INOVAtronics, Inc.

8499 Greenville Avenue

Suite 209B

Dallas, Texas 75231

214 340-4991

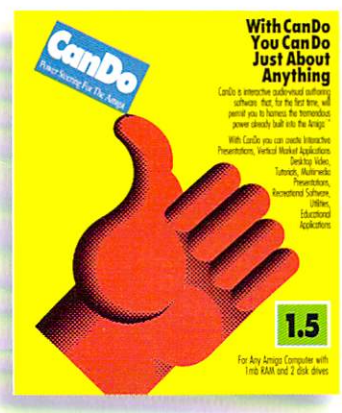
FAX: 214 340-8514

Trademarks:

Amiga: Commodore-Amiga, Inc.

INOVAtronics, CanDo: Inovatronics, Inc.

Circle 75 on Reader Service card.



TEST DRIVE CANDO 1.5 FOR JUST 10 BUCKS.

VISA MasterCard

1-800-875-8499

Give us your address and $10* and we'll send two disks and a CanDo manual by return mail. You'll have created a program before David Letterman goes off.

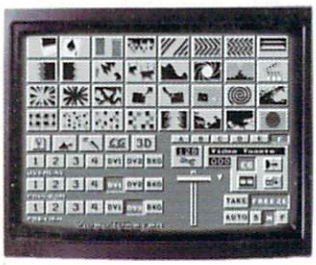
Get a fresh look at what your Amiga is capable of.

**Buy CanDo later and we'll give you your sawbuck back.*

New Video Toaster™ System 2.0 — New Effects, Ray Tracing, and even better Character Generator.

Video Toaster™ System 2.0:
9 essential tools you need if you're using your Amiga for video or graphics.

4 Input Production Switcher



Toaster System 2.0 includes organic switcher transitions like fire, smoke, clouds, pouring liquid and breaking glass. Powerful positionable effects for over-the-shoulder insets, soft-edge wipes and wild "KikiFX" like you've never imagined.

Digital Video Effects

Real-time digital video effects on live video at 60 fps. From flip, spin and tumble all the way to amazing perspective warping effects and even incredible sphere and cube mapping in real-time.

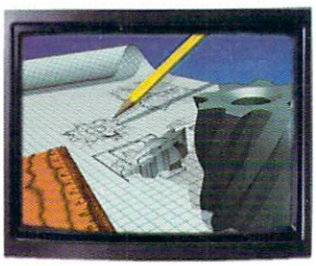
35ns Character Generator

16 million color 35ns broadcast text with over 100 high-quality, anti-aliased type-faces. System 2.0 also features faster loading of pages, framestores for backgrounds, improved keying and text file import.

24-bit Broadcast Paint

ToasterPaint is the only true broadcast-quality NTSC paint system for the Amiga. System 2.0 brings new features including improved auto-scrolling and direct import of images from the Toaster's frame grabber.

3D Animation



LightWave 3D 2.0 offers over *150 new features* including blazing rendering speed, multiple morph targets, 3008 x 1920 resolution and *true ray-tracing!* 2.0 makes modeling a joy with new tools like bend, twist, taper, skin and magnet.

Dual Frame Buffers

Hold two high-resolution 16 million color video frames in perfect YIQ-encoded RS-170A network quality. System 2.0 brings you enhanced hue matching, even faster loading, and framestore file compression to save disk space.

Luminance Key

Much more than just simple weatherman over a map, Toaster™ keying lets you do luminance fade transitions, or combine two live sources using a third source as a key and even key-based digital trails.

Color Processing

Control of color effects from the switcher and 20 new default effects make ChromaFX faster and more powerful. Now combine effects and color cycle with new organic switcher transitions for incredible new possibilities.

Still Store/Frame Grabber

Freeze flawless broadcast resolution images instantly from any color camera, laserdisc or even cable TV with better color reproduction, faster loading, and powerful new field and frame saving options.

Free Toaster™ Video Tape

We can't show you the power and quality of the new Video Toaster in a magazine ad. So we've decided to prove it with a free VHS tape about the Toaster *produced entirely with the Toaster.* This award-winning demo-within-a-demo starring NewTek's Kiki Stockhammer is aptly titled **"REVOLUTION"**. Call today to find out about the most successful Amiga product of all time.

Call 800·765·3406

Toaster 1.0 users call your dealer or 800-843-8934 to upgrade today.

Outside North America call 612-882-1662 for your free demo tape. 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. Amiga is a registered trademark of Commodore Amiga Inc. Video Toaster, Lightwave 3D, ChromaFX and ToasterPaint are trademarks of NewTek, Inc. © NewTek, Inc.

NEWTEK INCORPORATED

Circle 37 on Reader Service card.