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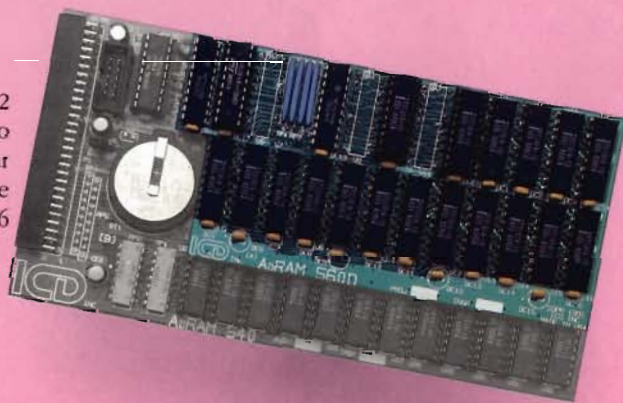
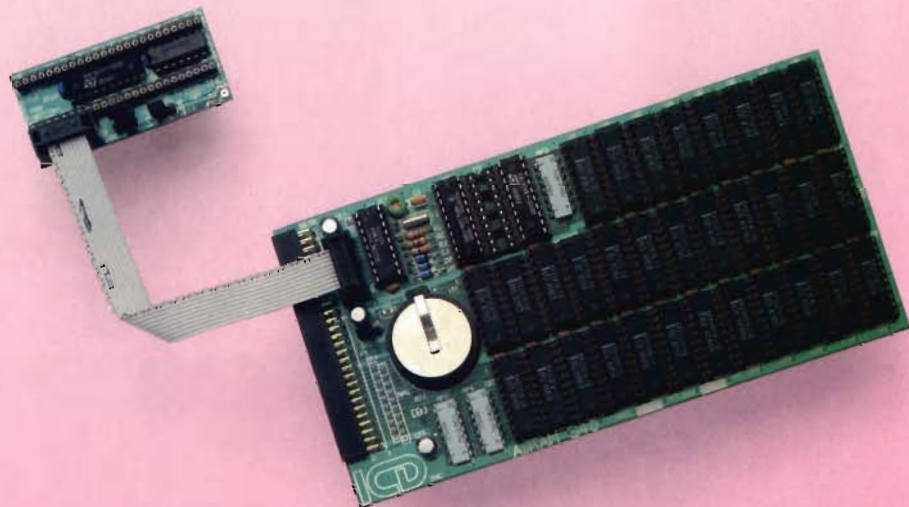
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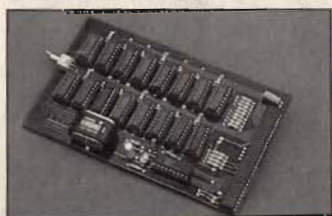
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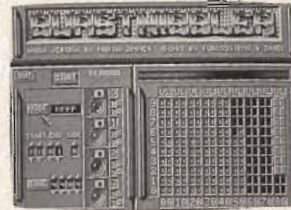
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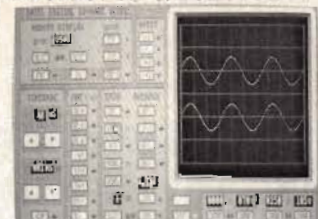
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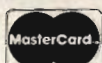
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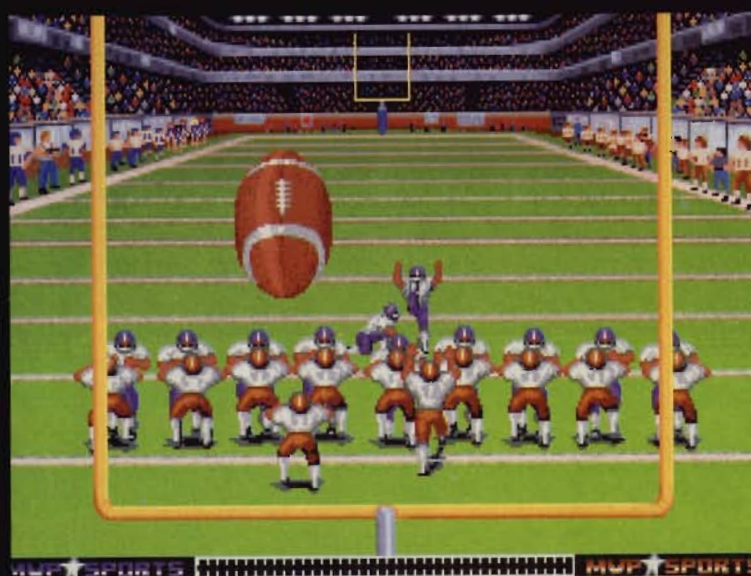


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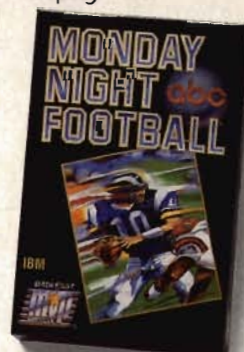
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Start learning elementary Japanese the interactive way with this flashy CanDo "HyperCard" application that shows off Amiga graphics and sound. Other language translation drills can be substituted if you type in the necessary vocabulary.
- 50 Dr. T's TIGER Cub Demo** *Make real-time music with a new breed of cat.*
This full-featured demonstration version of Dr. T's TIGER Cub does everything the \$99 commercial product does, except save or print your music. Here's sophisticated sequencer software that's easy to learn and works with your built-in Amiga sounds or MIDI controllers. **(Requirements:** Minimum 1Mb memory. See easy decompression instructions on this issue's disk.)
- 62 Super Abackup** *Your hard disk safety net!* **by Keith Wilke**
Now it's a breeze to copy your irreplaceable hard disk data! This professional-quality hard disk backup program stores the contents of your hard disk on a series of floppies, so you can easily recover the information if a crash occurs. **(Requirements:** Hard disk. See easy decompression instructions on this issue's disk.)
- 55 WorkBench Xpress** *Easiest command automation yet!* **by Arnie Cachelin**
Activate a whole command chain by double-clicking on an icon. Now you don't need to leave the Workbench to create simple "scripts" for automating your routine operations. You'll find useful examples already installed in this disk's WorkBench Xpress icon. **(Requirements:** Some AmigaDOS knowledge.)
- 59 FindIt** *Slick, elegant database hidden in your Workbench.* **by Donald Maxwell**
Personal address books and most other common database uses are easy to handle with this inventive AmigaDOS script that searches and sorts your selected text file strings. Included on disk is a sample database of addresses and phone numbers for more than 200 Amiga software and hardware companies. **(Requirements:** Runs only from the Shell.)
- 67 File Decompressor** *A few clicks unscrunch giant files.* **by Mark Lanoux**
It's never been easier to decompress online downloads from ANY compression format. File Decompression Chamber (ModemHelper) also makes it easy to select your file destination, and read the instructions or execute scripts commonly included in "archived" files. **(Requirements:** ARC, ZOO, LHARC, or similar compression program. LHARC is on this issue's disk.)

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EDITORIAL

Open Letter to Commodore President Harold Copperman

First of all, congratulations on doing a lot of recent things right, Mr. Copperman. Thanks to you, Commodore seems to be on a roll at last.

Commodore definitely won a lot of mainstream respect after the smooth-running springtime premiere of your new all-star product line — Amiga 3000, Workbench 2.0, AmigaVision, and now CDTV (the interactive compact-disk multimedia system which we will cover fully in our next issue). There have been plenty of cover stories in non-Amiga computer magazines and good write-ups in the business press.

Your keynote speech at the World of Amiga NYC show was personable, informative, and straightforward. I enjoyed your silly opening joke about the moose hunters who overloaded their plane and crashed into the tundra immediately after take-off. The punch line was, "Well, we got 500 feet farther than last year." You used this as a humorous plea for patience while real progress goes on at Commodore.

It's great that Commodore is moving ahead in the right direction, such as the solid new Amiga 500 customer support featuring Federal Express pickup and delivery. Some of the most heartening news has been the strong new line-up of top market-oriented executives you brought in. A well-thought-out and promising strategy for success seems to be settling into place.

However, I must tell you I'm still a little worried about Commodore's execution of tactical details. As editor of a national Amiga publication, I've heard some disturbing first-hand stories about Commodore missing out on substantial opportunities because of not following up or not being prepared. I won't go into detail here about these reported foul-ups, because AMIGA Plus is not looking to take cheap shots against Commodore. We all love the Amiga here and we *want* Commodore to be a winner!

AMIGA Plus knows that Commodore has plenty of good sailors as well as some fine new admirals. (Sorry, couldn't resist a bit of nautical jargon.) We just believe it's important to tell you that your grand strategy needs to give first priority to making sure that all person-to-person business dealings are consistently carried out in a way that's worthy of your New Commodore.

Since I'm asking you to do something, I think it's only fair that AMIGA Plus does something for Commodore in return. This magazine intends to become the premier information resource for Amiga-based video, multimedia and graphic arts. Sure, we'll continue to cover the highlights of all types of Amiga uses — from new spreadsheets to new C languages. But our own research indicates that most Amiga owners chose this computer because they're interested in using the best affordable graphics and sound applications. (We're sure that if readers think we're wrong, they'll tell us in no uncertain terms.)

So AMIGA Plus fully supports Commodore's drive to achieve undisputed leadership in multimedia computing. And Amiga users will find right here on these pages the vital information they need for getting the most from Amiga multimedia arts.

Nat Friedland

Nat Friedland
Editor, AMIGA Plus



YOUR LETTERS TO AMIGA PLUS

READER INPUT

HP Deskjet+ Tips

I read with interest the article on the **Hewlett Packard DeskJet+** in your April/May 1990 issue. I've owned one for about nine months and am more than pleased with this little wonder. Author Matthew Leeds wonders why anyone would want the Epson FX-80 Emulation Cartridge. One reason is that some programs use custom drivers, and are likely to include an Epson driver, but not necessarily one for the DeskJet+.

One such program is PrintMaster Plus, from Unison World. Those who use this program with the DeskJet+ and an emulator cartridge may have noticed that the bottoms of printed cards get cut off, because of the printer's mandatory top and bottom margins. To get around this, use legal size paper, and set DIP switch five to the up position. The card prints out fine, and all you have to do is trim the paper.

Another problem is printing out the Amiga's alternate character set, which bears little resemblance to what prints out with the DeskJet+. However, WordPerfect users with the Super_DJ+ printer driver and online access to People Link can download a custom WordPerfect printer driver I wrote to access many of the Amiga's alternate characters, as well as the extended character set built into the DeskJet+. The driver supports both the default Courier and Times Roman 22706R font cartridge. It is available in AmigaZone section 9 as WP-DJ.ARC, at this writing.

Stephen Chambers
Point Pleasant Beach, NJ

Some readers tell us they've had a hard time reaching Creative Focus, maker of the Super DJ 2.0 printer

driver recommended in the Deskjet+ review. This is a one-person company which sometimes falls behind on answering mail to: Box 580, Chenango Bridge, NY 13745. However, Dr. Gerald Hull will now take calls from AMIGA Plus readers on weekdays from 10 am to 1 pm, Eastern time, at (607) 648-4082. Hull also says his brand-new product is DJ Helper, Preferences-type software delivering many control enhancements for all Deskjets — price is \$50, or \$25 for Super DJ owners. — + EDITORS

Premature Funeral

I love my Amiga 1000 and can't afford to run out and buy another machine just because it's newer. Is there any way to plug in expansion memory somewhere? Does anyone make a hard drive that does not need \$3,000 worth of SCSI (whatever that is)? I would like to know how to add these things without securing a second mortgage—or a degree in computer engineering. For that matter, I would just like to know which programs require 512K to run, and which ones require more.

Norm Stevens
Richmond, VA

*The Amiga 1000 is far from dead, and has a number of dedicated supporters. In fact, our New Products section this issue lists several new products that let you upgrade your computer, including two boards that let you replace your existing WCS (the daughterboard) with a new plug-in board that adds room for plenty of expanded memory and the new expanded chip set. These boards are **The Rejuvenator** from Expert Services and the **DVS-Wonder** from Delaware Valley Software. **The ToolBus Expansion***

Chassis from Micro R&D lets you use Amiga 2000 expansion cards—including many hard disk controllers (like those SCSI things) and memory cards. (See New Products for more information.) You will need some sort of controller to use a hard disk with your system, but many hard disks are sold with controllers built in.

We try to keep memory requirements in mind when writing our articles, and mention when a program requires more than 512K. If we don't list memory requirements, you can generally assume the program requires only 512K or less. — + EDITORS

Crowded Drawers

Recently, I purchased a 40Mb hard disk from Supra for my Amiga 1000. As I put more and more into each drawer, usually with CLImate, the icons start overlapping. I end up needing to move some of them to get to the ones underneath to run my older programs. Is there any way to arrange the icons and the size of the drawer window and save them, so the next time I boot up and open that drawer, it will appear the way I arranged it?

David Melling
Chico, CA

*See the Workbench menu options **Cleanup** and **Snapshot**, both found in the Special menu. Cleanup will straighten up the icons in your drawer for you, if the drawer is currently open and the drawer itself selected. Once you have the icons arranged as you want them and the window sized correctly, hold down the SHIFT key while clicking on all the icons you have moved, and choose Snapshot to save their positions. — + EDITORS*



NEWS FROM THE AMIGA COMMUNITY

ALERT BOX

Amiga at Germany's Biggest Fair:

Transputer video, new laptop, MIDI and more...

BY DONALD MAPLE

In case you didn't know, the annual March CeBIT show in Hannover, West Germany is the world's largest computer fair. This year, CeBIT's total attendance surpassed 500,000, with more than 3,500 exhibitors from over 40 countries.

Germany now contributes almost 30% of Commodore sales worldwide. The rest of Europe accounts for 40% of sales, while North America comes to only 20%. Amiga computers account for 50% of worldwide sales, PC compatibles are 30%, while 20% comes from 1 million Commodore 64s sold last year, 300,000 at Christmas alone.

Third-Party Laptop

Gigatronic, a German company making Amiga add-ons — memory extensions and miniature 20Mb internal hard disks — was rumored to be about to unveil an Amiga-compatible laptop. They confirmed that the project is on track.

The laptop will sport a color LCD screen and a trackball. With one megabyte of RAM as standard, the machine will be expandable to two and four megabytes. The eight-layer motherboard will have four slots for these RAM expansions as well as other cards. A 20 megabyte Gigatronic hard disk will also be standard. The rechargeable battery will have a minimum life of eight hours. Finally, the laptop will be able to drive a large-screen monitor as well.

Videocomp's Show-Stealers

Videocomp was definitely the main attraction, dominating the Amiga stand. Its "wall" of video equipment stretched about 50 feet wide with a giant multi-screen display towering above it. Several transputer-reinforced Amigas controlled all these professional video devices. Videocomp produced the hardware:

The **G100** is a professional genlock device for TV studio quality production. Together with JVC BR-S 811 it forms a system for single frame animation which sells for about \$13,000.

VESone is a video mixer with a built-in Digi-View 4.0 digitizer and a genlock. It has both a character generator and paintbox software.

The software to control all those

transputer-boosted Amigas was supplied by ArTTeC, a German company specialising in graphic software for the transputer-based Helios operating system. **Miranim** is an interactive, programmable 3-D animation system employing "algorithmic animation."

Other Eye-Catchers

The **Virtual Motion** camera-control system by Panasensor was another impressive eye-catcher. The stand was transformed into a mini film studio, all under the control of an Amiga. The hardware consists of nine motors, each with its own processor.

The **Imagemaster** program from PRM performs automatic image analysis of any video input. Each identified particle is coded and counted and the program then produces statistical reports including histograms and bar charts. The data can be exported to spreadsheets. For example, when used with a microscope and a digitizer the program can automatically detect different biological viruses.



Just a few bricks in the Videocomp "wall of video" at Hannover's CeBIT fair.

Secret Amigas at Disney World

Booga booga, Unisys!!

During a recent business trip to Florida I heard that the Disney World complex at Orlando was using Amigas at their movie production facilities as well as to control some rides in the

new MGM Studios and Theme Park. I contacted Disney's Public Relations Department and they confirmed that Amigas were in fact being used in the MGM park. Their initial reaction to my request for backstage interviews was enthusiastic.

But then in a couple of days, Disney World PR called back to say they would have to regretfully decline any help for a story about their Amigas. It seems that the complex

has a corporate sponsorship deal with Unisys, pretty much as the "official computer" of Disney World. Other makes of computer are only supposed to be used there if Unisys can't provide a "technically suitable" equivalent.

So I asked the Unisys Orlando office for a waiver allowing Disney World to talk to me for an Amiga story in an Amiga-only magazine. My request was bounced up to senior

management and refused because "such a story wouldn't be in Unisys' best interests." But at least now you know the truth about the Disney World Amigas that Unisys would rather hide. — ED BERCOVITZ

(Our cover story for the next issue is an exciting report on the Amigas that are openly playing a major role at Walt Disney Television Animation's Computer Graphics Department in North Hollywood. — + EDITORS)

Report on D.C. AmiExpo & New York City's World of Amiga

Commodore President announces major changes!

The Spring 1990 AmiExpo at Washington D.C.'s Sheraton Hotel hosted the first organizational meeting of the Amiga Developers Association (ADA). The group laid groundwork for what will hopefully be a unified front of independent developers. Mike Halvorson of Impulse (Turbo Silver, etc.) was elected temporary ADA chairman.

A big crowd-pleaser was Digital Creations' DCTV (Digital Composite Television.) which looks like a breakthrough in video image manipulation. Using sophisticated video compression, DCTV lets your Amiga display broadcast-quality video images with millions of colors. It also boasts frame capture and can convert IFF images (including 24-bit) to full resolution NTSC video.

Active Circuits demonstrated their new 2.0 version of ImageLink, the high-end video graphics hardware-software that controls Mac or PC graphics enhancers such as TrueVisions Targa Board. Output resolution is an impressive 4,000 lines of 24-bit RGB video which can go to a VCR or straight to slides, film recorders, or other platforms. A professional system costs \$10-\$12,000, if you supply your own VCR or film recorder.

A few weeks later at New York's

Pier 92, the Hunter Group held their first all-Amiga show. Coming just three days after Commodore debuted the Amiga 3000 in Manhattan, World of Amiga featured the 3000 with AmigaVision and Workbench 2.0 at Commodore's big new traveling exhibit.

Copperman Keynote

Commodore President Harry Copperman gave the show's keynote speech and delivered some significant

news about Amiga marketing strategy. At the high end, heavy Commodore advertising will flatly claim leadership in the hot multimedia market, challenging Apple and IBM to prove they have anything better than the 3000 with AmigaVision.

Simultaneously, high priority will go towards placing the Amiga 500 into top mass-market retail chains. Copperman also announced that Amiga warranties now cover one year instead of 90 days. Also, Federal Express will be handling an impressive new customer support service for the Amiga 500 — including an 800 phone number and free pickup/delivery for repairs. — GUY WRIGHT & NAT FRIEDLAND

Amiga Big At Music Trade Show



A smoke-spewing Godzilla greeted crowds of musical instrument business professionals at the spring NAMM (National Association of Music Merchants) show in Anaheim, CA — where the Amiga made its strongest MIDI showing yet. Commodore had a major exhibit showcasing multimedia music presentations. Dr. T's and Passport were among the many third-party developers showing Amiga products.

NEW

*DynaCADD, Rejuvenator, DCTV,
Showmaker, Art Department,
DVS-Wonder, and more*

PR DUCTS

By Carolyn Cushman, AMIGA Plus Associate Editor

VIDEO & GRAPHICS

Showmaker

Build continuous, self-running desktop presentations with video, graphics, animation, sound and more with **Showmaker**. Gold Disk's entry in the multimedia market. Use your Amiga to manipulate external devices such as laser disk players and MIDI keyboards. Special timing controls and storyboard capabilities make it easy to put together a polished, perfectly synchronized production.

\$395. Gold Disk, P.O. Box 789, Streetsville, Mississauga, Ontario, Canada L5M 2C2. (416) 828-0913.

Art Department

An image processing program for 8-bit and 24-bit pictures, **Art Department** (\$89.95) from ASDG can even produce magazine-quality color separations compatible with ASDG's ReSEP and Gold Disk's Professional Page. Special palette controls and rendering features make touch-ups easy. Of special interest to 3-D modellers, the program converts 24-bit images to Amiga-displayable im-

ages faster than any of the 3-D rendering packages currently on the market.

ASDG Inc., 925 Stewart Street, Madison, WI 53713. (608) 273-6585.

Aegis Pro/Motion, VideoTitler Upgrade

With **Aegis Pro/Motion** (\$99) you can script animations for Aegis VideoScape 3D without using a text editor to enter coordinates. The interactive graphic environment lets you control as many as 25 objects. Add special effects like Wind Machine, Gravity and Magnetism for realism.

Version 1.5 of **VideoTitler** features 3-D text manipulation, built-in text animation facilities and a redesigned user interface, plus the slideshow program Lights!Camera!Action!. (VideoTitler 1.5 is \$159.95, upgrade \$34.95.)

Oxxi, P.O. Box 90309, Long Beach, CA 90809-0309. (213) 427-1227.

DCTV

Digitize and display full color NTSC video graphics on any Amiga with **DCTV** (price expected to be under \$500). This revolutionary new display and digitizing system uses a video compression system to take the Amiga's RGB output and convert it into full color composite video with the color and picture quality of broadcast TV. The package includes powerful image processing software for digitizing video images and converting IFF images. (Video camera or still-video source required for digitizing.)

Other products for use with DCTV are in the works. **DCTV Paint** is a full-featured true-color paint program. For animators, there's **DCTV Animation**, and the **DCTV-RGB Converter** is an interface for converting DCTV video output into RGB video for re-mixing with other Amiga graphics.

Digital Creations, 2865 Sunrise Boulevard, Suite 103, Rancho Cordova CA 95742. (916) 344-4825.

A new contender in the 3-D modeling field, **3-D Profession-**

al boasts an intuitive, mouse-driven interface, as well as an ARExx-compatible script language for precise control. In addition to lathe, extrusion and conic tools, there's fractal land and tree creation tools, multiple 24-bit rendering techniques, up to 99 colored light sources and models, and built-in surface textures.

\$499.95. Progressive Peripherals & Software, 464 Kalamath, Denver, CO 80204. (303) 825-4144.

Credit Text Scroller

Create smooth-scrolling text screens easily and automatically with **Credit Text Scroller**. Use any text editor or word processor to create your text, then use Credit Text Scroller's point-and-click interface to select fonts, sizes and scroll rates, creating a file in standard ANIM format. Other options include the automatic addition of color and drop shadows.

\$39.95, 1Mb required. Mindware International, 110 Dunlop Street W., Box 22158, Barrie, Ontario, Canada L4M 5R3. (705) 737-5998.

Title Page

More than just a video titler, **Title Page** comes with a font manager, effects editor, pattern editor, slide show maker, and an unusual copper list modifier that lets you adjust colors in individual display lines — the resulting non-standard images are stored in IFF format.

\$199, demo disk \$5. 1 MB chip RAM and hard drive recommended. New Dawn Technologies, 2354 Cote St. Catherine, Montreal, Quebec, Canada H3T 1A9.

AutoScript

Import PostScript drawing files directly into Sculpt-Animate 4D or Turbo Silver with **AutoScript**. Now you can create your designs quicker and more precisely in a sophisticated drawing program like Professional Draw, and then use a 3-D program to animate them.

\$129.95. Computerrall Services, Three North Walnut Avenue, New Hampton, IA 50659. (515) 394-3778.

MathVision

A math and scientific visualization program that supports HAM, overscan, half-brite, image processing, math co-processor, IEEE library and AREXX, **Math-**

Vision (\$197) offers a panorama of gadgets, controls and functions for converting data input to spectacular graphics. Registered owners of Doug's Math Aquarium software can upgrade for \$30.

A library disk for users of Doug's Math Aquarium, **Mandelbrot Variations** (\$24.95) lets users zoom in and out of the Mandelbrot set and fractal objects, using several viewing methods including the Binary Expansion, Continuous Potential, Scaled CPM, differential angle and differential radius.

Seven Seas Software, P.O. Box 1451, Port Townsend, WA 98368. (206) 385-1956.

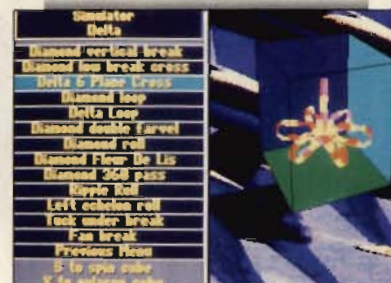
DynaCADD

Easy-to-use professional CAD comes to the Amiga with **DynaCADD**, offering an icon-based interface plus fully-interactive 2-D and true 3-D capabilities. Professional features include auto dimensioning, AGFA Compugraphic fonts, and PostScript output.

\$995. 1Mb, 2 disk drives required; 2Mb, math coprocessor and hard drive recommended. ISD Marketing Inc., 2651 John Street, Markham, Ontario, Canada, L3R 2W5. (416) 479-1800.

count for an opening hand, choose between either contract or duplicate Bridge, and review the last trick and bidding, with a new suggested bid option.

\$39.95. Artworx, 1844 Penfield Road, Penfield, NY 14526. (716) 385-6120, (800) 828-6573.



Damocles, Terminator, Hockey League

Save the planet Eris from collision with a comet in **Damocles** (\$49.95), the sequel to Novagen Software's hit, *Mercenary* — now brought to you by Bethesda Softworks. For arcade action thrills, Bethesda will be bringing **Terminator**, based on the hit movie, to a computer screen near you. **Terminator** is

Bethesda Softworks, 15235 Shady Grove Road, Suite 100, Rockville, MD 20850. (301) 926-8300.

Search Goes On...

Continuing the educational adventures of the nefarious Carmen and her gang, **Where in Europe is Carmen Sandiego?**

Blue Angels: Formation Flight Simulation

sends players to Europe for this latest geographical mystery.

\$49.95. Broderbund Software, 17 Paul Drive, San Rafael, CA 94903. (415) 492-3200, (800) 521-6263.

Data East North & South

Re-fight the Civil War as a captain, sergeant or corporal on either side in **North & South** (\$44.95) from Data East.

Jack Nicklaus' Unlimited Golf & Course Design



GAMES

Blue Angels, Unlimited Golf

A different kind of flight simulator, **Blue Angels: Formation Flight Simulation** (\$49.95) lets you train in 25 authentic maneuvers. For a finale, you get to test your skills by flying with the Blue Angels at an air show. For your golf simulations, **Jack Nicklaus' Unlimited Golf & Course Design** (\$59.95) lets you design your own course and then play on it, or on the

two new courses included. Previous add-on disks from Accolade's Jack Nicklaus series will also work with *Ultimate Golf*.

Accolade, 550 South Winchester Blvd., Suite 200, San Jose, CA 95128. (408) 985-1700.

Bridge 6.0

With significantly improved bidding and play, **Bridge 6.0** lets you set a minimum point

still in development, and the price is not set.

Adding realism to the hit simulation, Wayne Gretzky Hockey, **Hockey League Simulator** (\$39.95) lets you manage your own team, building fantasy all-star teams or recreating past teams.

Data East USA, 1850 Little Orchard Street, San Jose, CA 95125. (408) 286-7074.

Chinese Chess

If you like chess, but would like a little variety, try **Chinese**

INTRODUCING THE
EXCITING NEW

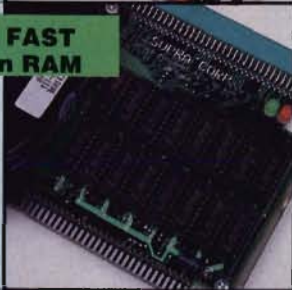
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THE ULTIMATE AMIGA 500 PERIPHERAL!

Now you need only ONE peripheral to turn your Amiga 500 into a powerhouse!!!

You'll get data transfers up to 34 times faster than floppies (on average, 411Kbyte per second reads vs. 12Kbytes on a floppy). You'll be able to use paint, digitizing, and animation programs that need more RAM, and your programs will run faster when they're in your convenient new RAM disk. And to play your favorite games, with a simple flip of a switch, you'll disable autobooting — without removing the drive or opening the drive case!

And if your new powerhouse makes you want even more, you can easily add RAM, Amiga bus peripherals (like digitizers), or SCSI peripherals (like removable media, tape backups, or add-on hard drives). It's EASY with a SupraDrive!!!

Don't miss your chance to have The Best System Around!! Check out the SupraDrive 500XP TODAY!!

Available at your local dealer, or call:

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1-800-727-8772

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

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

Chess, similar enough to Western chess to be easy to learn, yet refreshingly different, with unique rules and pieces including cannons and elephants.

\$32.95. Eagle Tree Software, P.O. Box 164, Hopewell, VA 23860. (804) 452-0623.

Waterloo, Second Front

SSI's **Second Front** is a WWII division-level strategic game on a grand scale, covering the battles of the Russian Front. One or two players command over 150 German divisions and over 200 Soviet divisions. **Waterloo** recreates the battle between Wellington and Napoleon, letting players take either role.

\$59.95 each. SSI distributed by Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171.

Treasure Trap, William Tell

Electronic Zoo's **Treasure Trap** sends you searching for sunken treasure in an undersea maze of traps, puzzles and fish.



Combining graphic adventure with hack-and-slash arcade gaming, **Legend of William Tell** features unique crossbow fighting and a detailed medieval landscape.

\$39.95 each. Electronic Zoo, 3431-A Benson Avenue, Baltimore, MD 21227. (301) 646-5031.

Barney Bear

Barney Bear Goes To School (\$34.95, 1Mb required) lets children help Barney Bear wake up and get ready for school, and then play games or paint pictures in the schoolroom itself.

Free Spirit Software, P.O. Box 128, 58 Noble Street, Kutztown, PA 19530. (215) 683-5609.

Globulus, Plague

Work your way through the colorful 3-D world of **Globulus** (\$29.95), a 25-level arcade action-strategy game filled with thought-provoking challenges. **The Plague** (\$39.95) features large-size characters, brilliant graphics, and plenty of smooth-scrolling action as you fight to stop the mutated carriers of this devastating disease.

Innerprise Software, 128 Cockeysville Road, Hunt Valley, MD 21030. (301) 785-2266.

Security Alert

Test your skills at espionage and stealth in **Security Alert**, a strategy-adventure game that

Chinese Chess

pits you against the latest in high-tech security systems. Work your way through a maze of over 1400 rooms in 15 buildings to find rare treasures. Amiga price not set.

Intracorp Inc., 14160 SW 139th Court, Miami, FL 33186. (305) 252-9040, orders (800) 468-7226.

Passionate Patty

Leisure Suit Larry meets his match in his wildest adventure yet, **Passionate Patty in Pursuit of the Pulsating Pectorals**, a swinging, sex-changing game

with just a click of the mouse.

\$39.95. Lawrence Productions, 1800 South 35th Street, Galesburg, MI 49053-9687. (800) 421-4157.



The Plague



Future Wars: Adventures in Time

that lets you play as both Larry and Patty.

\$59.95, hint book \$9.95. Sierra On-Line, P.O. Box 485, Coarsegold, CA 93614. (209) 683-4468.

Shark Attack!

Endorsed by the Australian golfing champion known as The Great White Shark, **Greg Norman's Shark Attack!** makes you feel like you're really out there on the fairway.

\$39.99. Virgin Mastertronic, 18001 Cowan, Suites A & B, Irvine, CA 92714. (714) 833-8710.

Katie's Farm

Second in a line of No Words Software for young children, **Katie's Farm** takes kids on a tour of cousin Katie's farm, where animations and digitized sound bring the country to life

Odyssey Software

Lunar Rescue uses digitized NASA footage to add realism as you rescue stranded astronauts from the moon — while learning about the solar system. Or head to the stars for battle in **Space War**, a fast-paced arcade action game. In the **Super Games Pak** you get three slick arcade games for one low price — **DEATH-BOTS**, **JAILBREAK** and **BYTE-MAN**.

\$39.99 each. Odyssey Software, P.O. Box 367, N. Eastham, MA 02651. (508) 240-2317, (800) 323-2317.

Future Wars

A graphic time-travel adventure, **Future Wars: Adventures in Time** will send you from the present to the Middle Ages — in the middle of an intergalactic plot to take over the Earth.

\$49.95. Interplay, distributed by Mediagenic, 3885 Bohannon Drive, Menlo Park, CA 94025. (415) 329-0800.

APPLICATIONS

Ready Robot Club

The **Ready Robot Club Disk Magazine** is a bi-monthly, two-disk system aimed at kids from kindergarten through sixth grade. The programs include science experiments, riddles, stories, games, and much more. A freely distributable demo issue is available for only \$5. Subscription rates are \$28 for six months (three issues) or \$48 for one year (six issues).

Signs Etc. by D. Knox, P.O. Box 628, Carmichael, CA 95609. (916) 944-4282, orders (800) 634-2952.

CoComm, Electron, Board Master

Navigate the different online services with new ease with **CoComm** (\$39.95), a serial communications program that lets you configure a uniform point-and-click interface that will work with any online service or network.

A stand-alone schematics generator for electronics experi-

menters and hobbyists, **Electron** (\$39.95) lets you create professional-looking schematics easily with its object-oriented editor and the hundreds of common components on disk.

Board Master (\$99.95) creates printed circuit board layouts, with grids and other special features designed to make boards easier to design.

Black Belt Systems, 398 Johnson Road, RR-1 Box 4272, Glasgow, MT 59230. (800) TK-AMIGA, (406) 367-5513.

ColorVision

The **ColorVision Color Planning System** lets paint-store customers pick their colors on computer, coloring digitized interiors and exteriors with just a click of the mouse. The software displays the store's available colors, and prints out the customer's final selection complete with ordering data.

ColorVision, Colwell/General, P.O. Box 329, Fort Wayne, IN 46801. (219) 424-5000.

SoftPanel

Designed for use in product development, **SoftPanel** consists of a four-by-eight array of 32 software-controlled light emitting diodes (LEDs) that can be mounted on the front panel of an Amiga 2000 or 2500. As a debugging tool, programmers can use the LEDs as status indicators by adding simple peeks and pokes to their programs to turn the lights on or off.

\$199.95. Black Belt Systems, 398 Johnson Road, RR-1, Box 4272, Glasgow, MT 59230. (800) TK-AMIGA, (406) 367-5513.

Corwyn Data Storage

The **Super Stream** series of tape storage units let you backup and store large amounts of data quickly and easily. Just plug the unit into a SCSI adapter and use the easy-to-follow QuickArc software to backup and restore your data on tape. External models come in four sizes, 60Mb (\$999), 150Mb (\$1,350), 1.2 gigabyte (\$4,990), 2.2 gigabyte (\$7,500). Internal models are available for all but the 2.2 gigabyte unit, and cost \$100 less.

An erasable optical drive with a 570Mb removable disk, the **OptiStor 600** (\$4,899, extra pre-formatted disks \$399) can be used as a bootable hard disk drive or as a backup device that works just like a floppy drive — only faster and 700 times larger. The **Storage Solutions 42R** removable hard disk system (\$1,350, dual unit \$2,599, extra cartridges \$159) offers the mass storage and speed of a hard drive, while its removable 42.7 megabyte cartridges provide the versatility of a floppy. The **CI Hard Pro** series of high-performance SCSI hard disk systems is available in capacities of 20Mb (\$799), 180Mb (\$2,599) and 1.2 gigabytes (\$9,999), with a seek time 15 milliseconds.

Corwyn International, 977 Seminole Trail Trail, Suite 275, Charlottesville, VA 22901. (800) 542-8505.

Mega-Midget Racer

Speed up your Amiga with the **Mega-Midget Racer**. Using the latest in surface-mount technology, this board lets you plug a 68030 accelerator into your Amiga 500 or Amiga 2000 68000 socket. The 68000 can then be resocketed on the board, assuring compatibility with all your programs. An optional 68881/882 math co-processor runs at speeds up to 50 mHz, racing through those number-crunching applications. Mega-Midget Racer without processor \$675, with 20 mHz 68030 \$795, 33 mHz 68030 \$1095; 20 mHz 68882 \$209.

CSA (Computer System Associates), 7564 Trade Street, San Diego, CA 92121. (619) 566-3911.

DVS-Wonder

Amiga 1000 owners can install the upcoming Enhanced Chip Set and Kickstart 2.0 ROM thanks to **DVS-Wonder**, a simple plug-in board that requires no soldering. The DVS-Wonder Kit comes as a bare board with PAL chips for \$124.95. An assembled unit complete with 1Mb RAM, Enhanced Agnus, Kickstart 1.2 and 1.3 ROMs, battery backed-up clock and audio filter switch is priced at \$399.95.

Delaware Valley Software, P.O. Box 2007, Upper Darby, PA 19082. (215) 446-9227.

Rejuvenator

Bring out the best of your Amiga 1000 with the **Amiga 1000 Rejuvenator Expansion Board** from Expert Services. This simple plug-in board adds 1Mb of memory, a clock, the new 1Mb Agnus chip and a video slot (currently configured for the FlickerFixer) to your A1000. You can also add your own enhanced Denise and Kickstart ROM. Fully populated board (without 1.3 ROM, Denise or Paula chips) is priced at \$499.95.

Expert Services, 5912 Centennial Circle, Florence, KY 41042. (606) 371-9690.

HARDWARE

FutureTouch

Let your fingers do the pointing (and clicking) with the **FutureTouch** touch screen. Invisible software drivers and an unusually clear screen let you forget it's there, but once hooked up to your monitor the FutureTouch screen works with any program that accepts mouse input.

The do-it-yourself screen kit for your 13-inch RGB monitor costs \$895, or you can buy the monitor with screen installed for \$1,195. A 19-inch RGB monitor with screen is \$3,390.

Amigo Business Computers, 192 Laurel Road, East Northport, NY 11731. (516) 757-7334.

LAN Rover

A high-performance Ethernet

board for Amiga 2000, 2500 and 3000 computers, ASDG Incorporated's **LAN Rover** comes complete with a well-documented general software driver, but without the expensive, upper-layer software usually bundled with such boards. In an agreement with Syndesis Corporation, the LAN Rover will be part of Syndesis' **TSSnet Amiga-DECnet** networking system, which links Amigas to minicomputer and mainframes from Digital Equipment Corporations's DECnet

ASDG Inc., 925 Stewart Street, Madison WI 53713. (608) 273-6585. Syndesis Corp., N9353 Benson Road, Brooklyn, WI 53521. (608) 455-1422.



**Microspeed's
AmTRAC**

AmTRAC

A mouse alternative with an ergonomic design, the **AmTRAC** trackball requires less space than a mouse, yet provides smooth, precise control. About three inches wide, the trackball has a sloped case with wrist-rest to eliminate fatigue, and three conveniently-placed buttons surrounding the ball.

\$99. MicroSpeed Incorporated, 44000 Old Warm Springs Blvd., Fremont, CA 94538. (415) 490-1403, orders outside CA (800) 232-7888.

AdRAM, Advantage 2000

Add memory and a battery-backed clock to your Amiga 500 with ICD's AdRAM 500 series. The **AdRAM 505** (\$69.95) simply plugs into your Amiga 500's A501 expansion slot, adding 512K of extended RAM. With **AdRAM 520** (\$149.95), you can add up to 2Mb of RAM, without using the internal expansion bus or needing any software modifications. The **AdRAM 540** (\$159.95) adds up to 4Mb. For the Amiga 2000 or 2500, the

AdRAM 2000 (\$199) series lets you add 2, 4, 6 or 8 Mb of fast RAM to your computer, with a true 6Mb mode. (Prices for boards only, call for current prices including RAM chips.) Also for the Amiga 2000 and 2500, the **Advantage 2000** (\$199.95, including mounting bracket, cables, software) is a high-performance SCSI hard disk controller that provides full support for Syquest and other removable media drives at no extra charge.

ICD, 1220 Rock Street, Rockford, IL 61101. (815) 968-2228, orders (800) 373-7700.

AmigaNET

Network your office with **AmigaNET**, a fully-functional Ethernet networking system. With this hardware and software combination, you can connect a group of Amiga 500s and 2000s

so users can share devices such as hard drives, printers, modems and screens. \$700 per board, includes cables, connectors and software.

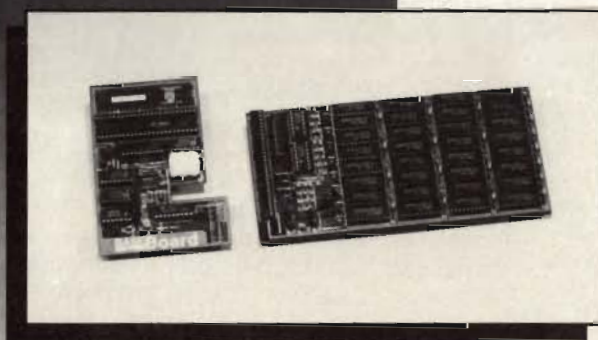
Micro-PACE, Commercial Park West, Suite C, 604 N. Country Fair Drive, Champaign, IL 61821. (217) 356-1885, orders (800) 362-9653.

Toolbus Expander

Use the Amiga 2000's internal expansion cards on your Amiga 500 or 1000 with a **Tool-Bus Expansion Chassis** (\$269.95) — the TB-2122 for the Amiga 1000, or the TB-2522 for the 500. With the addition of the **TBE-2500 Bus Expander** (\$19.95), you can install the TB-2522 away from the A500's keyboard.

Micro R&D, 137 N. 7th, Loup City, NE 68853. (308) 745-1243.

4 MEGABYTE MEMORY BOARD



4 MEGABYTE MEMORY BOARD FOR THE AMIGA 500

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BY HARV LASER, WITH STEVE TIBBETT

GURU BASHERS

Amiga users' technical questions answered here!

Reviving Dead Disks

Q: *I kept a number of my Amiga disks that went bad and reported Read/Write Errors. What can I do to salvage at least some of these disks' contents?*

A: The following three programs can help you recover data when errors develop on a disk that you didn't back up.

DiskDoctor comes on your Workbench C: directory and runs only from the CLI. While earlier versions of this program should be avoided, the Workbench 1.3 version has been improved and often can recover trashed data. Keep in mind that DiskDoctor writes directly to the damaged disk and could possibly make matters worse. So try to back up your bad disk if possible, and use DiskDoctor on the copy. After DiskDoctoring a floppy, copy all its still-useful files and then re-format the disk or throw it away.

DiskSalv is a freely distributable program written by Dave Haynie of Commodore. Unlike DiskDoctor, DiskSalv does not write to the scrambled disk. Instead it analyzes the damaged structure and tries to recover data onto another disk or RAMdisk. DiskSalv has many switches and options for recovery. It can even "undelete" files you accidentally erased, if you haven't already written other data to that disk.

FixDisk is a shareware program by Werner Gunther which sports a complete Intuition interface. FixDisk can often go where DiskDoctor and DiskSalv cannot and with its gadgets

and requesters, it might be easier for the novice to use. If you ever had AmigaDOS report that it couldn't validate a disk because of a "Key already set" error, try FixDisk.

Both DiskSalv and FixDisk can be found on national online networks like People/Link and CompuServe, on your local bulletin boards, on the Fred Fish public domain disks, and from many user groups. A convenient source is the **DevWare** AMIGA Plus Public Domain Library (Disk Utilities, WB12) advertised in this issue.

Script Executes

Q: *Sometimes when I am executing AmigaDOS script files from a write-protected disk, I get a message like:*

*Can't open workfile
"T:Command-00-T04"*

Yet some script files execute just fine on a write-protected disk. When does the Execute command need to be able to write to the disk?

A: Under Workbench 1.3, the Execute command creates a file in your T: (temporary) directory whenever your script calls a different script. An easy way to get around this if you need to chain scripts from a write-protected disk would be to ASSIGN T: RAM: — because your temporary files are deleted automatically when no longer needed, and you don't waste any memory.

Can't Delete File

Q: *I created a file named Amiga+ on one of my disks and now I can't get rid of it! I typed DELETE AMIGA+ and the CLI stopped until I hit RETURN,*

when I got the message:

*Could not get information for
"AMIGA" — object not found*

A: Whenever the CLI gives you a hard time working with a file, the best thing to do is to put quotes around the filename. This works for filenames with spaces in them, and it works for filenames that match keywords like ALL which Delete uses. If you had a file called: all — or a file called: quiet — you'll get a "No file to delete" message.

Another interesting thing about your question is why the CLI just sat there when you typed DELETE AMIGA+ — until you pressed RETURN and got an error message. This is actually a little-used feature of the CLI that lets you type in a number of commands, but not execute anything until you've entered them all — like typing a script file.

Putting the plus sign on the end of any CLI command means: "Load this command, but don't execute it yet. Wait until I press RETURN." As long as all your commands all end with the plus sign, nothing will be executed until you press RETURN on a line without a plus. Then all commands will be carried out in the same order you typed them. ■

Harv Laser is Senior Chairman of People/Link's AmigaZone Club and a frequent contributor to AMIGA Plus. Steve Tibbett is an Assistant Chairman of the AmigaZone, and author of many popular Amiga utility programs including VirusX, ScreenX, TaskX and others.



GAME REVIEW COLUMN BY GUY WRIGHT

QUICK SHOTS

Altered Beast, Risk, Dragonscape, Budokan, Nuclear War

Altered Beast

++++

"Awaken, dead warrior!" cries Zeus, God of Thunder. And thus begins your battle through the underworld. To rescue Athena, daughter of Zeus, from the demon god Neff you must pass through five hellish levels filled with vicious beings. Demons, crocodile worms, grave masters, zombies, creepers, venomous monsters and finally Neff himself will do everything in their unearthly power to keep you from reaching Athena. But you are more than just one being. Locked within you is the power to transform from barbarian strongman to Werewolf, Werewolf to Weredragon, Weredragon to Weretiger, Weretiger to Werebear. All you must do is catch three spirit balls to effect a transformation, but those spirit balls are locked within the bodies of three-headed wolves.

Altered Beast is a very good copy of the popular arcade game. You control your character with the joystick — jumping, moving, kicking, punching. As you transform into different beasts your punches may turn into flaming fireballs, or electric fields, etc. You get to learn each beast's special skills (all during nonstop mayhem, of course). As straightforward punching, kicking and blasting games go, this is a pretty good one. Graphics are very good, action and joystick response is fast and smooth, and the sound is well done. There isn't any exploration of each level, but learning the skills of the various werebeasts and finding the right techniques for destroying different adversaries will

require some thinking.

Dragonscape

++++

Chaos has scattered magic relics over the vast landscape of Tuvania. The king asked you to return the relics to their original places and of course you agree. If you had a top-of-the-line fighting dragon this quest would be a snap. However, all the good dragons have been taken, leaving you with Garvon. Now Garvon may not be the brightest mythical beast but he is fast and can spout flames with the best of them. So

**Dragonscape
is what an
arcade game
should be.**

mount up and prepare to search the 400 screens filled with traps, puzzles and 100 different forces of chaos.

Dragonscape is more than a shoot-everything-that-moves arcade game. On each level you must locate objects and return them to their proper places. For example a battery gets returned to the flashlight, a disk goes to the computer, etc.. While you fly around searching for objects and their proper places you are attacked by all manner of flying, zipping, buzzing, gyrating objects that will sap your strength. Firing bursts of flame will also lower your strength. Fortunately, a power disk follows you around

where you can replenish your dragon. Unfortunately, the disk is a little shy at times and it is also susceptible to dragon breath so you have to be careful where you shoot. The only flaw in the game is the poor documentation. They forgot to mention things like pausing the game, saving, turning off the music, etc. The graphics and sounds are very good and the map scrolling is fast and smooth. **Dragonscape** has lots of action, puzzles to solve, and more levels than you could ever complete. This is what an arcade game should be.

Risk

+++1/2

If you ever played the classic board game **Risk**, you already know how to play the computer version. **Risk** is a game of world conquest involving deals, battles, reinforcements, and eventual elimination of all but one player. You start by dividing the 42 territories on six continents among the players. You then place armies in those territories that are important to you. By attacking and winning battles, you try to control as many territories as possible. At the beginning of each turn you are awarded reinforcements, depending on the number of territories you control. Bonus armies are given for controlling complete continents. By defending your borders and expanding you get stronger and stronger, until you can wipe out the other players.

The board game **Risk** has been popular for many years and the computer version does not detract from the original as far as enjoyment and

playability. However, this implementation is not very well done. The graphics are fine (there is next to no sound), but moving around the map is awkward, not all of the keyboard commands work the way they are described in the manual, and play can be slow. There are a number of options available to let you speed up some things, change style of play, and there are a number of variations you can pick from. Finally, the most important feature you don't get with the board game is the ability to play against the computer. Die-hard computer strategy game players may find Risk a bit simple but the core of the game is sound and the few problems are minor annoyances. There is a good reason that Risk has remained a popular board game for so long, it is just plain fun to play.

Budokan

+++1/2

Welcome student, you are about to enter the Tobiko-Ryu Dojo to study bujutsu, the art of war, and budo, the path of life. Here you will become proficient in karate, kendo, bo, and nunchaku but fighting skill is not enough. You must also learn to build and focus your life force, ki. You will start by entering one of the four training halls where you may practice alone or spar with instructors at three skill levels. When you feel confident enough, you can spar with other students (human or computerized.) When you feel that you have a good grasp of all four fighting techniques you can enter the public tournaments. There you will face a series of opponents. Each one more difficult to defeat than the last — and some of them will be using weapons and techniques not taught in your dojo.

Budokan allows a wider variety of moves and actions than the standard 16 (eight joystick directions without the fire button and eight more with the fire button.) Most moves are accomplished with a series of joystick, keyboard, or keypad actions. For example, to perform a jumping one-



Budokan

handed high strike in Kendo with a joystick, you move the joystick up, press and hold the fire button, then move the joystick to the upper left corner. This move-fire-move system gives you many more possible actions. Each style has a unique set of 25 or more moves. While complicated at first, a little practice makes perfect.

Playability is very good. Response time is fast and solid. The graphics are fine and the sound is fair. You probably won't find the spiritual meaning of life in Budokan, but you will find a pretty good martial arts arcade game.

Nuclear War

+++

Now that it looks as if global peace is about to break out, it is nice to know that you can still go back to the good old days of **Nuclear War** scares. Yes, you can experience all the thrills of nuclear stockpiling, long range bombers, ICBMs, propaganda campaigns, and half-mad dictators with their fingers poised over the buttons that will bring global destruction. Pick four neighbors from a list of lovable crazies that include the Ayatollah Kookamamie, Ronnie Raygun, Ghanji, Tricky Dick, Infidel Kastro and others. From then on it's one big happy family. Sure there are the occasional tiffs, but what's a little nuclear strike between friends, right? All you have to do is survive.

You control all your actions from the Diplomacy Terminal. (There is about as much diplomacy in this

game as there is between Iran and Iraq.) Your actions are limited to building weapons, launching propaganda campaigns, readying missiles or bombers with warheads, attacking a specific city, or deploying a nuclear defense system. Once you select an action, you go to the Global Monitor Screen to watch the mayhem. When a nation is wiped out they launch a final strike, lashing out at everyone (who isn't already toast.) The graphics are pretty good and so is the sound. The game and manual are both filled with tongue-in-cheek humor, but actual play quickly loses appeal (destroying the world gets boring after a while.) The Doctor Strangelove approach is fun but there isn't quite enough strategy to keep you going for very long. A good idea that could have been better. ■

ALTERED BEAST \$49.95
Sega (Distributed by Electronic Arts),
1810 Gateway Drive, San Mateo, CA
94404. (800) 245-4525. Requires 512K
and joystick, copy-protected, one or two
players.

RISK \$39.99
Virgin Mastertronic, 18001 Cowan, Suite
A, Irvine, CA 92714. (714) 833-8710.
Requires 512K, mouse, copy-protected,
one to six players.

DRAGONSCAPE \$39.95
Free Spirit Software, P.O. Box 128,
Kutztown, PA 19530. (215) 683-5609.
Requires 512K and joystick,
copy-protected.

BUDOKAN \$49.95
Electronic Arts, 1810 Gateway Drive, San
Mateo, CA 94404. (800) 245-4525.
Requires 512K, joystick or keyboard,
key-word lookup protection, one or two
players.

NUCLEAR WAR \$49.95
New World Computing, (Distributed by
Electronic Arts), 1810 Gateway Drive, San
Mateo, CA 94404. (800) 245-4525.
Requires 512K, mouse, key-disk
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GAMES GALAXY

New Games Reviewed: *Drakkhen*, *Hoyle's Book of Games*

Drakkhen

++++1/2

Anhak Drakkhen Agbnahir Hurthd. A slow chant of warning fills your being as you begin playing Data East's incredible new role-playing game. Featuring realistic 3-D graphics, awesome sounds, and fantastic gameplay, **Drakkhen** pits you against an island full of fanatical dragons ready to invade the human realm. You control a group of four adventurers seeking eight jewels which could restore peace and prosperity to both mankind and dragonkind. So tread the many winding paths on the island of Drakkhen, but *don't* hit the grave-stones!

The way you set out to fulfill your quest is magical. Your party glides through a 3-D landscape as trees, rocks, and paths smoothly flow by. The terrain changes as you travel through the island. You'll cross plains, forests, wastelands, and blazing deserts. Vivid accompanying sounds enhance the atmosphere. You'll cross the plains listening to a chorus of crickets, or enter the desolate lands and be greeted by a howling wind.

When you gain entrance to any of the numerous castles, palaces, or other buildings, the rooms are shown cross-cut from a slightly elevated side-view. The four characters are independently controlled through an easy point-and-click interface. To move, simply click on your chosen character and then click on the destination. If you see an object worthy of interest, or a non-violent creature, use the nine-button control panel containing

simple commands such as attack, examine, greet, or talk.

Drakkhen's buildings are where you'll find the clues, objects, other characters, and eventually the jewels. Most of the experience points gained by fighting are gained in the buildings too. Combat encounters happen sud-

denly and usually result in a melee accompanied by howl sounds of slashing and growling. As a player you don't have much control over the battles. There is only one mode of fighting, where all your characters in the room fight automatically using their current active weapon or spell.

Drakkhen's rooms hold clues and objects that are vital to your quest. Unfortunately, the most common encounters are a bit on the sticky side!



Pass cards carefully to this tricky crew — playing Hearts or any of the Hoyle games against these characters from other Sierra games can be a challenge.



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Plotter Support

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Plotter drivers can be customized for DynaCADD using MAKEPLOT utility. Plots can be generated at a constant 1:1 ratio or a drawing can be automatically scaled to any degree. Plotting extents can be defined using drawing page, current window or database extents. Plotter and Printer output can be directed to the serial port, parallel port or to a disk file.

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The battles, as well as everything else, take place in real time — there are no "battle rounds".

When I first began playing Drakkhen I was really at loss about what to do. However, searching a nearby castle ended my confusion. The local dragon prince gave my band a little task to perform. During

**Even stargazing
isn't safe — the
constellations
themselves turn into
howling beasts and
attack the player.**

this mission I was entrusted with another mission, which eventually led me to my third challenge, and so forth. In order to complete the game you must solve a number of mysteries in a set order. Each individual mission gives you enough clues for starting the next mission. This might sound dull and tedious, but in reality it is just the opposite — the sheer number and challenging nature of the missions kept me pleasantly puzzled for a long time. Also, the quest is difficult enough to keep you and your characters on their toes during every moment of the game. Once you successfully finish exploring a castle (and after gaining an experience level or two) you head out for your next mission, barely prepared for it.

Drakkhen is a game of rare feeling and it features a powerful set of Amiga effects. When I began playing, I just stood watching the sun disappear behind the horizon amid a beautiful copper list sunset. The following blue-black night sky slowly filled with stars. Not that glancing at the stars is a safe exercise — sometimes the constellations themselves turn into howling beasts and attack the player. However, Drakkhen is not swallowed by the special effects (as other original Amiga games are). Rather, the ef-

fects complement the gameplay. You begin your quest with a limited amount of information, but soon you become completely involved with the intense power struggles of the dragonlords. The civil war waged by these powerful entities opens a way for you and your band to go about seeking the jewels.

The complexity of the quest combined with the eerie effects make Drakkhen into an enchanting adventure. It is guaranteed to be a rare treat for all adventure gamers, and for most other gamers as well. There is one setback, however — its documentation. The skimpy manual contained information so poorly organized that I found out more from the back of the box. Fortunately the package also includes a short novella, which greatly enhances the setting for your adventure. Drakkhen consists of two copy-protected disks. The character disk includes a utility for creating your own adventurers and character disks, so you can save games without damaging an original disk.

— AKI RIMPILAINEN

Drakkhen \$59.95
Data East USA, 1850 Little Orchard Street,
San Jose, CA 95125. (408) 286-7074.

HOYLE'S BOOK OF GAMES

+++

Computer card games have been available for some time, many in the public domain, so for **HOYLE'S Book of Games** (Volume One) Sierra On-Line added lots of little extras. This two-disk package contains six different games — Cribbage, Crazy Eights, Gin Rummy, Hearts, Klondike Solitaire and Old Maid.

You get nine different decks to choose from, and a gallery of 18 different characters to play with — many from other Sierra games (Leisure Suit Larry, etc.). You can even play against the programmer or his cute little girl. A bust of each player appears on the screen, where you can watch the characters' faces.

Unfortunately, they all seem to use the same animated smirks, snarls and astonished stares.

The games are all quite playable, though often slow and sometimes awkward. Hearts runs a bit slow, as each player carefully considers each move. Gin Rummy was my favorite, particularly when played against a

**You can play
against any of
18 different
characters — even
the programmer or
his cute little girl.**

skilled opponent. Cribbage seemed particularly awkward, but my only real complaint is that the computer counts points for you, so your opponent can't gain by your mistakes. The addictive Klondike provides your standard red-card-on-black solitaire game, using gambling rules and keeping a tally of money won or lost. Crazy Eights plays well, but Old Maid should be particular fun for kids. Each card has a little animation, and the game's loser gets literally turned into an old maid onscreen — even the human player.

I enjoyed playing all the games, but I can't say all the special trimmings really work. The varied music loses its charm after awhile, and the garishly colorful graphics are a little blocky, not outstandingly attractive. It's nice to have a computer opponent with personality, but generally I'd rather have faster play. Still, if you like card games, and don't want to bother with searching through public domain versions, the HOYLE collection provides a solid selection of challenging games for the whole family.

— CAROLYN CUSHMAN ■

HOYLE'S BOOK OF GAMES \$34.95
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CA 93614. (209) 683-4468



COLUMN BY CURT KASS

HARD COPY OUTPUT

Stop Color-Printout Blues: Get the colors you want on paper

If you create graphic art with your Amiga and make color printouts, you have almost certainly discovered how difficult it is to print the precise colors you see on your monitor screen. Now, color matching software can help you stop printing green faces.

Computer screen color seldom matches printed output. Different printers, inks, and even the weather can seriously affect your printed colors. To complicate matters even more, individual monitors display colors differently. You could adjust your monitor to a video color standard, but that has generally required expensive test equipment and video experience. (*Software now being developed by the Philadelphia Video Lab will greatly simplify this process and provide much better color control for Amiga image transfers to video cassettes or photo slides.* — + EDITORS)

Fortunately, when you're just trying to match your *printer* output (not video output), precise monitor colors aren't really necessary. All you need

is to select colors that work best with your particular printer, no matter what they look like on your monitor. (Often I choose an output color based on the look of its dithering pattern, as well as its color match to my screen color. See my column in the June/July 1990 *AMIGA Plus*.)

Three color matching programs are now available to help Amiga graphic artists produce high-quality results — **Pure Color** from Graphic Design Studios, my own **Palette Printer** from Ontological Survey, and the newly released **Ham It Up!** from Delta Graphics. With this software you print charts on your own printer, showing each printed color's RGB setting. This makes it much easier to pick very close matches between your monitor display colors and your printer colors.

I compared each of these programs on two well-known color inkjet printers — the Hewlett Packard PaintJet and the Canon PJ-1080A. **Pure Color** and **Palette Printer** both contain standard IFF files that can be loaded and printed, using any paint program. You'd need a HAM paint program to alter **Ham It Up!**'s files, but you can view and print the charts right from the **Ham It Up!** program.

Pure Color

Pure Color was designed primarily for the Canon PJ-1080A and compatibles. **Pure Color** contains 23 IFF files that print three sets of color charts with the RGB settings listed below each color swatch. Chart "a" prints the "top 32" colors that **Pure Color** feels are most acceptable for professional purposes when printed on the

Canon PJ-1080A, Quadram Quadjet, and Radio Shack ink jet. (All three of these similar printers have been discontinued, but the inexpensive and reliable 83 x 84 dpi (dots per inch) Canon PJ-1080A is still widely available via mail order.)

Charts "b" through "s" print 32 color swatches per chart in a continuous series of color ranges that average 12 to 16 steps of changing values and saturation. The charts lack any specific color range order, so you must view all the charts to find specific colors. Four additional charts called the dot-pattern palettes print dithered patterns that recreate the dot-patterns of screened artwork on the Canon PJ-1080A, although the patterns get lost on the PaintJet (as they would on other printers of different resolution).

Palette Printer

Palette Printer outputs 850 colors selected to enable any color printer to print solid-appearing color selections and color or value ranges. 30 IFF charts are arranged to group color families, making it easy to find a color. Each primary and secondary color includes a high to low value range chart and several color-to-color range charts. Additional basic color mix charts like Sea, Sky, Earth, and Gold group popular ranges. Charts like the High to Medium values repeat some color swatches to create complementary color range runs to help in rendering effects like shading and highlighting.

All color swatches were selected from the Amiga's 4,096 color palette after being printed on several printers to ensure that a useable percentage

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will dither well on any printer, regardless of its resolution. As in Pure Color, RGB settings are clearly labeled below each color. Palette Printer also includes a chart on the front page of the brief manual to convert RGB settings to hexadecimal settings (0-9, A-F) used in some paint programs and YMC (yellow, magenta, cyan) percentages for use in electronic publishing programs like Gold Disk's Professional Page.

Ham It Up!

Ham It Up! is the only one of these programs that comes on a bootable disk (Workbench 1.3) and operates via icons and menus. You don't need to have a HAM paint program to print your Ham It Up! charts, but you do need at least one megabyte of memory. Ham It Up! displays and prints all 4,096 Amiga colors in 16 HAM charts of 256 colors each. Additionally, the Ham It Up! Extras disk contains a very large HAM file called SuperBlue, a poster layout of all 16

color files, requiring the 1Mb Super Agnus chip to view.

A slide show feature displays all 16 screens one after another. These same screens can be loaded individually and printed in four sizes, from quarter-page to whole-page, using Ham It Up!'s pull-down menus. (I printed 10% larger charts by using Electronic Arts' Deluxe PhotoLab and custom preference settings.)

Unlike Pure Color or Palette Printer, which have white screen backgrounds, Ham It Up! files have black backgrounds. This looks slick on-screen, but wastes time and ink.

Finding the RGB values for your colors is a little more tricky with Ham It Up! The charts display colors in arrays of 15 columns and 15 rows, with the corresponding red and green (RG) settings marked at the end of each column and row. Each chart is labeled Blue 0 through 15, with the chart number indicating the B setting. As you go through the Ham It Up! charts from 0 to 15, you see the same

Red and Green value settings step up in Blue value. With all these colors to choose from, it may take time to narrow down your choices, and then figure out the RGB settings.

Hammond Goes Postscript

Now you can have your images digitally recorded on 35mm slide film by a color PostScript film recorder, thanks to Hammond Photographic Services, an established Amiga slide service. (See my review of four slide services in the February/March AMIGA Plus.) IFF Paint or HAM graphics will also transfer as highly-resolved images with this upgraded service.

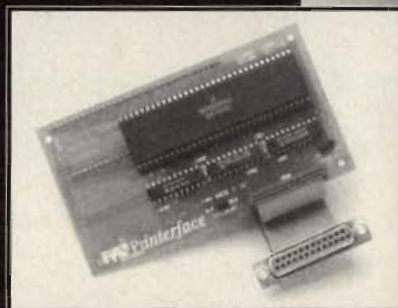
Hammond's film recorder renders your image using a grid of 4,096 x 2,732 pixels on the face of a 35mm slide, a much higher resolution than you get with a hi-res 640 x 400 Amiga bitmap, and much higher than what you see on an Amiga 1084 monitor. The more clearly-defined pixels tend to create a tiled or mosaic appear-

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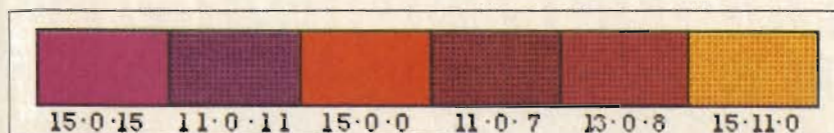
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Pure Color chart "a" printed on Canon PJ-1080A with ordered dithering, 83 X 84 dpi.



Palette Printer chart #1 printed on HP PaintJet with ordered dithering, 180 X 180 dpi.

ance, especially with non-PostScript files. Since your file's color values are read numerically by the digital recorder, the service has *no adjustment* control over color. Standard or overscan resolutions can be processed, but standard is highly recommended. These and other specifications and tips are all well-documented in the service's free literature.

If you work in Gold Disk's Professional Draw and Professional Page, you can create color graphic layouts with no scan lines or aliased jaggies. However, until now the only way to take full advantage of such high-quality output has been to produce four-color process separations, which

are prohibitively expensive to print. Now you can capture the high resolution potential of PostScript in color at an affordable price. One PostScript page converted to 35mm slide is \$50, two pages are \$30 each, and the cost goes down incrementally to 20 pages and over at \$8 each. ■

Curt Kass is a computer graphics consultant, artist and designer. He teaches on the college and elementary levels in Milwaukee.

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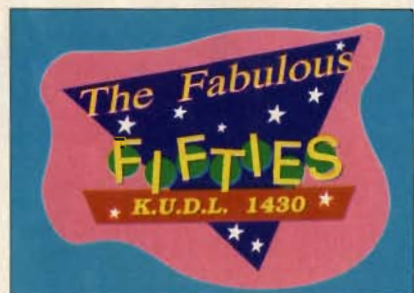
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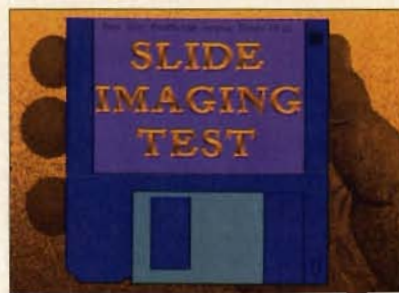
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Ham It Up! chart "Blue 1" printed on HP PaintJet with ordered dithering, 180 X 180 dpi.



PostScript logo created by Kip Hammond using Professional Draw and Professional Page.



IFF test image from Feb./March 1990 AMIGA Plus survey, imported into Pro Page where black type was added.

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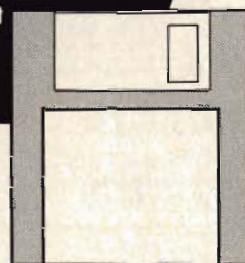
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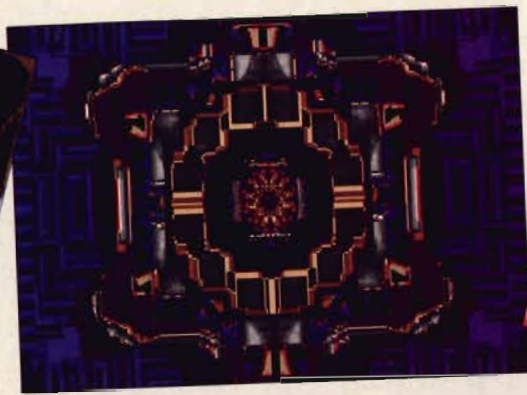
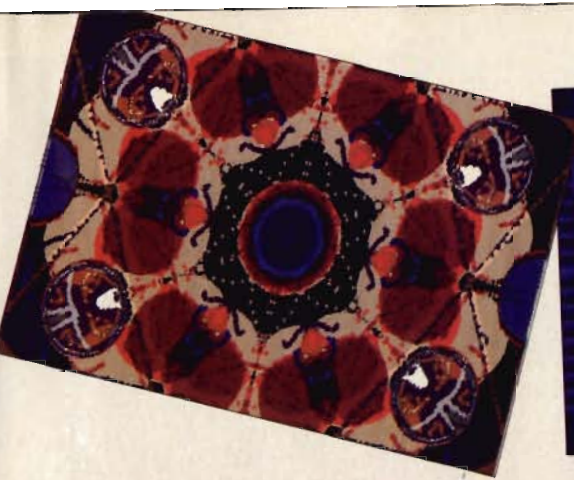
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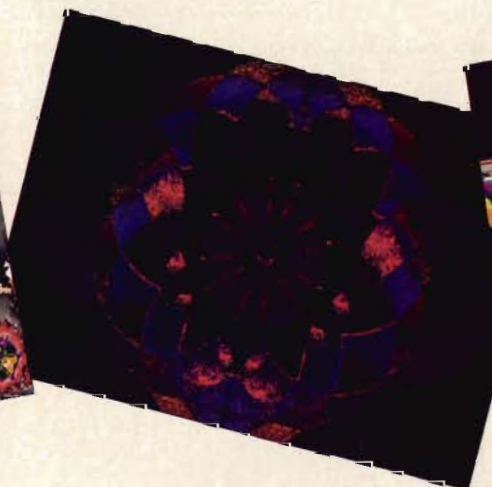
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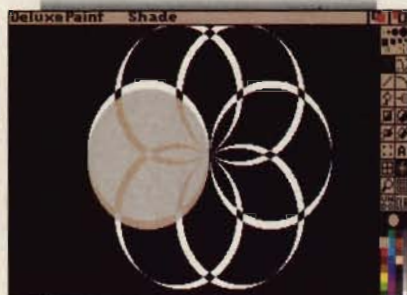
Create spectacular "liquid light shows" in real-time

BY CAROLYN CUSHMAN, AMIGA PLUS ASSOCIATE EDITOR

Turn on your Amiga, tune in to this easy DPaint technique, and trip out with flashy '60s-style kaleidoscopic mandalas

"Painting With F5" in the June/July 1990 *AMIGA Plus* described a flashy undocumented technique for using Deluxe Paint's SHADE function, accessed through the F5 key. After our issue deadline was over, I had a little time to fool around with F5 painting on my own.





Ready to go — overlapping brush images show the pattern to come.



All these colors come from ONE click of the mouse.



Three mouse clicks in different places, and colors begin to bloom.

It was a delightful surprise to discover that when you combine F5 with DPaint's Symmetry tool, you can effortlessly create gaudy psychedelic-style mandalas that seem to spin, surge and rotate as the colors cycle. Even better, you can draw these figures while the colors cycle, for brilliant kaleidoscopic effects.

Within seconds you'll have a spec-

tacular display blooming on your monitor — no artistic talent required! The results are reminiscent of those "liquid light shows" that used to be projected at '60s concerts — except that your Amiga light shows are much faster! And be warned — you'll want to save the best of your creations, and they're so easy to generate that you can quickly fill a few disks, or even a

hard disk, with your spectacular images.

How To Do It

The following instructions work with both Deluxe Paint II and III:

1. Start DPaint and choose a low-resolution, 32-color screen.
2. Left-click on the Symmetry tool.
3. Press TAB to see which colors

You've seen the rest... now try the BEST!

AMERICAN PEOPLE LINK

"THE KING OF THE HILL"

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- Lou Wallace, Amiga World, May 1989



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in your palette will cycle. Left-click on a *non-cycling* color.

4. Left-click on the Dotted Free-hand tool.

5. Press F5 to enter SHADE mode. The Title Bar should now read SHADE.

6. Press F10 to remove the toolbox and Title Bar. (If you're not used to using DPaint keyboard commands, you may feel like you're flying blind at this point, but be brave.)

7. Press SHIFT-H six or seven times to enlarge the brush. (Press H alone if you want to "Halve" the brush to reduced size again.)

8. The enlarged brush should leave circular "ghosts" all around the screen. Move the brush towards the middle until all the circular shapes overlap slightly. When the intersecting circles make an interesting pattern, left-click once, quickly. Then move the brush back so you can see the shape you've drawn.

At this point, you should have a multi-colored geometric design based on intersecting circles. Too basic? Repeat the process with the brush in a different position, but still overlapping at least part of your design, and see how much more complex the design becomes.

You can hold down the left button and drag the mouse for even wilder effects. If you go over one area repeatedly, colors will seem to bloom under your brush. The finely-scaled grays provide some particularly dramatic effects as they cycle. You want to see these effects as they develop, but sometimes the flashing colors can be hard to work with. Use the TAB key to turn the color cycling on and off as you work.

Where brushes repeatedly overlap, a bright and almost shimmering band of mixed colors will develop. You can carry that effect to extremes by choosing the Continuous Freehand tool from the Toolbox. Now when you drag the mouse to draw lines, strange shimmering tubes will slide up and down the screen. If your design is already quite busy and you have the color-cycling on, it can take

quite a while for the program to finish drawing. In the meantime, you get to watch an iridescent light show as the seething, bubbling masses crawl across your screen. Your results may be too amorphous to be worth saving, but this is one case where getting there is more than half the fun.

How it Works

The SHADE mode causes colors already on the screen to move down one step in the color palette every time you apply the brush. Where your brush overlaps, the colors shift

Within seconds you'll have a spectacular display blooming on your monitor — no artistic talent required!

once for every overlapping part of the brush. You can reverse the direction of the shading by using the right mouse button. When used with a color outside the cycling ranges, SHADE mode lets you cycle through the entire palette.

If your design gets too busy, you can try using the SHADE mode with a color from one of the cycling ranges. Then when you apply the brush, it affects only colors already in that range, shifting them toward the last color in that range. Using a gray from the default palette, for instance, all your grays would shift to the lightest (or darkest) of the cycling greys.

Other Far-Out Functions

While you're working with F5, you can easily switch to other modes to add a different effect. Press F2 for COLOR mode, which lets you draw

normally. Be careful, though — with a huge brush you can wipe out your entire drawing in an instant. Drawing in black with a smaller brush can give you a dramatic, stained-glass effect.

F7 lets you draw with cycled colors from one of the cycling ranges. Just select a color in that range, press F7, and try slowly swirling a smaller brush around the screen. Then pick a non-cycling color and a bigger brush, and see what happens when you apply the F5 technique to the cycled colors.

Right-button clicking on tools in the Toolbox lets you change the way they work. A right-button click on the Symmetry tool brings up a requester in which you can change the number of reflected points, move the center, or select a tiled effect. Try right-button clicking on the Fill tool to add a Gradient Fill from one of the cycling ranges.

If you want to change any colors, right-button click on the the Color Indicator (just above the Palette) or press P to bring up the Color Palette requester. Select individual colors by clicking on them, then adjust them with the RGB sliders. To see the cycling ranges already in use, click on the numbers following RANGE and note the white brackets that appear in the Palette. To change a range, click on the first color, then click on RANGE. Your pointer will now read "TO" — use it to click on the last color of your desired range. To see the colors actually cycling, and adjust their speed, hold the left button down on the SPEED slider.

With a technique this radical, some of your best results will come from accidents, not planning. Save often, and don't be afraid to ruin your art by experimenting. Don't hesitate to Clear the screen when things get too busy, either. These paintings can take only seconds to create, so why worry? You can always make more. ■

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WORKBENCH

Our first 100 hours using the spectacular

If you use an Amiga today, the long-anticipated arrival of Workbench 2.0 is probably even more important to you than the recent debut of the mighty Amiga 3000 (details in June/July 1990 AMIGA Plus). Before long, Workbench 2.0 will offer a bonanza of slick, well-crafted new power features for all Amiga users. Commodore expects to deliver final ROM chips for the Amiga 2000 version of Workbench 2.0 this autumn, with 2.0 for the Amiga 500 to follow. Amiga 1000 owners will need a Rejuvenator-type replacement board in order to use Workbench 2.0. Here's a close-up of what you'll get when the new operating system arrives for your Amiga model..

When you first see a Workbench 2.0 screen on your own Amiga, you'll probably be immediately impressed by the elegant grey screen with its embossed-looking icons and gadgets. While 2.0's slick new look is quite a treat for Amiga veterans, the real story is that an arsenal of enhancements in the underlying software makes the Workbench 2.0 graphic interface much more powerful and much easier to handle — for newcomers and power-users alike.

When you turn your Amiga on, what seems to be a window called Workbench opens, containing your disk icons.

Each icon image is outlined by a box that appears to be raised above the screen, and sinks below the screen surface when the icon is selected. If you click someplace where there is no icon, you'll draw a "rubber band" box which selects all the icons it encloses. At last, multiple icons can be selected without SHIFT-clicking each one!

There are improvements in the standard window gadgets too. The actual gadget images are all new and well-designed. (For a sample of the new look, check out the CLICK HERE FIRST! instructions display on this issue's AMIGA Plus Disk.) The Front

2.0 UNVEILED

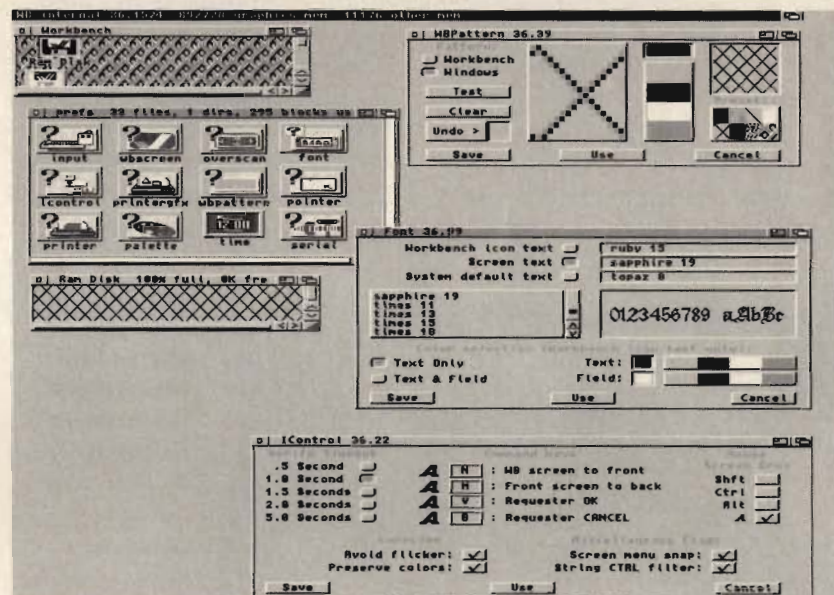
new Amiga operating system

and Back gadgets have been consolidated into one gadget which sits next to a new Zoom gadget that will shrink (or unshrink) the window at a click. Even the Shell window now has a close gadget! If you open a disk window, you will see the disk name, percentage full, bytes free and bytes in use. Drawer windows display their name, the numbers of files and directories within, and blocks used.

Menus

New and exciting options crowd the Workbench 2.0 menus. Many of these options also show their keyboard equivalents — or indicate that they have a sub-menu attached.

The Workbench menu proper has the following items — Backdrop, Execute Command, Redraw All, Update All, Last Error, Version, and Quit. Execute Command opens a little window (similar to "OneLiner," from the February/March 1990 AMIGA Plus Disk) which lets you type in and directly execute any CLI command. Quit closes the Workbench, freeing some memory for whatever application is active — or leaving you without any interface if you don't already have something else running. A requester lets you abort this option, so you don't get left in limbo. The Redraw All and Update All options re-



A scene from Workbench 2.0, showing the Font, WBPattern and IControl Preferences windows, as well as the "Workbench screen" window at top left.

draw opened windows on the Workbench. (Update actually scans the drawers for changes in their contents.)

The Windows menu operates on selected disk or drawer windows. It features the much-anticipated New Drawer option, as well as Open Parent, Close, Update, Select Contents, Clean Up, Snapshot, Show and View By. Select Contents highlights all the icons in the selected drawer, while View By lets you view the files as icons — or by name, date, or size.

Show lets you view all files, or files with icons only. Choosing Show All Files while in View By Icons mode (the default) causes Workbench to display pseudo-icons for files which had no icons. Snapshot now saves either the size and position of the Window, or the arrangement of its contents.

The Icons menu serves up items like Open, Copy, Rename, Information, Snapshot, UnSnapshot, Leave Out, Put Away, Delete, Format Disk,

and Empty Trash. The Information window is nicely redesigned and now shows multiple icon tooltypes at once. But the most interesting new selections are the Leave Out and Put Away items, which will leave the selected icon(s) out on Workbench screen, even after rebooting.

The Tools menu contains the ResetWB option, which enacts Workbench screen Preferences changes without rebooting. The Tools menu can also be extended to launch any applications that support this new feature.

Startups

The new 2.0 Startups drawer makes it easy to set programs that will start automatically every time you start your Amiga. All you need to do is drag your selected program icons into the Startups drawer. (This works much like our "BindStartups" utility on the April/May AMIGA Plus Disk.) Some types of program, such as RexxMast or a screen blanker, keep running in background instead of

want to find its appropriate icon in the Monitors drawer and drop it into Startups too.

Preferences

Perhaps the most fun Workbench 2.0 upgrade is in Preferences — which no longer exists in its familiar limited form. Instead, the 2.0 Prefs drawer now contains a dozen smaller Preferences editors which each control some of the system settings that customize your own Amiga environment. The Serial, Pointer, Palette, Printer and PrinterGfx modules all have work screens almost identical to their previous Preferences controls. Other modules have an entirely new look. For example, the Time program displays a calendar and sliders for setting the date and time with a few mouse-clicks.

The screen position adjustment, which used to occupy the center of the Preferences window, is now called Overscan. Its window shows the size of the current text and graphics overscan regions, then it opens a

sen key to hold down in order to scroll the screen with the mouse, or toggles an option which ensures that your menus are visible even when the left side of the screen is not.

The Input program controls mouse speed, double-click timing, key delay and repeat settings just as in the old Preferences, but it adds an acceleration button. With acceleration on, you can set your mouse speed lower for precise control, but you still move across the screen without walking your mouse across the room. Input also has a convenient box where you can type a "Key Repeat Test."

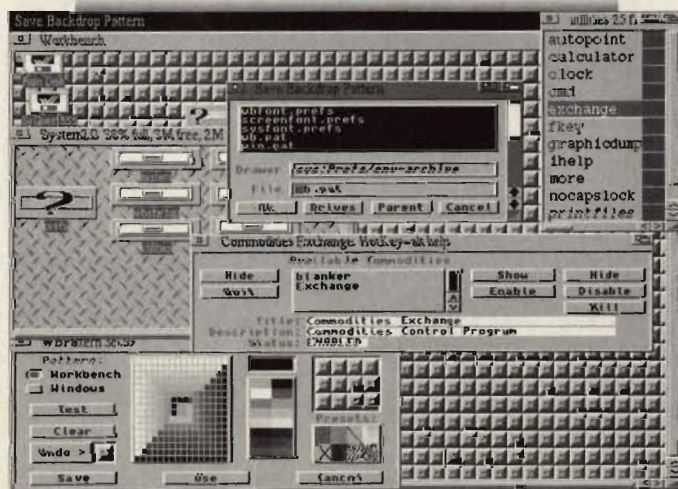
The WBScreen program lets you select the display mode and screen size for your Workbench screen. It will use the list of Mode_Names that BindMonitor finds in the Startups Drawer, or just give pixel dimensions if no names are available. When a mode is selected from the list, the attributes of this mode (i.e. draggable, supports genlock, etc.) are also displayed.

Besides choosing between modes like HiRes, HiRes-Interlaced, Productivity-Interlaced or Super-HiRes, WBScreen lets you set the actual screen size — your Workbench screen can be larger than the display and scroll around automatically! This program also gives you control of the number of Workbench screen colors.

16-Color Patterns

A 16-color Workbench screen sounds extravagantly colorful — and useless when you consider that most icons are made for four colors. But you can use all these extra colors with the new WBPatten Preferences editor. WBPatten lets you create or edit background patterns, with different patterns for your Workbench screen and for the Windows on it. You can select one of the eight preset patterns, or draw your own in the magnified pattern-editor area.

All of the 2.0 Preferences editors now sport menus which let you save the setting to another place (the default Save puts each editor's individual settings into the Prefs/env-archive di-



Workbench 2.0 with a 16-color screen (16 gray shades here) showing the ASL.library file requester, Commodities Exchange and the utilities drawer viewed "by name".

ending with a return to the Workbench. For these, you can either respond to a system requester to keep waiting for the program to return, or you can change the icon to tell the system not to wait.

If you are using a special type of monitor, such as multiscan, you will

separate screen with a box you can size to set the position and dimensions of the overscan regions.

A new member of the Preferences family, IControl lets you set some keyboard shortcuts for Intuition functions like shuffling screens and responding to requesters. It also selects your cho-

rectory), load one of these saved settings, restore the current or last saved settings, or restore a system default setting. There is also a Save Icons menu option which will create an icon for particular settings, which can then be recalled by simply double-clicking on that icon (as in the Print-Pal program on the February/March AMIGA Plus Disk).

Font is another brand-new Preferences editor that can radically change the appearance of your Workbench. It lets you select different Amiga fonts for three different areas — system default text; Workbench icons; and menus, requesters and title bars. System default text is what's used in the Shell window, for example, and it's limited to non-proportional fonts like Topaz or Courier. Workbench icon text now also supports text and background color settings.

AmigaDOS Commands

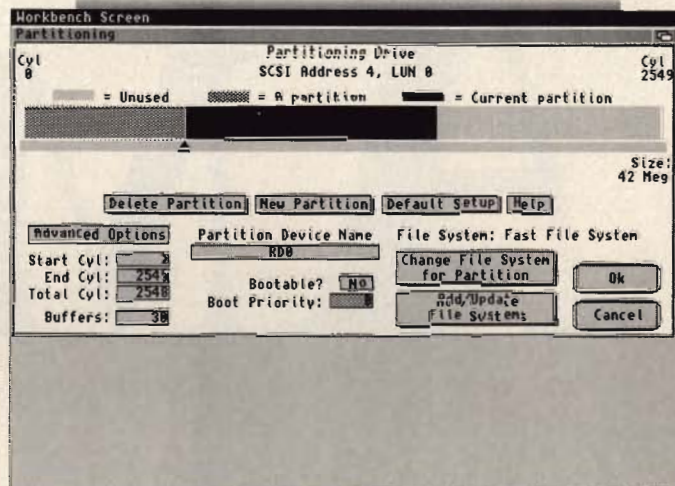
AmigaDOS Shell fans shouldn't feel entirely left out. Many commands now have improved wildcard handling ability and a couple of new commands have appeared. Some of your favorites have been removed from the C: directory and are now internal to the Shell — CD, WHY, ECHO, STACK and 16 more. MAKE-LINK is a brand-new offering that allows a single program to be called under various names, making it easier to access those iconless items in the equally iconless C: directory. (For example, c:ed = SYS:Tools/Ced.) WHICH will find the actual location of a command that's somewhere in the current command path. Among the enhanced commands, ASSIGN has "late-binding" and "non-binding" modes that only take effect when the ASSIGNED object is referenced. STATUS can now seek out running commands by name and report on them.

In addition to its new close button, the Shell window has been given a cut-and-paste feature. Users can highlight a block of text from, say, the output of a previous command and paste it into another console-type window. This is handy, not only for

pastings those long commands into another Shell to avoid retyping, but also for transferring text into an editor, or even into the SAY window.

Overall, the new upgrades make the Shell (CLI) environment more friendly and more consistent with the Workbench interface. Now, if you are

Workbench 2.0's HDToolBox: Hard disk formatting software usually came only with SCSI controller hardware, until now.



predominantly a Workbench user, you can close Shell windows without trying to remember the ENDCLI command. ASSIGNED disks no longer leave icons on the Workbench long after being removed, and C: commands and utilities can be accessed via icons in other drawers via MAKE-LINK.

Amiga documentation has also been greatly improved. Boasting a high-end professional look, the entire hefty manual is full of screen pictures, tables and highlighted text blocks, all making for quick and easy reference. The introductions are thorough and easy to follow, and the detailed instructions are similarly clear. The comprehensive AmigaDOS section contains information on file systems, hard disks, icons, scripts, and a large command reference.

Libraries

Workbench 2.0 has one major addition that most users will never access directly, but will nonetheless use every day. The Amiga Support Li-

brary (ASL.Library) provides ready-made font and file requesters, among other commonly-used functions. Previously, many ASL functions were handled by the ARP.library, which gained wide support primarily because of its useful file requester. (ARP.library, and two utilities which

use it, MicroBrowser and ModemHelper, are included on this issue's disk.)

The ASL is important for several reasons. First, it makes programming easier, since many mundane but necessary program elements are there for the calling, already written and (hopefully) debugged. Since ASL is a shared library, not only does program size decrease because the requester functions are external (for example), but if several programs need the same requester code they can share it instead of loading individual copies of the library functions. For the user, these features mean a consistent experience with requesters and other common types of gadgets — making a wide variety of Amiga applications easier to learn.

Another library upgrade provides a new way of handling system fonts. Called "scaleable bitmap fonts," the system will now create a bitmap font at whatever height your program calls for, by stretching or shrinking an ex-
Continued on page 79

Interactive applications created by clicking!

AMIGA

Commodore Lays Claim To

AmigaVision is an icon-driven programming system for interactive multimedia applications. It enables Amiga owners to create complex audio-visual applications simply by positioning icons onscreen. You don't need to write commands or program in languages like C or BASIC. AmigaVision easily assembles multimedia programs that are well-suited for business presentations, point of sale demonstrations, classroom training, or any other interactive applications. Commodore expects AmigaVision to open many doors for the Amiga in school, business and government markets.

Creating an interactive multimedia application with **AmigaVision** is highly intuitive. You simply move icons representing program commands into a Flow Window in the order you want them activated. AmigaVision can combine single applications from laserdisk segments, Amiga IFF images and ANIMations, digitized sounds, text in many styles and fonts, music soundtracks and synthesized speech.

AmigaVision is extremely friendly and practically all input can be accomplished by clicking on buttons or text. Almost all of the requester windows have online Help which can be accessed just by clicking on a Help button. The 350-page manual is quite detailed and example-oriented.

AmigaVision includes its own Object Editor, so you can create a variety of simple geometrical shapes as well as text. It also has a database function that's compatible with the DBase III data files so widely used on MS-DOS computers. AmigaVision has three sets of pull-down menus.

Review by Steve King

VISION

Multimedia Leadership

Among other things, these enable you to print out your presentation as a graphic screen dump or as ASCII text, and perform limited editing. From the Tools Menu, you can access the Object Editor, or create a database — and you can also configure AmigaVision to control one of the many popular laserdisk players it supports.

Hardware requirements for AmigaVision are quite intensive. You need at least one megabyte of RAM to create and deliver an AmigaVision application — a hard disk and 3Mb of RAM are highly recommended. The program itself is over 600K long. The latest version of AmigaVision appeared to be virtually bug-free.

When you start AmigaVision, an empty Flow Window appears on the top of the screen and a row of icons appears across the bottom. These Main Menu icons represent six groups of commands — Control, Interrupt, Data, Wait, Audio-visual and Module. Clicking on any of them will bring up additional icons representing the individual commands in that group.



The AmigaVision Screen Definition requester makes it easy to set your screen type, display pictures, and choose from screen transitions like fades, wipes and dissolves.

To actually use a command, all you need to do is point at the icon with the mouse, press the left button and drag the icon to where you want it in the Flow Window. The order of icon execution flows diagonally

downward to the right, so correct placement can sometimes be a bit confusing. But after an icon is placed in the Flow Window, double-clicking on it brings up requesters that make

Continued on page 78

H O L L O W

(And Other 3-D

Secrets of faster model rendering – using less memory

BY ALAN HENRY

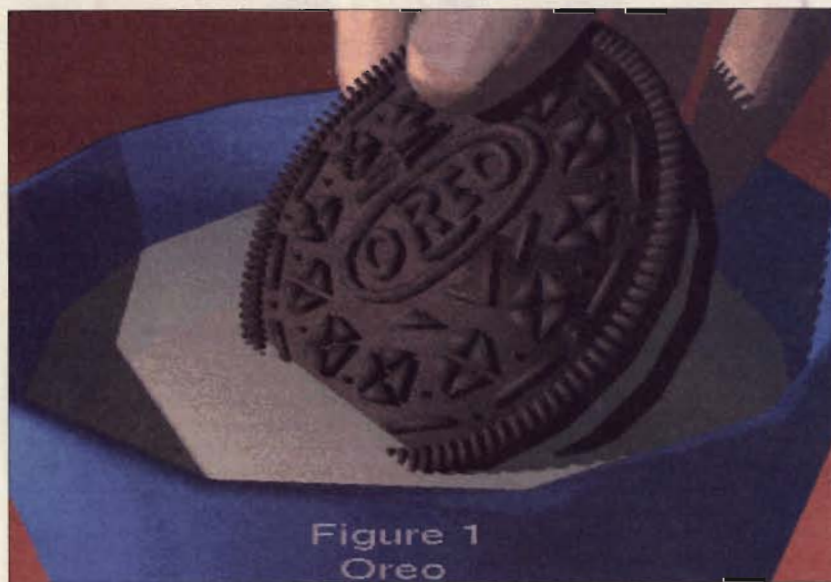


Figure 1
Oreo



Figure 2
Oreo – Hidden Side

If you ever tried to to build a 3-D object, you probably experienced one of the two main problems associated with 3-D modeling software — long rendering waits and major memory greed. So after many long nights of building that one true masterpiece — and plenty of meditations with the GURU — I have developed some useful shortcuts and tricks.

F I N G E R S

Shortcuts)

I now work almost exclusively with Impulse's **Turbo Silver**, because of its fast rendering and wide variety of surfaces. However, the principles I will explain to you should be pretty applicable to any of the top Amiga ray tracing programs.

My own Amiga system has 3 megabytes of memory and a 40Mb hard disk. If you are using a stock Amiga with only 1Mb of RAM, the following techniques will considerably help conserve memory. However, you may be limited to rendering stand-alone objects, as opposed to an entire multi-object 3-D picture. Even this limitation isn't entirely bad, as I will explain later.

Saving Time & Memory

The amount of memory needed for any rendering depends on the total number of "faces" in your scene. In most 3-D programs, a face is defined as the single polygon or surface created between three points. The more faces you have, the more memory you need. Therefore, the most obvious method of saving RAM is to reduce the number of faces.

How do you use less polygons in

your scene and still maintain the detail you need? Easy. First, build your object(s) exactly as you want and SAVE the file. (A second backup file is always highly recommended.)

Render your image in wireframe (or in solid model if memory permits) and note all surfaces which are not visible. Go back to your editor and, starting in the middle of the unseen surface, begin deleting points, edges,

and faces.

If possible, try to leave a row of hidden polygons just beyond the visible ones. This will prevent your objects from having unnaturally sharp edges. Also, some hidden surfaces contribute to the shadows and reflections on adjacent surfaces. This won't be obvious in wire frame or solid model modes, so take care what you cut out of the hidden surfaces.



Figure 4

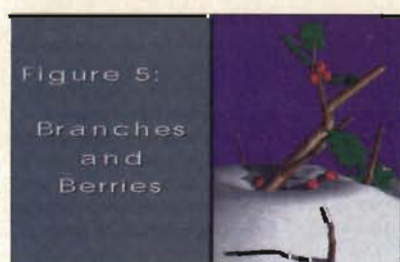


Figure 5



Figure 6

While making my picture, Oreo, I continuously met the GURU until I surgically removed practically every hidden surface. Looking at the same scene from a different angle reveals the amount of cutting required to render a relatively detailed picture with limited RAM (*Figures 1 and 2*).

Surface Surgery

Trying to keep track of your position while moving among all of your scene's lines, polygons, and points can sometimes be enough to frustrate a neurosurgeon. Byte by Byte's **Sculpt-Animate 4D** minimizes confusion by giving you more than just a standard tri-view. Each Sculpt window has a gadget that will show the reverse of its view. For example, the top view can be switched to show the bottom, front can be switched to back, etc. Sculpt also has "pseudo" hidden-line removal. In other words, by moving your object partially out of any given window in the editor, the surfaces outside of the window become invisible, allowing access to the vertices and polygons behind them without obstruction. Both of these features make hidden surface removal a breeze.

Unfortunately, Turbo Silver's editor isn't quite as user-friendly. However, with a little time, patience and imagination, hidden surface removal is a not hard. First select FACE from the PICK menu (make sure the object that you will be working on is highlighted) and pick any visible face in the general area you want to delete. Holding down the RIGHT-AMIGA key, select either B(ack) or N(ext) to get to the first of the unseen polygons. You will need to look at more than one view to ensure that a correct surface has been selected. After you're sure of your selection, press the F1 key to highlight it. For each subsequent selection, hold down the LEFT-SHIFT key with the F1 key. If you accidentally pick an incorrect face, select REM PICK from the PICK menu. When finished, simply select DELETE from the EDIT menu.

Render the scene again in wire frame and decide if more "clipping" is

required. SAVE the final scene (in case you are still on the GURU's hit list) and try either a Solid Model or Full Trace on your picture. While waiting, toggle to the Workbench screen with LEFT-AMIGA-N and watch your total RAM count down.

Any change that shortens rendering time usually also requires less RAM, and vice versa.

This either presents you with good news or helps you anticipate the inevitable.

HAM Helper

If you still find that you are crashing regularly, you may have to try a different approach. With the help of a HAM paint program such as **Digi-Paint 3** or **Photon Paint**, extremely detailed 3-D pictures can be produced with minimal RAM. My picture, Chickadee, demonstrates this method (*Figure 3*). At first, even though I had removed all but five feathers and one eye from the Bird's invisible side, I was unable to add the tree branches and berries to the scene without crashing.

To work around this, I built the scene exactly as I wanted and then highlighted the branches and berries. Next, I SAVED them with the option from the SETTINGS menu. I then deleted the branches and berries from the scene and rendered the smaller image (*Figure 4*). When finished, I went into the editor again and put back the branches and berries into the scene using LOAD from the SETTINGS menu. Then I deleted the bird. Since I was now only interested in the branches and their shadows, I used SET ZONE from the VIEW menu and blocked off the small section I wanted. The rendering time for this scene was substantially quicker (*Figure 5*). Both pictures were then loaded into NewTek's Digi-Paint, where

the RUB THRU mode allowed me to merge the two pictures into the final image.

Using HAM paint programs can also indirectly cut down considerably on rendering time. If your scene must have shadows, but doesn't contain reflective surfaces, or require transparent or refractive properties in the objects, this HAM technique could be your answer. The picture, The Computer, took over 20 hours to render in FULL TRACE mode. However, the same picture took only 38 minutes in SOLID MODEL mode. The only difference was the absence of cast shadows.

When rendering in SOLID MODEL mode, Turbo Silver does an impressive job with an object's shading, relative to a given light source. So why wait that much longer for a few shadows? I loaded the SOLID MODEL rendering into Digi-Paint. Using DARKEN mode and a filled polygon for my tool, I added all the major shadows in only a few minutes (*Figure 6*).

Many other methods can also significantly decrease both your time and memory requirements for 3-D — techniques such as building your objects as large as the software's work area can handle, changing the size of the 3-D universe itself, and working in a lower resolution. However, benefits vary widely between different programs, depending on the software's particular ray-tracing algorithms. In general, any change that decreases rendering time will also require less RAM, and vice versa. ■

Alan Henry is a USAF F-16 Pilot stationed at Shaw AFB, SC. He also has a BS in Mathematics and Computer Science. He won Third Place in the 1989 AmiExpo 3-D Art Contest, and his art appears in the AmiExpo 1990 Light Year Calendar.

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Flash Japanese

Multimedia language lessons make learning fun

BY ROB GRIFFITH

When I decided to use **CanDo** to help me study my Japanese lessons, I didn't realize how obsessed I would become with the process of creating an interactive multimedia language-teaching application that takes advantage of the Amiga's impressive graphics and sound. CanDo gave me the ability to create my own program without actually needing to learn a computer language.

So now, you can simply insert your own vocabulary drill word-pair ASCII files into Flash Japanese. The rest of this article explains how I put together Flash Japanese with CanDo.

(Rob's review of CanDo appeared in the June/July 1990 issue. AMIGA Plus is interested in publishing your best original multimedia applications on disk. Just send in a stand-alone version for prompt consideration. — + EDITORS)

Random Flashcards

At first, I just wanted to develop a simple system of flashcards so that I could tutor myself in vocabulary. My idea was to create a simple ASCII text

*To use a flashy CanDo application that shows off Amiga graphics and sound — while teaching you basic Japanese vocabulary — just double-click on the **CLICK HERE FIRST** icon in the main window of this issue's **AMIGA Plus** disk and click on the **Teach Me Japanese** button. The program is pretty much self-explanatory. For an overview, click on the button labelled **How To Use This Program**. Then just follow the instructions you'll see on the screen, and click on all the buttons to see what they do.*

file with two columns, each row containing an English word on the left, and a corresponding Japanese word on the right. I wanted CanDo to display a word at random from either the

left or right hand column at the click of a mouse button. Then, another mouse-click would display the corresponding word in the other column.

I created a button to load my

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ASCII text file into a CanDo document. The button had a script which used the CanDo AskForFileName function and LoadDocument command. With this command, a document doesn't need to be visible on-screen. Instead, it can be stored in a buffer zone until you display it.

I then created two visible documents and two buttons. The documents would display the word in English and in Japanese. The buttons would get a word at random from one column and display it in the doc-

able to find the corresponding word and display it in the document on the right.

Entering Words

Now that I had a method for displaying words at random, I wanted an easy way to create my word base. In my finished program, you can go to Create-Display on the menu, enter your own word-pairs and save the file for later loading into the Flashcards.

First, I created another card in my deck and began playing with fields. I

Each field needs its own script, but the 30 fields on my page had almost identical scripts. It seemed pointless and memory consuming to re-write the same script over and over. Fortunately, CanDo has a way of creating routines which are independent of specific objects or cards.

To make sure that users would enter words in the correct order, and not jump around entering words at random in various fields, I set up each field so that when that field was selected, pressing the RETURN key would first enter that field's name into a variable, and then run a routine which searches all previous fields for text. If a previous field was found to be empty, the current field would be cleared of text, and the textless field would be activated. Thus, fields could only be filled with text in the correct order. As an added gimmick, I added a little arrow which pointed at the active field, and a ringing sound.

I thought I might want to view an entire wordbase and edit it all at once, so I placed my fields where data could be displayed as well as entered. Once again, I used CanDo's scripting language to select a word file, load it into an invisible document, and then create a loop which would find the first word in my document, put it in field 1, then find the next word, put it in field 2, etc. I also removed the tildes to restore the spaces in my phrases.

This may all seem excessively complex, but my goal was to make the program as user friendly and fool-proof as possible. Hopefully all the work is relatively invisible to the end user.

Alphabet Learning

My next goal was to try to teach the Japanese phonetic alphabet, a form of writing called Kana. Kana characters are syllabic, and can be easily understood once memorized. Douglas Zokaitis spent many hours making brushes of the Japanese alphabet for me, which you can see if you choose the Reading Lesson op-

It even plays koto music while teaching you basics of Japanese vocabulary, pronunciation and reading Kana characters.



ument on the left, and then get the corresponding word from the other column and display it in the document on the right.

One nice thing about CanDo is the way commands can be nested. In order to pick a word at random from one line in my document, I included the following in the script of the "get a word" button:

Let RNumber = Random(1,LinesInDocument)

Here RNumber becomes a variable integer somewhere between 1 and the number of lines in the document. The LinesInDocument variable is nested in the Random function. RNumber is my own variable. Using other document commands, I was able to select either the first or second word from that line at random. Then, with my Corresponding Word button, I was

finally set 15 fields on the left and 15 on the right. I can't memorize more than about 15 words at one sitting, and 30 fields fit neatly on a page.

At this point, I decided that I also wanted to be able to enter phrases as well as individual words. However, having phrases with several words in one field would mess up my system, which requires a format of two columns with only two words in each row. In order to get around this, I wrote a script which replaced the spaces between words in phrases with tildes (~) when the word data in these fields was saved into an ASCII file. As far as CanDo was concerned, each phrase was simply a single word, if a long one. Then, when the words were displayed back on my flashcard page, I re-wrote my script to replace the tildes with spaces again.

tion on the main screen.

To display the characters, I created a new card with two new documents for displaying data, and two new buttons. I wrote a very simple scripts for the buttons which would search for a Japanese character brush at random and display it in a document, and then display the English pronunciation in the other document. After the earlier hassle of creating my fields, this was quite easy to do. For a finishing touch, I added a button that would take the user to the text of the writing lesson on another screen.

I also wanted to use the Amiga's sound capabilities to actually play samples of spoken Japanese. Just for fun, I decided to link my sounds to animation of a talking head. Susan Wang supplied the spoken words, which I sampled using Pro-Sound Designer. I designed a new card similar to the others for my speaking animation, and once again it was fairly easy to do. To hear the results, go to Ex-

pressions from the main screen.

Finally, I wanted a way to display text that would include grammar lessons. To do this, I simply customized the notebook in the CanDo

You can see some of the Japanese alphabet characters if you choose the Reading Lesson.

demo deck that comes with the program. For example, now if you go to this card from the Reading Lesson card, a writing lesson will automatically be displayed.

William Foster helped me with graphics that give the program a Japanese look, using Hiroshige's

woodprints as an inspiration. He also suggested that I try to minimize the amount of buttons and information on each card, and make the color scheme relatively stable throughout. He also created the animation of the woman on the Expressions page.

Finally, the friendship and hospitality I received in Japan from the Commodore Fan Club and its president, Koji Sugimura, were my primary inspiration to study Japanese and write this CanDo application. ■

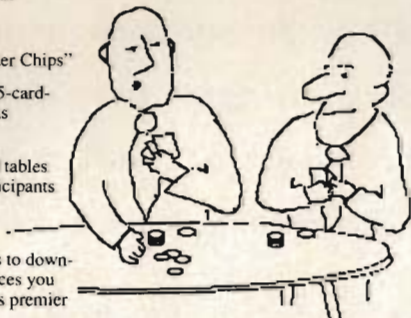
Rob Griffith is a musician, world traveler and Amiga power-user living in San Francisco, where he recently coordinated the Northern California tour by some 20 members of Japan's Commodore Fan Club.

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Dr. T's TIGER Cub Demo

Make real-time music with a new breed of cat—no MIDI needed

BY KENNY LYON

With TIGER Cub, you and your Amiga have everything you need to make beautiful music together, and in real-time too. This easy but high-powered music editor won a ++++ review in the June/July 1990 AMIGA Plus. And now, thanks to Dr.T's Music Software, you can try out TIGER Cub right on this issue's disk. Our exclusive demonstration version does everything that the \$99 commercial product does — except for saving music files to disk or printing musical scores.

TIGER Cub drastically simplifies composing, arranging and editing music for everyone, not just for experienced musicians. The magic difference is real-time graphic editing with The Interactive Graphic Editor (TIGER) module. Music can be seen exactly as recorded, "grabbed" by the mouse and edited — while you are hearing it in real-

time. With TIGER Cub, the music never stops.

This article presents an easy tutorial using your Amiga's built-in sound capabilities. Of course, a MIDI (Musical Instrument Digital Interface) keyboard makes recording music in real-time much easier and provides many more sounds than can be created with just the four voices available on a

computer sound chip.

But for now, all you need is TIGER Cub and an Amiga with at least *one megabyte* of memory. You can connect your Amiga's audio outputs to a stereo system, but even your monitor's speaker will suffice — just don't expect to dance to that thundering drum track you're getting ready to create.

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Getting Started

Because of its size, TIGER Cub couldn't fit on the already crowded AMIGA Plus Disk without being compressed. So before you can use TIGER Cub or play the included HipHopDemo song, you must decompress the TigerCubDemo drawer. To do this, just click on the Click Here First icon in main window of the AMIGA Plus Disk and follow the simple directions.

Click on OK and you'll return to the Tape Recorder screen.

Now you're ready to play the song. Press the SPACEBAR and listen. Pretty def, huh? Watch the track activity display and take note of which instrument is making which sound. Try clicking on the Solo or Mute button for a track and listen to the results.

Tape Recorder

The Tape Recorder screen is where

in addition to the notes themselves (such as aftertouch, pitchbend, etc.), on what MIDI channel it will be recorded, and whether or not it will be quantized (rhythmically auto-corrected). Many of these functions require a MIDI keyboard, but are fairly self-explanatory.

Graphic Editor

To move on to the Graphic Editing screen, click on the Edit button at the lower left. Or you could also use the Graphic Editing item on the Play menu, or the RIGHT-AMIGA-T key combination. Here the revolution starts! TIGER Cub's Graphic Editor screen is a deep, deep beast, but even this quick tour will open up vast musical territories for you.

You'll see onscreen something that looks rather like a high-tech adaptation of a standard musical score. Pitch is determined by up-down location and shown by the piano keyboard strip at the left of the screen, not unlike piano-roll notation. Time moves sideways to the right and is measured by bar and beat lines. Both pitch and time for the current mouse pointer location are shown in an indicator window at the bottom of the screen. The stem at the start of each note displays its attack velocity, which roughly relates to volume in most cases.

The information line just below the menus displays and enables the selection of various options. Reading from left to right, the information line shows current track, track name, track status (muted or in the group), Solo On/Off, MIDI channel, active program number (for external MIDI instruments), volume, offset (distance of the track's first event from the first beat). Additional window possibilities include program change, velocities, pitchbend, aftertouch, modulation, breath controller, foot pedal, and volume. These options bring up windows on the screen where, among other things, you can draw and edit continuous controllers.

The icons at the bottom represent the many drawing and selecting op-



TIGER Cub's Tape Recorder screen, showing the tracks that make up HipHopDemo, the sample song on the AMIGA Plus disk.

Now start your decompressed TIGER Cub by opening the TigerCub-Demo drawer and double-clicking on the CubDemo icon. You will be prompted to allocate memory for a selected number of MIDI events — such as note ons, note offs, program changes, pitch bends, etc. About 5,000 events should be plenty. Since this demo can't save your work, there's no point in creating a huge opus.

Once you allocate memory, the Tape Recorder screen appears. To load the demo song, select Open from the Project menu and use the file requester to load HipHopDemo.CUB.

Now you have music, but no sounds. Pull down the Utilities menu and select Internal Sounds. Click on Load Instrument Bank and load the file HipHopDemo.SND. The names of the loaded sounds, their MIDI channel assignments and other related information will appear on the screen.

you go to record in real-time from your MIDI keyboard, or if you want to organize the different tracks in your song. From here, tracks and instruments can be recorded, played, named, muted, soloed, grouped, deleted, swapped, merged, and commented upon. Menus give a number of options, while the transport control buttons below the track list work just like tape recorder controls. The tempo slider below controls how fast the music plays.

At the bottom right of screen are several controls: Cue lets you set up and play a separate loop within the piece. Group activates the grouping functions and allows only the selected tracks to be heard. X-Record aborts the track currently being recorded.

On the lower left you'll find the Edit button that takes you to the Graphic Editor screen. Other buttons show the various default settings that determine what data will be recorded

tions available with the left mouse button — draw, paste, select, select range, erase, edit pitch, edit velocity, edit duration, and move in time. Next are the tempo display and selector, the pitch and location display, the zoom in/out icon, and the quantize toggle/selector. On this screen, quantize forces all drawing and pasting operations to adhere to the specified rhythmic grid, which is chosen by scrolling through note value icons. Key commands duplicate most editing functions as well as a host of play options.

Hearing Hip-Hop

To start playing your song at the beginning, press the SPACEBAR. As the music plays, step through the tracks by using the track selection arrows in the information bar — the < and > on either side of the track number. Watch to see how the visual display correlates to the sound. This is a new language that will take a little getting used to. You will eventually find it vastly more accurate and flexible than traditional notation, even if you've been reading music for years.

Return to track one, And Now, and press F3 to go to the beginning of the song. Place the mouse pointer within the first bar and press 1 on the numeric keypad. This loops the measure that the cursor is currently in (2 would loop two bars starting at the cursor, 3 loops three bars, etc.). Scroll vertically with the bar at the right side of the screen until a long bar appears at the left side of the screen. This is the graphic representation of the "And Now" sound that is playing. ("Amazing" is on track two.)

Click on the range selector (the rubber-band box), then click once on the bar to select it. The bar will change color. A glance at the mouse position indicator (with the mouse on the note) shows it to be a D#6. Once selected, a note (or group of notes) can be edited or moved by the mouse or cursor keys. Hold down the right mouse button to grab the note so you can move it. The UP and DOWN AR-

ROW keys move the note up and down, changing the pitch. The LEFT and RIGHT ARROW keys change when the note occurs. Try transposing the pitch of "And Now" or shifting it in time as the measure loops. The + and - keys change duration, while the { and } keys raise and lower velocity (volume).

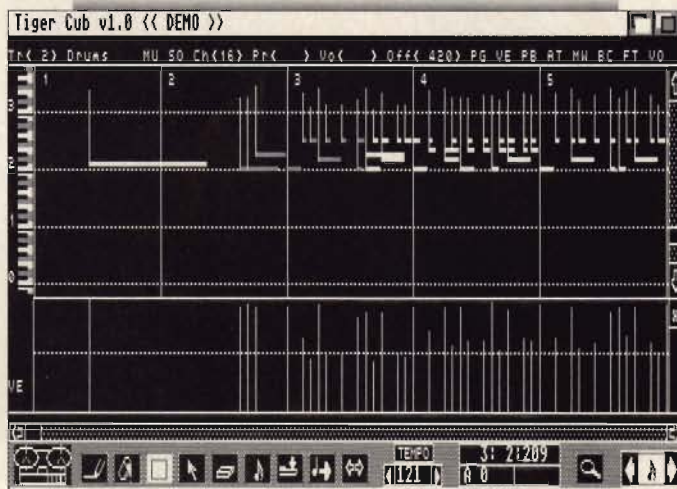
On track two, the drum track, there are lots of notes to play with. Place the cursor in measure three, and press 4 on the numeric keypad to play four measures. Now, click on the VE in the information line above the track. The window that opens below the track is the velocity window. Here you can draw the velocities of all the notes in a track, altering the length of the velocity stems. This makes it very easy to create accent patterns and dynamic changes. While the music loops, draw through this

on the notes of the keyboard icon. The note will be inserted in the track at the sweeping play indicator's position. Clicking in the track area itself will insert a note at the time and pitch determined by the mouse pointer's location. This is good for drawing melodies graphically, with the sequencer stopped.

If quantize is on, notes will only be inserted at the even rhythmic subdivisions determined by the highlighted note value. That is, if an eighth note appears in the quantize icon, all drawn notes will fall on subdivisions of a half a beat (in 4/4 time). To erase a bad note, just select it, if it isn't already selected, and press the DELETE key. You can also click on the erase icon to erase notes with the mouse.

If you create a melody you like, it can be copied and pasted into other

The Graphic Editing screen displays the first five measures of the demo's drum track. The window at the bottom shows the notes' velocities (volumes) like a bar graph, ready for real-time editing.



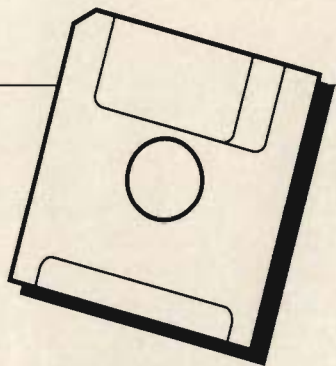
lower window with the mouse, holding down either button. Try creating dynamic contours. These are the basics of graphic editing. Now it's time to start adding some ideas of your own.

Adding Notes

Page through to track six, which is set to play a sort of brass synthesizer sound. Click on the draw icon and start the music. You can add notes while the music plays, just by clicking

locations, while the music plays. Try using the Rubber-Band-Box icon to corral and select a group of notes. Then choose Copy from the Edit menu. Now click on the paste icon. Clicking in the track will insert your melody, intact, at that spot. Holding down the right SHIFT key will force the pasted notes to maintain their original pitch.

If you'd like to have your melody recur at specific intervals throughout the song (a handy way to create



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rhythmically repetitive parts, such as drums) you can use the Repeat function. Call up Repeat Time from the Repeats menu. Click on the box next to 1. This sets the repeat time to one measure. Hold down CTRL while pasting. The melody will be pasted throughout the song at intervals of one measure. This works while drawing individual notes as well. Hold down CTRL when you place a note, and it will be repeated throughout the song at the specified intervals, an easy way to build background rhythms.

The copy and fill options in the Repeats menu also use the repeat time as the basis of their operation. The key commands for Double and Halve (RIGHT-AMIGA-D and RIGHT-AMIGA-H) make changing this important parameter fast and easy. This ability to draw, paste, and fill with repeats helps you build music very quickly.

Flying Solo

Let's put together a brand-new piece. Select New from the Project menu and type in eight measures as the new length.

Now go to the Utilities menu and select Drumkit (one of many powerful TIGER Cub features). Click on Load Kit, and select STANDARD.KIT from the Drumkits directory. This adds the names of the various drum sounds to the information shown on the edit screen. (If you don't have a MIDI keyboard, the Drumkit uses the Internal Sounds you loaded earlier, and you will only be able to use a few of the drum sounds shown.) Click on the Channel number shown at upper right and enter 16, press RETURN, and go to the Graphic Editor. Now when you move the mouse pointer up and down on the track, the location indicator will show you the name of the drum sound located there.

Page through the channels (on the top information line) to channel 16. Go to the Repeat menu, select 1/4 on the Repeat Time requestor, and click on the draw icon. Move the mouse pointer (now shaped like a pencil) until the location indicator underneath

the track reads "B. Drum" and "1 - 1 - 1" (measure one, beat one, step one.) Hold down CTRL and click the mouse. You now have eight measures of straight four kick drum.

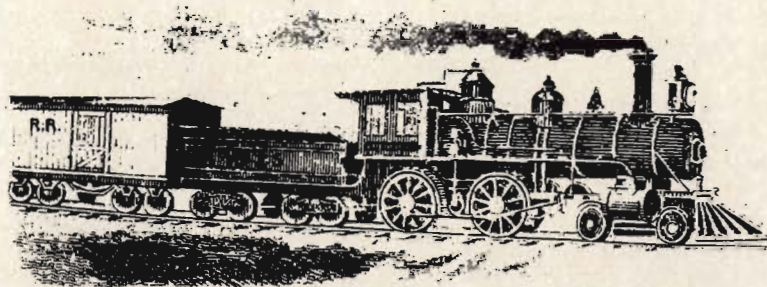
Press RIGHT-AMIGA-D to double the repeat time. Move the cursor until the display reads "Snare" and "1 - 2 - 1". Hold CTRL and click. The back-beat is in place. Now go to the Repeat Time requestor. Select 1/8 and click on the box next to Triplet — your first drum track has to swing, right? Press RETURN and place the cursor where the display reads "Cl. Hat" and "1 - 1 - 1". Hold down CTRL and click. Press the SPACEBAR and hear your never-ending high hat.

Now try using the same procedure to build up other tracks. Select New Track from the Utilities menu and specify the MIDI channel where the desired next sound is located (these can be seen on the Internal Sounds screen.) You might want to start with bass, which is on channel one.

If you have any IFF instrument sounds (such as came with **Synthia Strings** on the June/July AMIGA Plus Disk) you can use them, too. Go to the Utilities Menu, select Internal Sounds, then click on Load IFF instruments. The name of your instrument will appear at the bottom of the list of instruments. To the right of the name, you'll find the channel number. Change the channel to one not already in use by another instrument, and you can return to the editor.

Of course, this is only the tip of the iceberg. The release version of TIGER Cub has a Quickscore module that displays and prints music in standard notation. There are also smart instrument setups — plus too many other features to even list here. Last but not least, the complete \$99 TIGER Cub comes with my 101-page manual explaining the software in much more detail than possible in this article. ■

TIGER CUB \$99
Dr. T's Music Software, 220 Boylston
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244-6954. Requires 1Mb memory.



WorkBench Xpress

Easiest Command Automation Yet!

BY ARNIE CACHELIN, AMIGA PLUS TECHNICAL EDITOR

With WorkBench Xpress (WBX), the power of the CLI is only two mouse-clicks away. WBX is a short utility that carries out AmigaDOS commands without the CLI or Shell. Just double-click on a WBX icon, and all commands that you previously attached will be executed. Multiple copies of WBX can be kept on your Workbench, each with its own name and its own icon for executing a specific job script. Placing your own commands into WBX isn't hard either, if you've had a bit of experience with AmigaDOS. You just enter your CLI commands into the WBX icon's ToolTypes via the Workbench Info window.

One of the best things about your Amiga is the way it can execute scripts of multiple commands when users simply double-click on an icon. At AMIGA Plus we have put a lot of work into creating command scripts, in order to make each issue's disk as easy as possible to operate. A good overview of the techniques for creating icon-driven

command scripts were explained in "Everything You Ever Wanted to Know About Icons," a collection of three icon articles and a disk program in the December 1989/January 1990 AMIGA Plus.

Part of this special section on icons was "Secrets of IconX," which included a sample script. Commodore's IconX is a small program that comes

with Workbench 1.3 and will execute an AmigaDOS script file when you double-click on its icon. But as we spent more time writing icon scripts for the AMIGA Plus Disks, we began to realize that a more versatile tool was needed...

The result of this need is WorkBench Xpress (WBX) — which has these significant advantages over

IconX:

1. Since the actual DOS command text is stored with the WBX icon, the script and the driver can't be accidentally separated, and the icon will work with Amiga systems that are set up in many different ways — such as no IconX in the C: directory. This wider compatibility makes WBX scripts particularly useful for the AMIGA *Plus* Disks.

2. WBX can be run by the "Bind-Startups" auto-loader program from the April/May 1990 AMIGA *Plus* Disk — making it easy to handle whatever special ASSIGNS your system will need. This was a main motivation for creating WBX.

3. WBX commands can be conveniently edited from Workbench Info windows, instead of requiring you to run a separate text editor to write, edit and debug your simple scripts.

4. WBX will also run from the CLI, just like a command. It doesn't require setting the script protection flag, or use of the DOS EXECUTE command.

True, WBX doesn't have *all* the capabilities of IconX. For example, IconX can pick up the data files for a script if you start it from the Workbench and use extended selection (hold SHIFT as you click on multiple icons). Also, IconX only needs to be in one place, because all icons using it call the same program — while WBX requires a different copy of the program and icon for each use.

Roll Your Own WBXs

To attach a CLI command or series of commands to WBX's icon, click on the icon and select Info from the Workbench menu. When the Info window command comes up, click in the ToolTypes window and edit the text. If there is no text, and no cursor appears in the ToolTypes box, click the ADD button. This will insert a blank ToolType line below the current line. When you have added several commands, you can scroll through them by clicking on the up and down arrows. Extra command lines can be deleted by clicking on the DEL button. Whenever you enter or edit a ToolType entry, press RE-

On-Disk

The WBX WorkBench Xpress (WBX) icon on this issue's AMIGA *Plus* Disk prints a small message and some system information onto the screen. To run it, just double-click on the train icon in the disk's main window.

To put in your own commands, click on the WorkBench Xpress icon and select Info from the Workbench menu. When the Info window command comes up, click on the ToolTypes window and edit the text. If there is no text, and no cursor appears in the ToolTypes box, click the ADD button. This will add a blank ToolType line below the current line.

When you have added several commands, you can scroll through them by clicking on the UP and DOWN ARROWS. Extra command lines can be deleted by clicking on the Del button. Whenever you enter or edit a ToolType entry, it is advisable to press RETURN before moving on to the next field. When your list of ToolTypes looks finished, click on the Save button.

Some other useful commands you may want to run with WorkBench Xpress are included in the icon ToolTypes as examples. They begin with semi-colons (;) so they are treated as comments rather than commands. To use these alternatives, just remove the semi-colons and delete the lines you don't want to use. When you have set up your icon to do what you want, rename it so you'll remember what it does. C source code and more detailed instructions are provided on this issue's disk.

TURN before moving on to the next field. If you don't do this, the tooltypes may run together. When your list of ToolTypes looks okay, click on the SAVE button.

You are now ready to test your script. First, close the window containing WBX and then re-open it. This will put into effect your changes made with Info. Now double-click on the icon and see if it works.

If your commands operate successfully, you should rename the WBX icon to better describe its new function. Just click on the icon and select Rename from the Workbench menu.

This also lets you keep multiple versions of WBX on your Workbench — each renamed icon with its own WBX script for one of those CLI jobs you wish to handle by mouse-clicking.

High-Power Options

There are two other WBX options which use the ToolTypes list in the standard Amiga way. These are:

WINDOW — Specifies size, position, title of WBX output window, using the standard specifier. (For example, WINDOW = CON:10/10/100/100/MyWindow). If no WINDOW is specified, WBX opens its default window. If no window is desired, the ToolType WINDOW=NIL: will work, but if the INTERACTIVE option is also set, you will surely crash your Amiga.

INTERACTIVE — Allows interactive commands to receive input from the console window. Just enter INTERACTIVE=(anything). This is primarily intended to allow scripts which require user input (such as via the ASK command) to be run with the EXECUTE command. The WBX window *won't* close automatically if this option is specified. Instead it requires an ENDCLI command to be the *last* command encountered, either in the script or as a separate ToolType. You can also just type ENDCLI into the window to close it. If you forget to use this ToolType when you EXECUTE a script which uses ASK, the script will run fine but give you a NO at every ASK.

To best use these two ToolType options, they should be at the bottom of the ToolType list and be separated from the preceding commands by a blank. When WBX reads your ToolTypes list, it looks for an empty entry to signal the end of the list. If you have a blank ToolType *anywhere* in the list, WBX will stop executing there. This is very useful to keep WBX from trying to execute the WINDOW or INTERACTIVE ToolTypes. However, if WBX does try, you will get a little error like Unknown Command: WINDOW=NIL:. To separate the options from the commands, scroll to the last ToolType before the options start, and click on the ADD button. ■



REVIEWS BY GUY WRIGHT, AMIGA PLUS CONTRIBUTING EDITOR

NEW VIDEOWARE

*Animation Station, TV*SHOW (V.2), Desktop Video Graphics, Video Visions*

Animation Station

++++

Animation Station could be considered an image processor for ANIMs. While it does have features that let you create ANIMs (the main Amiga animation format) almost from scratch, it is mainly designed for manipulating, editing, mixing, and adjusting ANIMs that have already been created with other packages. When you load an ANIM into the program it automatically creates a storyboard with miniaturized images of each frame. You can pick individual frames, groups of frames or work on the entire animation all at once.

Animation Station has a good array of tools to let you edit ANIMs (cut, copy, insert), manipulate timing, change color palettes, create and move brushes, append or insert other animations. You can also merge animations, screens, and brushes together, choosing which will be in the foreground or background. A selection of special effects includes flipping frames on X or Y axis, scrolling in four directions, reducing the size of frames to 1/2 or 1/4 screen, adding a mosaic effect (pixelization) even adding motion blur for more realism.

Included with Animation Station are a number of utilities for viewing, building, combining, or splitting ANIMs as well as a utility to give you information about an ANIM (type, format, size, number of frames, etc.). Animation Station supports HAM and most other formats.

Overall, Animation Station performs



Animation Station

very well. If you are not familiar with ANIM manipulation, it might seem as if Animation Station is slow at times. But even with a stock 68000 Amiga, the program moves pretty quickly, considering the tasks that it performs. The tools included are very powerful. The manual is well written, the tutorials easy to follow, and even if you know nothing about animations you should have no trouble learning Animation Station.

Amiga owners who want to edit, manipulate or just fine-tune animations will find that Animation Station provides some essential tools, presented in a clean and simple manner.

TV*SHOW (V.2)

++++

TV*SHOW is a slide show/presentation package that lets you build scripts for graphics, animations, and sounds. These elements must first be created with other programs, although TV*SHOW has some tools for creating speech events and animating elements

that were originally static. TV*SHOW can create scripts consisting of six event types — screen, object, cycle, loop, speech, or key. Each event includes an event number, filename, type, "on" transition, dwell time, "off" transition, delay time, transition speed, and cycling on/off. Composing a script is a fairly simple process that's well-documented in the manual.

With almost 50 built-in transition effects and variations, you can create a number of unique titling or presentation sequences with TV*SHOW. When combined with a titling program like TV*TEXT, you can create some spectacular titling sequences for video work. This new version 2 of TV*SHOW (the original release was in 1988) supports ANIMs and 8SVX sound file playback, providing additional flexibility. You can even link sound playback to specific animation frames. There are also a number of program control features for live or unattended multi-media presentations. Playback of a script is enhanced by TV*SHOW's ability to work ahead, loading files while other things are going on. You can even jump out of sequence and then return to your original place.

One of the few limitations of TV*SHOW is that only one event at a time can be executed. This shouldn't be too much of a problem unless you are attempting something out of the ordinary (such as a shatter effect where an object breaks into separate pieces.) The strengths of TV*SHOW are in its straightforward scripting, wide variety of transition effects, tim-

ing controls, and the ability to coordinate a wide variety of elements. If you want to combine animations, sounds, and graphics into one smooth-flowing presentation, TV*SHOW is a tool worth having.

Desktop Video Graphics

++++1/2

Desktop Video Graphics is a series of VHS tapes covering various aspects of Amiga video production. Tape 1 covers many basics of video graphics including titling, graphs, and transition effects. Tape 2 covers color cycling animation. Tape 3 covers video digitizing techniques. Other tapes are planned. Each tape is approximately 30 minutes long and all of them are very well produced. There is a lot of good information on each tape presented clearly and graphically. Each tape leads you step-by-step through the processes, giving examples of the right way and the wrong way to do things. There is

even a bit of humor here and there.

While the tapes may not get into quite as much detail as you might want, they do cover the basics. One very nice aspect of the series is being able to see real results from real video tape. You might only view the tapes a few times before getting everything of value from them, but you will probably save a great deal of time and headaches when you start your own productions.

Video Visions

++

The **Video Visions** packages from CV Design are essentially clip art disks in various categories for use in desktop video productions. They are available on a number of different topics including images for weddings, ceremonies, sports, maps, fantasy, or characters. Specially designed for video, the images use slightly subdued colors (bright colors don't work very well on television sets) and give



Video Visions

the user ample palette room for fine tuning and genlocking. Using the images is a very simple process. Most people will want to combine the images with titling packages like Pro Video Gold or Broadcast Titler (which are both supported.)

However, the creative qualities of the images are just so-so. Most of the images seem to be designed as bland background material for the videographer who needs some quick, easily recognizable graphics to put around other images or to put titles on. If you do a lot of weddings, Bar Mitzvahs, or home-grown TV productions and just need something to put up on the screen then the Video Visions packages can give this to you, but not much more. ■

FREEDOM \ˈfrēd-əm\ n

1 : the ability or capacity to act without undue hindrance or restraint **2** : the quality or state of running or operating smoothly and without impediment

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ANIMATION STATION \$99.95
Progressive Peripherals & Software, 464 Kalamath Street, Denver, CO 80204.
(303) 825-4144. 512K memory required, 1Mb (or more) recommended.

TV*SHOW (V. 2) \$99.95
Zuma Group, 6733 North Black Canyon, Phoenix, AZ 85015. (602) 246-4238. 512K memory required, 1Mb (or more) recommended.

DESKTOP VIDEO GRAPHICS \$39.95 each
TeleGraphics Intl., 605 Dock Street, Wilmington, NC 28401. (919) 762-8028. VHS video cassettes.

VIDEO VISIONS \$24.95 each
CV Designs, 61 Clewley Road, Medford, MA 02155. (617) 396-8354. 512K memory required, 1.5Mb recommended for animations.



FindIt

Slick, elegant database hidden in your Workbench

BY DONALD MAXWELL

One of the Amiga's best-kept secrets is that it comes with lots of useful software built into the operating system. These goodies are mostly hidden away in your c: directory, where they are invisible from the Workbench. Two of those c: programs, SEARCH and SORT, can be used in a script file to construct a simple but practical database manager.

On this issue's AMIGA *Plus* Disk you'll find the script file FindIt, ready to help you turn any simple text file into a database with just a simple command from the CLI or Shell. FindIt will automatically SEARCH whatever database you specify and then SORT the output, saving the sorted list in a file and also displaying it onscreen. Finally, FindIt asks if you want the list printed out

on paper.

Also, for a useful sample database, this issue's AMIGA *Plus* Disk includes a text file that lists over 200 Amiga software and hardware manufacturers.

This article's "Using FindIt" section fully explains each step of how to work with your disk script. But unless you are already experienced with both the CLI and database software, you probably need to read the infor-

On Disk

To use the FindIt Script on this issue's AMIGA Plus Disk, first open a CLI or Shell window and type:
CD AMIGAPlus2.3:

Now, to find information about a certain Amiga Software company, such as Dr. T's, just type: FindIt "Dr. T" Database AmigaManufacturers. This will display all the information about Dr. T's from the Amiga Manufacturers database file on this issue's disk.

mation in the first part of the article.

Databasics

As you probably know, a database is simply a base (collection) of data (information). Database manager software enables you to locate specific data in a database. Of course, really serious database managers enable you to do all kinds of other things with data — sort it, analyze it, graph it, print it, and so on. But unfortunately, most serious database managers are expensive and require a fair amount of time to master.

Yet most people's database managing needs are relatively simple. You have a list of names, addresses, phone numbers, birthdays, anniversaries, and the like. Sometimes you want to find out who has a birthday this month. Other times you want to know a certain person's phone number. Once in a while, you might want to know which of your friends named Brown have wedding anniversaries in June.

The SEARCH command will do all of this for you from the CLI or Shell. For example, in a CLI or Shell window, suppose you just *enter* (type a command and then press the RETURN key):

```
SEARCH Database "birthday"
```

This will make SEARCH find all the lines in your database file containing the word "birthday" and display the lines in a group on the monitor. The characters you want to find are called the "search string." I enclosed the search string "birthday" in quotation

marks here, but actually you only need quotes if there are *spaces* in the string. Of course, a search string doesn't need to be an entire word, and it can contain numbers or other symbols.

Instant Database

Maybe you'd like to try SEARCH right now on one of your own ASCII text files. Each of the following CLI commands goes on *one line*, followed

Most serious database software is expensive and needs a fair amount of time to master

by a RETURN. For an instant demonstration, go into the CLI or Shell and enter:

```
SEARCH s:startup-sequence "assign"
```

You'll quickly be shown every line in your startup-sequence that contains the word "assign." Try something different by just entering:

```
SEARCH ?
```

That will show you the argument template for SEARCH — a brief list of parameters you can specify. One such option is NONUM. Ordinarily, SEARCH prints the number of every line it finds. But if you don't want the line numbers displayed, add NONUM to the SEARCH command. (NOTE: The Workbench 1.2 version of SEARCH lacks NONUM.) So to find all of the lines containing the word "birthday" in a file named Database you would enter:

```
SEARCH Database "birthday" NONUM
```

As with the quote marks, the uppercase (capital) letters are optional. In fact, SEARCH is not sensitive about case, even in the search string.

Printouts

If you want the results printed out on paper, just direct the output of SEARCH to the printer instead of the

monitor with > prt:

```
SEARCH > prt: Database "birthday" NONUM
```

In the same way, you can also have the output of a SEARCH directed to a disk or ram: file. For instance, you could enter:

```
SEARCH > ram:BirthDates "birthday" NONUM
```

Sorting

SEARCH shows you lines in the same order that it finds them — which may not be very logical, if your database is anything like mine. If you want the output alphabetized or sorted by date, first direct it to a disk or ram: file, as described above, and then use SORT on that file. Continuing with the previous example, SORT the file BirthDates like this:

```
SORT ram:BirthDates ram:SortedDates
```

The output will be sorted beginning at column one (the left margin) of your text file. If you want SORT to begin with some other column, add a COLSTART number after the SORT command:

```
SORT ram:BirthDates  
ram:SortedDates COLSTART 20
```

NOTE: If you are using the AmigaDOS 1.2 version of SEARCH, you'll need to set the COLSTART number at least to 8, in order to compensate for the line numbers.

Complex Searches

Suppose you want to search a database for more than one attribute — for example, all the people named Brown who have birthdays in January. With a professional database manager, you can just specify both requirements in one command. However, SEARCH does only one thing at a time. Still it's easy enough to first find all of the Browns and then SEARCH the all-Browns list to find every January birthday.

Unfortunately, SEARCH can't handle Boolean functions such as NOT and OR. So you can't ask it to find all the Browns who do NOT live in Milwaukee or to find either Browns OR Smiths. But if you really need to do a lot of that kind of search, you should

get a full-featured database manager program.

Using FindIt

Another lovely feature of the Amiga is that you can automate SEARCHes and SORTs with "script" files. Scripts are simply text files, written in (almost) plain English, easy to write and edit.

So now let's start working with the automated functions of the FindIt script on this issue's AMIGA Plus Disk. To put FindIt to work from the CLI or shell, simply enter:

```
EXECUTE FindIt "search string"
[column] [database]
```

Here's what the last three *arguments* (elements) of the above command formula really mean:

1. Inside the "search string" quote marks, you will actually type whatever you want to look for.

2. Replace [column] with the COL-START number where the sorting is to begin. The default is 1, the left margin (or 8 for Workbench 1.2). If you don't want the output sorted at all, specify 0.

3. Replace [database] with the name of the file you want FindIt to examine. Our script's default filename is (you guessed it!) "Database."

Arguments 2 and 3 are optional — which is why they're enclosed in square brackets. Just remember that if you specify a database other than the default, then you *must* also either specify a column number, or else enter the word "database" ahead of the database's filename. For example:

```
EXECUTE FindIt "search string" 10
Filename
```

Or:

```
EXECUTE FindIt "search string"
DATABASE Filename
```

If you forget what the arguments are, enter FindIt ? and the argument

template will appear on the screen. And if you forget everything, entering FindIt alone will display more complete instructions.

How It Works

In the comments, you'll see that FindIt makes use of the .key argument for identifying variables (parameters) and the .def argument for specifying defaults to be used in case you don't supply variables when you execute FindIt. Also, notice that FindIt expects

Most people's database managing needs are relatively simple

parameter variables in a different order than SEARCH does. This is so you don't have to specify the database filename unless it's different from the default database given in the .def statement.

With Workbench 1.3, finding things is even easier if you put the FindIt script in your c: directory and then set the script bit with PROTECT c:FindIt +S. This will automatically execute the script file when you enter its name in a Shell window. You won't have to enter EXECUTE at all. In this way, FindIt will work as effortlessly as the standard c: programs, such as Dir and List. Just enter FINDIT "search string" and watch it go!

Designing Your Database

In order for FindIt or SEARCH to work effectively, you'll need a standard format for your database entries. Here are a few suggestions:

1. Begin every line with a primary

keyword such as the name of a person, followed by a secondary keyword and the relevant information. This involves some duplication of information in the database, but it enables SEARCH to locate every line that contains the category you specify, along with the information related to it.

2. Put only two categories of information on each line — a person's name and birthdate, or a name and a phone number.

3. Begin each category of information at a column number that will be easy to remember when you later want to specify a COLSTART number.

See *Figure 1* for an example of one possible format.

Obviously, there are other effective formats. In fact, because SEARCH can handle lines as long as 199 characters, it's even possible to add spaces so that a line will wrap around in a window and occupy several screen lines. Formatting long lines is tricky, however, especially if the output goes to both monitor and printer. You can work around these formatting problems in your output by including special format codes in your strings. The characters *n will produce a line break when output to the CLI or a printer, while *e will generate an ESCape (ASCII character #27) which should precede codes for special text styles and printer commands.

Examples of these codes can be found in the FindIt script, on this issue's disk. You can use any text editor (such as Ed) to modify the script for yourself. However, be careful about the quotation marks. They may seem odd in some places, but they're essential for the script to work properly when there are spaces in a search string. ■

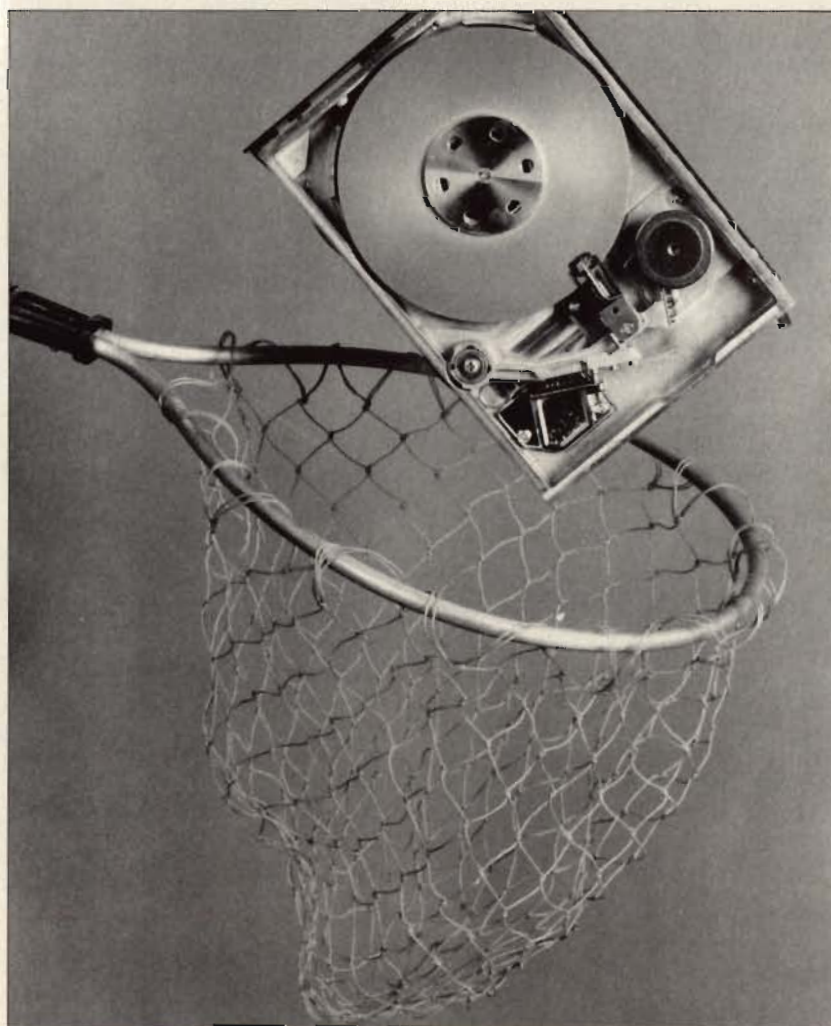
Donald Maxwell has written many articles about the Amiga and other computers. He's an ex-electronics technician who now teaches poetry at a college in Virginia.

John	Smith	birthday: 11-25-36	
John	Smith	address: 1607 Powhattan Pl.	Jamestown VA 23456
Commodore		phone: 215-431-9100	Main Switchboard
Commodore Bus Mach	address: 1200 Wilson Dr.	W Chester PA	19380
George Bush	job: President	U.S.A.	

Figure 1: Possible database format

Your Hard Disk Safety Net: **Super Abackup**

Now it's a breeze to copy your irreplaceable hard disk data!



BY KEITH WILKE

Crashing your hard disk can destroy months of work in a second! But making backup copies of all that data can be a time-consuming, tricky job. Now Abackup's here on the AMIGA Plus Disk to make your life easier, and your data safer.

It's easy to make up-to-date backup copies of your hard disk contents with Abackup, featured on this issue's AMIGA Plus Disk. Abackup protects your irreplaceable hard disk

On Disk

Because of its large size, we had to compress Abakup in order to fit it on to this issue's AMIGA Plus Disk. But decompressing the file couldn't be easier. Just double-click on the **CLICK HERE FIRST** icon in the AMIGA Plus Disk main window and then click on the **Install Abakup** button and follow the simple instructions.

files by copying the data onto multiple floppies, so you always have a backup copy in case of disaster. Then, when you need to restore the contents of your hard disk, Abakup easily copies the contents of the floppies back onto the hard disk.

You can copy everything at once. Or save only selected files that have been added or changed since the last backup, using the Incremental option that saves either by date or by archive bit. Abakup also lets you restore an entire set of floppies to the hard disk — or replace just one file out of the set.

Easy Installation

After you decompress Abakup, open the Abakup drawer and double-click on the **ConfigureAbakup** icon. You *must* edit this configuration file to fit your system, but the script makes this exceptionally easy. It runs the editor Notepad and loads the configuration file for you to edit, while displaying instructions in the window below.

First, you'll be prompted to tailor the list of drives Abakup looks for. Just change the drives under the following headings to match the drives in your system:

- ***BACKUP_SOURCE**
- ***BACKUP_DESTINATION**
- ***RESTORE_SOURCE**
- ***RESTORE_DESTINATION**

These changes aren't essential, but they definitely make Abakup much more convenient to use. If you don't change the list, and you're missing any of these drives, Abakup will give you repeated warning messages that you can simply click on and ignore.

If you have drives not listed, you can access them by typing their names into an **OTHER** requester later.

The next changes *must* be made for Abakup to run properly. Note the name of the drive and directory where you have placed Abakup. For example, the file currently assumes you put Abakup on your hard drive, Dh0:, in the directory (drawer) labeled Abakup. Find the lines ***TEXT_MESSAGE_DIRECTORY** and ***DATE_DIRECTORY** in the configuration file. The default Dh0:Abakup is listed below each as the directory. Simply type in the name of your Abakup directory instead, in both lines, and save the file.

For more detailed information on the configuration files and their specialized options, read the file **Abakup.doc** in the decompressed Abakup drawer on this issue's AMIGA Plus Disk.

CLI Note

Abakup needs a stack of 30,000 bytes to function. This is not a problem if you use it from Workbench, since the Abakup icon already defines the correct stack size. However, to run Abakup from the CLI you must first type **STACK 30000**. Also, Abakup uses a few AmigaDOS commands to perform some of its work. If these commands are not on your Workbench disk or on your hard disk, Abakup will not work. These essential commands are: **DELETE**, **ASSIGN**, **RELABEL**, and **FORMAT**. (To see if they are on your disk, you must use the **DIR** or **LIST** commands from the CLI or Shell.)

The first three commands are normally in your C: directory. Abakup does not really care where they are, as long as they are in your command path. So, if you hide them in dh0:Timbukt, please add a **"PATH ADD dh0:Timbukt"** to your startup-sequence. The last command, **FORMAT**, must be in your **SYS:SYSTEM** directory. So if you deleted it to save space, put it back and delete something else.

Running Abakup

To start Abakup from the Workbench, simply open the Abakup drawer and double-click on the Abakup icon.

Or from the CLI type:

RUN PATHNAME/ABAKUP

For example, if you put the Abakup drawer on Dh0:, you'd type:
RUN Dh0:ABAKUP/ABAKUP

This main menu contains three choices, **Backup**, **Restore** and **Quit!**. Backup lets you copy the contents of any drive defined in the configuration file to one or more floppy disks. Restore lets you copy one or more files that were backed up on floppies back to the hard disk.

The Backup Window

Abakup produces a file system backup, as opposed to an image backup, which simply copies the specified drive byte by byte. File system backups catch errors in the file system being backed up, where image backups merely copy the errors. Also, file system backups produce floppies in AmigaDOS format, and allow the user to re-partition and change the hard disk.

The Backup window's status information is divided into eight fields.

From Device shows which drive will be backed up, and **To Device** indicates the disk on which the files will be copied. **Floppies needed** tells you how many floppies you will need to backup the selected files, uncompressed. This number is an estimate and could be off by one floppy. The number in parentheses indicates the number of disk blocks needed.

The **Selection status** field has two possible values: "NO files selected," and "Files selected." No backups can be made until files have been selected, as discussed below. **Backup type** lets you select one of three backup types — Incremental by date, Incremental by Archive bit, and Full backup.

The fields **Exclude list is in file** and **Include list is in file** indicate the full AmigaDOS path of the exclude and include file lists. The default set-

tings for these fields are controlled by the EXCLUDE_DEFAULT and INCLUDE_DEFAULT sections in the configuration file. They may also be set through menus.

Finally, **Last error** shows what was the last error (if any). It appears below the Include List field.

Starting Selections

When backing up your files, the first thing to do is select your backup source and destination devices through the **Device To Backup** and **Output Device** menus. The selectable (non-ghosted) items under

Incremental By Date lists every file that has been added or changed since the last full backup, or since the last incremental backup based upon the time/date stamp associated with each file. To Avoid Losing Files: *Don't* use this option unless you set the time and date *every* time you boot your computer!

Incremental By Archive Bit lists every file that has been created or changed since the last full backup — or since the last incremental backup — based upon the Archive bit associated with every file. AmigaDOS turns off the Archive bit every time a file is

After you create your file list you can view it by selecting **Review Selected Files**. This opens the Selection window, displaying the selected files in a scrollable sub-window.

From among the Selected Files to be backed up, you now Select files to *exclude* from the backup. Simply highlight any files to be excluded by clicking on them in the displayed list. You can also include or exclude multiple files by typing in AmigaDOS file specifications with wildcards in the **Include** and **Exclude** string gadgets. If you enter a wildcard in the Include string gadget and push the **Include** button, all the files that match the wildcard will be selected and *won't* be backed up. Likewise, if you type a wildcard in the Exclude string gadget, all matching files will be unselected, and *will* be backed up. You can **Select All** or **Unselect All** by clicking on the appropriate buttons.

Once you are ready to accept the current set of selected (highlighted) files as the files *not* to backup, simply press the **OK** button. You can also discard the selected entries and backup the original list of files without edits by simply pressing the **Cancel** button.

Final Stages

As the final step, you must select the type of backup you want. Choose **Backup Selected Files** to start copying the selected files to floppies without compression. To save space, you can compress your backup files with **Compress & Backup Selected Files**.

After you select the backup method, Abackup opens two status windows and puts up a requester asking you to insert a floppy in the backup destination device. The requester also includes buttons labelled **Continue**, **Format**, **Abort**, **Erase** and **Append**. You can **Format** the floppy by clicking on the appropriate button. If the disk is already in AmigaDOS format you can **Erase** the files instead. Erasing can be as much as 10 times faster than a regular format.

If you click on the **Continue** button, any existing files on the floppy



In the file selection window you choose the files you don't want to backup simply by pointing and clicking with your mouse.

these menus reflect the contents of your current configuration file. To select devices not listed, select the **OTHER** menu item, and type the desired device name in the following string requester.

Once you select your source and destination, you need to create a list of files to backup. You create the file list by selecting your backup method from the **Selection Criteria** submenu under the **Project** main menu. Then, after you have a list to work with, you can review your list and exclude any files you don't want to back up.

The first choice in the **Selection Criteria** menu is **Full Backup**, which creates a list containing every file on the hard disk partition you have selected to backup.

created or changed. Abackup then sets the Archive bit on every time it successfully copies all the selected files to floppy.

File Review

The backup file list is also affected by the contents of any text files selected with the **Set Included Files** and **Set Excluded Files** menus. Basically, these are text files that specify directories or files to be included or excluded from the backup. For instance, Abackup is presently set to always exclude the Trashcan from a backup, but this can be changed. For more details about the special uses of these inclusion and exclusion files, see the Abackup.doc file in the Abackup drawer.

you just inserted will be saved. Note, however, that any files with names also used by the backup program will be overwritten. The backup program uses the following names — `<n>body.pck`, `<n>dir.pck` and `TOC`, where `<n>` is the volume number.

The **Append** button attempts to append the current set of files to an existing backup set. After you've made one complete backup set, you can then make incremental backups onto only one floppy that may not be completely filled. **Append** lets you add future incremental backups onto the same floppy, but the floppy must have enough room for the *entire* new incremental backup — you can't spill over onto another disk. This option can significantly reduce the number of floppies needed for incremental backups of your disk.

The **Abort** button takes you back to the Backup window. If you abort, no archive bits or file dates will be updated.

Clicking on any of the boxes other than **Abort** begins the backup process. Now you can follow the backup through both the Text window, displaying the files being backed up, and the Statistics window.

After the floppy has been filled, you will be prompted to insert another floppy. It's very important to write the volume number on each floppy. This will make the recovery process much easier.

Once all the files have been backed up, you will be prompted to insert volume one of the backup set in the destination drive. You *must* insert the first floppy at this point, or you will not be able to recover any files that you have just spent the last hour backing up. Abakup now writes a table of contents file indicating which files are on the different floppies.

You can abort the backup process any time by clicking on the **Stop** button in the Graphics window. This causes the program to gracefully return to the Backup window after displaying a requester telling you the consequences of what you just did.

When you are done with your backup, select **Quit** under the Project menu to return to the main Abakup window and menu.

Restore

The Restore window resembles the Backup window. It contains a short written description of the restore process and also has a small status section displaying the source and destination devices and the last error encountered.

As with backup, you must first select your restore source and destination devices. This is done through the **SourceDevice** and **RestoreDestination** menus. As before, with the **OTHER** menu item you may supply any valid AmigaDOS path name. Any directory names must be followed by a slash (/). By specifying a new destination, you can recover an old version of a file without overwriting its current version.

You must select the files to be restored, and then copy them to their destination. The **SelectFiles** item under the **Project** menu allows you to select the files to recover. This menu brings up the File Selection window. Now you can select files using almost the same techniques as in the backup file selection stage. However, this time you must highlight the files you want to recover.

After you have selected your files you must select the recovery method.

RecoverFilesToOriginalDirectory allows you to copy the files to be recovered from the floppies back to the hard disk. You will be prompted to insert the first volume that has one of the files to be restored. After you insert this floppy and click on **Continue**, all files to be recovered from that floppy are copied onto the hard disk. You'll then be prompted for the next floppy.

RecoverFilesToSpecifiedDirectory restores the files into *one* directory. This destroys the existing directory hierarchy, removing any subdirectories and placing all the files in the single directory you specify.

RecoverOnlyFilesThatAreOutOf-

Date ensures that if a file on the hard drive is newer than a file in the backup save set, it will not be overwritten and all files that are older than the files in the backup save set will be overwritten.

During the restoration process Abakup opens the two same status windows as during backup. Again, you can abort the Recover process any time by clicking the **Stop** gadget in the Status window.

When finished with the restore, select **Quit** to return to the main Abakup window and menu.

Caution Note

A final word of caution. The Amiga is a multi-tasking computer, capable of running many programs at once. However, backing up your hard drive is an extra-sensitive task — you shouldn't take the risk of having another program crash the system while Abakup is accessing the hard disk. Also, Abakup is meant for straightforward backing up and restoring files. Don't take chances by trying any fancy tricks with Abakup such as source/destination switches, or multi-tasking while it's running.

The AMIGA Plus technical staff tested and re-tested Abakup with every hard disk configuration in our offices. We did not experience any crashes or other problems with the published version, as used properly. However, there's no way we could test Abakup with every possible Amiga system set-up, so Antic Publishing must disclaim all responsibility for any file losses or other damages resulting from use of this program.

The author of Abakup welcomes your questions, comments, and suggestions. Please contact: Wilke Enterprises, 7867-F Rancho Fanita, Santee, CA 92071. ■

Keith Wilke is a programmer/analyst at AMCC, a semi-custom integrated circuit manufacturer. He has been a member of the San Diego Amiga Developers Society since it began in 1986.

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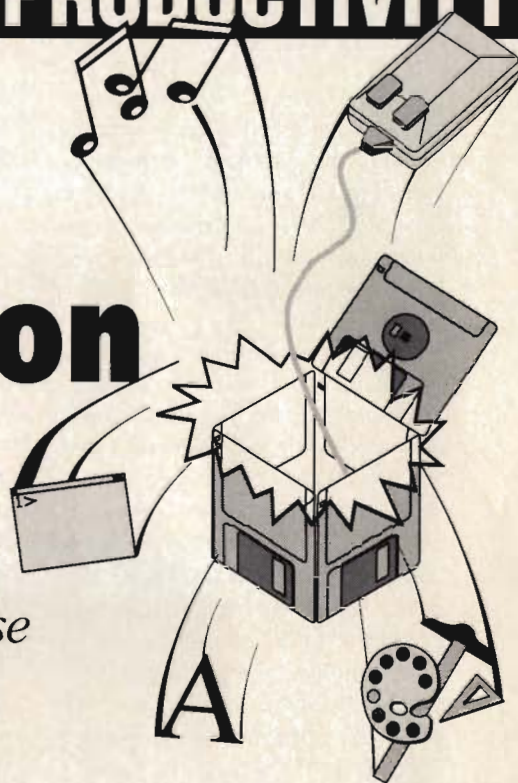
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File Decompression Chamber

Now... one click unscrunches those giant files you downloaded

BY MARK LANOUX



Many new Amiga users don't understand why they can't find their just-downloaded files on the Workbench. It looks as if nothing was received — because the downloaded archive file has no icon... ModemHelper overcomes this!

One-third of AMIGA *Plus* readers own a modem, according to the magazine's surveys. And probably just about every modem owner has at least downloaded a public domain program or two, even if they don't use their modems regularly for that purpose!

For quick transfer, online programs are almost always compressed to reduce their file size to a minimum. This also allows support files to be sent along in one master file — called an "archived file." To create archived files, you must use an archiving program. Some major Amiga archiving programs are Arc, Zoo, Pak, and LHArc, which are all either in the

public domain or shareware.

When an online file has been downloaded, it must be decompressed with the same program used to compress it. This is where a problem comes in. Many new users, without access to Amiga-owning friends or users groups, don't understand what happened to the file that was just downloaded. These new users will probably be using the Workbench interface. And it doesn't show that anything was actually received — because the downloaded archive file has no icon.

We know this is not true, because a simple directory listing from the Shell or CLI will show the new file.

But many new users are either ignorant of the Shell or just plain scared of it. And all current archive programs are written to be run from the Shell only, so this can put many new users in a real bind.

My program, ModemHelper, decompresses archive files just by pointing and clicking. ModemHelper is a kind of simple control center with a

On-Disk

To start the program, just double-click on the ModemHelper icon in the main window of this issue's AMIGA *Plus* Disk. However, to work correctly, ModemHelper requires ARP.library in your SYS:LIBS directory. If you don't already have this library installed, you can activate it for each ModemHelper session by simply double-clicking on the LoadARP icon in the AMIGA *Plus* Disk main window. Or if you prefer to install ARP.library permanently, just double-click on the CLICK HERE FIRST icon in the AMIGA *Plus* Disk main window and then click on the Install ARP button.

consistent and easy interface.

Meet ModemHelper

When ModemHelper starts, it opens a Workbench window that takes up about half of the screen. There is also an option for ModemHelper to start up as a very small window with only a title bar and a close button. You just click on the close button to open the full window for normal operation.

Follow three easy steps to decompress an archived file. First, click on the Source File button and use the file requester to select the file that was just downloaded from online. Next, click on the Destination Dir button and select the directory where the decompressed files will be located. Finally, click on the De-arc Archived File button to decompress the file.

When ModemHelper starts, it shows a default destination directory and archive program with parameters. These defaults can all be changed. First click on the text input boxes and

type your new choices, then click on the Save Setup button to automatically create a new S:ModemHelper.Config.

ModemHelper can also read the documentation files that are typically part of any program's archive. These files usually have names like ReadMe, or extenders like .doc or .txt. You can read these files using your favorite editor or file viewer by simply typing the name of the reader program and the text file to read, then clicking on the Read Text File button.

Many archived files include a file with a name like ExecuteMe. These are typically found when the compression program Arc was used. Arc cannot handle the long filenames of AmigaDOS, so the program names in the archived file are chopped down. An ExecuteMe file usually contains commands to restore the chopped filenames to their original versions. To run an ExecuteMe file, just click on the Execute File button and again specify the file you want to work with, then click on the Execute Com-

mand File button.

Programmers will be interested to know that ModemHelper uses Arp's ASyncRunO command to activate the file archiver and text reader programs. After setting everything to decompress a file, and clicking on the De-arc Archived File button, a small console window is opened by ASyncRunO. This window is where the archive program either shows what it is doing, or takes any necessary additional input. This window can also be used by text reader programs such as the More utility on the Workbench 1.3 disk. After the archive program completes running, the small window automatically closes. ■

Mark Lanoux is a computer science major at the University of New Orleans. Due to a busy schedule, most of his original Amiga programming consists of small utilities requested by members of the New Orleans Commodore Klub.

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BY ARNIE CACHELIN, AMIGA PLUS TECHNICAL EDITOR

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Fast FAX Fax Modem

List Price: \$549.95
MichTron, 3285 Lapeer Road W.,
Auburn Hills, MI 48057.
(313) 377-8898.

Fast FAX is currently the only way to send and receive faxes using your Amiga — and in some ways it's even better than a dedicated fax machine.

MichTron's new fax modem is an important addition to the ranks of Amiga peripherals, bringing most of the functionality of the standard office facsimile machine to your Amiga. You can send, receive, and re-send faxes; schedule automated fax transmission; preview, print or save incoming fax to disk; send straight text (ASCII) files, graphics, or mixed text and graphics.

Fast FAX looks like an oversized modem. It has a row of 8 status LEDs on the front and on the back it has 2 modular phone jacks, a serial connector, a power jack and power

switch. There's also a speaker hidden somewhere. Like a modem, you install Fast FAX by connecting it to the serial port on your Amiga and plugging in a phone line. Unlike a modem, Fast FAX sports an 8Mhz 68000 processor, 32K of RAM and CCITT Group III Fax compatibility.

Fast FAX software is also reminiscent of the terminal programs used to control modems. It has a phone book in which you enter your most frequently called numbers, along with the station name and contact person.

The Fast FAX phonebook stores your list of fax contents for automatic overnight transmission.

There is a configuration window in which you tell Fast FAX where to find its InBox and OutBox directories, its Phone book, and the files which will be used for the cover page, signature, and letterhead. These path settings turn out to be quite important, since the automatic fax scheduler will only look for the files to send and the phonebook of destinations in these previously specified areas.

Windows

A phone configuration window lets



you select between touch tone and pulse dial phones, set the delay between retries and the number of times to redial a busy line, set your phone number, the number of rings to answer on, and the serial unit number of the Amiga serial device you are using. This last feature should make it very simple to use Fast FAX with extra serial port expansion cards, and even to run multiple Fast FAXes at once if you find a reason to do this.

In the station configuration window you enter the name of your station (which will appear on the fax with the date, time and page number), the alert settings (i.e. flash on receive), and whether you want your fax to be able to receive or just send faxes. There are also printer and palette configuration windows which allow you to modify your printer settings and screen colors, respectively.

Once you have set your configurations, Fast FAX will remember and reload them each time. To actually send a fax, just select Send FAX from the Project menu. This will call up a file requester where you select which file to send, and type in the destination phone number. After you click OK, the Fast FAX modem will dial, connect and send the fax, displaying a thermometer-like progress indicator.

To receive faxes, you can put Fast FAX in sleep mode, where the Fast FAX screen becomes a very small Workbench window with a status message. Fast FAX is now ready to receive incoming fax messages, and will optionally alert you when one comes in. Fast FAX puts these incoming files in the InBox you specified earlier and names them by time and date received. Once the fax is received, you can view it with the View FAX menu option. When you select View FAX, Fast FAX opens up a scrolling black and white, 640 X 400 screen and displays the fax you select. You can now print it out or save it as an IFF file for use with other Amiga software. Unfortunately the quality of the received faxes is as low as that of conventional faxes. This is in stark contrast to the quality of faxes you



MichTron's Fast FAX looks like a modem and works like a fax machine.

can generate with Fast FAX.

Choice of Formats

Fast FAX can send plain ASCII text files, ASCII files containing Fast FAX "dot" commands, a previously received fax file, and Epson printer graphics files which can be printed by an Epson-compatible dot-matrix printer. These can be created from IFF pictures using the IFF2Epson utility that comes with Fast FAX, or by printing a file using the EpsonX printer driver and the CMD program on your Workbench 1.3 disk (CMD reroutes the data going to your printer into a disk file).

Fast FAX ASCII files with embedded dot commands (they begin with a .) insert specified files in the fax being sent. The .F command will insert any file, while the .C, .L and .S commands will insert the files Fast FAX has configured respectively as the cover page, letterhead, and signature. These inserted files can be any type, but I suspect the creators of Fast FAX envisioned graphic letterheads and signatures. It was easy to make a letterhead with Gold Disk's Professional Page, I just created a page that was 8 X 1 inch with a fancy text logo, and did a dot-matrix printout with CMD running. A goodlooking signature would probably require a scanner, but with my penmanship, DPaint in low-res should suffice.

While these embedded graphics will come out on a fax machine at whatever resolution (printer density) you set in Preferences, the straight ASCII text parts are printed using the fax machine's internal font, and are thus much clearer than *any* scanned-in graphic text which standard fax machines generate. Since the data is in the form of ASCII text rather than

the big scanned bitmap, the transmission and printing are also much faster, reducing long distance phone bills.

The Fast FAX scheduler is another way to cut your phone bills, by queueing your faxes to go out late at night, when rates are down. The scheduler window gives you two columns to select from, a listing of the OutBox directory's contents, and a list of names from your phone book. You also select the time and date when files should be sent. These selections are then recorded and you can choose the next batch of files to send to the next batch of recipients. This is a very flexible arrangement, allowing you to automatically send a single file to multiple numbers, multiple files to a single number, or multiple files to multiple numbers.

If the line is busy, Fast FAX will wait a while and try again and again. Both busy and successful attempts are recorded in Fast FAX's transaction log file, along with any faxes which may have come in. The scheduler facility of Fast FAX is a godsend for doing mass fax drops. On the other hand, having a paperless fax receiver allows the recipient to screen and delete "junk fax" without wasting paper or running out of paper when an important document is expected.

Petty Problems

Fast FAX still has a few minor problems. Often when trying to go into sleep mode, I got a message saying "Fax modem not connected." But after another try or two, it worked fine. The Send FAX requester requires that you type in the phone number, even though it is probably in the Phone Book already. The scheduler would be a bit nicer to use if you could select files from anywhere, rather than just the OutBox. Since you can change the path of the OutBox from within Fast FAX, the scheduler can actually send files from anywhere – in the same directory. But these are small problems which will probably be corrected before long and don't significantly impair this unique and powerful accessory. ■

The Cordless Mouse

Picks up your mouse movements from five feet away

BY CAROLYN CUSHMAN, AMIGA PLUS ASSOCIATE EDITOR

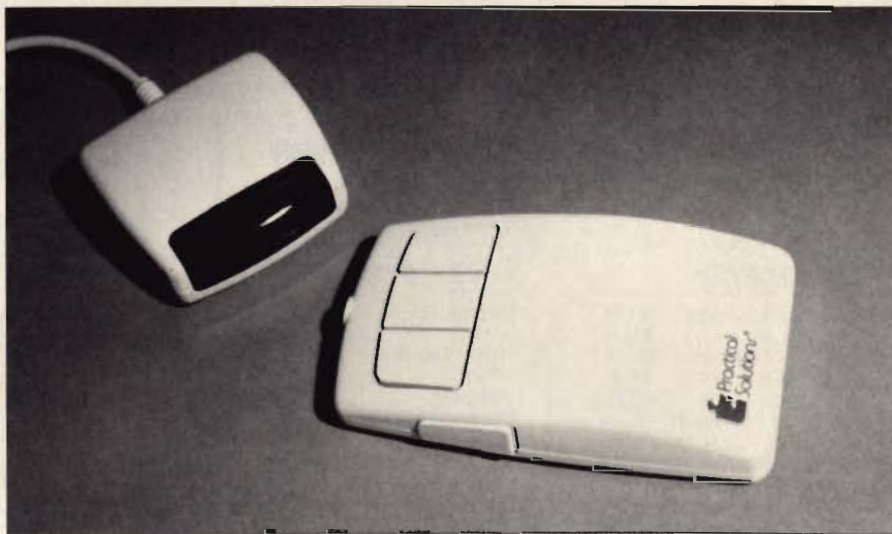
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The Cordless Mouse Input Device

List Price: \$129.95
Practical Solutions, 1135 N. Jones
Blvd., Tucson, AZ 85716.
(602) 322-6100.

You'll quickly get used to the slightly different handling, and you're likely to really enjoy the freedom of going cordless.

Installing hardware isn't one of my finest talents, so I was prepared to panic when this new wonder-mouse arrived at my desk. But as it turned out, installation consists merely of plugging **The Cordless Mouse** receiver's cable directly into the mouse port and making sure that the mouse itself contains two working AAA batteries. No special software or mousepad grid is required, just turn on your Amiga and get clicking. (For "the ultimate in convenience" Practical Solutions recommends their **Mouse Master** (\$39.95), which lets you switch easily



The Cordless Mouse from Practical Solutions.

between The Cordless Mouse and any other mice or controllers.)

This mouse has three buttons on top — the usual left and right, plus a generally unused middle button. At first I occasionally found myself clicking ineffectually on something, only to realize that I was pressing that &*(#^@% middle button again. However, this is something you quickly get used to avoiding. Less easy to adjust to, the pointer tends to drag just a bit

with The Cordless Mouse, and in the beginning I frequently over-shot my targets. But after just a few days' practice, I no longer even noticed the delay.

The Cordless Mouse's receiver is surprisingly flexible, reading from as far away as five feet, even at a 45-degree angle from the mouse's infrared-sending nose. The short, clear manual suggests placing the mouse receiver at a slightly elevated position

to avoid blocking it with your desk clutter. A piece of thick, double-sided tape is provided, so you could attach the receiver to the side of your monitor, for example. According to Practical Solutions, The Cordless Mouse has a tracking speed of 600mm per second and is accurate to movements as small as 1/200 of an inch.

Overall, I preferred the response I got with the receiver close to the mouse, level with the mouse pad, and directly in a line with the front of the mouse as I usually hold it. Particularly with fast-paced games, I found myself moving the mouse at an angle to the receiver — and losing my pointer. Radical twists of the wrist may work on a mouse with a cord, but you'll have to restrain yourself with this one.

I tried The Cordless Mouse with several mouse-intensive games, and had no noticeable trouble with either Broderbund's Typhoon Thompson or Shufflepuck Cafe. However, I'm no expert at these two games, and with

one of my favorites, EA's Populous, I found that The Cordless Mouse slowed me down. When you need both speed and fine precision, The Cordless Mouse may not be your best choice.

For general use, The Cordless Mouse movements are often actually smoother. The Cordless Mouse worked with Deluxe Paint III at least as well as my normal Amiga mouse. Drawing absolutely straight horizontal or vertical lines was easier with this cordless rodent. Not having to worry about kinked-up cords made drawing a series of curves easier, although the slight lag in response made it easier to lose control when going fast. I've never really considered any mouse to be an adequate drawing tool, but this one works as well for me as any.

The mouse's batteries should last most users from three to six weeks. Rechargeable batteries are recommended for the heaviest users, and Practical Solutions offers a \$24.95 GE-

type recharger with four rechargeable batteries. To help conserve batteries, the mouse turns itself off if you don't use it for 10 minutes. A button on the left side of the mouse turns it on again. This only presented a problem while word processing — I could easily go 10 minutes without using the mouse. Then I'd reach for the mouse to mark a block, and the blasted thing wouldn't work. Turning the mouse on again never became an automatic gesture for me, but I did find myself glancing frequently at the reader's red LED display to make sure it was reading.

Overall I recommend The Cordless Mouse, particularly for the sense of freedom it brings. You may not think your mouse cord is a nuisance now, but just try going cordless for a while. The more I get used to working with The Cordless Mouse, the better I like it. I plan to keep this useful pet from wandering off to another editor's desk as long as I can. ■



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ALF: Powerhouse hard disk interfaces

"Amiga Loads Faster" is what it stands for

REVIEW BY MORTON KEVELSON

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ALF

Hard Disk Interfaces

List Price:

ALF-RC-RLL \$278

ALF-AF-RLL \$339

ALF-AF-SCSI \$371

Pre'spect Technics Inc., P. O. Box 670,
Station "H," Montreal, Quebec H3G
2M6, Canada. (514) 954-1483.

ALF is an effective, open-ended, hard disk interface system, with software that's extensive, functional and easy to use.

AL F hard disk interfaces have nothing to do with TV's popular furry, wisecracking space creature. Here, ALF is the acronym for "Amiga Loads Faster," an awkward phrase which nevertheless makes its point. The manufacturer, Pre'spect Technics of Montreal, is a relative newcomer to this part of the world. But its parent company, West Germany's Elaborate Bytes, has been making Amiga hard drive interfaces for some time.

Many comparatively inexpensive hard disks are available for MS-DOS computers. ALF's interface and software can use these hard disks with

an Amiga, in effect acting as a specialized PC-XT expansion slot. The various ALF interfaces showed some impressive performance, even though they are not DMA designs. The ALF design does take up some memory — all of the ALF interfaces require at least one megabyte of RAM.

Bewildering Riches

At first glance, the Pre'spect catalog seems to offer a bewildering array of interface configurations. It lists no less than 28 varieties of ALF, but this is not as complex as it first appears. To start with, the various ALFs are grouped for use with the Amiga 500,

1000 and 2000 computers. Then, for each Amiga model, there are ALF interfaces that work with different types of hard drives and offer various levels of autobooting.

ALF model names are actually pretty systematic. The first word is simply "ALF." The next two letters identify whether or not the hard disk will autoboot, and whether or not the interface is a half-card. The last group of letters in the ALF model name identifies the type of hard disk for which the interface is designed — MFM, RLL or SCSI.

MFM and RLL models are designed to control ST-506 and ST-412 hard



ALF hard-card with software.

disks which are popular in the IBM world. MFM and RLL identify the type of magnetic recording method used by the hard disk. MFM disks are generally the slowest and have the least storage capacity. RLL disks use a different type of data encoding that creates increased storage capacity and speed.

SCSI drives (pronounced "scuzzy") deliver even better storage capacity and speed. SCSI stands for Small Computer System Interface, an industry standard used with a variety of devices. SCSI also gives you the most flexibility, because all SCSI devices communicate with their interfaces in the same way. So if you install a SCSI interface in your Amiga, you could "daisy-chain" a variety of tape drives, printers, removeable media drives, optical drives and other peripherals, as well as hard disks.

Speed & Installation

Speed measurements play a big role in marketing hard disk interfaces. However, mechanical limitations of specific hard disks models are often the most important factor in the overall speed of a hard disk system. According to DiskPerf, a widely used public domain program for testing hard disk speed, ALF's RLL unit that I reviewed reads files at 145K per second and writes at 128K, while ALF's SCSI review unit reads at 179K per second and writes at 138K. These numbers, obtained from a 4K buffer setting, show performance speed that is quite respectable, if not exactly world-beating.

All three ALF interfaces reviewed here were made for the Amiga 2000. Installing any of the ALF interface hard cards in an Amiga 2000 requires little more than plugging the card into the slot. You will also have to plug in one of the disk drive power connectors (part of the A2000's power supply) into the hard drive, because the ALF interface does not supply a power connector on its own. The ALF interface cards also lack a connector for the hard disk LED (light-emitting diode) provided on the A2000's front

Interface? Controller?

Interfaces and controllers for computer peripherals such as hard disks are not *quite* the same thing. The interface is the total piece of hardware that plugs into your computer and communicates with it. The controller is the actual circuitry that operates a specific peripheral and communicates with the interface. Interface and controller functions may, or may not, be combined into a single piece of hardware.

panel. This makes it impossible to tell when the hard drive is active once the hardware has been installed.

ALF-RC-RLL

The **ALF-RC-RLL** interface can reboot (R) the hard disk after a reset, when used with Kickstart 1.3. It is built as a half-length card for use with an ST-506, RLL hard disk. Physically, the ALF-RC-RLL card consists of little more than a PC-XT style, 30-pin connector, mounted on a bare-minimum Amiga 2000 plug-in card. An OMTI 5527B hard disk controller card is installed in the XT slot. This OMTI controller is designed for use with a standard ST-506, RLL hard disk. The entire assembly is mounted on a full-length metal backing plate which fills an Amiga 2000 slot. The backing plate is drilled to accommodate a 3.5-inch hard disk. The ST-506/412 hard disk which came with my ALF-RC-RLL interface was a rather noisy Miniscribe 8450.

In fact, if you removed the backing plate and the hard disk you would be left with a functional half-card controller. A complete "hard card" can be created by simply mounting a 3.5-inch, half-height, ST-506 hard disk on the backing plate. The overall physical design of all of the ALF hard cards is such that none of the components extend into the expansion slot space to the left.

This interface will reboot after a system reset, if you use Kickstart 1.3. This does not mean that the interface will autoboot from a cold start. The

ALF-R line of interfaces don't have autoboot ROMs aboard. Instead, there is a two-stage method of starting up your system, using a customized boot disk that contains the bare minimum needed to open up the system. After this initial boot, you perform a system reset (CONTROL-AMIGA-AMIGA) and reboot from the hard disk itself. You won't need the custom boot disk unless the system gets turned off. (An alternative loading program provided lets you boot directly off the disk, but you'll need your boot disk again after a system reset.)

Three programs, SoftSCSI.device, ALF.device and MountALF, are installed in recoverable RAM from the ALF boot disk. ALF.device is the ALF-specific driver software corresponding to the hardware driver that must be provided with all Amiga plug-in cards. MountALF is the ALF version of the AmigaDOS mount command. ALF does not use standard mountlist entries to define the hard disk's configuration. Instead, all of the hard disk's partition data is stored on a dedicated portion of the hard disk itself. The MountALF program reads the partition data and reports it to AmigaDOS for use by the system.

The SoftSCSI.device is unique to ALF. Internally, ALF treats all hard drives as SCSI devices. This program provides the conversion between the SCSI commands issued by ALF.device and the hardware-specific commands required by the hard disk. Over a dozen versions of the SoftSCSI.device program were included on the ALF installation disk for use with a variety of hard drives.

ALF-AF-RLL

The **ALF-AF-RLL** is a full-card, autobooting, hard disk interface. Nevertheless, the basic hardware is similar to the ALF-RC-RLL. The extended circuit board eliminates need for a metal backing plate to support the hard disk. Instead, the hard disk can be mounted directly on the circuit board to create a hard-card. The only difference in the electronics is the AF's autobooting ROMs plus supporting cir-

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Public Domain Library

The Antic Amiga Plus Public Domain Library presents *DevDisks* by *DevWare*. DevDisks are the public domain library of choice for the serious Amigaphile. Each Disk is chalked full of nothing but the best programs. The first two letters on each disk indicate the orientation of the disk; DD# intermediate to advanced - often contains source, WB# general interest - most programs can be run from the workbench, and FD# games and entertainment. Order our disk based catalog and receive a coupon for a FREE volume on your next purchase.

Featured Disk

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. Also includes SID a real must have!

New Disk

FD27: Arcade Games - This disk is loaded with some great games. Includes, Racerama a great racing car game with ten different courses, MiniBlast a helicopter gunship type clone, Shark in the same class as frogger, and SBreakout the original breakout with more.

FD28: Game! - This disk contains several great games including, DripGame - Sort of belongs to the PacMan type clone category but not exactly. This is truly a new and great original gaming idea. Very addicting, excellent playability, highly recommended. Pyramid - a O-Bert type clone. Also, KingOil - a challenging board game where you are the leader of a wild cat oil team. Object - try and become another Exxon.

WB26: Disk Utilities #2 - MrBackup, KwikBackup - two well done utilities to help with harddisk and floppy disk backups. FileMast - a binary file editor much like NewZap. LabelPrinter - a brand new disk label printer with some of the most powerful features. We have seen to date, each designed to give maximum control over what shows up on your labels.

WB27: Nagel - This disk contains 26 Patrick Nagel pictures of beautiful women.

WB28: Scientific - On this disk is MATLAB. MATLAB stands for Matrix Laboratory. It is a FORTRAN package developed by Argonne National Laboratories for in-house use. It provides comprehensive vector and tensor operations in a package which may be programmed, either through a macro language or through execution of script files.

WB29: Graphics and Sound - This disk has several different Mandelbrot type programs for generating stunning graphics. Includes, MandelMountains - a realistic terrain generator, Fractal - 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 we mean anything. Try this disk you'll love it!

DD55: ARP - On this disk you will find the complete ArpRel3.0 release including the full user docs, the full Developers guide, and Conman (1.4). ARP is the official AmigaDOS Resource Project (ARP) release 1.3. ARP makes many improvements to AmigaDOS and makes your system easier to use from the CLI.

DD56: UNIX #1 - Several UNIX type programs including Bison (2.0), B yacc(1.0), Gawk and M4.

DD57: Advanced Utilities - Msh - like Cross-dos, copies files to and from MS-DOS, Pal-NTSC - convert any pal program to NTSC and visa versa, IconJ - a new improved IconX clone, KillAgnus - disables 512k of chip ram, also several utilities that improve your startup-sequence, plus 25 more programs.

DD58: Compression #2 - Tar - a unix type backup/archiver CompTool - cando stack to help with archiving, Convert - convert arc,zoo, and pak files to Lharc, Lharc99c - an intuition based Lharc, Lhunarc - a very fast unarc'er, and Text - article on compression algorithms and source.

Other Great Disks

FD5: Tactical Games - BattleForce(3.0) see MechForce on FD20. 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 good Amiga version of Kingdom, Golden Empire, Etc. Very very habit forming.

FD6: GAMES! - This disk is chalked 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 Zom.

FD8: Game! - This disk is full of games, game hints and a few game editors (cheat programs) including: Antepuul - The best PD Ultima type going, GameEditors - Crystal Hammer, BardsTale, TV Sports Football, and FaeryTale, GameHints-These are: Zak McKracken, Shadow Gate, FaeryTale, Space Quest II, Dragon's Lair, and others.

FD9: Morla - a very well done port of an UNIX based character adventure game. This has great graphic controls, multiple spells, similar to Larn and Hack. Takes up the whole disk. Play time several days!

FD10: HackLite - A dungeon adventure game. Considered a must have classic. This is the second release of this game on the Amiga. Originally a UNIX game. Great Amiga graphic interface. Fills the whole disk. Play time several weeks!

FD12A,FD12B: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).

FD13: Board Games - contains multiplayer Monopoly, Dominoes, Paranoids, and others.

FD14: Dungeon Master Hints and Arcade Games - DM maps, spells, item location, and hints and more, also on this disk. Hobbit - an arknoid/break out type game, Trix - a Qix type clone.

FD15: RayTracing #2 - You know those pictures you see with the

highly reflective surfaces, thats raytracing. Learn about raytracing the inexpensive way with, DKBTrace and DBW_uRAY (micro raytracer). Source code included

FD16: Strategy Games - Includes Diplomacy and Empires, both great conquer and rule multiplayer games similar in concept to Simcity and Populus. Also includes blackbox, hearts, and others.

FD17: Educational Games - This disk includes several games for the younger members including geography, math, science, and word games, also includes World of Fortune.

FD18: Arcade Games - Includes Bally a qix type clone, Billard a pool game, Paccers, a pacman game with screen editor, also Elj, a lunar lander type clone, and others.

FD19: Arcade Games - Raiders a space raiders clone that can be 3d compatible, Frenzy a shark feeding nightmare, VollyBall a good implemation, and Jar impossible to describe but fun game.

FD20: Tactical Games - MechForce(3.65): 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. This game is the full featured update to BattleForce(3.0) on FD5.

FD22: Arcade Games - This disk has MoonBase - The best lunar lander game we have seen in a long time, very challenging and addicting. Also BongGame - a maze type, donkey kong type game.

FD23: Text Adventure Games - This disk is loaded with three great games, Adventure - this is an greatly enhanced version of the first AI game ever written on a computer! THE true classic even the genera was named after this game, JackLand - In the words of the author "This is a text adventure, set in the COMPLETELY FICTIONAL Attrash Computer Company.. Also World and a adventure graphing/mapping program.

FD24: Strategy Games and Others - Includes Dicey, a yathzee type clone, MM a master mind type clone, Flipper an othello type clone, China a great implementation of Shangi, CircuitWars a challenging game based on electronics, and Etrain a complete based model train set construction set for the enthusiast.

FD25: Tactical Games - Empire (1.33w) Empire is a rich simulation of international politics, economics and war, which is played over a period of a few months by 2 or more people. Players can run their countries from the normal Amiga keyboard, or via a modem at 300 to 2400 baud.

FD0026: Arcade Games - Marble_slide, truly this is a commercial quality game. Similar to a Lucas game named Plumming, excellent playability and entertainment. Mutants - a small version of the arcade game of the same name, also SuperBreakout a pong/arknoids type game.

WB4: Telecommunication - This disk contains several excellent pd communication programs designed to get you on line quickly and easily. Access (1.42) - A very nice ANSI term program based on Comm v1.34, but with the addition of transfer protocols, Comm (1.34) - Last version of one of the best public domain communications programs ever made on the Amiga, Handshake (2.12a) Handshake is a Full featured VT52/100/102/220 terminal emulator, and JRComm (0.94a) another great com program.

WB5: Fonts #1 - Several fonts (35) for the Amiga, also included are few PageStream fonts, and ShowFont - a font display program.

WB6: Fonts #2 - ShowFont(4.0) This program allows you to quickly and painlessly view all 256 characters in a typical font. AmigaDos fonts (some up to 56pts)

WB8: File Management - Great disk. UtilMaster - From your workbench move, copy, delete, read, show, edit, arc, run any command, and much much more! Atree - similar to UtilMaster but hierarchical tree displayed. Also Mach1 - a must have mouse and keyboard enhancer, and Go - an ancient chinese game.

WB9: Icons - Truly a multitude of various types and kinds. Also includes IconMister, IconLab, and others great utilities to help generate icons.

WB10: Virus Killers - The latest and best VirusX(4.0), Kv(2.1), and ZeroVirus(1.3)

WB11: Business - Clerk(4.0), finally a full featured business accounting PD program for the small to medium company. Includes receivables, payables, end of month and much much more. This version comes with the full user docs!

WB13: Printer Drivers and Generator - over 70 drivers, and if these don't do it, PnDrvGen an easy to use program to 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 rolidex program, and pennywise a good "Cash Book" accounting for home or office.

WB17: General Utilities - Includes several interesting programs.

DiskX - Great disk sector editor, Snap - Cut and paste text between different windows, Clean - defragment memory, also on this disk - calendar generator, diet program, workbench scrolling text, scale converter, and many more.

WB18: Word/Text Processors - This disk contains the best editors that we could find. Includes, WordWright(v6.2) a full featured word processor with mail merge and outlining capacity, Dme(v1.35) a enhanced editors editor with strong macro features, and TexED(v2.6) an enhanced Emacs type editor.

WB20: General Interest - On this disk is, DiskSalv V1.42 a disk recovery program for all Amiga file system, FixDisk V1.0 another file recovery program with features DiskSalv doesn't have, 3DLook a program that gives a 3D appearance to your WorkBench, Clean V1.01 a program to defragment memory, Tracer Originally prepared and released as a commercial product by Rapide, allows one to take a picture in 16 gray level format from a Digitizer system, then hand outline or Trace any part of that image.

WB21: Music - On this disk are several modern songs and a great Sonix music player, also a utility to remove the sound filter on500/2000.

WB22: Fonts #3 - Several more great fonts. These, like the other font disks work great with Daprit and WYSIWYG word processors.

WB23: Graphics and Plotting - Plot (20b) a three dimensional mathematical function plotter. Can plot any user defined function, all aspects controllable, an greatly enhanced update to Plot on WB1. BezSurf2 is a program for producing bezier surfaces of revolution. It produces awesome pictures of objects one could turn on a lathe. Can also map 16 bit image files onto any surface that it can draw. Now compatible with most 3D packages Update to Surf on WB1, and VScreen makes a virtual screen anywhere. For you DTP people this is a absolute must have, it allows full page editing without redraws!

WB24: Animation and Paint - On this disk, Dva a complete commercial quality cell orientated animation package. Movie an "ANIM" player for standard animation. QuickFix an IFF slide show and cell animation program. Also on this disk are two PD paint programs of good quality.

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 enter user global coordinate. This powerful program will zoom in or out to give you a satellite based map or a birds eye view. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.

DD45: AREXX PROGRAMS - This disk contains several useful arexx programs and examples, PopCL14 - The latest of a must have utility. ArpUserDocs3.1 - Finally, the documentation for the 3.1 release of Arp which replaces most 1.3 AmigaDOS commands (see dd44).

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) implemation, Blink linker.

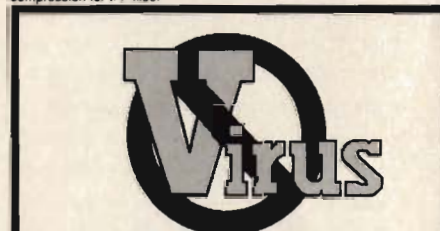
DD50: AREXX #2 - a must have set of tutorials on Arrexx and several useful examples and utilities for Arrexx development.

DD51: Circuit Analysis - Aspic (2.3) A full featured program for electric circuit analysis.

DD52: Scientific - This disk contains several great programs and C source routines for the scientist and science student. 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, and FFT - same as FFT on the 68000.

DD53: Programming - This disk contains a complete forth implementation for the amiga. Also on this disk is DevKit - a collection of C and Arrexx routines to aid in your software development.

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), Ldarc(1.0), Lhwar(1.03), Pkarc(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.



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cuitry. The AF lacks a jumper to defeat the autoboot function. If you need to completely disable the autoboot sequence you must physically pull the ROMs.

The autobooting ROMs allow the ALF-AF-RLL interface to boot directly from the hard disk if you have Kickstart 1.3 installed in your system. This eliminates the need for the separate boot disk used with the ALF-RC-RLL interface. In all other aspects, the ALF-RC-RLL and the ALF-AF-RLL interfaces performed identically.

The same OMTI controller was installed in the onboard XT-style connector and the same hard disk was used. In fact, once the hard disk was formatted and installed with the ALF-RC-RLL card, it only had to be physically installed on the ALF-AF-RLL card and it was ready for use.

ALF-AF-SCSI

The underlying hardware of the **ALF-AF-SCSI** interface is identical to that of the ALF-AF-RLL. The only difference is the hard disk controller card plugged into the onboard XT-style connector. In this case a SCSI card designed and built by Elaborate Bytes was connected to a Seagate ST-177N, 60Mb SCSI hard disk. This interface does not provide an external, 25-pin, SCSI pass-through for daisy-chaining additional SCSI peripherals.

ALF Software

All of the ALF interface cards share a common software library consisting of the initial set-up programs, a variety of test programs, some diagnostics programs and a set of hard disk backup utilities.

The hard disks supplied with the ALF interfaces were pre-formatted and ready for use. However, if you are supplying your own hard disk, or if you require more than one partition on the hard disk, you will have to install, format and set up the hard disk yourself. The InstallALF program, which is very user friendly, leads you by the hand through the entire procedure. If you are using a SCSI drive, the parameters will be automatically

read from the hard disk's SCSI controller. If you are working with an ST-506 drive, you must provide the drive parameters yourself. These parameters include bad block identification, the hard disk's type and the controller type.

Note that ST-506 drives are supplied with a list of bad blocks by the drive's manufacturer. You should make a note of these bad blocks prior to installing the drive in your computer. These will have to be listed into the InstallALF program when you are setting up. InstallALF will also check the drive and append any bad blocks that it finds to this initial list. SCSI drives automatically handle bad blocks on their own and don't require these steps.

If you want more than one partition, you must specify the size of the partition in zones. InstallALF automatically calculates its size in kilobytes. Partition names default to four characters, D0H0: for example. The first digit indicates the unit number while the last digit identifies the partition number. It might be a good idea to change this to a three character identifier such as DH0: because some Amiga programs have difficulty dealing with more than three characters in the drive designation.

InstallALF also lets you create an FLP: partition on the hard disk. This partition matches the size and format of an Amiga 880K floppy disk, and speeds copying files from floppy disks by letting you diskcopy from a real floppy to the hard disk. FLP: uses the Amiga's old file system in order to maintain compatibility with the floppy format. Although the CLI diskcopy command worked with FLP:, the Workbench method of dragging the disk icon unto the FLP: icon generated an incompatible format error.

Included with the ALF system software is a fully-functional hard disk backup and restoration utility. ALF-Backup automatically reads the contents of the selected device and reports on the number of files, the amount of data and the number of floppy disks which will be required

for the backup. Selective backup and restoration is also possible. The large-size file requester and its associated control gadgets make it easy to select the files and directories which will be included in the operation.

A separate utility, FrameBackUp, is provided to backup the hard blocks which identify the partitions on the hard disk. This could save some time if a complete restoration of the system should ever be required. Although ALF-Backup is a generic backup utility, the version which is supplied is keyed to the ALF interface. It will not work unless an ALF interface is installed in the system.

Among the other ALF utilities included are several programs which provide system checks and diagnostics. ALF also supports password protection of individual partitions to limit unauthorized access. All of the ALF utility programs are provided with easy-to-use mouse-driven interfaces, and request confirmation before performing any potentially destructive operation.

ALF's preliminary manual did not survive its translation very well. However, the manual does include a considerable amount of technical detail regarding the system. The ALF Extras disk also contains some developer information, including source code for the main routines. Unfortunately, the manual did not include any information regarding the physical hardware. For instance, the OMTI interfaces contain several jumpers preset by the factory, and you might someday need to know the settings of these jumpers. And I didn't find any options in my ALF catalog offering the choice of buying a bare-bones ALF interface to which you could add your own low-priced OMTI controller. Also, the complete ALF interfaces for the Amiga 2000 seem a bit more expensive than corresponding interfaces from other developers. ■

Morton Kvelson is a well-known Amiga hardware reviewer and an electrical engineer in New York City.

UltraCard Revisited

Now it really is the Amiga HyperCard we waited for!

REVIEW BY STEVE GILLMOR

Since Guy Wright called **UltraCard** "not ready for the general public" in *AMIGA Plus* #5, this hypermedia software has undergone many significant improvements and bug-fixes, as well as being upgraded with additional features in a new version, **UltraCard Plus**.

Before we look at the Plus version, here's a round-up of changes in UltraCard 1.8. Most importantly, error handling is significantly improved and warnings are given in low memory situations. The speed of stack execution has more than doubled, as has scrolling speed. You can add text coloring and stylizing on any word or phrase within a single line of a multi-line field, a great aid in design and readability, especially to indicate hypertext links.

Hypertext commands can be on multiple lines, where previously a sub-routine had to be written to handle more than one command. Double clicks can now be detected, and can be used in script handlers that simulate Workbench icons (to give a proper double-click response). Icons, as well as brushes, can be imported into objects, either from the menu or under script control. Text in the menu bar can be changed automatically. The bar can be turned on and off (defaulting to off) via scripts or function key. Access to Modify mode can be controlled or disabled. The right mouse button can also be enabled or disabled. Overscan and color-cycling

are now supported, as well as pre-loading and asynchronous playback of sound. Now you can Iconify UltraCard, putting UltraCard to "sleep" while running tasks launched via script control.

In Modify mode, there are several new tools to aid stack and object creation. Now you can control object size and movement with cursor keys, and enable Grid/Snap-To for precise placement. Unlike CanDo, you can see the results of changes in object properties immediately, without having to exit to Browse.

UltraCard supports complete self-modification under script control. This means you can have scripts that change any property of an object, create and delete objects, frames or backdrops, even create new stacks — all under automatic control. Asynchronous ARexx support is now possible, allowing UltraCard to listen for incoming ARexx messages even while executing scripts, useful to synchronize the actions of multiple programs.

UltraCard Plus

With UltraCard Plus, now you can run multiple stacks at one time. This enables the user to have, for example, a low-res stack full of images in the upper part of the screen, while simultaneously displaying related text in a 640 X 200 stack at the bottom. Sophisticated Help and tutorial stacks can now be created that interact with other stacks, taking advantage of

UltraCard's seamless transitions between stacks. With careful palette design, a number of stacks of different resolution and size can appear as one super-stack with multiple windows.

UltraCard Plus also supports Xcode modules, which include Menus, Dirscan, and IFFShow. The menus module allows you to either add additional menus to your stack, or completely customize your menus. Dirscan automates the scanning of directories, and IFFShow adds a slide show facility with all of UltraCard's visual effects, supporting all resolutions including HAM.

A commercial Browser has been released. An Encrypt/Decrypt stack allows release of stacks in a form where data entered by the user can be saved to disk, but the stack cannot be modified without password access. UltraCard's manual is much improved, with all UltraTalk statements, functions, globals, and properties documented with examples. UltraTalk's similarity to the HyperTalk language means much can be learned by reading HyperCard tutorial books. ■

Steve Gillmor is a widely published Amiga journalist from Charleston, South Carolina.

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AMIGAVISION from page 41

it easy for you to provide information for the action represented.

Audio-Visual Icons

The nine Audio-Visual Icons are the heart of AmigaVision. To initialize a screen and simultaneously display a picture, just drag the Screen Icon up to the Flow Window and double-click on it. A Screen Definition requester appears. By clicking on buttons and cycle gadgets (buttons that cycle through a number of options as you continue to click them), you can easily define the resolution, size and

Icon lets you draw a rectangle where a text file will be displayed in color and in any standard Amiga font. You can also easily construct boxes that move the text forward or backward, when clicked on. The pull-down Object Editor menu permits you to resize, move and copy any graphic.

The Video Icon gives you complete control over a laserdisk player, permitting you to seek and display a single frame, play a series of frames, and control the audio channels. Playing digitized sounds is as simple as placing the Sound Icon in the Flow Window, bringing up its requester

tions' interactive flow, based on specific input from users. The Wait Icons temporarily halt the application and wait for the user to either press a key, click the mouse pointer on something, or (if available) press a touch screen. The application then performs different actions, depending on what the user selected. You could also opt to continue the application automatically, after a specific amount of time has elapsed without input. The Wait Mouse Icon requester takes you to the Object Editor where you can define specific areas of onscreen pictures or text as "hit boxes" and assign each hit box to a particular variable for the Control Icons to process. The Wait Keyboard Icon allows the program to proceed only if specifically defined keys are pressed. Finally, the Delay Icon simply suspends the presentation for a specific amount of time and is most useful for displaying images on the screen.

The Control Icons group actually handles the flow of the application and processes the various user inputs obtained by the Wait Icons. There are three classes of Control Icons — evaluation, looping and call. The first group simply consists of if-then evaluators that monitor which key was pressed or which hit box was activated by the mouse. For example, if a screen had two separate hit boxes containing text saying "Beep Horn" and "Break Glass", the Wait Mouse Icon would suspend execution of the application until one of the boxes was clicked on. A subsequent If-then Control Icon would branch the program and play a digitized sound of a horn beeping or a glass breaking, depending on which box was clicked. When you click on the If-Then Icon, the Expression Editor appears and scrolls through 35 available functions — ranging from simply detecting user responses to complex mathematics.

The Loop Icon causes a series of other icons to repeat — either continuously, for a certain number of times, or until a certain condition has been met. The Call icon lets you branch to a specified subroutine and then return



Interactive AmigaVision projects can wait for user input from mouse clicks or the keyboard.

number of colors of the screen. If you type a picture filename, AmigaVision automatically adjusts the screen for the image and also displays it during execution. Clicking on the Transitions button brings up a list of 18 different transition effects and another style gadget cycles transition speed.

Placing a Graphic Icon in the Flow Window is one way to access the Object Editor. With this tool you can create simple graphics and text for display. Each graphic becomes a unique object recognized by AmigaVision — no matter whether it's a circle, rectangle, text line, or an imported brush. You can assign a variable name to each graphic object, and use other icons to track whether your user has mouse-clicked on it. The Text

and typing in the name of the sound. Additional buttons let you set the number of times to play the sound, as well as its audio channel. The Music Icon can automatically play a standard SMUS music score in the background. The ANIM Icon can display animations created by popular Amiga paint and animation software. The Speech Icon uses the internal synthesized voice of the Amiga to speak a typed line of text, or an entire text file. The Brush Icon will load and display pictures and brushes stored in the standard Amiga IFF format, and it supports color cycling.

Wait & Control Icons

The most critical functions of AmigaVision determine its applica-

to the main program flow. Similarly, the Goto Icon directs program flow to a particular part of your application.

Interrupt Icons are similar to the Wait Icons. They stop the application's flow at occurrence of a defined event such as a keypress or mouse click. But unlike Wait Icons, Interrupts don't suspend the program while waiting for the event. They are active throughout the presentation — always on lookout for the specified event. When that event occurs, program flow will automatically be diverted to the string of icons placed to the right of the Interrupt Icon. At the end of that string, the program flow returns to the point of interruption.

Data & Module Icons

The Data Icons are for creation of full-fledged databases with records that can be processed in AmigaVision. You can read from and write to database files, search for specific data, and print the output to a disk file or printer. The Form Icon can also be used to set up a screen for accepting

typed user input, which can then be processed by the Control Icons. This powerful feature is quite useful for educational applications, where student scores on an interactive exam could be recorded in a database file.

The Module icons are utility-oriented and perform such functions as creating subroutines, quitting the application and making various timers. The Execute Icon lets you start other programs as well as serving as an ARexx interface. The Resource Icon loads user-selected graphics and sounds into memory immediately (instead of just prior to execution) and lets you remove them from memory when you no longer need them.

Summing Up

AmigaVision is undoubtedly a very powerful program. It enables users with no knowledge of any programming language to create interactive multimedia applications quickly and easily. But this drive towards ultimate user friendliness does limit the program's capability. Languages such as

C or even BASIC have many more commands than AmigaVision's icons offer. A long application will produce Flow Window screens confusingly packed full of icons. Also, AmigaVision does not presently come with a play-only module. So your application can only be used by someone who already owns AmigaVision.

But despite minor shortcomings, AmigaVision is a truly exceptional program that puts the incredible power of the Amiga into the hands of novice users. It also shows that Commodore has the ability to develop and market solid, substantial application software. ■

Steve King, a regular AMIGA Plus reviewer, was an AmigaVision beta tester and has been using this software since October 1989.

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WORKBENCH 2.0 from page 39

isting bitmap.

Workbench 2.0 includes ARexx, for linked control of many programs. The "Using the System Software" manual boasts a typically detailed and comprehensive section on ARexx. It covers everything, from what ARexx is and why you want it, to using external function libraries.

Commodities Exchange

A screen Blanker actually comes with Workbench 2.0. It lives in the Utilities drawer, with its friends in the Commodities Exchange — IHelp, FKey (the hot-key utility), AutoPoint, NoCapsLock and of course Exchange itself. The Commodities Exchange programs have nothing to do with the S.E.C. or pork bellies. Rather, they monitor all the keyboard and mouse button input entering your Amiga, and access it before any other program, including Intuition itself. Com-

modities Exchange programs can alter or remove these input events before your software even knows they happened. Traditionally, this is used for "hot key" programs that intercept certain key combinations and replace them with either a typed command or another action. A popular example of this is the public domain PopCLI program, which opens a new Shell window when it detects a certain key combination.

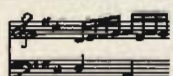
Until now, the various hot-key utilities and applications had to battle over who got what events and when. If your word processor wanted ALT-F10 to mean "save and quit" and you had already mapped it to LIST DF0: — something would break. Commodities Exchange programs not only have first shot at all the events all the time, they even work out priorities among themselves in a polite and well-defined manner.

Commodities Exchange programs can be run or stopped from their

icons, or from their main control program, called Exchange. Exchange shows all the Commodities programs currently running, and gives you information about them while allowing you to enable, disable, remove, or hide them. A hidden program simply runs while its window is closed. Each of these programs can also start from a function key assigned to un-hide the window. This makes it easy to temporarily disable your function key assignments when you happen to be using an application that conflicts with them.

As for the other Commodities programs: IHelp, the Intuition Helper, maps function keys to window operations such as sizing and front-to-back cycling; NoCapsLock does what it you expect it to; AutoPoint automatically activates whichever window your mouse pointer hovers over, no mouse-clicks required. ■

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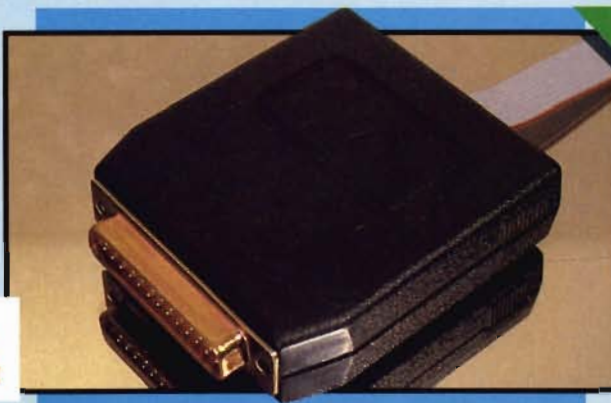
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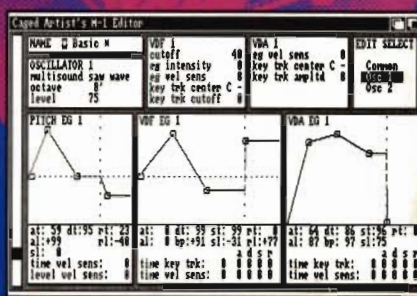
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Our exclusive Multi Program Environment™ allows for dynamic data transfer, as well as the standard multitasking. You can transcribe directly from the sequencer to Copyist, record your Caged Artist editor "moves" directly into the sequencer, use AutoMix™ (included free with Level II and KCS) to perform real time "MIDI mixdowns," or instantly switch between MPE modules from the Intuition menu. If you need to sync to tape, our new Phantom™ SMPTE synchronizer will lock you up faster and cheaper than you would have dreamed! And Dr. T's has added Laurie Spiegel's acclaimed Music Mouse™ program to our line of quality products.

Dr. T's, software of quality and power that will never go out of style!



Dr. T's
MUSIC SOFTWARE

PRODUCTS

SEQUENCERS

LEVEL II 3.0 w/AutoMix
KCS 3.0 w/AutoMix
TIGER Cub
MRS V1.1

EDITORS/LIBRARIANS

CASIO VZ-1 VZ-RIDER
CZ RIDER
DX HEAVEN
EMU Proteus
ESO'apade ESO-1 SO-80
4-OP DELUXE (Yamaha)
KAWAI K-1
KAWAI K-5
KORG M-1
LEXICON PCM-70
OBERHEIM MATRIX 6/1000
ROLAND D-110
ROLAND D-50
ROLAND MT-32
X-OR V1.1 (UNIVERSAL EDITOR)

COMPOSITION/SCORING

COPYIST APPRENTICE
COPYIST DTP
TIGER (GRAPHIC EDITOR)

MISCELLANEOUS

MODEL-A MIDI INTERFACE
PHANTOM SMPTE SYNCHRONIZER

Music Software of the Year, 1988
Commodore Magazine

"Our hands-down favorite new piece of software, TIGER... is a music composition program whose elegance is simply stunning. Finally, a program that bridges the gap between cold, hard technology and the creative musician."

Keyboard Magazine

"The most powerful and dependable of MIDI sequencers for the Amiga is KCS..."

Amiga World

"(Copyist is) a composer's delight that provides score editing, file conversion capability, and custom printing all in one package."

Amiga World

"(Level II) is a powerful collection of MIDI recording and editing tools that works well, is responsive, and is designed with the high-end user in mind."

Amiga Sentry

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