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Issue #43, October 1991

About the cover: This month's cover illustration is a 24-bit hi-res raytrace rendered with Activa's *Real 3D*, a relatively new modeling, rendering, and animation package. The spiral sphere was modeled using *Real 3D*'s unique and powerful Boolean operators. This bi-textured object would be nearly impossible to create accurately with any other Amiga modelling software. As always, *.info* is produced and managed entirely with Amigas running off-the-shelf consumer software and peripherals. *.info* was the first magazine in the world produced entirely with personal computers.

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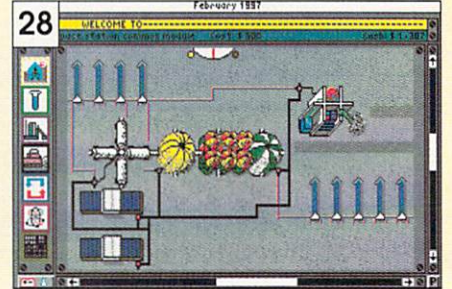
Brad Schenck reviews Aegis/OXXI's *SpectraColor*, the reincarnated *Photon Paint*.

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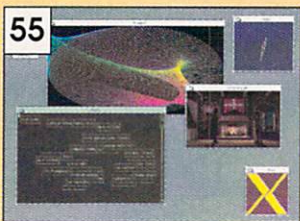
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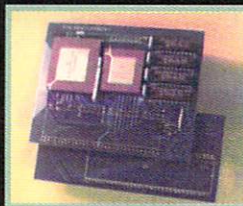
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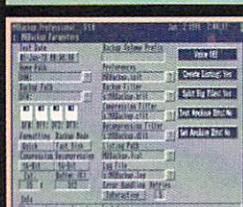
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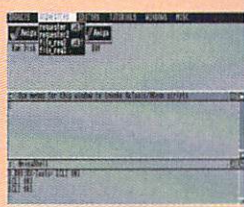
Workbench Management System v3.0

WMS v3.0 is completely rewritten in machine language with features implemented from user recommendations. Pull-down menus, tree-directory style button layers, easier editing and assigning, intelligent layer sizing, and the still convenient one-click buttons to easily launch your applications.



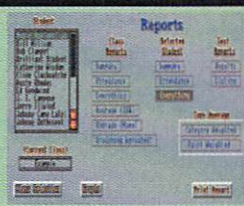
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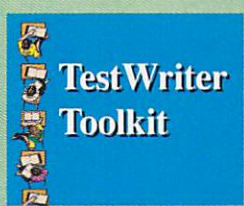
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WHAT CDTV COULD BE

CDTV is an interesting concept, but as we have pointed out in the past, it fails to meet its potential. We understand Commodore is already working on version 2.0 of CDTV, and we'd like to take the opportunity to pass along our thoughts on what a new, improved CDTV unit should be like.

The first thing Commodore needs to add is two standard Amiga joystick/mouse ports. Without these, you can't play many Amiga games. We know they're available on the infrared I/O 'brick,' but they should be right there on the unit.

CDTV also needs an internal disk drive. With the simple addition of the joystick ports and a disk drive, CDTV owners could play most existing Amiga games. Then you could add a sticker to games that says 'CDTV Compatible.' The drive would also make it possible to actually save off notes and graphics from programs like *Timetables of History* for use in Amiga applications programs. You could even produce 'reader' disks that would let CDTV access CD-ROM applications written for MS/DOS systems. By providing just the indexing and retrieval software on disk, you could buy the MS/DOS CD-ROMs separately and use them right off the shelf, without having to wait for the company that produces the CD-ROM to create an Amiga version of their retrieval software. This would be a great niche market for CDTV developers.

While you're at it, you could just as well throw in a keyboard, mouse, and joystick. With these additions, you'd have a full-blown computer, not just an 'audio/video appliance,' whatever that is. It would make CDTV really worth the money.

And if CDTV really is an 'audio/video appliance,' why stop half-way? It doesn't do full-motion video, and it should. Pioneer and others sell a combination CD/laserdisc player for a \$349 street price. With a combo CD/laserdisc player instead of just a CD slot, CDTV would become a superpowerful multimedia machine. With *AmigaVision* available via a built-in disk drive, you could control videodisc access like a real

pro. If the genlock were built-in instead of an option, you could even do laserdisc presentations with overlaid Amiga graphics and titles. CDTV would become an indispensable multimedia toolbox. It would also have the side effect of eliminating that stupid CD caddy.

CBM should also stick in three megs of RAM while they're at it, or at least provide sockets for easy internal RAM expansion. They should provide it with the two-meg Agnus, too, because most people are going to want to do lots of graphics with this thing. And they should give it an A500-style expansion buss for those who want to add a hard drive or more RAM; it should be compatible with existing peripherals. I suppose asking for A2000-style video and cpu slots is going too far, but we can dream, can't we?

I can hear people screaming 'The price will be too high!' Bull. An Amiga 500 (with keyboard and disk drive) is available through the Power Up program now for \$399 (and a cost-reduced version is in the works with a reported projected list price of \$300). A combo CD/laserdisc player has a street price of \$349. An inexpensive genlock is \$99. That's a total of less than \$850, or \$150 less than the suggested retail price of the current CDTV. It seems to us that the SuperCDTV could also carry a \$999 'suggested' pricetag, and deliver a lot more for the money.

But the most important thing that Commodore should change about CDTV is their marketing concept. Get rid of the idea that Joe Consumer is afraid of computers. He isn't. Not if he pulls down the kind of money it takes to buy these expensive electronics toys. And if he's going to plunk down \$1000 on a new electronic marvel, it better have a computer in it. From the way Commodore hides the computer in CDTV, you'd think it was a lump of plutonium. In reality, the Amiga inside CDTV is the *main reason* to buy one. Let's hope Commodore realizes this, and soon.

- Mark & Benn

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.info (ISSN 08975868) is published monthly except bi-monthly in August-September by .info Publications, 705 Highway 1 West, Iowa City, IA 52246. US subscription rate is \$26.00, one year; \$47.50, two years; \$65.00, three years. Canada/Mexico rates in US funds are \$34.00, one year; \$63.50, two years; \$89.00, three years. Foreign surface rate is \$50.00 (US funds), one year. Second-class postage paid at Iowa City, IA and at additional mailing office. POSTMASTER: Send address changes to .info, 705 Highway One, Iowa City, IA 52246.

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CYBERCON

complex protecting Cybercon III's brain stem and deactivate it.

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- Unique Picture in Picture mode. Allows you to monitor enemy movements.
- Over 1/3 million lines of code crammed onto 1 disk!!

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Screen shots are only intended to be illustrative of the game play and not the screen graphics which vary considerably between different formats in quality and appearance and are subject to the computer's specifications.

FORMAT AVAILABILITY: Amiga - IBM PC, AT & XT 100% compatibles

GRAPHIC SUPPORT: CGA, EGA, Tandy 16, VGA, MCGA

SONIC SUPPORT: PC Speaker, Ad Lib, Roland

MEMORY REQ: 512K (640K for 256 color mode)

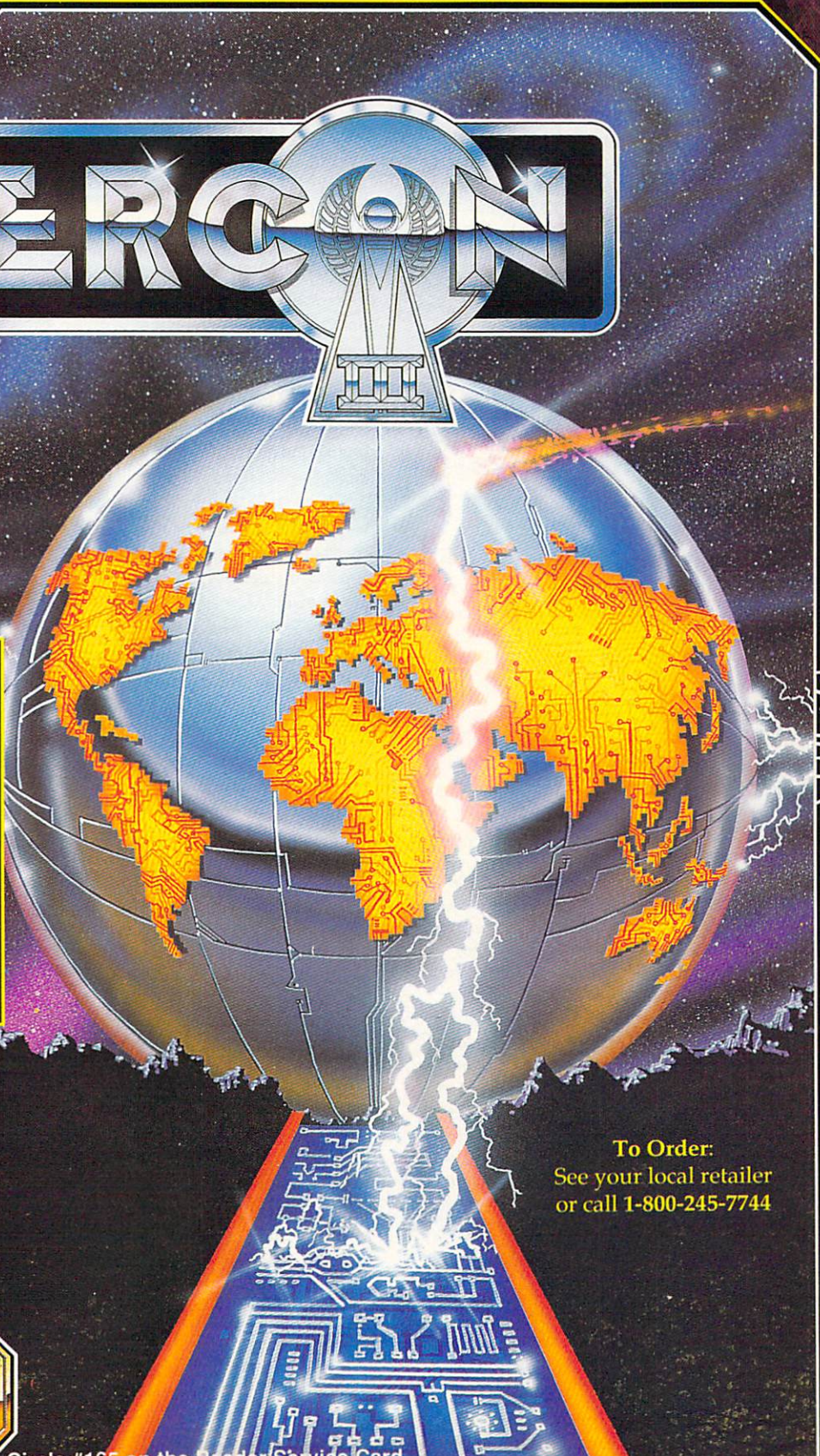


Game designed by Ricardo Pinto

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I am a computer novice and am contemplating buying an Amiga 500 as my first computer. However, I realize that on occasion I might like to be able to use an Apple or PC program and wondered how that might be accomplished on the A500, as well as the cost involved for special hardware, etc. Also, I have small children and wondered how the Amiga compares with Apple computers concerning educational programs offered.

- Rodney Mann, APO San Francisco

You're headed in the right direction and know just what questions to ask. It's a fairly simple matter (if not exactly inexpensive - prices vary by dealer, so shop around) to turn an A500 into a Mac or an IBM clone. ReadySoft makes a Macintosh emulator called the A-Max II. It requires an external Mac floppy drive and you must also supply your own Mac ROMs, but once you do, you can run most Mac software. There are also some boards available that plug into the A500's RAM expansion slot and turn it into an XT or AT-compatible. As far as educational software goes, there are a good number of titles for the Amiga and the machine is probably more educational in and of itself (and certainly more entertaining for kids), but if you're thinking of Apple [(rather than Apple Mac for educational stuff, we'd recommend against it. Apple has all but abandoned support for the [(series and we're afraid you'd soon find yourself with an orphaned computer. Besides, since you can turn an Amiga into a Mac or an IBM clone

and still have an Amiga, what other choice is there?

- Benn & Mark

I have been a proud Amiga owner for just over a year now. I labored long and hard before making my decision to purchase my Amiga 500, and happened to luck into a real sweet deal with a 500 package that included a load of software, enough to get me started, and a free modem. I owned an Atari XL/XE for over 5 years, and had compiled a pretty nice library of software including wordprocessors, databases, and those games that that supposed "game machine" was famous for. It was hard to let go of that old 8-bit system, but I had outgrown it and felt it was time to move up. My intent was to make the next logical move up the ladder and purchase an ST system from Atari, but a friend urged me to look at the Commodore hardware. This was not an easy thing to do considering the "rivalry" between the Commodore and Atari communities, with the C64 being the powerhouse in the 8-bit market. Atari owners are a passionate bunch, and their zeal is the only thing that has kept their computers from becoming orphans. After weighing the alternatives, I made the jump to Commodore and went with the Amiga. I must say that the decision I made has proven to be the correct one. At first I wasn't so sure, however. This is a hard machine to learn, with a complex DOS system and so forth, and I had become spoiled by the simplicity of the Atari 8-bit system. But the complexity of the Amiga is part of what makes it so powerful. I would urge those struggling with their Amigas to be patient, because it is well worth the effort. No system on the market, Mac included, has the potential that this system has. With the digital sound and high powered graphics capabilities, no other machine can hope to reach the level that the Amiga has, and for such a low price!

One thing that concerns me is that some of the other Amiga periodicals have vanished from the market. This is a concern because it is a sign that interest is dying down. But just now the Amiga has become the standard in video, and this will surely save the market for the rest of us. Where the PC has cornered the business market and has grown from there to become the standard in computers, with a wide range of

software following, the Amiga should do the same through its video capabilities.

One thing that I do wonder, however. Several software titles that are remarkably popular with all of the other systems do not seem to be available as yet for the Amiga. One title that really stands out to me is *The Print Shop* by Broderbund. Broderbund seems to have no problem releasing their collection of fine games for the Amiga, but has not to my knowledge released *The Print Shop* program for our system. This is very odd considering that they have a version of it for almost every other system, including Apple, Atari XE and ST, and IBM. This is a great program and I would like to know if Broderbund has a version of it for the Amiga, along with *The Print Shop Companion*, on the way. It is a great program and it is a shame that a standard like that is not available for such a fantastic machine. Thanks a bunch!

- Jeffrey Sevier, GENie

We, too, think you made the right decision and, more importantly, went about it in the right way. Being a computer consumer requires a lot of thought and even more research. Buying a computer system should be a rational, well thought-out process, weighing your needs against your pocket-book without being swayed by irrational propaganda from one camp or another. After all, you're the one who's going to be using the thing, not some wild-eyed Atari groupie.

As for periodicals, magazines come and magazines go. Many of them are underfunded to start with, often launched by those with more zeal than business sense. We don't think interest in the Amiga is dying down at all, but has stabilized and specialized. People who are using Amigas in video are reading video magazines (and .info, too, of course), and those magazines are adding more and more Amiga coverage. In other words, the Amiga is entering the mainstream.

We checked with Broderbund about The Print Shop series, and they don't have any plans for an Amiga version. Actually, that isn't too surprising, since there are already Amiga products that do essentially the same things. A good graphic wordprocessor can easily fill the bill, as can Electronic Arts' Deluxe Print. Amiga users seem to prefer putting together their own clipart, text, and graphics without limiting themselves to a single software package. - Mark & Benn

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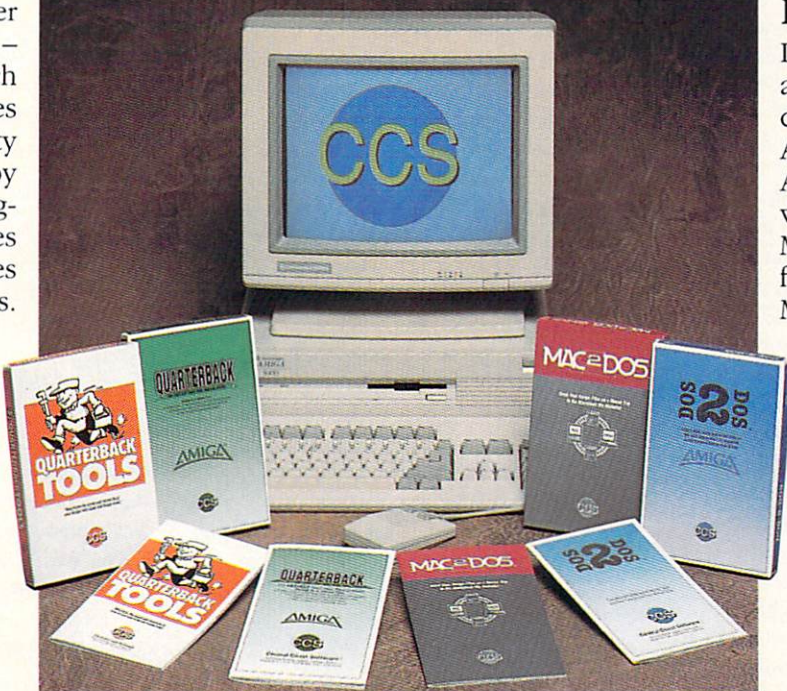
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NEW PRODUCTS



This image and the one on the cover were rendered with Activa's *Real3D*.

THE REAL REAL 3D

We have mentioned *Activa Software's Real3D* a couple of times in the past, but until now it's only been available in Europe. Activa has announced both a North American distributor and a new version of the modelling/raytracing/animation package. In addition to the features we've come to expect in this type of package, *Real3D* has a few that are particularly noteworthy, like its boolean operations. By using AND, AND NOT, EOR, and DIVIDE, you can do all sorts of nifty things to objects, like dividing them to reveal the interior structure (or another object inside). The boolean functions can also be used to change the materials objects are made of - for example, you could use a shiny object to drill a shiny hole into another object with a matte texture. By the way, these textures and surfaces aren't limited to just shiny or matte. Light reflectivity can be set anywhere from absolute, light-absorbing matte to complete mirror, as can the refraction settings. The control is precise enough that you could actually make a magnifying lens, place it in a scene, and see it magnify whatever is on the other side of it. *Real3D* will accept any IFF image for texture mapping and there are several methods for wrapping the image: parallel, cylinder, color, ball, and spiral. These can be used separately or simultaneously for some very weird effects. There's also very good support for bump mapping, to which you can also add reflectivity and brilliance. One

of the more impressive *Real3D* demos uses just this technique to create very realistic moving water. Animations can be controlled by scripts or interactively from the keyboard, and can be created and edited in key frame style. There are numerous options for the raytracing output, including wireframe and single light source for testing. The final raytracings can be output in HAM, greyscale, or Targa, and support for more 24-bit formats is under way.

Version 1.4, which will be available by the time this hits print, incorporates a long list of new features. Among them are a visible grid, Phong shading for objects (there's also a smoothing option), and new texture mapping options. There is also a tool for making curved freeform objects, and Activa has improved the way the currently selected object is indicated by not only highlighting its name, but also flashing its wireframe. Can't get much more obvious than that.

Real 3D comes in two flavors, the basic consumer version which retails for \$199 US, and Pro/Turbo, which adds even more features (like outlines, unshaded, lapless, control of the aspect ratio, and a frame command) and costs \$499. Available in North America from Programs Plus & Video, 544 Queen Street, Chatham, ON Canada N7M 2J6. 519-436-0988. RS #251.

ADDRESS HELPER

Keeping track of names, addresses, and phone numbers is an endless pain; you can use little slips of paper that

get lost, an address book that you can erase and cross out, a text file, or a database manager (which is akin to swatting a fly with an Patriot missile). If all you want to do is keep a simple 'Rolodex' of the most needed information, check out *KarmaSofi's Mail-O-Dex Professional*. The program opens a window on your Workbench screen and gives you spaces for name, address, phone number, and date, along with two comment lines. You can also print labels with the program, specifying the exact size of the labels and there are little buttons to turn fields on and off for printing. *Mail-O-Dex* is 2.0 compatible, iconifiable, and it will even dial your phone for you. All in all, a lot of convenience for \$49.95. PO Box 1034, Golden, CO 80402. 303-490-2939. RS #253.

COMMODORE BOARD

We have been hearing about Commodore's Lowell graphics board for quite a while and now they've officially announced it. The **A2410** is a high resolution 1024x1024 pixel display card for the A3000UX Unix machine. It provides 8 bit-planes and can display 256 colors at once from a palette of over 16 million. The card was developed in cooperation with the University of Lowell and uses Texas Instruments' 34010 graphics coprocessor. It has one meg of video memory on board and is specifically designed for use with X Windows and Open Look Unix systems. The display requires a multisync monitor, such as Commodore's own 1950. 1200 Wilson Drive, West Chester, PA 19380. 215-431-9100. RS #254.

KEYBOARDING

Are you less than thrilled with your Amiga's keyboard? One of the problems with the Amiga's proprietary keyboard is that if you don't like it, you don't have any alternatives. Until now. *Co-Tronics* is shipping their **KB-Talker**, a \$69.95 interface that connects any PC/AT keyboard to an A1000, A2000, or A3000. The little box doesn't require any additional power supply and it performs the necessary translations automatically. The most obvi-

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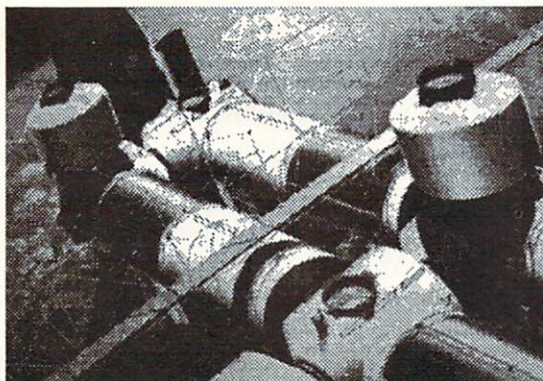
PixelScript Owners' Upgrade for \$89.00!

Introducing **SaxonScript Professional™**, the most powerful and sophisticated *PostScript Interpreter* available on the commercial market. It's like turning your *dot-matrix, ink-jet* or *laser printer* into a full fledged **PostScript printer**, with the added flexibility of being able to edit and manipulate individual files! **On printers equipped with resolutions of 300 dpi or more, the output quality of SaxonScript Professional actually exceeds that of 300 dpi Adobe PostScript laser printers!** Halftoned areas in particular, are consistently sharper, more detailed and feature better transitions between various levels of grey than comparable images produced by using PostScript.

FEATURES

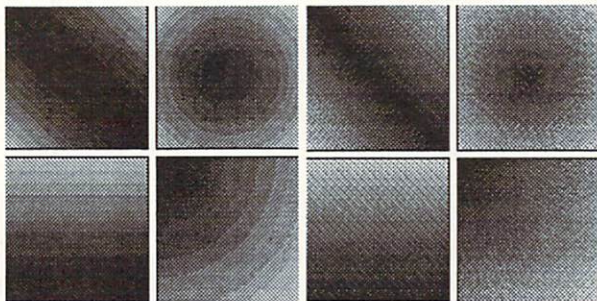
- True virtual memory for compatibility with low memory Amigas, or under conditions of heavy multitasking.
- A powerful **PostScript Interpreter** featuring the implementation of *all* of the standard PostScript operators.
- Support for all Preferences printers.
- A standard set of fonts, matching those most commonly found in PostScript printers: **Avant Garde, Bookman, Century Schoolbook, Courier, Helvetica, Palatino, Times, Zapf Chancery** and **Zapf Dingbats**.
- Support for all *PostScript downloadable fonts* including **Compugraphic, Adobe Type 1** and **Adobe Type 3** fonts obtained from any number of different sources. Any PostScript font on an Amiga disk can be manipulated within **SaxonScript Professional**.
- Conversion of PostScript fonts into **Saxon Publisher, Amiga Bitmap**, or **Adobe Type 1** formats.
- A full color **PostScript screen preview** which is **100% accurate** to the limitations of the screen display.
- The ability to convert PostScript files into a **compressed PostScript format** for faster output at service bureaus.
- The ability to test screen angles and densities for **moire patterns** before printing.
- The ability to integrate individual separations into a single full-color document for **accurate color proofs** on color printers.
- The conversion of PostScript files into **IFF, EPS, EPSF, or DR2D** formats for editing and manipulation in various applications.
- Automatic sensing of **68881, or 68882**.
- Implementation of all standard PostScript operators.
- An open architecture to allow customization by PD programmers.
- **Delayed printing** and **print to disk** options.
- Plus so much more!

PostScript Output at 300 dpi

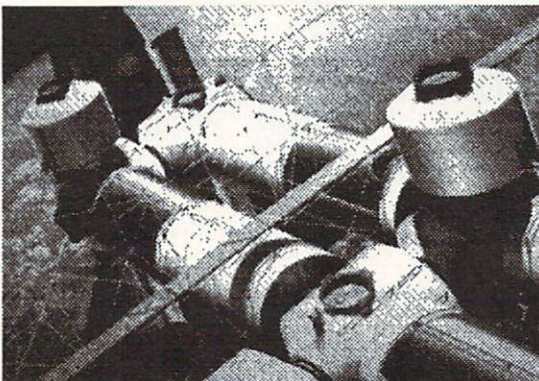


When pixel values cannot be reproduced exactly, **PostScript** renders the affected pixels in the closest *darker shade* available at the given screen density. *Subtle details are inevitably lost as a result.* PostScript halftones also tend to have a grainy appearance because of PostScript's inability to produce irregularly shaped halftone cells.

PostScript's approach to halftoning limits the maximum number of possible greys to a function of both *resolution* and *screen frequency*. At lower resolutions, this gives rise to the creation of very visible bands of grey which degrade the overall quality of printed images.



SaxonScript Output at 300 dpi



Because *SaxonScript's* algorithms intelligently switch between *halftoning* and *dithering*, any pixel value can be accurately reproduced. Notice the greater detail found in this image. *SaxonScript's* images are also sharper and crisper than comparable PostScript images because of the program's unique ability to create **irregular halftone cells**.

Our unique approach to halftoning does not limit the number of grey levels which can be printed. Consequently, no banding is visible in areas containing color gradients. This permits smoother transitions and enhances the overall quality of printed images.

FONT CONVERSION UTILITIES

SaxonScript Professional supports *all PostScript downloadable fonts*, including **Compugraphic** and **Adobe Type 1** fonts. Custom utilities further allow you to convert PostScript fonts into **Amiga Bitmap, Saxon Publisher** or **Adobe Type 1** formats for use in a variety of different applications!

IMAGE CONVERSION UTILITIES

Convert your PostScript files into **IFF, EPS, or DR2D** formats for manipulation in various *paint programs* and *desktop publishers*! Or attach **IFF headers** to your EPS files, effectively allowing you to **view EPS files on screen!**

PRINTING UTILITIES

Preview linotronic files for potentially costly errors *before* sending your output to a service bureau. Print PostScript *directly* to the screen display to

obtain accurate color proofs on screen. Using the included **moire testing program**, you can also test screen angles and densities for visible artifacts *before* printing! After verification, *SaxonScript's* proprietary *compression algorithms* can be used to **compress** your PostScript files into a more compact PostScript format for faster, i.e., much less expensive output.

SaxonScript Professional is available at your nearest dealer for only \$130.00! A **free copy of SaxonScript Professional** is also included with every purchase of **Saxon Publisher V1.2**.

SAXON INDUSTRIES

14 Rockcross Gardens,
Nepean, Ontario,
Canada K2G-5A8

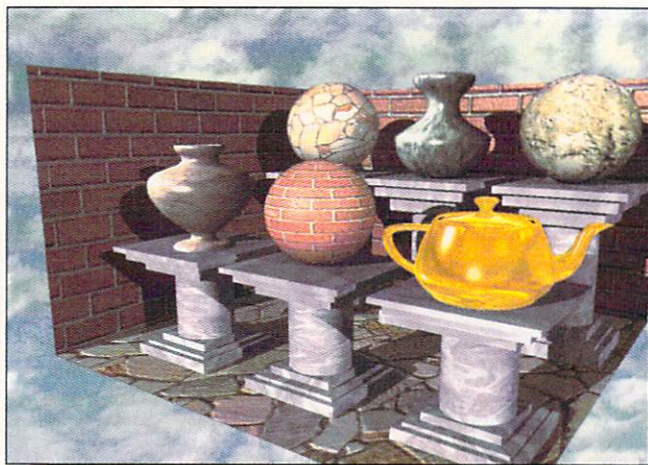
Tel(613)228-8043
Fax(613)563-9596

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MIN REQ: 1 meg,
2 drives.

* Amiga is a registered trademark of Commodore-Amiga Inc.
* All other products mentioned herein are the property of their respective owners.

NEW PRODUCTS



Map and wrap with Amazing Computers' *Pro-Textures*

ous use would be for Bridgeboard users, and the device even has a pass-thru. It would also let you use an A2000 keyboard on an A1000 (finally! a real numeric keypad!). The box supports dual keymapping that can be toggled on the fly and doesn't require any special software. We've also learned that a special A500 version is also in the works. The **KB-Talker 500** has an additional cable that is inserted through the A500's case and will also have a small circuit board to install. Of course, making the hole will void your warranty, but that's a small price to pay for adding a detachable keyboard to a 500. Once you have the hole drilled, you disconnect the regular keyboard and plug in the *KB-Talker*. You can then connect an external Amiga or AT keyboard. Price hadn't been determined at presstime, but will probably be about \$99.95. PO Box 5146, Glendale, AZ 85312. 314-429-2644. RS # 225

EXCLUSIVE OR

One of the benefits of having one company develop software across several platforms is that it tends to be compatible (or at least cooperative) from machine to machine. That's especially true with *Dr. T's* music software. Their latest is **X-OR**, The 'Universal System Exclusive Orchestrator' (quite a mouthful, huh?). Basically, it's an editor/librarian that can be set up to match a complete MIDI setup and automate communication of MIDI data. It works by taking a "snapshot" of the user's

setup, after which it can treat all of the MIDI devices as a single instrument. The package offers, among many other features, graphic editing of MIDI instruments and patches (sections of patches can be copied between patches), automatic MIDI patch bay switching, bank editing commands, a database (library), and automatic patch creation with programmable blending and randomizing. *X-OR* is also available in Macintosh, IBM, and Atari versions, which means that besides being widely used, all the data files and profiles you create with it are directly compatible with other versions. \$325.00. 100 Crescent Road, Needham, MA 02194. 617-455-1454. RS #256.

MAGIC WAND

Besides producing fractal software, *MegageM* has also put together a bar code reading package called **BarPro**. It's a complete system, comprised of a stainless steel wand and support software. The wand has connectors that plug into the Amiga's serial port and operates without a separate decoding box. It can read these types of codes: Code39, Code39ASCII, Code93, Code25 (regular and interleaved), Code128 (A, B, & C), UPC (including 2 & 5 addenda), EAN (8 & 13), Codabar, and MSI. The software will let you read bar code labels directly into other Amiga software (such as databases and spreadsheets) and bar codes could even be used instead of the keyboard; it can add a carriage return at the end of the code. The package also

includes software for generating and printing bar codes. The full package retails for \$899.50, and the bar code creation software is available separately for \$89.95. 1903 Adria, Santa Maria, CA 93454. 805-349-1104. RS #258.

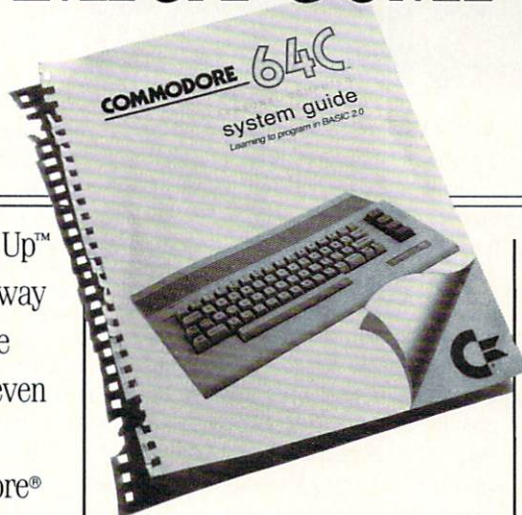
TEXTURING

As the Amiga penetrates further and further into the realms of video and animation, we're seeing more and more collections of textures for texture mapping. The latest we've seen is **Pro-Textures** from *Amazing Computers* (not to be confused with the periodical with a similar title). Volume #1 includes such surfaces as brick, clouds, gold, water, rock, flagstone, and two types of marble. The textures are specifically designed to be seamless: each edge matches the one on the opposite side so that when they're tiled onto an object, there won't be any visible joints. We were impressed with the graphic on the packaging and asked *Amazing Computers* to send us the original 24-bit file to reproduce here. As you can see, the textures wrap perfectly. Turn your imagination loose and wrap them onto your own objects. The set includes both 24-bit IFF and HAM images, and retails for \$59.95. 1441 E. Fletcher Avenue, Tampa, FL 33612. 813-977-6511. RS #252.

A500 HARD DRIVE

ICD, known for their imaginative Amiga hardware, are now producing **Prima**, a high-capacity 3.5" internal hard drive system for the A500. It manages to do this by replacing the internal floppy drive with a Quantum LPS-52AT (52 megabyte) or LPS-105AT (105 megabyte) autobooting drive. An included external adapter called the *ShuffleBoard* allows you to use an external floppy drive as DF0:, and the package also includes ICD's *AdIDE-40* host adapter. Price for the 52-meg **Prima52i** is \$649.95, and the 105-meg **Prima105i** is \$899.95. ICD is also selling the *ShuffleBoard* separately for \$39.95, as well as the *AdIDE-40* for \$159.95. 1220 Rock Street, Rockford, IL 61101. 815-968-2228. RS #259.

YOUR COMMODORE OWNER'S MANUAL IS WORTH UP TO \$300 OFF AN AMIGA® COMPUTER.



The Commodore Power Up™ program is the easiest way to buy an already affordable Amiga® 500 computer for even less.

If you own a Commodore® 16, 64, or 128; or a Pet, Plus 4 or VIC 20, write the serial number on the cover of the original owner's manual (no photocopies) and take it to your authorized Commodore-Amiga dealer. You can save \$300 on an Amiga 500P (off the MSRP of \$799). And \$200 on an Amiga 500S (off the MSRP of \$599).

The powerful Amiga 500S hooks up to your TV.* It has incredible graphics – with more than 4,000 colors. Built-in sound, word processing, and three exciting games.

The Amiga 500P includes

one MB of RAM, a word processor, a clock/calendar, paint and music programs, and a challenging graphics-oriented game.

And behind every Amiga is a 24-hour toll-free hotline. Plus a one-year limited warranty with free pick-up and delivery.

Graduating high school or current college students and educators can also qualify for this offer. See your authorized Commodore dealer for details before Oct. 31st, 1991. Or call 1-800-66-AMIGA.

THE AMIGA POWER UP PROGRAM

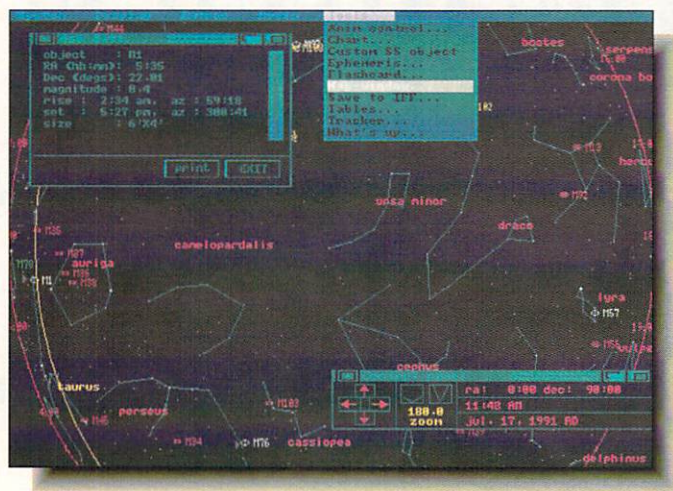


* With optional A520 RF modulator.
Subject to dealer participation. See authorized dealer for details.
Not valid with any other offer or special pricing program.
Offer ends 10/31/91. Commodore VIC 20, 64, 128, Plus 4 and Pet are registered trademarks of Commodore Electronics Ltd.
Amiga 500 series is a registered trademark of Commodore-Amiga, Inc.

Commodore®
AMIGA®

Circle #164 on the Reader Service Card

NEW PRODUCTS



Journeying through space and time with VRLI's *Distant Suns*

VIDEO SPIRIT

Spirit Technology has come out with a new genlock called the **Studio A**. It takes a modular approach to video production work, letting the user start with a basic unit and then add features as they're needed. The base model (\$795 NTSC, \$925 PAL) performs the basic genlock functions of overlaying graphics on video (or the reverse) and performing manual or automatic fades and cuts. The additional modules are boards that plug into the base unit. There are three modules so far. The first of these is a Y/C component (\$459) that provides S-VHS chrominance/luminance circuits (these are pure Y/C, not taken from the composite video signal, though there is also provision for transcoding the Y/C information from the composite). Another module (which is mutually exclusive with the Y/C module) provides separate RGB outputs and a video splitter (\$199 NTSC, \$280 PAL). A third module gives computer control, via the serial port, of production features. Just to make your life a little more convenient, Spirit has designed the front control panel of the *Studio A* to be removable, allowing it to be used as a remote controller. 220 West 2950 South, Salt Lake City, UT 84115. 801-485-4233. RS #260.

FAR AWAY PLACES

Virtual Realities Laboratories is shipping version 4.0 of Mike Smith-

wick's *Distant Suns*, which is the best astronomical program for the Amiga and probably the finest computer planetarium anywhere. This latest edition has undergone some major upgrading since the previous version, which is why it's here in New Products instead of in the Update section. Some of the new features include ARexx support (which VRLI suggests could be used for telescope control), multiple resolution, the ability to make ANIM files, double buffered screens, a definable search list, ephemeris, and (we love this) twinkling. Of course, the biggest upgrade is in the number of stars. The number has nearly doubled to 4200 in the basic package, and VRLI will be releasing auxiliary disks that will raise the number to 255,000. That's a lot of twinkling. Also, you can now place the viewpoint as far as 400 AU away from the earth and look back at our own solar system. The cost of this tour of the universe is \$99.95. 2341 Ganador Court, San Luis Obispo, CA 93401. 805-545-8515. RS #257.

TELE-SUPRA

The latest in *Supra's* modem line is their **SupraModem 9600**. At an unexpectedly low price of \$699.95, you get CCITT V.32, CCITT V.42bis, and MNP 2-5 protocols, which will give you up to 38,400 bps throughput when you're connected to another modem with the same protocols. Of course, you're more likely to use it at standard speeds up to 9600 baud, and *Supra's*

modems are known for their reliability and high quality, so you won't have to worry about whether the thing is going to work and keep working. Of course, the most tantalizing question this new modem raises is whether it's going to have FAX capability. *Supra* tells us that while this release doesn't, they are working on FAX modems and hope to have something out later this year. 1133 Commercial Way, Albany, OR 97321. 503-967-9075. RS #261.

C ME, FEEL ME

If you're into programming these days, you're into *C*. *Comeau Computing* has released **Comeau C++** in versions for both AmigaDOS and Amiga UNIX. It complies with the specifications of the ANSI C++ committee and is billed as a bridge for C programmers into the realms of object-oriented programming. The most important point to be made about this product is that it is compatible and consistent across a truly impressive array of platforms; there are versions for MS/DOS, all UNIX 386 machines, SCO UNIX 386, SCO XENIX 386, AT&T 3B2, AT&T UNIX PC 7300 & 3B1, Sun, IBM RS/6000. What this means in practical terms is that code developed with *Comeau C++* can be ported to and from any of these machines. The initial release supports Lattice/SAS C 5.10a as a back-end code generator, and support is planned for Manx *Aztec C* and Matt Dillon's *DICE C*. Under UNIX, it works with *GNU C* and AT&T's C compiler. The C++ package includes the compiler binary, include files and stream library, and the 2.1 Language Reference Manual. Cost is \$250. 91-34 120th Street, Richmond Hill, NY 11418. 718-945-0009. RS #262.

THE HYPER IMPULSE

We are starting to get a little hyper around here from all the Amiga hyperware. The newest is *Impulse's Foundation*, a hypermedia product that uses the stack metaphor popularized on the Mac. It goes beyond that, of course, into hypertext, macro recording, and application creation. The macro recording is interesting, since it

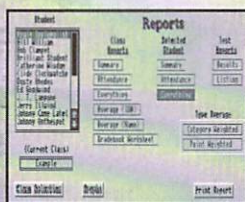
Simply Put

Teacher's Toolkit takes the drudgery out of the everyday paperwork tasks by providing an integrated set of tools with a special emphasis on ease of use.

The classroom teacher can manage grades, analyze student and class performance, compose lesson plans, keep appointments, write notes to parents, and keep track of important phone numbers.

Gradebook

- Unlimited students, unlimited grades, unlimited classes.
- Supports point grading systems and weighted-test category grading.
- Grades can be separately categorized and tracked as homework, classwork, quizzes and tests, even extra credit.
- Grading method conversion.



A COMPLETE CLASSROOM MANAGEMENT SYSTEM

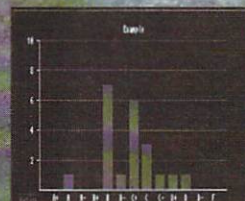
Reports

- Large selection of reports covering:
 - Individual student or class progress.
 - Test results and summaries for an individual student or the whole class.

Name	Class	Page #	Size	Grade	Test	Row
John Doe	Math	10	10	A	85	101
Jane Smith	Math	10	10	B	75	102
Mike Brown	Math	10	10	C	65	103
David White	Math	10	10	D	55	104
Emily Green	Math	10	10	F	45	105
Chris Black	Math	10	10	F	40	106
Alex Yellow	Math	10	10	F	35	107
Sarah Purple	Math	10	10	F	30	108
Ben Orange	Math	10	10	F	25	109
Lucas Red	Math	10	10	F	20	110

Graphs

- Comprehensive graphics displaying:
 - Class curve; class trends in different categories.
 - Student and Class Diagnostic.
 - Test results.
- Graph permits side-by-side comparison with class average.



Teacher's Toolkit

Lesson Planner

- Structured format breaks lesson planning into easy steps.
- Teacher can easily insure continuity between lessons and build upon previous creative ideas.
- Speeds lesson plan construction where material is similar.

Schedule Calendar

- Tracks school holidays, teacher meetings, parent-teacher conferences, etc.
- Keep Lesson Plan schedule
- Print day's schedule for use in class.

Telephone Book

- Keeps track of names, addresses, and phone numbers.
- Auto-dial phone (if you have a modem connected).

Memo Editor

- Small wordprocessor for quick notes, writing tests, etc.
- Search and Replace feature for quick changes.

Teacher's Toolkit offers unprecedented flexibility, supporting the needs of the elementary, secondary, and college level educator.

Coming Soon: Test Writer Toolkit

TTR Development, Inc.
6701 Seybold Rd.
Madison, WI 53719

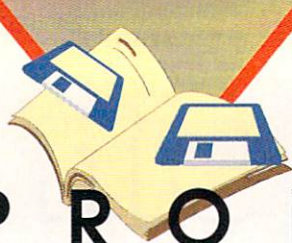
Sales and Technical Support
608-277-8071

Circle #162 on the Reader Service Card



BBS Support: 608-277-8072
Fax: 608-277-8073
BIX Support under TTR.Support

NEW PRODUCTS



Feed your Toaster with Kara's latest collection of fonts

can be used to record tutorials on how to use the program. There's built-in help and a collection of example stacks, including a phone/address book, calendar, and one called 'MediaBase,' which is designed as a database for animation, sound, and pictures. All of the examples can be used as starting places for creating your own custom versions. Impulse particularly emphasizes the suitability of *Foundation* for CDTV authoring. Applications can also be created using a built-in scripting language called FAST-Talk, which comes with a debugger and compiler. The idea here is that you can compile frequently-used routines into libraries and tools that can be used by multiple stacks. It also saves reinventing the wheel every time you want to perform the same actions, and affords a high degree of compatibility with Macintosh *HyperCard* stack scripts. The package comes with two stand-alone, freely-distributable stack readers/players so the people you give (or sell) your creations to don't necessarily have to own *Foundation*. Retail price is \$250. 6870 Shingle Creek Parkway, #112, Minneapolis, MN 55130. 803-556-3459. RS #263.

ANIMATION CONTROL

A new add-on for NewTek's *Toaster* is now shipping from a company called *Diaquest*. The **DQ-TACO** (you have to love the name) is a board level animation controller that plugs into a PC slot (no Bridgeboard required) and boasts frame-accurate recording on professional quality

video decks. The board itself has two RS-422 ports, so you can hook two VCRs to it, and it comes with software to control a long list of serial video recorders, including tape, digital, and laser videodisc units. The list is far too long to include here, but covers such brands as Sony, Panasonic, Ampex, Teac, JVC, and Abekas. The board will auto-configure itself to most of the recorders, and since it's an intelligent board, it performs its operations in the background, leaving the Amiga free to do other things. The **DQ-TACO** works in both NTSC and PAL, and complies with SMPTE/EBU standards. It also supports frame-accurate insertion of one or more video frames at pre-defined points and will even let you define pre-roll timing and park points so you won't damage your tape. There are a couple of options available as well: *Action Animator* is software for bringing video clips into the computer by sequentially digitizing frames based on their SMPTE/EBU codes. The *Desktop Editing* option uses both serial ports on the board for producing frame-accurate edits using one source and one recording machine. Price of the **DQ-TACO** is \$2195.00. 1440 San Pablo Avenue, Berkeley, CA 94702. 415-526-7167. RS #264.

KARA TOAST

We have been using Kara's fonts for years, and now they've come out with two sets of fonts to use with the *Toaster's* character generator. Each of the

six-disk sets contains four distinct fonts in two sizes. Each font consists of the full character set, both lower and upper case, numerals and symbols. **Toaster Fonts 1** features shiny and metallic styles: Chrome, Gold, GoldExtruded, and Inflated. **Toaster Fonts 2** goes for textures: Marble, Granite, Wood, and brushed Brass. Each font package retails for \$99.95. *Kara Computer Graphics*, 2554 Lincoln Boulevard, Suite 1010, Marina Del Rey, CA 90291. RS #267

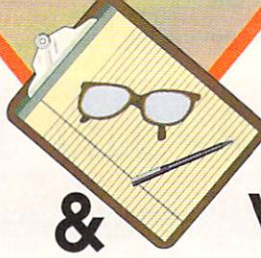
NOW WE'RE COOKING

OK, folks, it's time to move the Amiga out into the kitchen and get it cooking. (Just how long do you have to bake an Amiga before it gets tender?) Well, maybe you could use it to handle recipes. *Meggido Enterprises* is shipping **Recipe-Fax Version 2**. This software is billed as a complete recipe creation environment and has facilities for editing and rearranging ingredient lists and procedures, automatic adjustment of amounts (either fractional or decimal), and adjusting serving size yields. It will automatically generate shopping lists and you can add or subtract recipes from the list. To make the trip to the supermarket easier, it understands standard measures (cup, oz., kg., etc.) as well as common can sizes (#10, #303, and so on). Sounds like *Recipe-Fax* would be useful not just for home use, but in commercial cooking, too. \$44.95. 7900 Limonite Ave., Suite G-191, Riverside, CA 92509. 714-683-5666. RS #265.

BACKGROUNDER

If you're in need of backgrounds for 24-bit graphic applications, *The Digital Graphics Library* has a version of **Screen-Maker** to use with 24-bit graphic boards. The collection of 100 images (which sells for \$395) is comprised of various images, textures, and shapes can be easily modified to suit your needs. A sampler of 12 specially designed screens is available for \$48 (which includes a \$20 rebate coupon if you decide to buy the full set). 333 Third Avenue, Suite 333, New York, NY 10021. 212-978-8508. RS #266.

NEWS & VIEWS



HINT LINE

According to a press release from Electronic Arts, the 900-number industry raked in over a billion dollars last year. So it's no great wonder that EA has started a 900 number themselves. The system provides hints for their games (like *The Immortal*, *Might & Magic*, *Populous*, *Sword of Sodan*, *Centurion*, *John Madden Football*, *King's Bounty*, and many others) at a charge of \$.95 for the first minute and \$.75 for each additional minute. Before you get all bent out of shape over having to pay for the service, let's put it in perspective. The system is now available 24 hours a day, seven days a week, instead of only 40 hours a week during normal business hours. We also figure that having to pay for hints will make players try a little harder before they give up and call for help. We also expect other game publishers to quickly follow suit with their own 900 numbers.

PLINK R.I.P.

The plug was pulled on American People/Link on June 28th. The online service was by far the most popular Amiga telecommunications service and the sub-

scriber list read like a 'Who's Who' of Amiga computing. The decision to cease operation was a business one. The slack is being taken up by a couple of other services, most notably Portal. *.info's* own multimedia guru and former PLink sysop Harv Laser has moved the Amiga Zone to Portal and will hold court there. We'll let Harv tell you about it himself:

"The Amiga Zone crew is moving our act to Portal. Portal is a multi-user realtime national dialup network similar to Plink with many additional features: Zmodem batch file transfers, a full Usenet newsfeed, real-time live conferencing, and soon, in the tradition of the Amiga Zone, the best online Amiga support anywhere.

The entire crew of the Zone is moving to Portal with me: Dan James, Steve Tibbett, Oran Sands, Bill Seymour, Steve Gillmor, and John Hoffman (all Amigoids of renown in their own right) will work with me to set up, open, expand and manage Portal's Amiga support areas.

If you're a former Plink subscriber, we hope to see you on Portal soon! You can sign up any of these ways:

By Voice: 1-408-973-9111 (9am-5pm Pacific Time)

By Modem: 1-408-725-0561 (24 hours)
Or just dial your local Telenet/SprintNet node and type "C PORTAL" (without the quotes) at Telenet's "@" prompt for online signup, rates, and more information. Portal's rates are very low: a small flat monthly fee for all you can "eat", a small surcharge for access via Telenet unless you dial direct. Users in the 408 area code should dial direct.

Portal is, like Plink was, a PCPursuit "DAF" (Direct Access Facility). If you log into Portal with a PCPursuit account, you're looking at an hourly equivalent rate of under \$1.50/hour! Rate/Pricing info is available when you sign up."

ENTERTAINMENT STATS

The Software Publishers Association states that for the first time, simulations are outselling roleplaying games in the US. Whether it's the result of the Gulf War (simulation software includes wargames and flight simulators) and whether the trend will continue now that the war is over is anybody's guess. The results come from data submitted to the SPA by 26 companies and breaks down like

.info UPDATE

ADDRESS CHANGES

- ✓ Paris-based entertainment publisher UBISoft (B.A.T., Pick 'N Pile) has opened an additional office here in the US. The address is 15 Atwood Avenue, Sausalito, CA 97965. 415-332-8749.
- ✓ Supra has moved to new quarters at 7101 Supra Drive SW, Albany, OR 97321. (Must be nice to get a street named after you.) The phone number remains 503-967-9075.
- ✓ Talon Technology (ATonce, Beetle Mouse) has merged with Medionix. The new address is 9115 Brown Deer Road, San Diego, CA 91212. 619-597-6000.
- ✓ DKB Software has moved to

50240 West Pontiac Trail, Wixom, MI. The new phone is 313-960-8750.

PRODUCT CHANGES

- ✓ Interactive MicroSystems has announced that their *MediaPhile* desktop video system (see New Products, April '91) can control *Toaster* fades, wipes, and dissolves. 9 Red Roof Lane, Salem, NH 03079. 603-898-3545 voice 603-898-3606 fax.
- ✓ Neuralink has reduced the price of their *Context Bible* from \$120 to \$50. The price including *Thinker* (their hypertext system, which is required to use the *Context Bible*) has been reduced to \$100. Neuralink has also announced a free upgrade that will replace the search files with a pre-indexed concordance. PO Box 16311, Lubbock, TX 79490. 806-793-0423.

- ✓ D.J. Distributing, whose Amiga carrying cases we told you about in the last issue, tell us that they added a case for CDTV to their lineup. If you need one, contact the company at PO Box 654, Bountiful, UT 84011. 801-299-1208.
- ✓ It seems like a week doesn't go by without some new additions to Digital Designs Group's series of video graphics disks. The latest are *Birds, Up Close* (\$39.95, part of the Video Graphics Library Disk series) and *Birds in Nature* (\$49.95). *Birds in Nature*, which contains many of the same images as the other set, is the first of a new series, *Multimedia Graphics Library Disks*. These are HAM images with a resolution of 352x480. PO Box 593, Whiteville, NC 28472. 919-642-6295.

N E W S & V I E W S



this: 35.6% of entertainment sales were simulations, 26.2% roleplaying, and 22.1% arcade/action games. Interestingly, international sales (which account for 23% of the entire entertainment market) show a radically different picture. There, arcade/action accounts for 45.9% of sales, and simulations 32.3%, with sports, family entertainment, and roleplaying combined making up the remaining 21.8%. The primary platform, of course, is MS/DOS with 73% of the market, though the Amiga is second with 10%, and the C64 still hanging in there with 8%. The Macintosh isn't even a contender.

DOINGS AT COMMODORE

In a burst of generosity and good will, Commodore has donated Amiga equipment to Rowland High School in Rowland Heights, California. The inner city school will use the Amigas for its animation program, which is run by Dave Master. Master was nominated as Teacher of the Year in a contest co-sponsored by Technology and Learning magazine and IBM. Ironically, Master won the nomination for work using only Amigas.

Commodore's Power Up Program is now in full swing and it sounds like it's going to sell a bazillion Amigas. Under the terms of the program, owners of old Commodore machines, whether it's a PET, VIC 20, C16, C64, C64SX, C128, Plus/4 (did they actually sell any of those?), can buy an Amiga 500P (list \$799) for \$499 or a 500S (list \$599) for \$399. All you have to do to get in on the deal is rip the cover off of your original owner's manual, write the CPU's serial number on it, and take it to an authorized dealer. Students and can get the same deal by presenting a high school diploma, college ID, or college acceptance letter, and educators are also eligible with a school ID or business card. Call 1-800-66-Amiga or contact a dealer for more information.

If you don't want to buy an Amiga, your company can lease one (or preferably more). Commodore has set up their leasing program through Master Lease, based in Berwyn, PA. The Amiga 500P, Amiga 2000, and Amiga 3000 are available for lease and there are several leasing plans available. Squarely aimed at the multimedia

market, the plans include a Discounted Rental Lease, which offers reduced payments for the first couple of years of the lease, and Flex-Lease, which offers variable payments for companies with cyclical businesses. Contact Commodore (1200 Wilson Drive, West Chester, PA 19380. 215-431-9100) or Master Lease (1055 Westlakes Drive, Berwyn, PA 19312. 215-651-5000) for more details.

GENIE-OUS

Genie has announced a speedup to 9600 baud service. Approximately 80 cities already have the high-speed baud rate available, with more to follow. Slower speeds are, of course, still being supported. GENIE is also working on a new Amiga interface called *Aladdin*. It provides a colorful, convenient way to navigate the service, which can be very easy to

get lost in if you aren't paying close attention to where you are and what you're doing. The preliminary version we've seen looks like it will be very helpful. You can get GENIE sign-up information by calling 800-638-9636.

CONTEST

Deltaware, the developer of *A-Sound Elite*, is looking for a few good ideas. Twenty of them, to be exact. They're running a contest to find ideas for new Amiga software and are going to award a copy of *A-Sound Elite* to the best 20 they receive before November 20. All you have to do to enter is write out your idea in 75 words or less and send it off to Deltaware at 3148 Kingston Road, Suite 202, Box 395, Toronto, Canada M1M 1P4. Phone 416-431-2047.

THE RUMOR MILL

DISCLAIMER: The following are among the most entertaining rumors we've heard the past month. They are presented for your entertainment and amusement only. Please do not make any important decisions based on these rumors, as some will prove to be inaccurate or just plain false.

↪ If you're wondering where the 2.0 Kickstart ROMs are, here's the scoop: Commodore ordered two batches of the new 2.0 ROMs from two different vendors, and one company screwed up royally, swapping the low and high bytes Intel-style, rendering them useless. Replacements (without the MS/DOS style byte swap) are on the way. Meantime, 2.0 ROMs are in short supply.

↪ In addition to Commodore's highly successful A3000 and A500 Power Up Programs, look for a combination deal on an A500 and A590 hard drive, coming soon to an Amiga store near you.

↪ Further down the road, Commodore will be introducing the Amiga 300, a cost-reduced machine will all the features of an A500 and a \$300 pricetag. Shades of the C64!

↪ Surprisingly, one of the hottest features of CDTV is turning out to be its capability to play CD+G disks. Despite the limitations of the CD+G format, clever artists and programmers at Warner Bros. are managing to put together some impressive shows on these discs, and listeners like 'em! (Look for a report on the CD+G format from Harv Laser in the next issue.)

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VIDEO HARDWARE

Tired of knowing more about Amiga video than the people you buy it from? The technology is expanding so rapidly it's hard to keep up. So we've brought in some video experts to help you make the right selections.

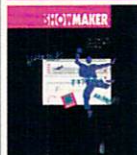
16mm Lens w/ Variable Iris	\$48
Amigen Titling Kit	Scall
CBM2320 Display Enhancer	\$249
Chroma Key Switcher	\$329
Colorburst	Scall
Color Splitter	\$105
DCTV	\$389
DPS Personal TBC	\$779
Firecracker 2400	\$929
Flicker Free Video	\$309
Frame Grabber	\$459
Ham-E	\$289
Hitachi KPC50LB	\$1019
Kitchen Sync	Scall
Minigen	\$189
Panasonic WV1410 Camera	\$179
Showline TBC's (as low as)	\$799
Sony 1304 Monitor	\$689
SuperGen 2000s	\$1399
Supergen	\$649
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		Director V2.0	\$79
		Disney	\$79
		Hyperbook	\$64
		Imagine	\$199
		Professional Draw 2.0	\$119
		Pro Conversion Pack	\$59
		Pro Video Post	\$219
		Scala	\$239
		Scenery Generator	\$62
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		Sculpt/Animate 4D	\$359
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SupraModem 2400zi	\$119
SupraModem 2400 Plus MNP5 v.42bis	\$175
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Some programs seem designed to encourage disk-swapping! They tell you to insert disks so many times that you're getting disk-swappers' cramp! Who says you can't get exercise from a computer? But who wants to?

A500/1000 3.5"int	\$69	AE High Density 3.5"	\$199
Air 3.5"	\$85	AMAX Compatible 3.5"	\$189
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Syquest 044MB Remvble	\$429
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Malibu	\$139
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Baseboard	\$109	\$205	\$299	n/a
Supra 500RX	\$139	\$209	\$389	\$599

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Gravis Mousestick	\$69
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SketchMaster 12x12	\$389

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Abyss

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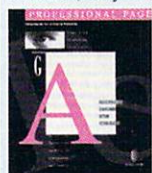
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PUBLIC DOMAIN

.info has consolidated its three public domain columns into a single column - this one. From here on out, I'll be writing about the most interesting PD and shareware programs from all sources. Although I will cite individual sources, many of the programs I'll be mentioning are available from other sources as well, including commercial PD disk collections, user group libraries, Fish Disks, and online services like Portal, GEnie, BIX, and CompuServe.

-Jeff Lowenthal

MGH #198

If you like Mandelbrot designs, you'll love this, the best collection I've seen (shown). These were plotted with *MandelVroom*, then manipulated in *DPaint*. Good work by Michal Todorovic.

MGHSoft Music Demos

Have you ever seen a European demo disk? The *Gnome Music Disk* I wrote about some months ago is a good example, and now there are many more. Mostly produced by overseas hackers, they will blow you away. Each takes a different approach to showing off coding skills, but all have in common scrolled messages with greetings to other hackers interspersed with self-serving statements about their own programming prowess. These scrolls twist, jump, cycle colors, and everything else you can imagine, with wild animation and scrolling backgrounds in several directions at once. MGHSoft has over 100 demo disks, with more arriving from Europe every day. Start with **MGHSoft 413** and **423** and see if you like them.

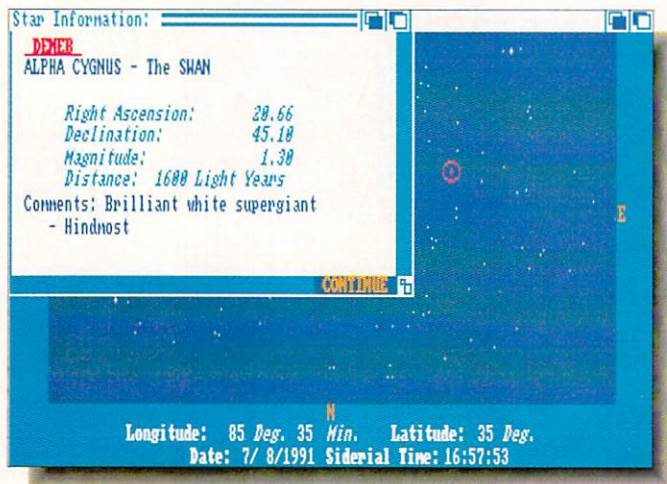
ADDRESSES

Cranberry Software, PO Box 565
Carver, MA 02355, 800-321-0815

Chiron Conceptions, PO Box 19474
Jacksonville, FL 32245, 904-260-6521

Barbara's Choice Software
38438 20th St. E, Palmdale, CA 93550
805-267-1172

MGHSoft, PO Box 645
Bayfield, WI 54814, 715-779-5600



Roy Larson's
Star Chart
from
CranWare
#161.

Cranware # 161

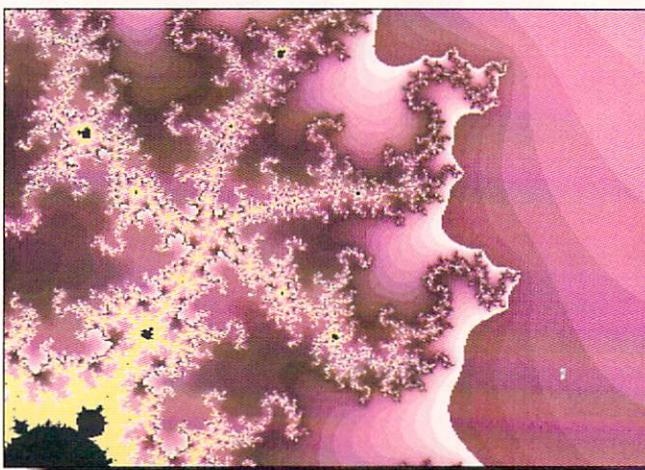
Roy Larsen's *StarChart* (shown) displays the sky for any year and location. Clicking your left mousebutton on an object brings up information about it. Clicking the right button will highlight the other stars in a constellation, showing you its form. Constellations can be selected for viewing from menus. You can also locate an object by typing its name in a requester. You'll like it if you're interested in astronomy.

Chiron Astronomical Pak

More astronomical programs are available in this five-disk package. Here you can create your own solar system, defining planets, satellites, etc. You even name them yourself, the ultimate conceit. (Mine were Jeffie, Gloria, Mary, and Marko.) There's a demonstration of colliding galaxies, an excellent sky chart, and much more, including a trip to Mars via well-done models. For the more technically minded, there's information on how to receive weather satellite pictures with a VHF scanner and your computer. Other disks include astronomical objects and a variety of programs. This set is ideal for the space buff.

Barbara's Choice #9257

We've had sampled Star Trek sounds before, but these are the best yet! The dialogue is very clear, unencumbered by background noise, since they came from a CD. Some of the dialogue samples will find their way into my system via *DiskTalk*, (on **CranWare #18**) a Nico Francois hack which plays a sound sample when you insert or remove a disk. Very funny, and a surprise for your friends.



A dramatic and
colorful portion
of the
Mandelbrot set
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GAMES

- #139-WARGAMES: Two excellent games that will keep you occupied for hours on end. SEALANCE - A great submarine simulator up to par with "Silent Service" and "Attack 668". AIR ACE 2 - Patrol the skies and keep your trigger finger ready.
- #404-GAMEHINTS2: Hints, cheats, and maps for "Chaos Strikes Back". Includes Super Characters plus many more tips and tricks for all your other favorites.
- #153-GAMEPAC: METAMORPH - IA well written dungeon game that changes every time you play. AMIGA TANXI - Shoot it out with a friend or an enemy with this great tank simulator game. Excellent sound and graphics. SPACEWAR - A Star-Trek arcade type game with remote modem feature for two players.
- #154-FLIGHTSIM: This disk contains DC-10 instrument flight simulator. Also on this disk PETER'S QUEST - A Rainbow Island clone.
- #191-ST:TNG: Star-Trek The Next Generation. Another great addition to the Star-Trek game library. Digitized sound and other effects.
- #022-BOARDGAMES: This disk is full of classic board games for multiple or single players. MONOPOLY, REVERSI, OTHELLO, CLUE, BACKGAMMON, and CHESS.
- #140-ARCADE4: PACMAN 87 - A classic PIPELINE - Keep the flow of oil going. ADDITIVE. CYCLES - A Tron like game.
- #183-DEMO'S: Two great fully playable demo's - LEMMINGS and the KILLING GAME SHOW.
- #184 - TRAIN: A great computerized ELECTRIC TRAIN set. METRO - Plan and control the transit system by building rail lines. SLOTCARS - Race along avoiding hazards and making death defying jumps.

GRAPHICS & ANIMATION

- #066-COVERGIRLS: 18 beautiful faces of models from around the world. Disk 1 of the series.
- #063-ANIMALS: 25 pictures of all sorts of animals. Point and click or use the slideshow projector. Also can be used in multimedia presentations or other projects.
- #068-MOVIESTARS: All your favorite TV and movie stars from today's shows. Point and click or slideshow.
- #071-RAYTRACE2: More stunning Ray Trace pictures. Great for showing off your Amiga or using in a project.
- #075-SPACE/ROBOTS: This disk is packed with great shots from space and a collection of assorted robots.
- #80-CARS: Porche, Lamborghini, Ferrari, and fourteen other exotic sports cars are all here in stunning high-res pictures.
- #083-SCENIC1: Beautiful art and pictures of the outdoors. Waterfalls, mountain ranges sunsets, much more. Disk 1 of the series.
- #89-SCI-FI: Star Wars and Star Trek fans this disk is packed with your favorites. Point and click.
- #156-POP ART: Create "Andy Warhol" type prints with this amazing graphic utility. Also includes ROT - A good ray-trace program.
- #46-ANIMATIONS: This disk contains some digitized clips from a few Marilyn Monroe movies and a spectacular Sci-Fi animation.
- #047-HUSSEIN: Watch Saddam get his in these humorous animations by Ray Lambert. Also includes a Hi Res picture of the defeated dictator for you to edit as you wish in your favorite paint program.
- #059-ANIMATIONS: TOOMUCH3D - Don't miss this excellent animation of a spaceship that flies straight out of the monitor and plays havoc on the room, only to return from where it came. Also on this disk BILLIARDS, 3SPACE, and a couple of good cycle pics.

- #120-AEROTOONS: A wacky collection of high altitude shenanigans from Eric Schwartz. STEALTHY MANEUVER, SKYDIVE, AGGRESSOR, SOVIET SOFT LANDING.
- #300-ANIMATIONS: Go along with "Amy the squirrel" in AT THE MOVIES by Eric Schwartz. This is a long running movie about a persistent date who won't take no for an answer. Rated PG-13.

UTILITIES

- #002-PRINTER DRIVERS: This disk contains many useful utilities for your printing needs. PRTRDRVGEN - Generate your own custom drivers for any printer. PRINTSTUDIO - Print hard copies of any type of IFF file (HAM, Extra-halfbright, Overscan). Print it all or just the part you want. LABELPRINT - Reads your disks and prints out labels for them. Also catalogs and allows custom editing. Much more.
- #003-COMPRESSORS: 16 files compressors, to include LHArc, ARC (v2.3), LHWarp(v1.4), PKAZIP, and ZOO (v2.0). These will compress your files up to 50%+ and are indispensable for the Telecommunicator or Hard Drive owner.
- #015-DISKUTIL1: SID - List directories, copy, delete, move and rename files with the click of a button. View text files & IFFs, hear sounds, compress and decompress ARC files. Allows for custom commands. If you don't have this program, get it and you won't have to mess around with CLI commands ever again. TURBOBACKUP - Copies disks in less than 105 seconds. FIXDISK - Recover files from defective disk, even unreadable tracks. DISKSPEED - Gives accurate results of true disk performances. RAMCOPY - For one drive users. Allows you to copy disk on one pass. Also on this disk - FASTDISK.
- #035-MOUSE: DMOUSE - Auto-activate any window without clicking. MACHII - A mouse accelerator with hot keys (and other stuff). Many more Mouse enhancements to include a mouse driver for left handed users.
- #039-MISC: A grab bag type disk full of useful tools and applications from ARP projects to ANSI editors.
- #074-CONVERTERS: GIFTIFF - Converts IBM GIF format pics to Amiga IFF format simply. AMGIF - Converts IFFs to GIF. ANIM2IFF - Convert animation files back to IFF pictures. MACVIEW - View or convert MacPaint pictures to IFF format. SEARCH - A handy little program that searches an entire disk for IFF picture and sound files. MULTIVIEW is also included on this disk.
- #076-ANIPPOINTERS: A great collection of animated pointers. Replace your old workbench pointer with a new colorful animated one. Dragons, mermaid, fish, crosshair, globe, rainbow, spinning ball, snakes, many more. If you can't find one to suit your needs, POINTERANIM allows you to custom design your own.
- #10-HARDDRIVE: Everything needed to maintain your hard drive. MRBACKUP, KWIKBACKUP, BACKUPII - Great utilities for backing up your data, similar to QuarterBack. DISKSALV - A powerful disk repainer with a well down user interface. LOOKFOR - Finds any file on your drive. FILEMASTER - Allows you to manipulate bytes of data, like NewZap but much better.
- #345-BACKUP: XCOPYIII and NIB - Copies what the others won't. Gets rid of annoying code wheel protection and other protection schemes. Plenty of parameters included.

PROGRAMMING

- #204-C-COMPILER: Powerful and full featured C compiler and environment system.
- #201-CTUTOR: Covers Game Programming, Sound Implementations, Device Drivers Double Buffering, IFF reads and writes and much more.
- #202-CMANUAL: A good Amiga Dos C reference guide. Unpacks into 3 disks.

BEST BETS

- #ED1-EuroDemosPAK: We have had many requests from our customers for European demos. Well here they are! 3 disks of great overseas Animation and Sound! Specially priced at only 9.90!
- #67 & 68-Covergirls 1 & 2: Our covergirl collection set specially priced this month. 2 disks for only 4.95! A real bargain.
- #PTB-C-Programmers: This is a 4 disk set that will unpack into 7 disks! Contains the complete Amiga C Manual, Matt Dillon's C Compiler, C-tutor disk and Steve Ballem's Debugging tool kit! All this for only 12.95.
- #172-ClipArt: 2191-ST:TNG: More clips to use on your favorite word processor. Covers a wide range of subjects from business to home.

TELECOMMUNICATIONS

- #013-TELECOM: Includes COMM(v1.3), AMIGATERM, AZCOMM, A-HOST, and HANDSHAKE(v2.12). These support all the popular protocols, Xmodem, Zmodem, Ymodem, etc., many other features. An unbeatable value anywhere.
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Hardware

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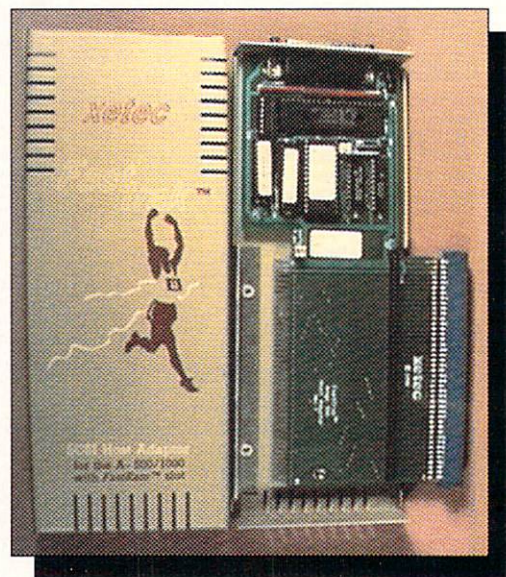
In this final installment, I will examine Xetec's *FastTrak*, the *DataFlyer 500* from Expansion Systems, and GVP's *Impact Series II A500-HD+*. (See issues #39 and #41 for previous installments in this series on A500 expansion.)

XETEC

Xetec has taken a modular approach with their *FastTrak* system for the Amiga 500. The basic module, the *SA-5 Host Adapter*, is a compact metal enclosure which plugs into the A500's expansion port. It houses the SCSI host adapter and up to eight megs of expansion RAM. The *SA-5* logs in as the smallest plug-in unit by placing the hard drive and power supply in an external enclosure. The *SA-5* does provide a pass-through for the Amiga's expansion port; however, none of the A500 peripherals that I had on hand would fit it. The *SA-5*'s port lacks the clearance for the metal housing extensions that most manufacturers provide. The hookup to an external SCSI disk drive is via a 25-pin connector on the *SA-5*'s back panel.

Inside are jumpers which select autobooting on/off for Kickstart 1.3 systems, and whether the A500 or the external drive will serve as the unit's power source. Up to eight megs of autoconfiguring expansion RAM can be added to the system by installing the optional model *FR5 FastRAM* board. The *FR5* mounts on a 100-pin connector inside the *SA-5*. Two or four megs of fast RAM can be added using 1M SIMMs, or eight megs of RAM can be installed with a pair of the more expensive 4M SIMMs. The *FR5* will also accept 256K SIMMs; however, these will limit the memory to either 512K or one meg.

The hard drive enclosure is 14" wide x 12" deep x 3" high. The fan-ventilated metal enclosure is sturdy enough to support the video monitor. Inside is the system's power supply along with plenty of space for a 5.25" half-height hard drive. I mounted the 3.5" Quantum drive in this space on an adapter chassis. If you are installing your own drive, Xetec will supply the system with all the mounting adapters as well as a 5.25" half-height face plate with a drive activity LED. The drive enclosure's back panel has an on/off switch, a power connector, and a single 25-pin connector for the SCSI cable. Xetec makes a SCSI 25-pin to 50-pin adaptor board



Xetec's *FastTrak* A500 SCSI host adaptor module is the smallest of the lot.

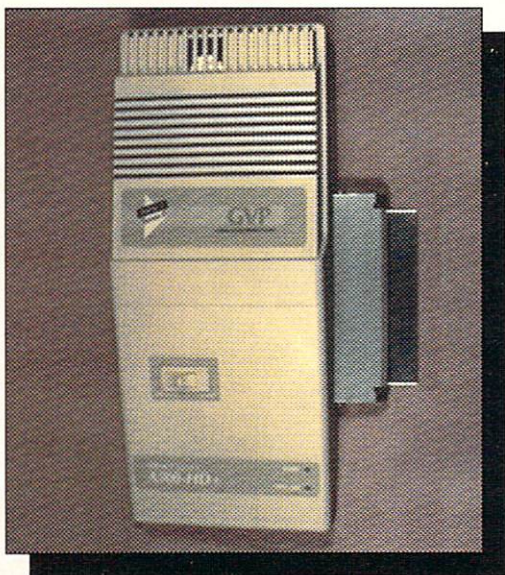
which can be installed in a second cutout on the back panel.

The setup software is effective, easy to use, and modular. Separate utilities are provided for low-level formatting, partitioning, high-level formatting, installing the software, and creating a boot partition. Two versions of the partition software are provided for novice and advanced users. The system uses Commodore's rigid disk block standard for storing the partition information on the hard drive. A small "old file system" boot partition is required for autobooting systems. This partition automatically transfers control to a fast file system partition. I found that this arrangement had little or no effect on the system's performance. The only inconvenience I encountered was that the system configuration file had to be copied from the main partition to the boot partition whenever it was updated by a save from Preferences. Xetec has chosen this setup to minimize the need for ROM changes and keep the costs down whenever a system update is released.

GREAT VALLEY PRODUCTS

GVP's *A500-HD+* is a near perfect match to the styling of the A500 case. Its 13" deep x 3" high x 5"

This
installment
completes
Mort's overview
of outboard
expansion
products for
the Amiga 500.

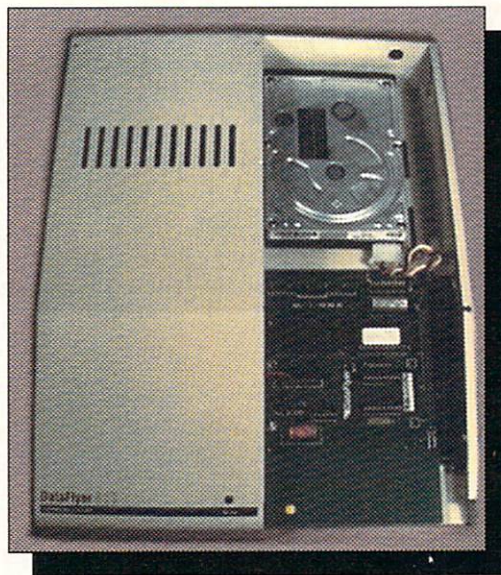


GVP's *Impact Series II A500-HD+*. Note the game switch, which turns autobooting on and off.

wide plastic enclosure follows the contours of the Amiga's case, matching even the grooves which conceal the ventilation slots. Green and red power and hard disk activity LEDs are mounted flush towards the front of the of the case. A small but noisy fan ventilates out the top rear of the enclosure. A sliding game switch, situated in the center of the sloping front panel, turns autobooting on and off. The system comes with an external brick-type power supply which plugs into the back of the unit. The power supply has its own on/off switch and a plug-in power cord. Although the manual recommends simultaneous power up, I found that I had to power up the *A500-HD+* before the computer to avoid a system lockup. Powering up the system from a power strip invariably required a warm reboot to get the system started.

The plastic case conceals a less attractive sturdy metal enclosure which covers most of the main circuit board. Removing three of the nine screws on the bottom of the unit lets you take off the plastic cover. A slip-off metal hatch provides access to a set of four SIMM sockets. Two or four megs of RAM can be added to the system by using 1M SIMMs. A pair of the more expensive 4M SIMMs let you expand the system to a full eight megs of fast RAM. A half-height 3.5" inch hard drive is mounted at the rear of the unit. The system I tested was equipped with a Quantum 52M hard drive. The internal hard drive connection uses a standard 50-pin SCSI connector and ribbon cable. Additional SCSI devices can be daisy chained to the external 25-pin connector which is located on the system's back panel.

The system does not provide a pass-through for the Amiga's expansion bus. Instead, a 100-pin header connector is located inside the unit alongside



The *DataFlyer 500* from Expansion Systems, with its 100-pin *FastRAM* slot.

the connector to the Amiga's expansion port. This is the GVP 'MiniSlot' which, in the words of GVP's literature, "will allow *Impact A500-HD Series II* owners to expand their A500 like they never thought possible." MiniSlot peripherals will be available in "the near future."

Hard drive formatting, partitioning, and setup was fast and easy using the integrated *FaaastPrep* software. Both automatic and manual modes are provided, which should satisfy both novices and advanced users.

Other than the slightly noisy fan and the sequential power up, the *A500-HD+* performed without a hitch and the system turned in an impressive performance in the speed tests.

EXPANSION TECHNOLOGIES

The *DataFlyer 500* is housed in a 5.75" wide x 2.25" high x 15" deep sheet metal enclosure whose profile is a close match to that of the computer. The back panel has cutouts for a power connector and a 25-pin SCSI connector. The hard drive mounts at the rear of the enclosure. Mounting screws and a 50-pin ribbon cable are included in the package.

The connection to the Amiga 500 is a basic 86-pin to 100-pin single slot extension to the Amiga's expansion port. The *DataFlyer* SCSI host adapter is a standard A2000 half-length plug-in card which is at home in either computer. The system is advertised and sold as a low-cost no-frills hard drive interface. The connectors on the host adapter include a standard 50-pin SCSI port, a 26-pin header for an optional external SCSI port (\$19.95), a 2-pin connector for the hard drive activity light, and a 100-pin header for a piggy-backed optional memory board. The board is missing the jumpers

Xetec FastTrak

Q52

☆☆☆☆

\$625.00

Xetec

GVP Impact

Series II

A500-HD+

☆☆☆☆

\$489.00

Great Valley

Products

DataFlyer 500

☆☆☆

\$189.00

Expansion

Systems

DiskSpeed 3.1 Test Results

Device: Xetec FastTrak 500 with Quantum 52M drive.

Test Intensity: Med; Performance Stress: None

8 Files Create, 20 Files Open/Close, 117 Files Scan, 24 Files Delete, 48 Seek/Read

BUFFER SIZE	512	4K	32K	256K
Bytes Create	25461	139230	223138	251815
Bytes Write	26744	172405	354604	464421
Bytes Read	71659	279232	394951	486589

Device: GVP A500-HD+ with Quantum 52M drive.

Test Intensity: Med; Performance Stress: None

11 Files Create, 24 Files Open/Close, 109 Files Scan, 15 Files Delete, 195 Seek/Read

BUFFER SIZE	512	4K	32K	256K
Bytes Create	29180	142708	277309	333046
Bytes Write	30002	195438	478494	699050
Bytes Read	65196	318302	472043	726155

Device: Expansion Systems DataFlyer with Quantum 52M drive.

Test Intensity: Med; Performance Stress: None

9 Files Create, 24 Files Open/Close, 149 Files Scan, 31 Files Delete, 204 Seek/Read

BUFFER SIZE	512	4K	32K	256K
Bytes Create	60268	98040	148470	163880
Bytes Write	66378	109834	191329	205697
Bytes Read	95055	260785	371794	443450

which choose between Kickstarts 1.2 and 1.3.

The basic system lists for \$189, and I have seen it advertised for less than \$150. The optional memory board, which is fitted with slots for eight SIMMs, lists for \$119. Using low-cost 256K SIMMs, you can add 512K, one, or two megs of fast RAM. With the more expensive but cost effective 1M SIMMs, you can add two, four, or eight megs of fast RAM. The entire system is powered from the Amiga 500 unless you buy one of the optional power supplies. The small supply, which powers only the expansion memory, lists for \$29.95. A 40 watt supply, which can power the hard drive, host adapter, and the memory board, lists for \$79.95.

The no-frills setup software is easy to use. The format and partition program only asks for the percentage of the drive which is to be allocated for each partition and takes care of the rest. The installation program copies the Workbench and system

files. The software and hardware were designed by Ricketts, Inc., an independent producer of electronic peripherals which does not sell directly to the end-user. As a matter of historical note, Ricketts was the company that manufactured many of the products sold by the late C Ltd.

The *DataFlyer 500* is an effective no-frills way to add a hard drive to the Amiga 500. But keep in mind that much of the low cost is due to the options which are standard on the other systems.

CONCLUSIONS

Any one of the systems we've looked at over the past few months will provide satisfactory results for general purpose use. When shopping for price, keep in mind the accessories such as power supplies. The Xetec and GVP systems come with their own; power supplies are optional for the others. If you are impressed by speed results, *Trumpcard Professional* comes out on top with GVP right behind. The speed

results for both *Trumpcards* and the *DataFlyer* held up well with CPU stress and DMA contention turned on. The Xetec system takes up the least amount of space next to the computer, and its drive enclosure doubles as a monitor stand. If you are planning to upgrade to an Amiga 2000, keep in mind that the *Trumpcards* and the *DataFlyer* can be transferred to that system. Probably the best way to keep the cost down is to buy the bare bones enclosure and then buy a hard drive and memory from a mass marketer.

ADDRESSES

Xetec

2804 Arnold Road
Salina, KS 67401, 913-827-0685

Great Valley Products

600 Clark Avenue
King of Prussia, PA 19406, 215-337-8770

Expansion Systems

44862 Osgood Road
Fremont, CA 94539, 415-656-2890



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6 MB	CALL
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2400 ZI PLUS (MNP - V.42 Bis)	\$155.00
9600 PLUS (V.32, MNP - V.42 Bis)	\$540.00
SUPRA WORD SYNC (A2000)	\$99.00
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PRIMA 52i (A500)	\$459.00
PRIMA 105i (A500)	\$639.00
AD IDE -40 (3.5" HDKII)	\$109.00
AD IDE -44 (2.5" HDKII)	\$119.00

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52 MB - LPS	\$235.00
105 MB - LPS	\$385.00
210 MB - 5	\$710.00

Seagate

ST 157N - 1/49MB-28MS	\$225.00
ST 277N - 1/60MB-28MS	\$275.00
ST 1096 N /80MB-20MS	\$325.00
ST 296 N /80MB-28MS	\$285.00

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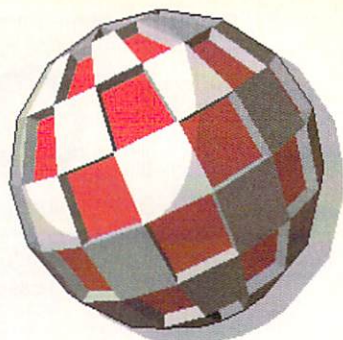
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CyberPlay

by Tom Malcom



Incredible
★★★★★

Very Good
★★★★

Average
★★★

Poor
★★

Drek
★

It hasn't been the best of summers for new game releases. With a couple of exceptions, the games I've been playing for the past few weeks have been notable mostly for their sleep-inducing qualities. I've had to take a close look at a few of them to make sure I hadn't pulled an old title off the shelf instead of one of the new ones. We seem to be on a long, slow downslide into generic, marketing-inspired IBM-style entertainments. The good news is that there are better on the way. Psygnosis has several new games under development, Virgin Games is shipping *Wonderland* (look for a review next issue), and we're starting to see more new games from smaller publishers and new startup companies. The December issue of *.info* will focus on games and entertainment, so stay tuned to this space.

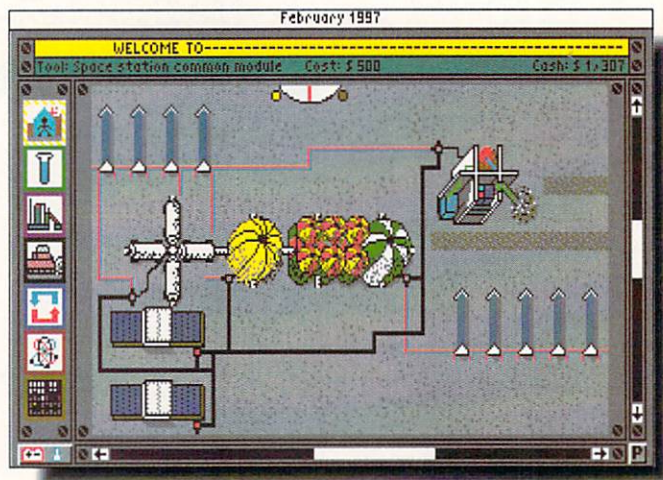
MOONBASE

★★★★+

Wesson International,

500 S. Capitol of Texas Hwy.,
Austin, TX 78746, 512-328-0100

Moonbase is the first simulation to hook me since *SimCity*. The concept and execution is very close to *SimCity*, though the feel is thoroughly lunar. Maxis did include a Moon Colony in their *Future Cities* expansion graphics sets for *SimCity*, but the



Lunar colony under construction in *Moonbase*

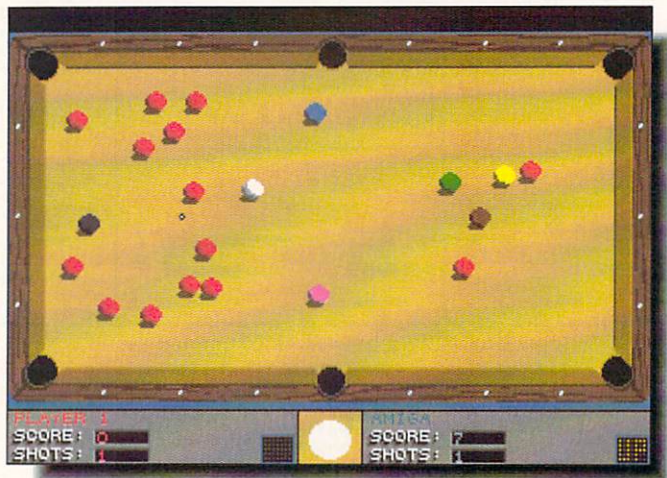
objectives in *Moonbase* are different. (And to be honest about it, I'd like to have the Moon Colony graphics in *Moonbase*; they're considerably better.) The primary goal in *Moonbase* is profit. It seems NASA has turned cheap and will support a colony for only ten years. After that, the support dries up. In gaming terms, this means you have to work fast to get from bare rock to a populated, efficient base capable of exporting salable items back to Earth before NASA pulls the plug.

Getting started is a little on the frustrating side, but worth the effort. The manual, while it is well done and does have an

index that helps a little, lacks organization. Wesson also neglected to put any saved colonies on the disk, something that would have helped enormously in figuring out how things work. The play is controlled by icons and submenus, with a level of detail that strikes just the right balance between complexity and playability. You begin by setting up housing for the lunar workers (are lunar residents referred to as lunatics?), and then a power supply. In addition to the power, you must also take care of thermal control. Since the Moon has no atmosphere, excess heat must be dissipated by special radiators, which must be monitored as closely as the power. Once you get the basics set up and start adding to the population, you can then get mining and manufacturing operations under way. It's here that a business aspect comes in; you sell what you produce and then figure out how to use the proceeds to expand the colony. You can also generate income by setting up tourist hotels, a fun touch.

Much as I like *Moonbase*, I think it could have been slicked up a little better. The graphics are adequate, if uninspired, and the scrolling is jerky. There are some digitized voice announcements now and then, and though the sound effects are minimal, it doesn't detract from the game at all. On the plus side, *Moonbase* is hard drive installable and runs fine under 2.0.

Shooting a little snooker down at *Fast Eddie's*



Moonbase is the first Amiga simulation from Wesson and there's a reason that it's so good. The company has been developing real-world simulations for several years, primarily air traffic control, and are the publishers of *Tracon*, an IBM air traffic entertainment simulation. They're also doing work on simulations for NASA and are working on an Amiga version of *Tracon II*. If you enjoy simulations, don't miss *Moonbase*.

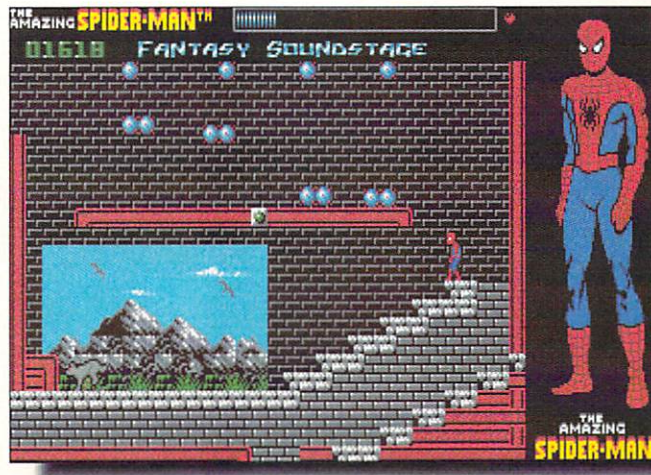
FAST EDDIE'S POOL & BILLIARDS

★★★★+

Aegis/Oxxi, PO Box 90309, Long Beach, CA 90809, 213-427-1227

I didn't much care for this game at first, but it's one of those rare pieces of software that grew on me the more I played. It has so many nice touches and little points of detail that it almost convinced me to start hanging out at pool halls again. (I vividly remember some parent/rebellious-adolescent arguments on that very subject.) For example, on the game selection screen, there's a video arcade machine that you can click on to pull up a little missile command game. It's nothing outstanding, but its inclusion is a wonderful touch.

Fast Eddie's pool hall offers billiards, snooker, and bumper pool, as well as several variations on regular pool. You can play eight-ball, nine-ball, cutthroat, rotation, and enough others to keep you out of real-world pool halls for months. The mechanics of play are simple and efficient,



Getting Spidey through another puzzle in *The Amazing Spiderman*

THE AMAZING SPIDERMAN

★★★★+

Paragon/MicroProse, 180 Lakefront Drive, Hunt Valley, MD 21030, 301-771-1151

I'm not sure why I played this game for as long as I did (and far longer than I needed to for this review). The most likely explanation is that it's been a while since a Nintendo-type arcade puzzle game has come across my desk. Spiderman was always my second-favorite comicbook hero (right behind Superman), and while this game doesn't have much of Spidey's personality in it, as a playable arcade game it's not bad. Not great, but a good way to fritter away a few hours.

Using fairly responsive joystick control, you guide Spiderman through a series of interconnected screens throwing switches to open up other sections. Bad guys are trying to stop you, of course, and there are traps to avoid and lots of puzzles to figure out. Movement is the usual run, jump, and crouch, though you can also throw webs and swing on them. The artwork is decent and the animation is about on a par with Nintendo; it could have been considerably better. The background screens are crisp, but the characters could have used more detail.

The main thing *The Amazing Spiderman* has going for it is playability. It hooks the player in the first five minutes and knows how to entertain without becoming simplistic or terminally frustrating. Like a good TV cop show, it won't win any awards, but it's fun to play once or twice.



Tom Clancy's bestseller comes to the computer screen

CyberPlay



Tank command
in quad-view:
ReadySoft's
Team Yankee

THE CARDINAL OF THE KREMLIN



Capstone/Intracorp, 14160 SW 139 Court,
Miami, FL 33186, 305-252-9040

Probably the only detrimental effect of the end of the Cold War is that it has made so many political potboilers and spy thrillers irrelevant. Based on Tom Clancy's bestseller, *The Cardinal of the Kremlin* has to do with the Star Wars anti-missile defense race between the U.S. and the Soviet Union. It has the requisite spies, scientists, satellites, and treachery, and the game plays rather well if you can forget the political events of the past couple of years.

The idea of the game is to recruit scientists for the basic research of a laser-based defense system and get satellites launched before the Russians do. There are other elements to make the job difficult, everything from kidnapping to the CIA to job burnout. The player's task is to keep everything running smoothly while combatting the Soviets. The various elements are controlled from separate screens where different options can be clicked. The interface is reasonably easy to manage and the game moves along at a fair clip, with situations constantly changing, making the play challenging.

The graphics are fair, if a little on the cartoonish side. If you're a fan of spy thrillers, give *Cardinal of the Kremlin* a play. We probably won't be seeing many more in the genre. The real world, in a rare fit of good sense, has rendered it obsolete.

TEAM YANKEE



Empire/ReadySoft, 30 Wertheim Court,
Unit 2, Richmond Hill, ON Canada L4B 1B9,
416-731-4175

Great, I thought when I looked at the box, another tank simulation. Just what the world needs. There have been about four times too many of them released in the past couple of years. So imagine my surprise when I actually liked this one.

The problem with many simulations is that they get so bogged down in detail that by the time they get around to the play, the player has gotten bored and booted up something else. *Team Yankee* doesn't do that. I'd recommend going through a practice mission before you jump into the game, but getting into combat is quick and easy. The graphics are very well done, using a combination of solid-modeled images and

bitmaps that work very well together and provide more landscape detail than is usual in combat games.

From what I've been able to find out, the game is quite accurate in its facts, but it doesn't let that get in the way of the play. You are in command of four platoons and it's here that *Team Yankee* really shines. Switching between the many views and magnifications is instantaneous and very slickly done.

Like so many wargames on the market lately that depend on a scenario of the U.S. against the Soviet Union, *Team Yankee* has the feel of being left behind by real-world political events. That doesn't make it any less playable, but it does lessen the game's impact, turning it into fantasy war. Overall, if I had to pick one tank game to play, *Team Yankee* would be it.

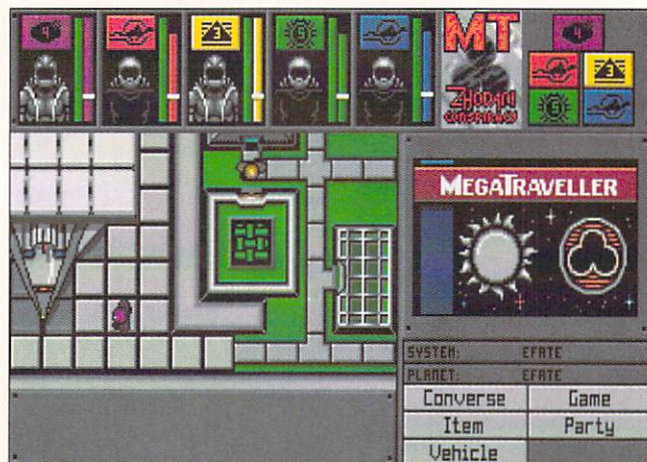
MEGATRAVELLER I: THE ZHODANI CONSPIRACY



Paragon/MicroProse, 180 Lakefront Drive,
Hunt Valley, MD 21030, 301-771-1151

The IBM version of this sci-fi roleplayer has been very popular and I've been eagerly waiting for the Amiga version, hoping it would be something special. It isn't. Sure, the graphics are better than average, and the play is reasonably streamlined, but there's certainly no original thought in it.

Combining overhead ground views with starmap navigation and interplanetary trading, there's the usual plot about preventing



MegaTraveller
comes from
paper to IBM to
Amiga

a galactic war. The whole plot is unmemorable enough that I couldn't remember any of it an hour after I'd read it. The staggering amount of detail, which I'm sure was meant to add to the realism of the game, instead is just mind-numbing. Like so many boardgame conversions, this one, too, suffers from not using the computer effectively to take care of the drudgery of playing a game that started out using paper and pencil. I don't care about hitpoints and endless statistics, I care about playing. (One more gripe and then I'll stop - I am sick and tired of games like this one that start with an attack before the player even has a chance to get his bearings.)

Roleplayers and diehard sci-fi readers will undoubtedly find a lot to like in *The Zhodani Conspiracy*, others will most likely be bored and frustrated.

KING'S BOUNTY



New World Computing/EA, 1820 Gateway Drive, San Mateo, CA 94404, 415-571-7171

Yet another in the endless stream of *Faery Tale Adventure* clones, *King's Bounty* is your standard quest to return yet another sceptre of power to yet another inept king. (How do these dweebs get to be king anyway? The way they keep losing things and otherwise mismanaging their kingdoms, you'd think their families would have died out years before.)

The artwork is crisp and colorful, but the animation is seriously subpar. Your position is represented by a man on horseback, and the horse frequently doesn't even face the



Hacking and slashing through *King's Bounty*

direction it's moving. Pretty lame. The battle sequences quickly bog down into tedium and like most games in the genre, there are entirely too many of them for no good purpose.

I'm seriously disappointed with this latest from New World. They've proven they can do excellent games (*Nuclear War* was one of last year's best), but now seem to have jumped on the me-too fantasy wagon. OK if you feel you just have to go on one more quest, undistinguished otherwise.

BRIGADE COMMANDER



TTR Development, 6701 Seybold Rd., Suite 220, Madison, WI 53719, 608-277-8071

I had thought that the days of hex-grid

wargames were over, replaced by war simulations with better graphics, or at least invisible grids, but *Brigade Commander* shows that the old days haven't completely passed. This wargame has several things going for it, like accuracy, a terrain editor, and a Desert Storm scenario disk, but it also has one major shortfall: the lack of a way to speed things up. Getting a unit from one place to another takes just as long as in the real world. That may be good for the sake of accuracy, but in a game it's about as exciting as watching paint dry. TTR did have the foresight to include a tutorial scenario to help you get going, and while the manual is adequate, it's filled with misspellings and grammatical errors.

Wargamers will probably find *Brigade Commander* interesting, but they're the only ones who will.

KING'S QUEST I



Sierra, PO Box 485, Coarsegold, CA 93614, 209-683-6858

Until now, there's been a hole in Sierra's Amiga lineup and I'm glad to see they've released the original *King's Quest* graphic adventure. Sierra redid the game with their newer graphics and play engine (which still aren't very good, even if they are better than the old ones), giving it the same look as the rest of the *King's Quest* series. Of course, the game's primary interest is historical, since it was one of the very first animated graphic adventures. The game itself is the usual Sierra fare, but if you've



Hexed in *Brigade Commander*



A Sierra blast from the past: *KQ I*

played the rest of the *King's Quest* series (there are five adventures so far), you'll certainly want to go through this one just to see how it all started.

EURO-PREVIEW

We recently got some disks of screenshots (PAL versions) from some soon-to-be-released games from 21st Century Entertainment and they were so stunning we had to show them off. The three games they have scheduled include *Nebulus II*, *Rubicon*, and *Deliverance*.

Nebulus II [not pictured] is a continuation of the arcade hit, released first in 1987 for the C64. It doesn't seem possible that

it's been that long ago. Anyway, you work your way through a series of rotating towers that have multidirectional doors, teleports, elevators, springboards, and all kinds of interesting things.

Rubicon is a classic scrolling shoot-em-up where a nuke plant disaster has caused some serious mutations in the wildlife. It's your job to destroy them. The game uses 2-layer parallax scrolling and has seven levels of action. The graphics, as you can see, are first-rate.

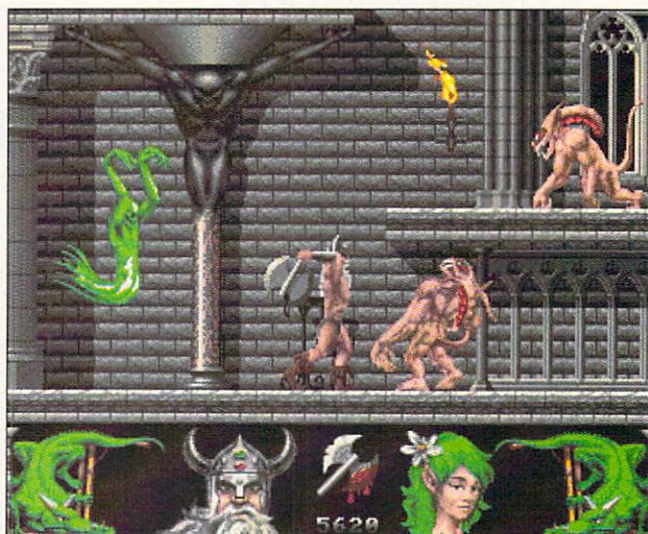
Saving the best for last, *Deliverance*, scheduled for January release in the UK, is subtitled *Stormlord II*. The original *Stormlord* was released in the US by Cinemaware as half of their *Arcade Fever Action Pak*

and was distributed by Electronic Arts. No matter who distributed it, it was one of the best-looking and best-playing arcade adventures ever. When I reviewed it in March, I gave it 4-plus stars. I wish now I'd given it five. *Deliverance* continues in the same vein; you're a *Barbarian*-type hero fighting a slew of evil creatures in an attempt to rescue some kidnapped fairies. The graphics are so good I use them as a standard to judge other games by. The play, if it's anything like the first one, will be very difficult, but also very rewarding.

21st Century is currently planning on distributing these titles in the US themselves. We'll let you know as they become available.



Confronting the dragon in *Rubicon*, a new Euro-Game from 21st Century Entertainment



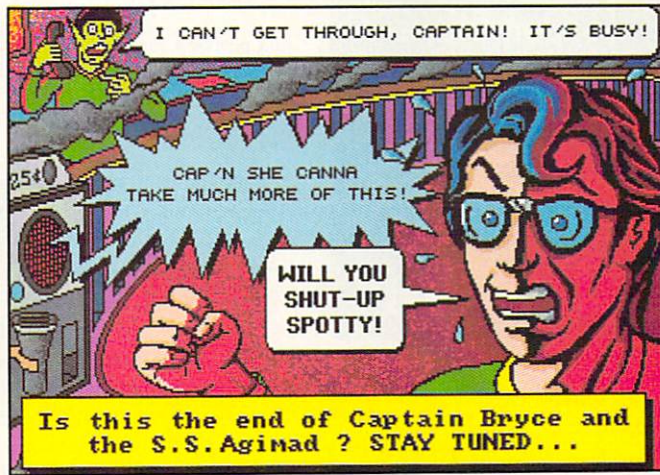
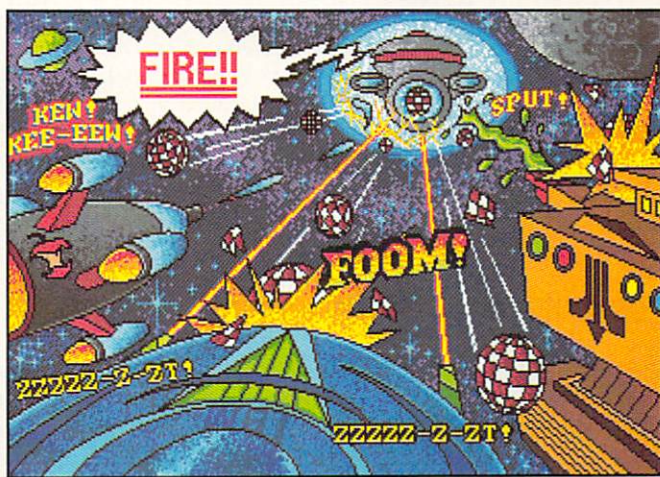
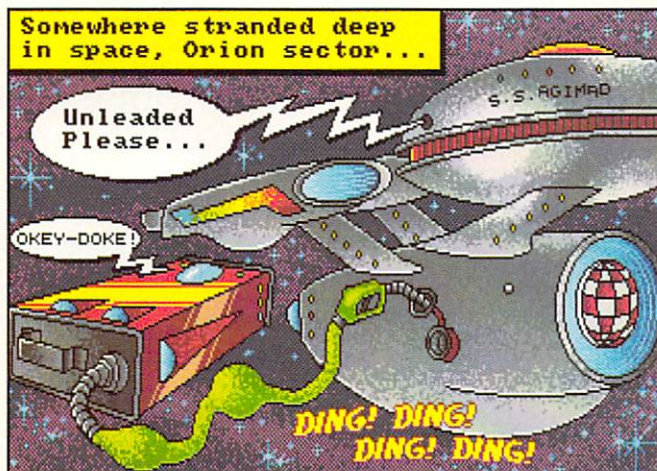
Stormlord's saga continues in *Deliverance*



BRYCE

ROCKETSCHLOCK PART I

BY GREGORY CONLEY



Gregory Conley can be contacted by writing: Gregory Conley, 17320 Lavenue Avenue, Cleveland, Ohio 44135

ProVisions

Video page 34
MultiMedia . .page 43

Graphics page 41
Audiopage 46

ProVisions

VIDEO

by Oran J. Sands, III

There are as many ways to create a video presentation as there are video professionals to do the job. Because of this, studio installations are quite varied. Often the very same equipment is set up to do different tasks or to do the same task in a different way. It is therefore difficult to tell someone how the Amiga should be integrated into an existing or planned video studio. But there *are* a few standard setups you can use and modify according to your intended usage. This month, we'll step through the decisions of what to purchase and why, and guide you to the installation you need.

The one thing I *won't* do is recommend which model of Amiga to use. I'm assuming you already own one and want to use it. Since each model is expandable (some more than others) it's really a matter of preference, convenience, and price.

HARDWARE

Output Devices - Encoders

If all you want to do is to turn your Amiga graphics into video, then an encoder is what you want. This device converts the Amiga's Red, Green, and Blue output signals into an NTSC color composite video signal. It may also provide Y/C outputs for S-video

systems, enhancing circuitry, and/or RGB signals for your monitor. Encoders range from the \$100 *DigiFex* (which features RGB pass-thru to your monitor and additional Y/C four-pin output) to the \$8000 *COX* with

Faroujda encoding circuitry. While the *DigiFex* unit may be several orders of magnitude less expensive than the *COX*, it still does the job quite well. If you merely need to drive a monitor or lay graphics to tape, it would be a good choice.

Output Devices - Genlocks

If you find yourself wanting to combine your graphics with a piece of video, an encoder is necessary but not enough. What you need is a way to (A) synchronize the Amiga with the external video source, and (B) combine the graphics and video in some manner. The device that does this is called a *genlock*. The genlock provides a color video signal output and, just like an encoder, can serve as the output device when you simply wish Amiga graphics converted to a video signal. More importantly, all genlocks sold for the Amiga will accept a video signal from any source (tape, videodisc, or camera) and will overlay the computer's graphics on top of that video. Some genlocks may feature faders that perform a dissolve between graphics and video, Y/C signal compatibility, RGB pass-thru, and timing adjustments for subcarrier and horizontal delay. The *SuperGen 2000s*, *VidTech VideoMaster* and *Magni 4004* are genlocks offering some or all of these features.

Caution! Some inexpensive genlocks can actually *deteriorate* the quality of your signal, so read the reviews and test a genlock before buying it! Although at first you may never need to use a genlock, it's a good bet that you'll need one eventually. Don't scrimp! Get the best you can afford.

What do you do if you want to overlay live video on computer-generated graphics? That requires the opposite of a genlock, a chromakeyer. MicroSearch's *ChromaKey* is the only one currently available for the Amiga, and it

In this special feature, *.info's* resident video expert Oran J Sands III tells you what you need to set up an Amiga-based video studio.

does a good job. Watch for my review in an upcoming issue.

Extended Displays

Animators who rely on 3D modeling software to create single frames of animation like to take advantage of that software's ability to create images drawn with 24-bit palettes. Since the Amiga doesn't provide this type of output, you must buy display boards such as Impulse's *Firecracker 24*, Mimetics' *Framebuffer*, MAST's *Colorburst*, etc. Some of these boards have color video output and some have only RGB signals out, requiring an encoder to make video. 24-bit display devices can't do real-time animation, so single frame controller software and single-frame accurate VCRs are mandatory for making 24-bit animations. Recently we've seen new output devices appear that provide "near 24-bit" quality. The *Ham-E* from Black Belt Systems and *DCTV* from Digital Creations both offer what are being referred to as "extended" display output. While not directly displaying 24-bit color, they provide images with an infinitely greater palette than a stock Amiga. They are currently *much* cheaper than a true 24-bit display board. The *DCTV* provides composite video out, while the *Ham-E* needs an encoder or genlock to convert its RGB output to video.

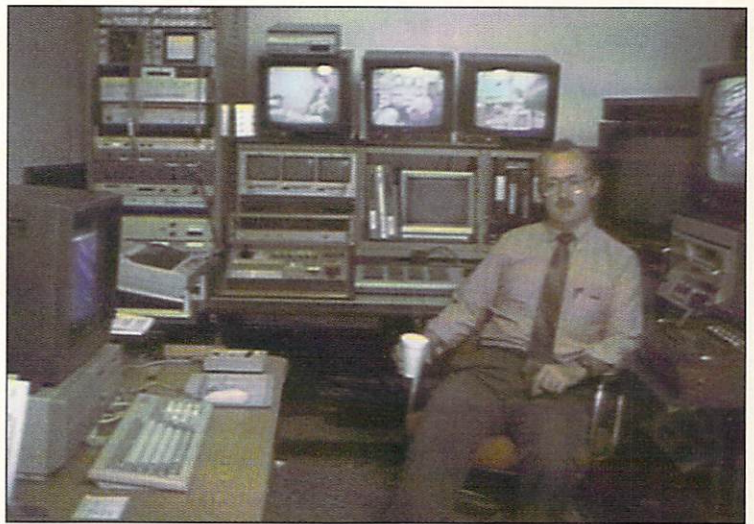
Monitors

Now that we have a method of deriving video from our Amiga, we need to address a special problem. That's the need for knowing what your graphics look like in composite video, not RGB. Don't try to design graphics for video without viewing them on a composite monitor or TV! The fine detail and vibrant colors you can see in RGB are rarely visible in the composite signal of the same picture. A Y/C monitor will lie to you as well. It's an unfortunate occurrence, but one we must live with since all the world uses some form of composite video. If you can't afford a separate color monitor, then use the composite video input on your Amiga 1080, 1084, or compatible monitor.

What about flicker, you ask? Well, it's interlace that causes flicker, and interlace is required for a good, editable video image. Learn to live with it. Okay, if you can't, get MicroWay's *flickerFixer* along with its genlock and no-slot adapters, or try ICD's tiny Denise-socket *Flicker Free Video* device (untested).

Digitizing and Scanning

To capture imagery from outside the computer requires a digitizer, and there are several types. There are video digitizers, hardcopy digitizers, color, and black and white digitizers.



OJ in his video studio.

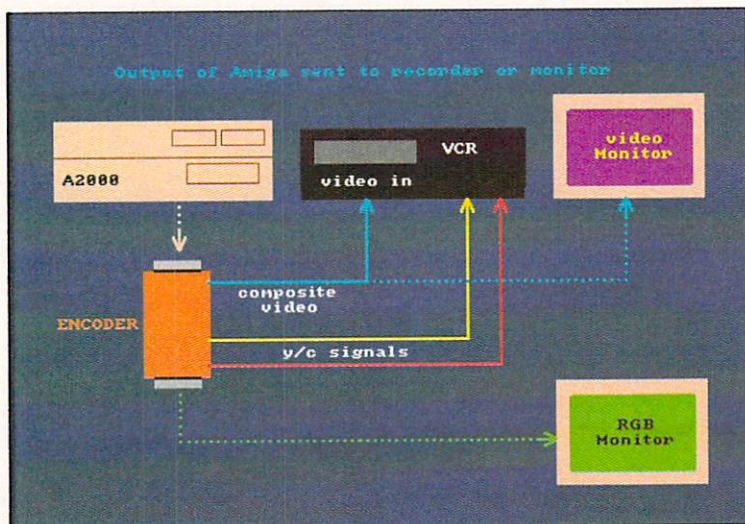
Video digitizers can be readily separated into slow-scan and framegrabbing categories. The slow-scan units such as *Digi-View* and *Perfect Vision* use a monochrome video camera and color filters to image the subject in three scans, taking as much as 60 seconds each. (MicroSearch sells an RGB splitter box that simulates the color filters for use with a color video source, such as a color camera or freeze-frame VCR.) The software combines these three images into one color image. This method is very flexible and the quality is good, but it's unable to deal with fast-moving subjects. Framegrabbing digitizers, however, can literally freeze one frame of video from any source, including tape. Currently only two such dedicated digitizers exist. PP&S's *Framegrabber* and *Framegrabber 256* both provide "instant" digitizing of video with good quality. (I should mention that both *DCTV* and the *Video Toaster* offer the capability to digitize video, and both perform quite well. The *DCTV* unit slow-scans in less than ten seconds from a color source, without needing filters or a splitter box, while the *Toaster* framegrabs.)

Hardcopy scanners come in two types as well: color, and black and white. Color scanners for the Amiga, such as the Sharp and Epson scanner lines from ASDG, offer incredible quality. Unfortunately, scanned subjects must be flat and as small as the scanner's digitizing boundaries; This limits maximum source size from as small as 4x6" to as large as 14x17", depending on the model. Since most artwork, logos, etc., fit within this range,



Don't try to design graphics for video without viewing them on a composite monitor or TV!





Setup #1: The simplest possible Amiga video studio

however, the size usually isn't a factor. Black and white digitizers are fine when you need to create high-contrast line art for roughing out new artwork - as in scanning a client's logo in for redesign in *Deluxe Paint*, for instance. Otherwise they are mostly relegated to desktop publishing work.

Videotape Editor Controllers

Assembling a video production is a tedious process and requires VCRs that are controllable and edit-capable. It also requires a method of controlling those decks, and the hardware to tie it all together. The Amiga easily

adapts to performing this task and offers more functionality than other PC-based systems because of its multitasking nature. The very computer that controls your editing can also show your graphics, if necessary. RGB Creations has several editing packages available, depending on your level of production and budget. For those of you with "prosumer" equipment like the Panasonic AG-1960 S-VHS VCR, *AmiLink-CI* (which stands for "Consumer-Industrial") will allow you to edit in

"cuts only" style for about \$1000, and in "A/B roll" style for \$1500. All controller interfaces are provided. For those of you with more upscale equipment and needs, there is the regular *AmiLink* package that can control over 35 separate VCRs/laserdisc players for A/B roll editing, with SMPTE timecode or control track accuracy. The latest version, *Ami-Link VT*, will also control

NewTek's *Video Toaster*, which gives an entirely new meaning to the term "desktop video." (See sidebar on using the *Toaster* in your studio). For those with lesser budgets and consumer/prosumer equipment, there are MediaPhile's editing packages. The Mediaphile editor controls less expensive VCRs via the standard remote control input and "finesses" them into editing with more accuracy than usually expected. One nice aspect of MediaPhile's system is the ability to interchange and mix types of VCRs, a feature usually not available at this price level.

Single-frame Controllers

There is basically no way to animate 24-bit imagery, due to the huge file sizes, so images must be rendered individually and then recorded on tape sequentially. Or you could render them all to a huge hard drive and then record them one-by-one to video tape. Single-frame animation requires a VCR with frame-accurate editing, a device to interface the computer to the VCR, and a software control program to coordinate the whole works. It takes hours and hours to assemble an animation of any real length, so unattended operation is one of the key features found in a single-frame controller program. The pre-eminent controller program is Microillusion's *Photon Transport Controller* which, when combined with the appropriate controller hardware, can automate the entire process so you can start it and walk away.

Single-frame controller hardware varies in price from about \$1795 to \$5000, depending on features. Units are available from Lyon Lamb (the original), BCD, and Diaquest. The Diaquest *DQ-TACO* is unusual in that it is a printed circuit card that plugs into one of your computer's slots. RGB Creations is also working on a new *AmiLink* program that uses their *V-LAN* controller boxes to provide animation capabilities.

Special mention is due the new *Personal Single Frame Controller* from Nucleus Electronics. Although it works only with VCRs that use RS-422 serial control protocols, it is almost all software, requiring no hardware outside of a special cable that connects your VCR to your Amiga. Its price is an amazingly low \$425.00, and it offers a full range of features that an animator needs. VCRs that are parallel-controlled may be used via third-party "serial-parallel" converters usually costing about \$1000.00. (We are *not* talking about the usual computer serial-parallel signals here!)

The Amiga Video Suite

Just how do we incorporate the Amiga into our existing setup? What else may we need? There are several ways to actually connect things, so let's examine a few of the more common installations.

Setup #1 shows the simplest possible setup. It features

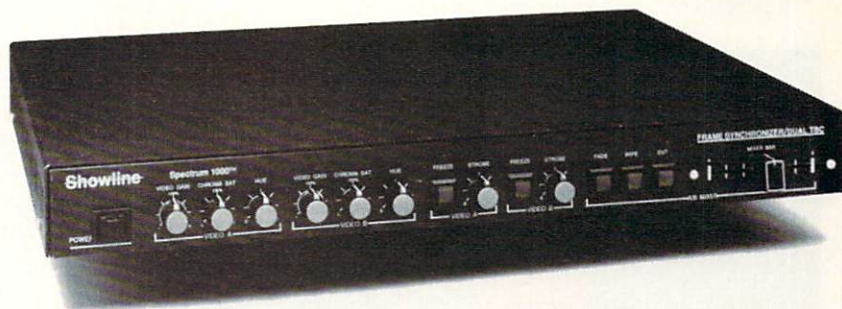
There is basically no way to animate 24-bit imagery, due to the huge file sizes.

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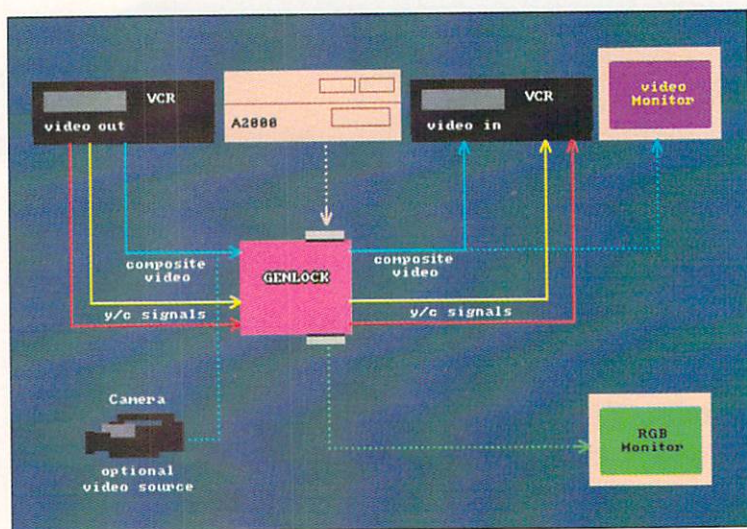
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Circle #175 on the Reader Service Card



Setup #2; An intermediate Amiga studio with two VCRs.

an Amiga as the centerpiece, with an encoder attached to supply a video output. The output of the encoder can be directed to a monitor or a VCR. A genlock could be used to supply output instead of the encoder, but that could be overkill depending on your application.

Setup #2 is very similar to #1 but differs in that it uses a genlock for video output. At this level we add a video source to the genlock. If you want to overlay titles atop a videotape, remember you'll need *two* tape decks, one for

the playback and one for the recording. You'd be surprised at the number of genlock purchasers who don't realize this. The video source doesn't have to be videotape - it can also be a camera, laserdisc player, special effects generator, TV tuner, or even another Amiga. Using graphics from one Amiga with those from another can allow for animations with multiple layers of motion that might not be possible with just one Amiga. Setup #2 is probably the most common.

You'll find it in numerous variations, but operationally it's always the same.

You'll notice we don't show any timebase correctors being used. It really isn't necessary to TBC the output of a VCR in order to use a genlock. Most all genlocks can handle the variations in sync caused by playback of the tape. The Amiga will vary its sync to match the tape. However, if you use a TBC for the VCR, you'll be assured of having stable sync every time. A TBC with freeze frame capability gives you even more options. Ideally, you'd have a TBC for every tape deck you use as a source deck. There is no need to TBC the output of the

Amiga. It will always be as stable as the signal fed to the genlock (or the built-in sync generator if no reference video is used).

Setup #3 shows an Amiga incorporated into a already existing studio system. A genlock is used to synchronize the Amiga to the rest of the system, but not for overlaying. The genlock's external key output signal is fed to the switcher to enable overlays (keys) using the special effects generators. This is known as an "upstream" installation, and it allows whatever special effects are available to be enacted upon the Amiga graphics as well as the usual overlays. This is somewhat tricky, since the timing of the arrival of the Amiga's signal at the S.E.G. must coincide with the proper subcarrier phase of the entire system, or else the graphics will be tinted. (Trust me - I *am* simplifying this a great deal!) Fortunately several genlocks feature timing adjustments that make this a simple task, without the use of expensive test equipment.

It would really be nice, though, to leave our genlock tweaked so it could be used with the switcher, or downstream of the switcher (as in setup #2). This is possible if the signal sent to the Amiga is correctly delayed in the first place, making such adjustments unnecessary. This requires some equipment and is a bit trickier to set up, but leaves our genlock ready for use up- or downstream.

How Much: Memory? Speed? Storage?

How much (fill in the blank) do you need? In all cases, it varies with the task at hand. Some tasks are very memory-intensive while others are very storage-intensive. Some processes can be sped up tremendously with processor accelerators while others will show very little speed increase. So it's really a matter of what you want to do, and how seriously you want to do it. All of which leads us to the question of software.

In the software portion of this article, we'll examine each application and you can keep track of the minimum hardware requirements for the tasks you are considering performing. The maximum figure you encounter will establish what you need. If you can't afford that, then you'll have to rethink your needs, find more money, forget about doing that until another time, or do the task anyway and accept the consequences.

SOFTWARE

Titling

Titling is often just showing one page of graphics after another. Titles are created in a program such as *Deluxe Paint*, *TV Text*, *Title Page*, etc. This can often take no more one meg of RAM, and storage can be done on floppies. Speed is of little concern, so no accelerator is needed. Font libraries will slowly grow to epic propor-



SETTING UP YOUR TOASTER STUDIO

NewTek's *Video Toaster* is such an exception to the normal process of working with graphics on the Amiga that it's worth considering separately. If you are using a *Toaster* in your Amiga, it means you're probably using it for a variety of graphics applications. This requires a special setup.

The *Toaster* already has a composite video output (and soon, possibly D-2 compatible output) so you won't need any encoders. You also won't need a genlock, since the *Toaster* synchronizes itself and the Amiga to whatever external video is applied to input #1. However, you will need all other video sources to be synchronized to the first source. That is accomplished by using cameras that are genlockable and VCRs that are timebase corrected and genlockable. While most consumer gear doesn't meet these specs,

the price of TBCs and professional-type cameras is dropping like a rock, partly due to the market created by the *Toaster* itself.

You'll also need the correct amount of RAM - five to seven megs is highly advisable. Also needed is a large hard drive to store your framestore / 24-bit images, which you'll create in large quantities. Try starting with 80 megabytes. A processor accelerator is a good idea, but definitely mandatory if rendering frames in *Lightwave* for 24-bit ANIMs.

And if you're doing *Lightwave* animations, you'll need a single frame recorder controller. The *Toaster's Lightwave* program is wonderful, but it creates only one frame at a time. You'll need to assemble these frames onto videotape either after rendering them all to the hard drive, or one

at a time to the VCR as there are created.

The most exciting new product I've seen in a while is RGB Creation's *AmiLink-VT*, an edit controller system that not only runs on the Amiga, but commands a *Toaster* mounted in the same computer. This means an A/B roll package that offers incredible control over special effects/fitting and switching. But the truly amazing part is that it is all accomplished within *one box!* One little A2000 can house your *Toaster*, a TBC or two, a single-frame animation controller, and all the software to allow you to framegrab, render 3D images, paint in 24-bit, title, use DVE's, switch inputs, and edit and control your videotape decks with single-frame accuracy. This is true "desktop" video! The *Toaster* is certainly a capable tool to build a complete video studio around.

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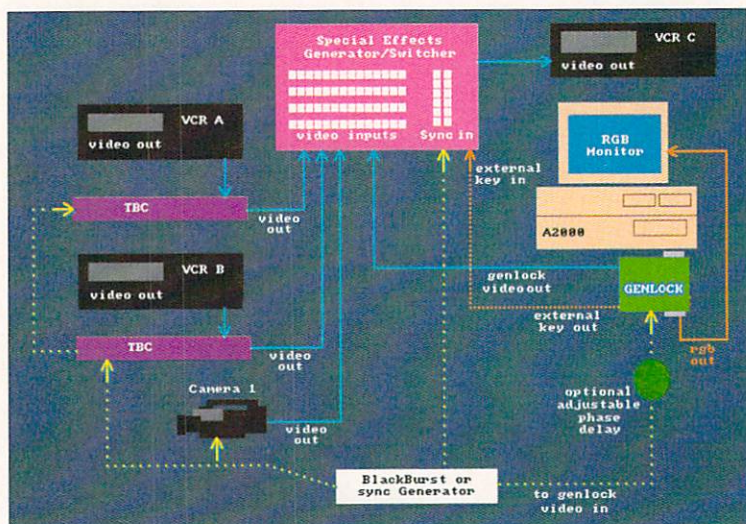
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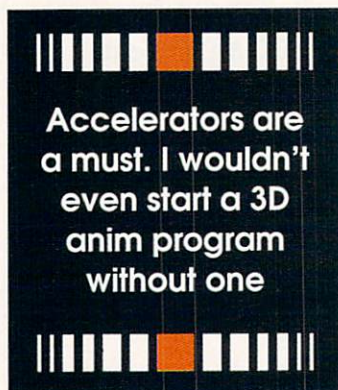


Setup #3: A professional Amiga video studio.

tions and will need the kind of storage found only with hard drives. Character generation programs are more sophisticated than titlers, and often need as much as three megs of RAM to perform comfortably.

Transitions

Moving the titles or graphics mentioned above starts to make the computer breathe hard. Moving screens (especially hi-res or overscan) can begin to tax the processors and fill up your available memory. Programs to use here are *TV*Show*, *AmigaVision*, *The Director*, and *Lights, Camera, Action*, among others. Storage can still be on floppies except for very large jobs. Having two to three megs of total memory will ease the pain. Accelerators will moderately help speed up the screen moves, but may not be worth the expense.



2D Animation

Whether using polygon morphing (*Aegis Animator*, *FantaVision*, *Moviesetter*), brush moves (*Deluxe Paint*, *Graphics Workshop*, *Deluxe Video*, *SpectraColor*) cel animation (*Photon Cel Animator*, *Animator:Apprentice*, *Disney Studio*) you'll find that chip RAM is in short supply. You'll need the full one meg possible (two megs on the 3000). Fast RAM is also going to be in short supply, so have at least three megs (more wouldn't hurt). Since your animations are going to get large (especially in hi-res and overscan) you will quickly have trouble storing them on floppies. You'll want to have a hard

drive for storage; 40 megs is the smallest I'd buy. 65 megs is more like it. If you're going to do a lot, then try 80 Megabytes. Graphics and ANIMs take up a great deal of space. Accelerators will definitely put some snap in the playback of your ANIMs, and creating brush-move ANIMs will definitely get quicker.

3D Animation

While 3D's requirements for chip RAM aren't heavy, requirements for total RAM can be, particularly if you're building realtime ANIMs to run from RAM. Accelerators are a must. I wouldn't even start a 3D anim program without one. The faster the better, and 32-bit RAM speeds things up as well. Some ANIMs can be as large as five megs, so floppy storage is out of the question. Get a hard drive - a BIG one. Many animators have found that removable media hard drives are a godsend, and they trade hard disk platters amongst themselves as if they were floppies.

Graphics Creation & Manipulation

Deluxe Paint, *SpectraColor* and other paint programs are relatively easy to live with. While one meg of chip RAM isn't required, it's certainly worth the money when working in hi-res or overscan. Individual images are small and can be stored easily on floppies. Most paint operations will show no improvement in speed if an accelerator is used, unless using perspective, gradient fills, or anti-aliasing modes. One to three megs of total RAM is recommended. Using color scanners like ASDG's *JX-100* can require several megs of RAM depending on the scanning mode used. Digitizers like *Digi-View* and the *Framegrabber*, on the other hand, require a minimal amount (one meg). Graphics manipulation programs such as *Bucher* and *Pixmate* prefer at least a couple of megs of total RAM. *The Art Department Professional* does an outstanding job of massaging graphics, but is quite a hog for memory. Try seven to nine megs to get the most out of it.

Conclusions

I hope I've covered most of the equipment and software you've been concerned with. It's impossible to be as thorough as we'd like without publishing an entire book. In fact, I'd like to direct you to any of the fine books we've mentioned in past issues, and recommend a new one called *The Amiga Desktop Video Workbook* (authored by Jay Gross). All of these go into more detail about each of the topics we've discussed. In the meantime, be creative, work smart, and maintain a good relationship with your banker.

What's this? Amid the current shower of enhanced displays and paint software, a... HAM paint program? While we drop back to earth for a moment, let's remember that the Amiga's Hold-and-Modify mode is the Amiga's out-of-the-box graphics display mode that offers 4096 colors in low resolution screen widths. There are some peculiarities in the way HAM works that make some color combinations difficult, resulting in color fringing off to the right of the area being painted. Over the years, HAM paint software has grown and matured, and many of the mode's side effects have been filtered out by the accomplished programmers who've worked with it.

Spectracolor is the reincarnation of *Photon Paint*, formerly published by Microillusions. *Photon Paint* was a popular HAM paint program which had begun to incorporate some animation features in its last revision; as *Spectracolor*, more animation features have been added and a bit of fine-tuning done throughout.

The program works only in Hold-and-Modify mode, and while it supports overscan it does not allow the artist to create 'superbitmaps' (images larger than a displayed screen, most useful for desktop publishing but with other

values as well). Different painting modes can be set for the left and right mousebuttons as they paint with a foreground and background color, respectively; there is a wide variety of these modes, including Blending, Lightening and Darkening, an interesting 'Pantograph' mode that replicates one area of the screen elsewhere, variable use of Hue and Saturation of colors, and the Boolean And, Or, and Xor modes so dear to the hearts of programmers, if to no one else.

The Magnify window is brilliantly done. It zooms, it's movable, scrollable, and sizable, and the best I've found in any program. The toolbox (there are really two, one for drawing and one for animation) never changes color when the image's palette changes, which is nice; the dark side of that is that to cover up the clever way this was done, the screen can't be clicked to the back. It is draggable, though, using a non-standard drag bar.

Fonts are well-supported. They can be loaded from



Brad examines *Spectracolor*, the resurrected and revised *Photon Paint*.

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The *Spectracolor* title screen.

any directory, not just your assigned FONTS: directory, and can be used in many text styles. Colorfonts are also supported. There's a surprising 'right to left' text mode for numerical entry and for languages that are written right to left. I was amazed and pleased by that one.

Like *Photon Paint*, *Spectracolor* will wrap a brush onto a shape and can render it with a variable false shading and luminosity. Perspective effects are available, with the same controls. There's also a Rub Through mode, in which you can 'erase' through to another image. Stencils are available but limited: they're just solid filled shapes. You can only define one such shape for a stencil, and they can't be saved or combined. It's worth noting that a stencil will protect an area from overpainting, but not from Clearing the screen.

Several of the freehand drawing tools have an 'edit' function. This means that you can draw a shape and then alter it before it becomes final. That's a clever addition which makes

a freehand drawing tool far more useful.

Spectracolor uses ANIMbrushes, and can load those saved by *Deluxe Paint III*. I did have one of my test ANIMbrushes misbehave when I brought it in (one frame alone rendered in 'solid' mode, with color zero non-transparent).

The animation in the program is based on keyframing.

By placing the First and Last positions of a brush or ANIMbrush - and at either point the brush might be rotated, twisted or scaled - or by drawing a freehand path, the user defines the course of motion. In the freehand mode, the speed at which you draw the path determines how fast the brush will move; starting slowly, speeding up and then slowing near the end of the path results in acceleration and deceleration. Specify the number of frames to use, and the program generates all the intermediate frames for you. There is no control over anti-aliasing available (that's a function that smooths the jagged edges of pixels, especially notable in diagonal and curved lines). Standard IFF ANIM files can be created, edited and saved.

Installation

I ran into a few problems with the program during evaluation. First off, the manual refers to an Installation program on the disk which is nowhere to be found. In fact, simply dragging the program icon to the desired directory is all that's needed, but one does like for a program and its manual to agree on things. Secondly, *Spectracolor* was very unstable, crashing repeatedly, on one 2500 system I tested it on; it performed flawlessly on the other, so it looked as though there was a conflict with some utility running on the first system. That's unusual: it happens to be the Amiga where I do the bulk of my work, and I wasn't able to figure out where the incompatibility lay. Whatever it was, it doesn't disturb the other tools I use and test. One incompatibility I did discover was with *Mach II*, the popular shareware screen blanker and mouse accelerator. The program didn't behave well when *Mach II* was running. And while I appreciate the wealth of features *Spectracolor* offers, I found its very busy menus hard to 'read' - not in the literal sense, but it was hard to see where I was and what I wanted at a glance.

Conclusions

If you're a happy *Photon Paint* user you'll likely want to upgrade to *Spectracolor*. Oxxi offers such an upgrade: simply send them the title page of your manual or a photocopy of the disk labels with your name, address, and phone number. The cost is \$49.95 + \$5 shipping (CA residents add sales tax).

Spectracolor has more advanced animation tools than its ancestor, and many powerful painting features. If you've never worked in HAM mode you may well want to take a close look at this one. If you're already working with other HAM paint software, you'll have to decide for yourself whether any of *Spectracolor*'s unusual features are worth adding it to your array of tools.



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24-Bit News

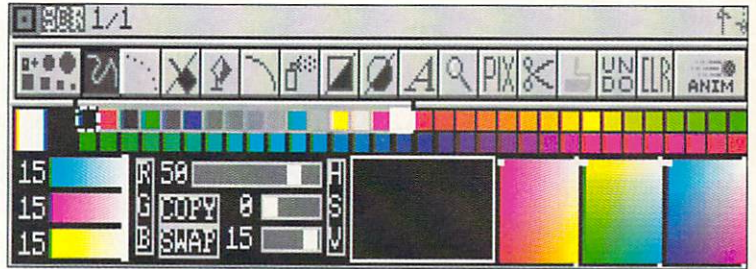
Impulse has reduced the list price of its *Firecracker* 24-bit display board to under \$1000. The *Firecracker* supports resolutions up to 1024x480 pixels in full 24-bit RGB, and while its paint software *Light* is still unfinished, beta versions have been distributed to *Firecracker* owners.

MAST, whose *Colorburst* 24-bit display aroused a lot of interest at the New York Amiga World Expo, was recently in Los Angeles at the Video Expo. *Colorburst* sports a resolution of about 736x480 pixels in 24-bit color, with some hardware based functions for 24-bit sprites and masks; its projected list price is just under \$500.

Other Developments

Imagine and *Lightwave 3D* users can look forward to a major revision of Syndesis' *Interchange* with modules for both those 3D rendering packages. Syndesis has announced that the product is now in testing.

Interchange translates 3D object files among various formats; as it is, *Imagine* users can often get their objects



Menu bar with 4096 color palette.

into *Lightwave* with *Interchange's Turbo Silver* module, but errors sometimes creep in as the object formats are slightly different. For myself, I've found it best to load an *Imagine* object into *Turbo Silver SV* and save it out again before using *Interchange* to convert it to *Videoscape* or *Sculpt 4D* format (either of which can be read by *Lightwave*), but even so I keep my fingers crossed. Hopefully, the new Syndesis software will take the anxiety out of the process.



ProVisions

MULTIMEDIA

by Harv Laser

Welcome to *.info's* new MultiMedia column. Each month I'll be your *.info*meister into the exploding arena of this decade's hottest computer buzzword: Multimedia. We'll cover both Amiga software and CDTV titles here. This month, it's all CDTV.

Sometimes these pages might be devoted to just one or two applications. At other times you may find a "product roundup" here that covers many. I promise to keep it honest and interesting.

JUST SO YOU KNOW

My CDTV output display is a Sony KV19TS20, a 1991 model 19" stereo color Trinitron television. I've hooked up CDTV with the "composite out" jack to the television's "video in" jack, and connected CDTV's audio into the Sony's stereo speakers through the twin audio jacks on the back of both devices. This gives me excellent video and acceptable (though by no means "hi

fi") audio from CDTV. I mention this because you might see CDTV demoed on different kinds of displays or your own hookup might be different. I report 'em the way my eyes see 'em.

When talking about CDTV titles, I'll include some useful information about each disc: price, *.info* star rating, and whether or not it comes with its own disc caddy (my local dealer gets \$12.95 each for empty caddies).

So with the ground rules out of the way, let's take a look at a few early release titles. (Oh, and no games here. CDTV games will be covered in *.info's* CyberPlay section).

World Vista

A family-oriented world atlas on a disc. *World Vista* is a reference title that will probably



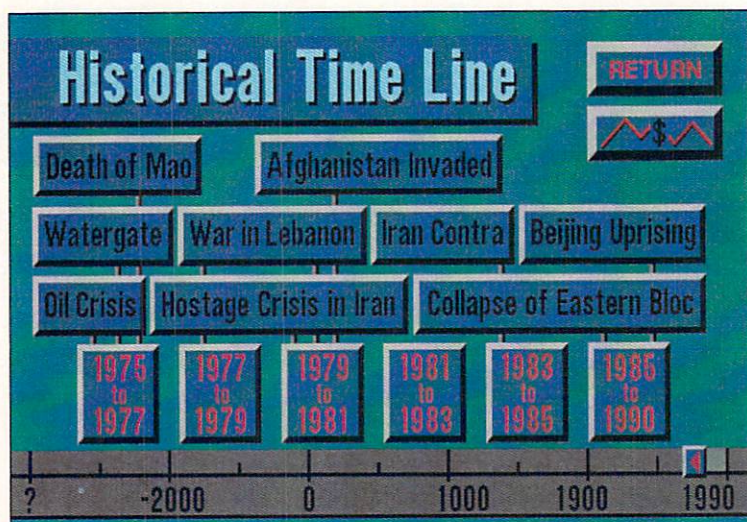
World Vista



\$79.95

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Xiphias' *Timeline of Science and Innovation*.

end up in the home of just about all CDTV owners, along with an encyclopedia and/or dictionary. What sets this disc apart from your standard book-type atlas is that as you explore the world, you can hear samples of countries' music and language, something no book can give you.

Like most CDTV references, you navigate *World Vista* down through layers of menus and submenus to reach your destination, but there are "jump" points to get you

to certain areas quickly. I expected the menu called "Tours" to take me on a guided tour of some country like a travelogue, but instead found that this button actually summoned a guide to *World Vista* itself: basically the title's manual on disc. Still, it proved useful for initial orientation.

World Vista is chock full o' maps as a good atlas should be. Continents, countries, regions, major cities, right down to some scroll-around highway-level maps scanned from an atlas, but there are no detailed street maps. Surprisingly, some major cities such as New York, Detroit, and Minneapolis, were missing from the U.S.A. city maps, while some smaller cities like

Buffalo were there. Strange logic, and it led me to wonder if this title was rushed out before completion.

But while some maps are absent, there's a ton of information and statistics on each country. If you're aching to know the life expectancy of women in Botswana, or what commodities are Poland's main imports, you'll find

it here, along with similar info for every country in the world; there are even bar charts showing each nation's ranking in the world in many categories.

World Vista's interface graphics are nothing spectacular. They are mainly low-resolution, and lack a certain cohesiveness - as though different artists with different styles worked on different parts of it - but at least low-res means screens load quickly. Summary: not an exceptional title, but definitely useful.

Timeline of Science and Innovation

In a word, this title is spectacular. *Timeline of Science and Innovation* (there's a companion release covering *Business, Politics & Media*), is a remarkably well-crafted title that's so rich and deep with detail it's almost overwhelming. What can you say about a disc that covers a period of time from the Big Bang to the Hubble Telescope!?! If all Xiphias CDTV titles are as great as this, they're going to be a name to remember.

ToSI is remarkably professional-looking - the best I've seen so far. High-resolution screens are used throughout, and they display beautifully. The muted colors and crisp fonts make working with *ToSI* for hours a pleasure. Only the black overscan border area spoils perfection.

The hard facts of scientific discovery and invention are put in their proper frame of reference by the inclusion of dozens of important historical events along the timeline. The fact that a Benedictine monk developed musical notation in 1026 AD may be a yawn by itself. To know this happened while the Crusades were going on (and then have the Crusades explained, on demand), or to hyper-link that word "notation" and find 157 other subjects which contain it, and then to explore them, shows how *ToSI* has perfectly embraced the concept of multimedia and hypertext. This disc just *begs* you to explore it.

ToSI contains many still-frame animations with digitized sounds, such as the Challenger explosion. The full Periodic Table of the Elements is here with details on each. A terrific "Powers of Ten" slideshow lets you see how far off-Earth many events occurred. Economic influences are charted. A terrific Prehistoric Time Line is a major plus. And I've just scratched the surface. This one title really puts the entire history of science into perspective in a way you may have never seen it before. Summation: a real winner. A must have.

Illustrated Works of Shakespeare

This title is unique of those I've sampled since it contains both CDTV and IBM-PC VGA versions. I didn't have a chance to try it on a PC, so I can't offer a comparison.



What we have here is every word the Bard of Avon ever wrote: all his plays, poems, and sonnets. This massive body is wrapped in a rather charming and decidedly British-looking user interface which you navigate by moving a small semi-animated human hand around the screen with your controller. An opening tutorial aids in learning how to use it. It was here I found the title's major flaw - the tutorial's buttons and the hand were almost off the bottom of my TV's screen. I suspect this title was written with PAL screens in mind - annoying, though not impossible to use.

Slap the 'run' button and dive in. A strip of icons (Paragraph, Scene, Bookshelf, Pictures, Search, Font, etc) allows easy maneuvering through each of Shakespeare's works, while his texts are presented on a 2/3 screen "scroll" above. You can drop up to five bookmarks anywhere, should you wish to wander and come back. There's a search facility to find any paragraph with up to five search words in the book you're reading or the whole bookshelf of works. Here again, the computer inside CDTV shines: this is something you simply can't easily do on paper. But why doesn't Search mode have

an abort command? Argh. Don't misspell a search word or you're in for a long wait.

TIWoS's "pictures" which illustrate each book are grayscale scans of woodcuts - nicely atmospheric. For reading, many different fonts and sizes are available at the touch of a button - they're all stock WorkBench fonts and many were illegible on my television, so I stuck with the default. None were as clean as the fonts used in *TimeTable of History*. Again, lo-res has its drawbacks.

I expected some suitably Elizabethan background music and British-accent narration on this title, but was disappointed to find the only sounds on this disc were the button press and page-flip "beeps." The Bard won't read to you.

Summary: if you need all of Shakespeare's work on one CD for your classes or research, this will surely do.



Illustrated Works of Shakespeare



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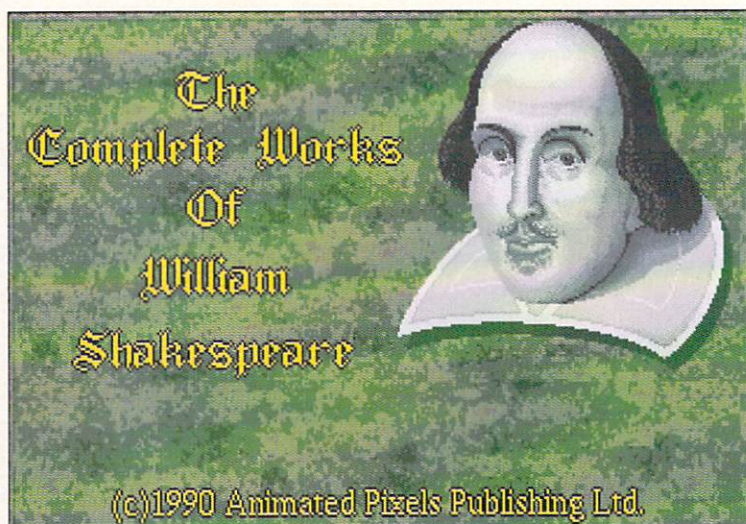


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Illustrated Works of Shakespeare from Animated Pixels.

but it could have a cleaner television display. On an RGB monitor it should be fine. The IBM-VGA version on the same disc is a definite plus, especially in a school or college situation where no CDTV is available.

Addresses

World Vista, Applied Optical Media Corporation, 18 Great Valley Parkway, Malvern, PA 19355

Timeline of Science and Innovation, Xiphias, Helms Hall, 8758 Venice Boulevard, Los Angeles, CA 90034, 213-841-2790

Illustrated Works of Shakespeare, Animated Pixels (Publishing) Ltd., Albermarle House, Osborne Road, Southsea, Hampshire PO5 3LB, United Kingdom

About the author

Harv Laser is Sysop/Moderator of the Portal online system's new Amiga Zone. His Internet EMail address is harv@cup.portal.com



Welcome to the regular meeting of the Martian society of planetary anthropology. This month we have an earth topic from the mid-nineteen-eighties through the mid-nineties. We have, as a special guest, techno-historian Midi Smpte! Did I pronounce that right, Midi?"

"Uh, actually it's pronounced Mid'-ee Simp'tee. But my friends call me 'T.C.'"

"T.C.?"

"Yeah. It stands for 'Time Code'. See, there used to be a thing called SMPTE Time Code, and my grandfather..."

"The famous musician..."

"...suggested my name to my parents, with SMPTE for a last name instead of the four hyphenated last-names I would have had. And anyway, everyone just calls me T.C."

"Let's give a warm welcome to, Midi, ahem, Smpte, uh, Smpte T.C!"

"Thank you, all. I started my research early in life when I was being teased for not having a more normal name like 'Zsackt' or 'Nepty'. I was a little sensitive, so I started looking into where my name came from. Luckily my mother had kept a lot of grandfather's stuff, so I had



Bars & Pipes Professional's MIDI mixing, tempo map, main sequencing, and song construction windows.

desired, especially when printed, it's really nice to have the option to edit visually using standard notation. I can also use the visual bar editing or edit MIDI data in a list, and I can have editing windows open on more than one track at the same time."

"This window-oriented approach to MIDI sequencing makes a lot of sense on a graphics machine like the Amiga. Even the main sequencing window that shows all the tracks draws a rough graph of the notes on each track."

Questions & Answers

T.C. closed the journal. "Well, before I play more music, are there any questions?"

"My name is Tnekcsen," said a musical voice. I turned around. It was the metallic!

"You've explained some of the basics of MIDI, and I think I understand that it was a serial data protocol that allowed two-way communication between computers and MIDI instruments on late 20th century earth. I can see where MIDI could have really

enhanced the output of musicians who were interested in developing their talent, though it would seem that it would have been easy to fall into the trap of becoming fascinated with the technology and getting distracted from actually making music."

She continued. "But you haven't told us about the origin of the last part of your name, Smpte T.C.!"

"Ah yes. 'SMPTE' stood for the 'Society of Motion Picture and Television Engineers,' who (among other things) adopted a standard way of representing the time on a videotape using a number for each frame.

"By recording SMPTE time code onto a videotape and connecting the output of that time code track into the Amiga through a SMPTE interface, the Amiga would know precisely what frame was showing at any moment."

"Here," he went on, "Listen to what grandfather wrote about that..."

"I'm working on a soundtrack for a movie this month. They sent me the film on a videotape. Using SMPTE time code, the Amiga plays my music along with the picture. The graphic tempo editing window in *B&PP* is very helpful for getting everything synchronized, and *B&PP* lets me designate which tracks follow the tempo variations and which don't, so I can tweak the music's tempo without moving sound effects around."

"I can also use SMPTE to synchronize the Amiga to a multitrack tape recorder and add acoustic instruments and vocals to the arrangements. On my next project I hope to record acoustic instruments digitally, directly into the computer while doing MIDI sequencing at the same time, all locked via SMPTE to the video machine. Professional quality direct digital recording has already been announced for the Amiga!"

Unfortunately the rest of the journal is missing," said T.C. "We do know that SMPTE time code was also used by interactive multimedia and video editing software on the Amiga to keep presentations and video synchronized, and that *Bars & Pipes Pro* worked with other programs using something called AREXX."

"Now if there are no more questions, I'd like to play more of grandfather's music."

I leaned back, closed my eyes and drifted away on the wondrous sounds. My hand reached back like a MIDI cable and connected with the metallic's hand. Even with SMPTE time code, the music could never have been synchronized to a better film than the one that was running through my brain at that moment.

Addresses

Bars & Pipes Professional

\$379.00

Blue Ribbon Soundworks, 1293 Briardale, Atlanta, GA 30306, 404-377-1514

Phantom MIDI/SMPTE Interface

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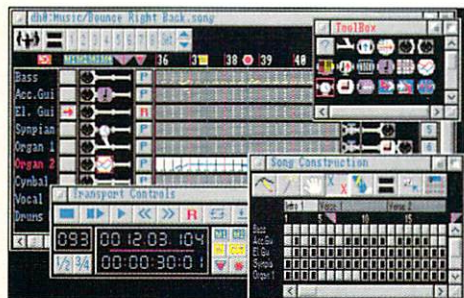
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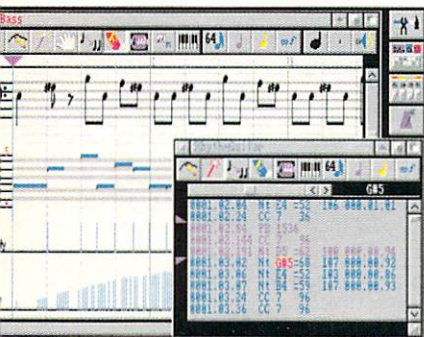
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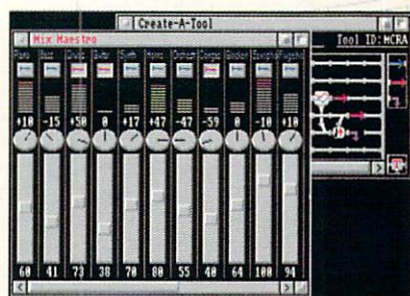
transposed score and individual parts, with lyrics, chord symbols, measure numbers, labeled sections, page numbers, author, title and a wide selection of automatic transpositions.

ARRANGING: BARS&PIPES PROFESSIONAL's Graphical Song Construction window enables you to see an overview of your composition, label it and reorganize it. And with its Graphical Tempo Mapping window, you can easily add realistic tempo change curves.

MIXING: BARS&PIPES PROFESSIONAL's automated mixing feature, MixMaestro, includes real-time control of volume, panning and other MIDI controllers. As your music plays, you can move the various sliders and knobs to adjust the balance of your arrangement, then save your mix to disk. MixMaestro automatically sends control change data to your tracks.

SYNCING: BARS&PIPES PROFESSIONAL sends and receives MIDI clocks and System Exclusive data, reads SMPTE and MIDI File Format, and includes AREXX support. With its Time-line Scoring window, you can arrange your soundtrack, then coordinate your music with video, film, tape and multi-media applications.

ENHANCING: Aside from the variety of Tools and Accessories included with BARS&PIPES PROFESSIONAL, we've created five BARS&PIPES ADD-ON SERIES packages containing many, many more: MusicBox A, MusicBox B, Internal Sounds Kit, Multi-Media Kit, and Rules for Tools. And from our BARS&PIPES MUSICWARE COLLECTION, you can select from over 300 professionally arranged music files in BARS&PIPES format.



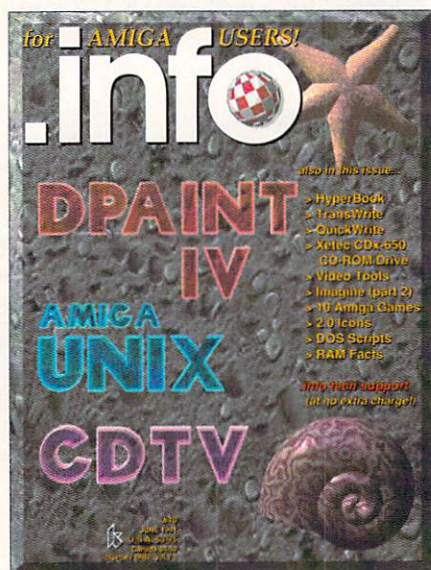
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#2 INFO 64, Winter 1983/84
Guide to C64 products, Koala pad, Flexidraw, UltraBASIC-64, Home Accountant vs. C.P.A.

#3 INFO 64, Spring 1984
Product Round-up: 1000 product listings for C64, Superbase 64, Commodore LOGO, C64 Forth, Model Diet, Computer Mechanic.

#6 INFO 64 Spring 1985
Color Gallery! C64 hard drives, Intro to Assembly Language, COMAL 2.01, The Print Shop, Whither C/PM.

#10 INFO May/June 1986
Monitor Roundup! C64 wordprocessors, Multiplan for C64/C128, Amiga BASIC, Tips & hints.

#11 INFO Aug/Sept 1986
Product Roundup issue: over 1500 hardware and software listings for C64, C128 and Amiga.

#12 INFO Nov/Dec 1986
Graphics report: C64/128 and Amiga painting, CAD, drafting, video animation, tools and utilities. Idea-processors, 8 bit business software.

#13 INFO Jan/Feb 1987
Games issue: C64/C128 and Amiga games, 8-Bit business and application software (part I), Telecommunication networking, Amiga Music.

#14 INFO Spring/Summer 1987
Product Roundup issue: over 2000 hardware and software listings for C64, C128 and Amiga. First look at the A500 & A2000 systems.

#15 INFO July/Aug 1987
1st Annual C.H.U.M.P. Magazine! Commodore & Amiga Survival Guide, Anne Westfall interview, TDI Modula 2, Supra Hard Drive.

#17 INFO Nov/Dec 1987
ANNUAL GAMES ISSUE! GEOS Update, 16/32 bit comparison, C128 ROM upgrades, B.E.S.T. Accounting, Word Writer 3, DIGA!

#18 INFO Jan/Feb 1988
Desktop Publishing & wordprocessors (part I), Virus diagnosed, Geos Update, C64 Power Cartridges, C128 Superpak II.

#19 INFO Mar/Apr 1988
Desktop Publishing & wordprocessors (part 2), Leo Schwab interview, GEOS Update, ICT hard drive, Digital SuperPak2, Thoughtform.

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#22 INFO Sep/Oct 1988
Digitizing, Mac VS. Amiga, GeoStuff, Over 50 reviews for C64, C128, and Amiga computers, INFOmania Game Tips! BRYCE debut!

#23 INFO Nov/Dec 1988
ANNUAL GAMES ISSUE!! INFO Mania Game Tips, New Products, News & Views.

#24 INFO Jan/Feb 1989
Amiga 3D Graphics Round Up, Reichart Von Wolfsheld interview, GeoStuff, SuperBase Pro, Spectrascan, Sky Travel.

#25 INFO Mar/Apr 1989
Amiga Animation Round Up, Rodney Chang interview, C128 T.H.I.S., GeoCalc 128, Dr. Term Pro, AC/BASIC, Microfiche Filer Plus.

#26 INFO May/June 1989
Paint Program Round Up, Loren Lovhaug interview, Removable Mass Storage, 1581 Toolkit, MicroLawyer, WillMaker, Pen Pal.

#27 INFO Jul/Aug 1989
3rd Annual C.H.U.M.P. Magazine! Dale Luck interview, Sound & Music, Fractals, GeoProgrammer, Silentwriter LC890, Transcript.

#28 INFO Sept/Oct 1989
Video Boot Camp! High-End Amiga Expansion, Gail Wellington interview, 3D options, Home Town, Viking I, A-Max, Anti-Virus, V.I.P.

#29 INFO Nov/Dec 1989
Annual Games Issue! Chris Crawford interview, SFX Sound Expander, The Write Stuff 128, Toshiba ExpressWriter 301, RawCopy, Mac-2-Dos.

#30 INFO Jan/Feb 1990
Amiga DeskTop Publishing Tools, LOGO, A590 Hard Drive, Dual Serial Board, Abacus Books, Twin Cities 128 book.

#31 INFO July 1990
Amiga 3000, AmigaVision, AmigaDOS 2.0, R.J. Mical interview, Ray-Tracing, TV*Text Pro, CanDo, CrossDOS, FractalPro, ScanLab 100.

#32 .info September 1990
First issue of monthly All-Amiga *.info!* Turbo Silver, Laurence Gartel interview, Page Stream 1.8, Power PC Board, introducing CDTV, all new *.info* Technical Support section by Sullivan and Zamara.

#33 .info October 1990
Fractal Frontiers, Inside AmigaVision, Peggy Herrington's new Music & Sound column, Pro Video Post, The Art Department, Archivers.

BACK ISSUES

#34 .info November 1990
The Video Toaster Cometh! George Christensen interview, ProWrite 3.0, Synthia II, Saxon Publisher, Pro Draw 2.0, Hard Disk Management.

#35 .info Dec 90/Jan 91
Annual Games Issue! The year's top 25 games, Exclusive - Amiga Unix, Battletech Center, Elan Performer, GVP Impact II SCSI RAM Controller.

#36 .info February 1991
Image Wrapping, The Amiga in Europe, Victor Osaka interview, World's first Video Toaster Show, Renderman, A-Max II.

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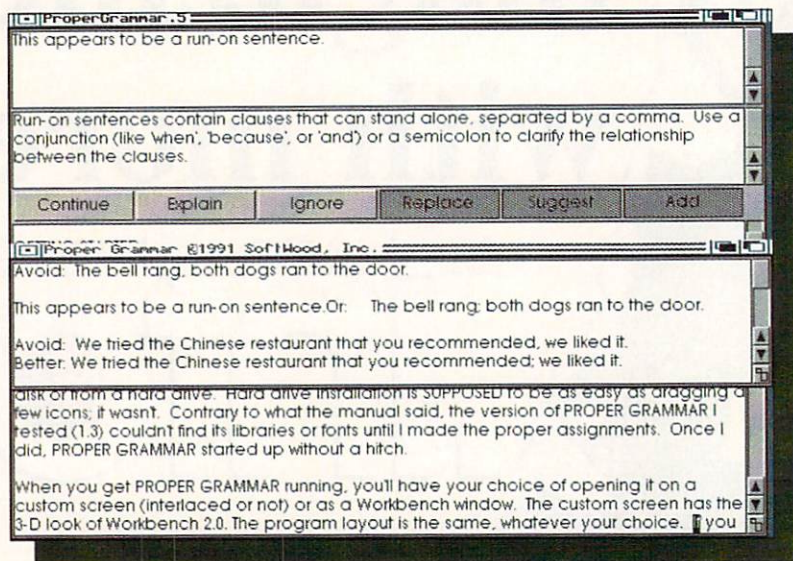
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Jim Meyer on Productivity



Proper Grammar picks on a sentence.

the version of *Proper Grammar* I tested (1.3) couldn't find its libraries or fonts until I made the proper assignments. Once I did, *Proper Grammar* started up without a hitch.

The screen is divided into two main areas, separated by a row of command buttons. The lower area is the document window; when you open a document, it will appear here. The upper area of the screen is divided into two text windows. If the program encounters an error, it announces it in the upper window and explains it in the lower window. The command buttons (Continue, Explain, Ignore, Replace, Suggest, and Add) control the grammar and spellchecking process.

Proper Grammar will read and save files in the following formats: *WordPerfect*, *ProWrite*, *QuickWrite*, *Pen Pal*, *Excellence!*, *TextCraft Plus*, *KindWords*, *TransWrite*, *Scribble!*, and ASCII. I tested *WordPerfect*, *ProWrite*, *QuickWrite*, and *TransWrite*; they all loaded fine. The ability of *Proper Grammar* to load and save in any file format is critical, since one of the functions of the program is to make corrections in your text.

CHECK, PLEASE

Program operation is simple. You select Open from the file menu and click on a filename. *Proper Grammar* will detect the format of the file and make the necessary translation. Once a document is loaded, clicking the Check gadget starts the grammar checker. *Proper Grammar* will analyze your document and display any errors in the upper window. Your options will vary with the type of error. *Proper Grammar* will present you with a list of alternatives for certain kinds of errors - misspelled words, verb/subject disagreement, or mixed tenses, for example. Other errors will merely trigger a warning, with examples of proper usage. Only those command buttons appropriate for the error will be active. The rest will be ghosted.

If you think your document is so well written that *Proper Grammar* won't flag any errors, guess again. *Proper Grammar* is both paranoid and persnickety. Anything remotely resembling a passive verb will be flagged. I used the sentence "The screen is divided into two main areas, separated by a row of command buttons." earlier in this column; *Proper Grammar* flagged it as a possible passive verb construction. When I rewrote that sentence as "A row of command buttons divides the screen into

Jim examines the release version of *Proper Grammar* and finds an interesting program but a hard taskmaster.

W

riting seems to be something of a lost art these days. Whether it's techno-jargon, dangling modifiers, or split infinitives, the evidence of poor writing is all around us. Softwood has introduced *Proper Grammar*, promising to "take the guesswork out of good grammar..." The advertisements for *Proper Grammar* claim that it will detect 95% of all writing errors. With that claim in mind, and properly armed with my favorite goofs, gaffes, and blunders, I put *Proper Grammar* to the test.

GETTING STARTED

Proper Grammar comes on two disks. The main program resides on the Program disk. The data files, libraries, and fonts reside on the System disk. *Proper Grammar* is not copy-protected, and you are advised to make backup copies before installing the program. You'll need a minimum of one meg of memory and either an external floppy or a hard drive. It is possible to boot from the *Proper Grammar* disk and run it as a floppy-based program, but you'll get the best performance running either from a ram disk or from a hard drive. Hard drive installation is supposed to be as easy as dragging a few icons; it wasn't. Contrary to what the manual said,

two main areas," *Proper Grammar* had no complaints. Unfortunately, the two sentences do not mean the same thing. I was describing the screen, not the command buttons, so the first construction was proper.

BENDING THE RULES

Fortunately, *Proper Grammar* allows you to tailor the rules it follows to a particular document or even a particular style of writing. You can turn off entire classes of rules permanently or for a single session. I managed to keep *Proper Grammar* from complaining about passive verbs by turning off the Verbal Consistency rule. (By turning off this rule, though, I ran the risk of missing some errors.) You may also set thresholds for certain kinds of errors. If, for example, you often use sentences with more than three nouns or prepositional phrases in a row, you'll want to set *Proper Grammar*'s threshold higher for those conditions.

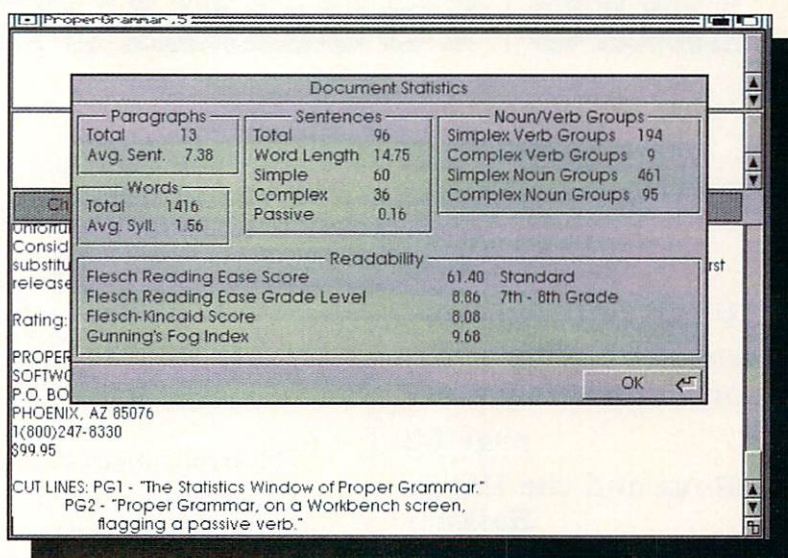
WHAT YOUR GRAMMAR NEVER TOLD YOU

So how good is *Proper Grammar*? It's not perfect. I decided not to use the examples supplied with the program. Instead, I dug out my copy of *The Elements of Style* and tested *Proper Grammar* on 18 of the "Rules of Usage." *Proper Grammar* missed 8 sentences containing mistakes. That's far below the rate claimed by Softwood, but my test was somewhat rigged. I included errors of style and errors of position, where a sentence is technically correct but its meaning is skewed. An example: "Being in a melted condition, I was unable to eat the chocolate." *Proper Grammar* had no way of knowing that I meant that the chocolate was melted. All it knew was that my sentence contained a verb, subject, and object, and that everything seemed to be in the right place.

The manual for *Proper Grammar* contains an entire chapter devoted to "The Principles Behind the Program." This chapter should be required reading. It explains both the principles used to find mistakes and the limitations of the program. *Proper Grammar* will not catch every mistake, and it will often both catch and miss mistakes within the same sentence. For example:

Do you have a tendency to loose things? Its not you're fault. Life is to complex, and many people has been known to have bad days.

Proper Grammar correctly identified "loose" as a possible error, and suggested "lose" as a replacement. It also caught the omission of an apostrophe in the word "its" but missed the other mistake in that sentence - "you're" should have been "your." The last sentence provoked mixed results as well. *Proper Grammar* correctly identified the subject-verb disagreement (many people has been known...) but failed to flag "to" - it should have suggested "too." That last omission is interesting; *Proper Grammar* will normally flag "to" as a possible error.



The Statistics window displays the ratings for this column.

When I tried the sentence "It is to bad," *Proper Grammar* caught the mistake.

GRAMMAR AND MORE

Grammar isn't the only thing *Proper Grammar* checks. It will also scrutinize your spelling, and it can provide you with a slew of statistics regarding your text. You can add words to the dictionary, but no provision is made for an alternate dictionary. If you have a need for a specialized dictionary, you'll have to create a duplicate *Proper Grammar* drawer and add the appropriate words. The statistics that *Proper Grammar* provides include the familiar "readability" indexes, as well as information about noun/verb groups, sentences, and paragraphs. An ARExx port is provided.

Perhaps the greatest strength of *Proper Grammar* is its capacity to teach, and to do so in a gentle manner. Most of the error messages are accompanied by a simple explanation, and an example or two of usage. If you need more help, you can usually summon a full explanation of the type of error, the circumstances under which it is likely to occur, and a number of suggestions. The program is always friendly, never threatening. It never demands that you make a substitution. It merely suggests. Mistakes are presented as possibilities, not as certainties.

GRADING GRAMMAR

Proper Grammar is almost a great program. At times, it is capable of amazing insight. Unfortunately, it can also exhibit tunnel vision, missing mistakes that seem obvious. Consider it a tool, not a panacea. Although it can be a valuable assistant, it is no substitute for a good human editor. Softwood has given us an impressive product with this first release of *Proper Grammar*, but it still has rough edges. It should get even better. ★

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Jim Butterfield says maybe those dreaded BPTRs aren't so bad after all.

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AmigaDOS Scripts, Part 3

Chris Zamara shares simple tricks for high-power scripts.

UNIX: IS IT FOR YOU?

Part I: For The User

by Daniel Barrett

Commodore has released several Amiga computers that run an industry-standard multitasking operating system called UNIX. What does UNIX have to offer the average Amiga owner, game player, power user, or programmer? How is UNIX different from the Amiga operating system (which I will, for the purposes of simplicity, call AmigaDOS) that we get for free? Is UNIX better?

This is a series of two articles comparing and contrasting UNIX and AmigaDOS. This month, we discuss these two operating systems from the point of view of an ordinary user. Part two will focus on topics for power users and programmers. These articles should serve as a quick introduction to the world of UNIX.

Components of UNIX

AmigaDOS consists of two parts: a low-level program called Kickstart, plus a set of support programs and files found on the Workbench disk. UNIX also has this dual structure, but it is much larger. Its low-level 'kernel' program could fit on 1-2 floppy disks, but the support programs and files can easily fill up 80 megabytes, so a hard disk is obviously needed! (Commodore's UNIX computers come with UNIX pre-installed on a 100 or 200 meg hard drive.)

So what do you get? *Hundreds* of programs: text editors, spelling checkers, document processing software, over a dozen compilers and interpreters, programming tools, programs for sorting and searching data, on-line documentation, networking software, electronic mail, window systems, games, tape backup programs, three or four user interfaces (shells), and day-to-day programs similar to your Amiga CLI commands. And if that's not enough, thousands of freely-distributable UNIX programs are available.

User Interfaces

On a standard Amiga, we can use graphical (Workbench) and command line (CLI) interfaces. UNIX has a command-line interface called the 'shell,' and many of today's UNIX workstations offer a window environment such as the *XWindows* system. Currently, there is no standard UNIX graphic user interface (GUI), although *X* is probably the most popular.

UNIX GUI's tend to be more complicated and configurable than the Amiga Workbench. *X* allows a user to specify exactly what happens whenever the

user presses a key or clicks the mouse anywhere on the screen. For example, you could easily design your own menu (both its look and its function) and cause it to pop up whenever you press the right mousebutton or the F6 function key. This power comes with a price, though: *X* is a large and computer-intensive application, whereas Workbench is small and relatively speedy.

Now, let's compare and contrast the Amiga CLI (or AmigaShell) and the UNIX shell. At first glance, they appear quite similar: they both have wildcards, script languages, command history, command-line editing, and so on. However, they have several important differences. The main one concerns the treatment of wildcard characters. Suppose you want to see your Amiga files whose names begin with 'A', so you type the CLI command:

```
list A#?
```

What happens now? In the Amiga CLI, wildcards are seen and interpreted by individual programs. This means that *list* itself must have the ability to understand the '#?' characters; the CLI does not interpret them. In short, Amiga programs understand wildcards only if they are specifically written to do so.

In UNIX, wildcards are interpreted by the shell, not the programs. Here is a UNIX command like the AmigaDOS command above:

```
ls A*
```

The wildcard is interpreted by the shell before *ls* executes, becoming (let's say)

```
ls Aardvark Amiga Anniversary.txt
```

Finally, *ls* executes as if you had typed the three arguments yourself. Thanks to the shell, every UNIX program automatically understands wildcards.

Here are some other Unix/Amiga shell differences:

- In the UNIX shell, the user can send the output of one program as input to a second program simply by typing a

.info technical support

vertical bar ('|') between the two programs on the command line. For example, to view your file names one page at a time, you might send a directory listing as the input to the *more* program, like this:

```
ls | more
```

These 'pipelines' are also possible in the Amiga Shell/CLI, but the syntax is not as convenient.

- UNIX programs may be paused, restarted, pushed into the background, or brought into the foreground any time. This is actually a feature of the operating system and not the shell, but it is the shell that gives the user access to this 'job control' ability.

- With the Amiga Shell or CLI, it is not permissible to type script commands directly at the command line. Have you ever tried typing an IF statement directly at the CLI prompt? You get an error message:

```
1> if EXISTS MyFile
IF only valid within command →
files
```

However, the UNIX shell allows you to type script commands directly at the command line. In general, the UNIX shell's script language is more powerful and general than the CLI's. (Note that AmigaDOS 2.0 makes vast improvements to the CLI, though.)

- Suppose you execute a CLI script that changes its directory using the *cd* command. When the script is finished, your original CLI will have moved to that new directory. This can surprise you if you didn't know that the script contained a *cd* command. Under UNIX, every shell script executes in its own private environment. Therefore, your scripts are free to *cd* all over the place and still have no effect on your original shell when they terminate.

There are several shell programs in the Amiga public domain that give the Amiga user many of the UNIX capabilities mentioned above. Some popular ones include Matt Dillon's *csh* and Steve Koren's *sksh*.



Color XWindows running under UNIX on an A3000 with Commodore's ULowell 8-bit graphics card.

File Protection

Have you ever let a friend use your Amiga, only to find that he accidentally modified some of your files? This unfortunate experience is possible because AmigaDOS does not prevent one user from affecting another user's files. In fact, AmigaDOS does not have any concept of file ownership at all - any file is accessible to any user.

On the other hand, UNIX was designed as a multi-user environment. Every file has an owner, and only the owner can modify it. This protection is enforced by UNIX, and there is no way around it - unless there is a bug in the operating system! Of course, the owner can choose to share files with other users on the machine.

How do you identify yourself as the owner of your files? Simple: when you first sit down to use the computer, you type in your name (really, a designated login name) and a secret password you have chosen previously. If you type the password correctly, then UNIX treats you as that user until you end the computing session (log out).

There is one special user on every UNIX machine called the Superuser, or 'root'. The Superuser may access every file on the machine without restriction. Important system files are typically owned by the Superuser, so they cannot accidentally be deleted by casual users. Have you ever deleted your only copy of *Deluxe Paint* by mistake? UNIX guards against this error.

As you might imagine, the Superuser's password is almost always a closely-guarded secret. If you are the owner and only user of a UNIX Amiga, however, it is likely that you will be your machine's Superuser and have access to all files. Even so, it is wise for you to create and use a separate, ordinary login name. When you are the Superuser, you lose the extra protection UNIX gives you, and it is once again possible to delete system files accidentally.

Multi-User Environment

A major feature of UNIX, and many other mainframe operating systems, is that many users can use the computer at the same time. Each user requires a separate terminal which can be attached to the serial port(s) or network interface card(s) of a UNIX Amiga.

When a UNIX user logs in, a private file similar to the Amiga's Startup-Sequence is executed. This allows each user to configure his UNIX environment differently from every other user's, even on the same machine. For example, one user's startup file might print a friendly "Hello" message, while another's might automatically open four shell windows.

Having multiple users on the same machine opens the door for on-line communication. Electronic mail allows files and letters to be sent between users, and the programs *write* and *talk* allow users to carry on interactive conversations.



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We have been the official Public Domain Library of all of the best Amiga magazines. Find out why these magazines choose us! Each of our disks are jam packed with only the best programs. The first two letters on each disk indicate the orientation of the disk; DD# intermediate to advanced - often contains source, WB# general interest - most programs can be run from the workbench, and FD# games and entertainment. Order our disk based catalog and receive a coupon for a complimentary volume with your next purchase. We have always used only SONY blank disks!

Featured Disk

DD79abcd: Amiga C Tutorial - This is the most comprehensive C language, Amiga orientated set of tutorials available. Includes full working examples, source code and an incredible set of lessons. Included are full discussions and examples of every topic on Amiga programming. Four disk set, counts as three.

New Disks

FD63: Quizzshol! - An interactive multimedia quiz game show program that tests your knowledge of DpaintIII. The questions can be changed so you may quiz on whatever topic you'd like.
FD62: PomFom Gunner. An extremely smooth and well done World War II gunnersimulation. Requires 1 meg of chip memory.

FD61: Games Solitaire - great graphics, plays two versions. Kluge; an interesting piece of eyecandy. Extreme Violence; 2 player kill or be killed game. YATC; A Tetris clone with Artificial Intelligence. Genesis; create realistic 3d fractal worlds.

FD60: Games In Nebula, race over a 3d world to destroy enemy installations. Interferon; a great Dr. Mario clone. Enigma; is it a game or a puzzle?

FD59: Game Potpourri Xenon III is an almost exact clone of the commercial game of the same name... a great shoot'em up. Crossword will take lists of words & automatically generate crossword puzzles for any Epson compatible printer.

FD58: GAMES! Includes Schleichang; a great Tetris clone from Germany with music. SCombat; simulate battle between up to 40 players & monsters. Imperium Romanum: Battle up to 4 players for control of the Mediterranean in this Risk-esque game.

FD57: Arcade Games Includes 2 true commercial quality games. MegaBall is the successor to Ball; features 5 full musical scores, multiple levels and addicting gameplay. Gravity Attack is a psychedelic trip through several different worlds--each distinctly different.

WB95: Checkbook Accountant 2.0 This program is definitely commercial grade; we've seen many checkbook programs and this is absolutely the best. Full budgeting, transaction recording and report generation.

WB94: Desert Storm This disk contains an interactive hypermedia presentation about the conflict in the Persian Gulf. Very nicely done with colorful maps/graphics.

WB93: Workbench Extras #2 This disk contains the utilities that Commodore should have shipped with the Amiga; VirusX4.0, Snap, FixDisk (recover/corrupt/deleted files), Disk Optimizer (floppy & hard), MachIII (screenblinker, hotkey, mouse accel., macro, clock utility), GOMF (a gurbuster) and PrintStudio.

Other Great Disks!

FD5: Tactical Games - BullRun - a Civil war battle game, Metro - you play the role of a city planner. Build wisely and your system will be a success, but poor planning will lead to disaster and financial ruin. Very very habit forming.

FD6: GAMES! - This disk is chock full of games including; Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.

FD7: PACMAN - This disk contains several pacman type games including; PacMan87, MazMan and Zonix.

FD9: Moria - This has great graphic controls, multiple spells, similar to Larn and Hack. Play time several weeks!

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

FD11: Las Vegas and Card Games - Las Vegas Craps - The best Las Vegas Craps simulation ever written for any computer. Contains extensive HELP features, Also Thirty-One, VideoPoker and more.

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

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

FD14: Dungeon Master Hints and Arcade Games - DM maps, spells, item location, and hints and more, also on this

disk, Hball - an arkanoid/breakout type game, Trix - a Cix type clone.

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

FD20: Tactical Games - MechForce(3.72); A game that simulates combat between two or more giant, robot-like machines. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.

FD26: Arcade Games - Marble slide, this is a truly commercial quality game. Similar to a Lucas game named PipeDreams, excellent playability and entertainment, Mutants, a small version of the arcade game of the same name, also SuperBreakout a pong/arkanoids type game.

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

FD29: Shoot'em ups - WWII - you're the pilot of a WWII plane flying through enemy territory, you've just been spotted, good luck on your mission, SpKiller - try and penetrate enemy lines with this game, and Retaliator - another great game.

FD31: Games! - Air Traffic Control - a good ATC simulation game, Black Jack Lab - a full featured set of card games, ChessTel - play chess with your friend in distant and remote places with this game and a modem, labyrinth - a well done text adventure game (like an infocom game), and MouseTrap - a 3d maze game.

FD32: Flight Simulator - Includes an instrument flight simulator for a DC10.

FD33: Arcade Games - Freddy a mario brothers type of game, Gerbil's a target practice game, PipeLine a German interpretation of Pipe Dreams, Tron a light cycles version, and wretoids a wonderful version of asteroids with a hilarious twist.

FD34: Games - Includes WellTrix a derivative of the addictive game of tetris, and new version of BackGammon. Also included are several new "Schwable type Hacks".

FD35 Omega (v 1.3) - A new outstanding dungeon and outdoors adventure game in a similar vein as hack, rouge, and moria. This version is considerably faster and better than all previous versions. Play time several weeks or months.

FD37a & b: Tactical Games - Empire (2.2w) This great game comes highly recommended. With a full-featured graphic front end.

FD38: Games - Cribbage Master - A great cribbage game and tutor. Spades - a well done card game, ChineseCheckers - A computer version of this classic, Puzz - a slide piece puzzle game and construction set.

FD39a & b: Star Trek, The New Generation - This is a completely different version of Star Trek than that found on FD12. This one was created by the German author Tobias. Now with English instructions. Very Excellent!!! Counts as two disks. Requires 512k memory.

FD42: Games - Includes SpaceWar3 - a remake of this original Amiga classic, Trippin - a fascinating board game of intrigue, strategy, and player manipulation, Dominion - an engrossing strategy game of galactic war and conquest, Frog - a frogger type clone, and Mines - a very good strategy board game.

FD44: Game - Mechflight is an out of this world role-playing adventure comparable to hack and moria. The setting, interplanetary colonies and space stations. In your quest to explore the world, take time out to liberate bad guys of their most valuable possessions, engage in a mortal combat or two against robots and alien life forms, pick up a new amiga 9000. Most of all, don't forget to stay alive...

FD47: Arcade Games - Contains DownHill - a demanding computer slalom ski game, MicroPac - a Workbench minipacman game, CrackOut - a break out clone, Jet - a superb aerial dogfight game, AmegaRace - an interesting asteroids type of game, and WindyDay - a unique arcade shoot'em up.

FD49: Chaos Cheats - This disk contains an everything you wanted to know about cheat set for Chaos Strikes Back, including full maps, spells, object locations, super characters and more.

FD50: Submarine Game - Sealance, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.

FD52: Classics Games - PetersQuest a well done Mario brothers type of game, Jymbc a two player missile command clone, and Vstank a tank commander game.

FD53: Great Arcade - On this disk is a wonderful implementation of the ever popular classic arcade game Defender. Also contain Air Race a WWII flying ace arcade

game, and Psychoblast new creation idea game.

FD56: Arcade - Includes SpaceWar, HueyRaid a well done helicopter arcade game, and PowerPong a great expanded pong game.

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

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

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

WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.

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

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

WB11: Business - Clerk(4.0), finally a full featured business accounting PD program for the small to medium company. Includes receivables, payables, end of month and uch more.

WB12: Disk Utilities - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts of file manipulation. A must have!

WB13: Printer Drivers and Generator - over 70 different drivers, and if these don't do it, with PrtDrvGen you can make your own.

WB14: Video - on this disk are several utilities for the video enthusiast. We have included multiple slates, video titling, Bars and Tone, Gray Scale, Screen fades and swipes, Interlace toggles, and SMPTE Calculators. Also on this disk is a full featured video cataloging program.

WB15: Business - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).

WB16: Business - This disk contains an inventory manager, a loan analysis program, a great calendar/scheduler, a rolodex program, and pennywise a good "Cash Book" accounting for home or office.

WB18: Word/Text Processors - This disk contains the best editors. Includes, TextPlus (v2.2e) a full featured word processor, Dme(v1.35) a great programmers editor with strong macro features, TextED(v2.8) an enhanced Emacs type editor, and a spell checker.

WB20: General Interest - DiskSalv V1.42 a disk recovery program for all Amiga file systems, FixDisk V1.0 another file recovery program with features DiskSalv doesn't have, 3DLook gives a 3D appearance to your WorkBench, Clean V1.01 a program to de-fragment memory, Tracer - trace any part of an image.

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

WB23: Graphics and Plotting - Plot (20b) a three dimensional mathematical function plotter. Can plot any user defined function, BezSurf2 - produce awesome pictures of objects one could turn on a lathe. Can also map if image files onto any surface that it can draw. Now compatible with most 3D packages, and VScreen - makes a virtual screen anywhere, great for DTP.

WB25: Educational - On this disk are two programs that can generate maps of differing types, World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.

WB26: Disk Utilities #2 - MrBackup, KwickBackup - two well done utilities to help with harddisk and floppy disk backups, FileMast - a binary file editor, LabelPrinter - Disk label printer with very wonderful features.

WB27: Nagel - 256 Patrick Nagel pictures of beautiful women.

WB29: Graphics and Sound - This disk has several different Mandelbrot type programs for generating stunning graphics. Includes, MandelMountains - a realistic terrain generator, Fracgen - generated recursive fractals from user input, Mandelbrot and Tmandel - two fast mandelbrot generators, also Mostra - the best IFF display program to date, will display ALL IFF's including Dynamic HAM, and Sound - a great IFF sound player, will play anything. Try this disk!

WB33: Circuit Board Design - several terrific routines for the electronic enthusiast. Including PCBTool - a circuit board design tool, LogiLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with pre-drawn common circuit components for insertion into schematics.

WB34: Utilities - Several well done utilities, some will require moderate knowledge of a CLI or Shell for setup, ChatterBox - this one will play any user defined sound after any event (ie. disk insert, mouse click, disk removal...), Artm - The Amiga real time monitor, gives you full control of the Amiga OS, very powerful program. Helper - help program to make learning the CLI easier, and more!

WB35: 3d Graphics - This disk contains several neat programs to use with your 3d modeling/raytracing programs 3dFonts - Full vector font set for use with 3d programs, FontMaker - make 3d fonts from any system font, Make3DShape - create 3d shapes from any image, DumptoIFF - create 3d animations preserves pallet, and World3d - a demo program of a front end for use with DKBRender.

WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images that a symmetrically similar to a rose, SimGen - display those spectacular images as part of your

WB36 cont. SimGen - display those spectacular images as part of your workbench screen, and RayShade - a very good raytracing program, create your own beautiful 3d graphics.

WB37: Educational - Educational games and puzzles that cover math, geography, spelling, and books. Ages 6 - 15

WB38: Plotting and Graphics - Plotly is the most powerful full featured plotting package. Used by many colleges and universities. A welcome addition to our library! Highly recommended. Plans - a incredibly well done Computer Aided Drafting program, very full featured. Tessellator - a program that helps generate fantastic looking, recursive M.C. Escher type pictures.

WB39: Music - Intuitracker is a German offering of an exquisitely well done program that allows you to play music on your Amiga with CD like controls. Lets you strip out music from your favorite games or others and include them in your music library.

WB40: Music - "CD on a disk", 90 minutes of modern music on this well presented collection.

WB41: Music - MED an incredibly well done, full featured music editor. Create your own stunning music directly on your the Amiga. Similar to SoundTracker but better. Very powerful easy to use program.

WB43: Business - This disk contains AnalytiCalc - probably the most powerful spreadsheet program on the Amiga. A full featured spreadsheet with many features expected in a commercial package. Requires 1.2 MB of memory!

WB45: Clip Art - HighRes clip art with the following motifs - embellishments (borders, dodads), people, and transportation.

WB48: Clip Art - HighRes clip art with the following motifs - Holidays, music, medical, and misc.

WB49abc: Animation Sampler - On this three disk sampler set (counts as two disks) are some of the best animations that have been created over the last three years. Several examples of "Movie" type animations some with spectacular raytraced reality (coobyro, watch, spigot and egg). Also several european style or "Demo" animation with incredible graphics and outstanding electronic music (akrilight, copersine, doc, dps2010, impact, and logodemo). These truly show off the creative edge of an Amiga!

VALIDATION of corrupt disks.

WB66: Icons #2 - Lot's of neat icons. Also, several wonderful programs that to let you create your own icons, modify and manipulate icons and info structures.

WB68: Music Utilities - several good utilities for the Amiga music enthusiast. Includes, Noisetracker - a great music creation program, Sonix2MOD - converts sonix to .mod files which then can be used by noisetracker, soundtraker, and MED, SpeakerSim - a speaker design tool demo, Wondersound is an additive harmonic instrument design tool with a separate envelope design window and 16 relative harmonic strength and phase angle controls.

WB69: Music - This disk has over 90 minutes of classical and modern electronic music for you Amiga.

WB70: Desk Top Pub - Atop - transfer Macintosh screen fonts, Mac or IBM format .AFM metric files, to Amiga screen fonts and PPage .metric files. With this program open door to the libraries of Adobe and PostScript type1, Calendar - month templates in PS form, Post - a full featured post script file display and print utility.

WB71: C64 Emulation - The A64 Package is a complete, very powerful, Commodore 64 emulator.

WB75: Music - over 100 instruments files (.inst) and sample sound files (.ss) for your music programs.

WB76: Applications - This disk contains Stichery - a often requested knitting design program, Lotto - a rather complete lottery tracking and prediction utility, SSS - this screen capture program can grab almost any screen including games, Today - a personal calendar, Tarot - fortune teller, and Grammar - grammar checker.

WB78: AV - On this disk are two Amiga Vision programs (bubbler, sync) written by Lou Wallace, chief technical editor of Amiga World. These programs are marvelous examples of how too's with AV.

WB79: Home & Business Accounting - Includes Ckbcact - the most complete checkbook accounting program going, LCDCalc - this well done calculator has a very large display and operates from the keyboard or mouse, Mileage master - monitor your automobile mileage with this mileage log, Grammar - a grammar checker, and Worktime - find out what time it is in up to 50 global cities.

WB80: Graphics - Raytracing programs generate absolutely stunning realistic looking planes, rockets, buildings... and surreal images often consisting of highly polished spheres and objects. 3-D Master is the most powerful EASY-TO-USE of it's kind we have seen to date. This is easily better, and more full featured, than similar commercial programs costing in the hundreds of dollars.

WB81: Great Applications - DataEasy a very easy to use, database program. Don't let the ease of use fool you, this is a very full featured database program including full printer control for address labels and mail merge applications. Also includes, TypeTut a good typing tutor, RLC a full featured label printer, Banner, a multi-font banner maker, and Budget a home accounting in a program. Highly recommended.

WB82: Animations - Four full length, well done "movie" style animations. Including, Coyote, Juggler11, GhostPool, and Mechanix. Two disk set, counts as one!

WB83: Computer Art - this disk has some of the best Amiga generated computer art that we have collected in the past 5 years.

WB85: Graphics - Contains several programs for manipulating 24 Bit color images (ham-e) and a rather nice Iff Image processing package.

WB86: Amiga Vision - Contains the Centurion Press, An Amiga newspaper by Lou Wallace.

WB88abc: The Complete Bible - A three disk set, with the entire text of the New Testament and Old Testament. Great search utilities.

WB90: Rippers, Strippers and Beats - For the Amiga music enthusiast, this disk contains many programs designed strip music from your favorite games and programs. Music can then be played with your favorite Pd Music program. Also contains Drums, a very nice drum machine. This disk can require moderate knowledge of the CLI.

DD45: AREXX PROGRAMS - This disk contains several useful arexx programs and examples, PopCL4 - The latest of a must have utility.

DD47: Pascal - This disk contains everything needed to program in Pascal. Includes, A68k (1.2) 68000 assembler, Blink linking software and PCQ (1.0) a modest Pascal sub-set compiler.

DD49: C Compiler - contains zcc(1.01) fully K&R, zcc(1.0) front end, A68k(1.2) assembler, Blink linker.



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

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

DD52: Scientific - Includes Elements - an incredibly well done periodic table program with source, Scientific plotting - over 600k of Lattice C source routines that can be included in your own programs.

DD54: Compression - This disk is loaded with ALL of the best file compression programs and aids for the Amiga. Many of the programs can be used by the new user. Includes Arc(2.3), Lharc(1.0), Lhwar(1.03), Pkax(1.0), PowerPacker(2.3a) a must have by all, Zip(1.0), Warp(2.04), and Zoo(2.0). Also IFFcrunch an excellent compression for IFF files.

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

DD57: Advanced Utilities - Msh - like Cross-dos, copies files to and from MS-DOS, Pal-NTSC - convert any pal program to NTSC and vice versa. Also several utilities that improve your startup-sequence, plus 25 more programs.

DD62: Basic and Xscheme - Cursor - a full featured Amiga Basic compiler, sbasic and flex - several wonderful routines to help in basic programmers, and Xscheme - an interpreted object oriented language.

DD64 Amiga Programmers Manual - The fully comprehensive Amiga programming manual with source code examples and easy to understand tutorials!

DD65 C Tutorials - Several well done tutorials on how to program the Amiga. Includes tutorials and working examples on Device drivers, IFF reads and writes, Sound implementation, Arcade game design and implementation, Double Buffering, and others. A must have for Amiga Programmers.

DD66 Programming ToolBox - Many programs to help in your development efforts (most for C some for basic) Includes programs to generate requesters, an incredible spritemaker toolbox, to greatly aid compiling, convert DPaint brushes to C structures, a great library manager, and many more wonderful time savers!

DD69: Advanced Utilities - SerNet and ParNet - Connect two Amiga's and share resources, MemMonitor - Similar to WFRag but greatly improved, Selector - put monitor on your workbench screen, and more.

DD71: C compiler - This disk contains Dice, Matthew Dillon's full featured, powerful C compiler and environment system.

DD72: VT Emulators - Contains three powerful, full featured vt emulators, with many advanced features including kermi, xmodem and tektronix protocols. VaxTerm, VLT, and more.

DD77: Fortran - Contains a full featured FORTRAN77 environmental development system. Also contains EzAsm a strongly macro dependent 68000 assembler.

DD78: Menus & System Enhancements - Several neat programs to aid in launching programs from special icons (Next computer style), adding WorkBench menus and more. Also contains many useful programs to determine operation

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WB50: Animation - Seven of the best european style animations or "Demos", including - scientific 451, subway (a U.S. entrant, also our favorite), sunride, thrsdemo, tonight, waves, and woow.

WB51: Animation - On this disk are two excellent movie style animations including ShipRotation - a futuristic space ship orbiting a surrealistic world (one of the best), and RV-3 - a dpaintlll anim of a rather wacked out airplane.

WB53: Graphics - The disk contains C-light - The easiest to use raytracing we have seen to date. This one started out life as a full featured commercial product similar to Sculpt3d. Raytracing programs can generate stunning, realistically shaded objects. Also, sMovie - a full featured video text titler similar to ProVideo, Broadcast Titrer. Great video scrolling, wipes, special effects, and more...

WB54: Printing - This disk contains several routines to help with the chore of printing. Includes Gothic - Finally a Banner printer for the PD! PrintStudio - a well implemented all-purpose printer-utility with a very comfortable graphic interface and many advanced features, Lila - with ease, print ASCII files to a PostScript printer, and many more.

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WB57: Animation - This disk has several "Demo" style animations, Including, Blitter, Lolly, Sun5, vertigo, vortex, and xenmorph.

WB59: Business - contains a great, very full featured stock market technical analysis and tracking program, also an appointment calendar, and more.

WB61: Intermediate Utilities - Includes programs to help to drastically decrease flicker in interlace and hi-res modes (antiflick), an Atari-st emulator, an eprom programmer, turn your amiga into an eight channel digital data analyzer or oculoscope, and more.

WB62: Midi Utilities - Several useful midi utilities including, programs to transfer to and from several music programs to midi, a midi sysx handler, a midi recorder with timebase, display midi info, file sequence player, and a few scores.

WB63: Disk Utilities #3 - Several highly recommended programs to aid in removing duplicate files from your hard drive, performing file backups, Binary editing, fast formatting, file recovery, disk track recovery, and forced DISK

Do I Need UNIX?

Is UNIX better than AmigaDOS for the average user? The answer depends on your needs and your personality. If you use your Amiga primarily for playing games, then UNIX has little or nothing new to offer you. UNIX games, while fun, do not begin to approach the level of graphics and fast action found in a typical Amiga game.

If you use your Amiga for its strengths in graphics and video, then there probably isn't much reason to move to UNIX right now. Similarly, if you primarily use canned Amiga programs, and you are happy with them, then you may not need UNIX at the moment.

If you are a programmer, however, you should give UNIX *very* serious consideration. I'll talk more about this next time.

Suggested Reading

There are dozens of UNIX books on the market, and it's difficult to know which ones to read. My general rule of thumb for new users is to buy a book written fewer than five years ago. A number of things about UNIX have changed during that time, and these differences can be very confusing for beginners.

Here are some of my favorite UNIX books: For a very quick introduction, try *Learning The UNIX Operating System* by Grace Todino and John Strang (O'Reilly & Associates, Inc., 1987). For a solid tutorial and reference, try *A Practical Guide to the UNIX System* by Mark G. Sobell (Benjamin-Cummings, 1989). Once you have been exposed to UNIX, check out *Life With UNIX* by Don Libes and Sandy Ressler (Prentice-Hall, 1989). Interesting, well-written and funny, this book traces the history of UNIX and offers a lot of good (and hard-to-get) advice. ■

About the Author

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AREXX AND THE HAPPY HAIKUER

Can computers write?

by Nick Sullivan

You probably know that *.info* is produced - edited, laid out, typeset - on Amiga computers.

Not long ago, the ability to produce a commercial-quality magazine with consumer equipment would have been astounding, almost unbelievable. Today, it's routine.

But what if we now revealed that *.info* is produced not just *on*, but *by* a stock Amiga 2000... that every word in the magazine you are holding was authored by *hemingway*, a suite of sophisticated assembler programs written in 1989 by a 17-year-old genius from Düsseldorf: would *that* surprise you?

Certainly it would. In fact the idea is preposterous. No computer in the world is anywhere close to having the sophistication needed to generate even an *AmigaWorld* automatically. So far, only the human mind is capable of creating sustained text with content that develops logically from beginning to end. Since computers deal in the manipulation of symbols as symbols, without regard to the meaning the symbols might convey to a human being, this weakness is hardly surprising.

Parlor Games

On the other hand, making computers give the *appearance* of duplicating human text-authoring skills has been an intriguing parlor-game among programmers for many years. (Several of their more public efforts were documented from time to time during the 1980s in A.K. Dewdney's "Computer Recreations" column in *Scientific American*; that is the source of some of the information presented here.) Many of those programmers worked on microcomputers in BASIC, probably attracted by its convenient string manipulation and fast testing cycle compared to compiled languages or assembler. For this kind of program, the relative slowness of an interpreted language like BASIC is not often a drawback.

ARexx beats BASIC hollow when it comes to string manipulation, so it should be a natural for this kind of programming. ARexx's wide variety of built-in string functions, along with other features like compound variables, give it more than enough power for just about any text application. The methods for automated authoring discussed in this article are mostly pretty easy to implement; the challenge is to apply them effectively, a task that demands creativity and sensitivity to language more than raw programming skill. A sense of humor doesn't hurt, either.

Racter & Creativity

Besides the fun you can have with programs of this type, they do serve at least a shadow of a serious purpose in forcing us to examine anew our views about human creativity. Here is a little poem by the well-known program *Racter*; the poem appears in *Racter's* book *The Policeman's Beard is Half Constructed*:

Night sky and fields of black
A flat cracked surface and a building
She reflects an image in a glass
She does not see, she does not watch

And here, for a sort of comparison, is a stanza from *Dwarf of Disintegration*, by the American poet Oscar Williams:

It is the dwarf, the yellow dwarf, with the
minted cheeks
With the roots of the fingers, with the
wafer-thin cry,
In a maze of walls, lost in the nurseries
of definition -
Shadows dance on shins of trumpets in a
waning sky.

Few people, I think, would have difficulty distinguishing the work of the human from the silicon poet in this pair of examples, and the difference becomes clearer by the line. Wide as the gulf still may be, though, it does reach a narrower point than usual in poems that, like the one by Oscar Williams, are unrhymed and depend on unconventional word associations like "shins of trumpets in a waning sky". What is it exactly that distinguishes the poetry of the human author from the

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mere mechanical production of the computer?

Racter is the most sophisticated computerized writer I know of. Besides short poems like the one above, *The Policeman's Beard is Half Constructed* contains epigrams, limericks, a short dramatic scene in Elizabethan style, and a variety of prose ranging from a sentence or two to several pages in length. *Racter* has an impressive grasp of grammar and uses a large vocabulary and a wide variety of sentence forms. Perhaps its strongest feature is its ability to extend a chain of associations through the text that it generates, sometimes giving the illusion of semantic abilities it doesn't really possess. Here is one of the better examples; a moderately eccentric human writer might have done something very similar:

Bill sings to Sarah. Sarah sings to Bill. Perhaps they will do other dangerous things together. They may eat lamb or stroke each other. They may chant of their difficulties and their happiness. They have love but they also have typewriters. That is interesting.

Unfortunately, beyond what can be inferred from examining its output, not much information is available on how *Racter* works. One gets the impression of a program that has developed over a number of years more by accretion than by careful design. Since the human brain and human minds appear to develop in much that way, perhaps there is something to be said for it.

Travesties by Shaney

A completely different approach to generating text is the basis for a much simpler program by the name of *Mark V. Shaney*. The program begins by analyzing a document produced by a human author. The analysis consists of building a table of every word-pair in the source document, and for each entry recording the following word for each occasion the pair was used, and the frequency with which that word was chosen. For instance, suppose the document contains the sentence:

And then I turned, and then I ran,

Another page of fine haiku...	
The leaping child strays Where silver caverns flutter. Does the green brook climb?	The potent cliff creeps As silver maples retire. Does the lost stream swim?
Low, supple, sighing; The queen stunes, the man utthers; Enchanting, spinning.	Under the ill hill, When the silver valley flows, I live: the cry creeps.
Not dark, not jasmine, Tante comes to the shadow: Your hot forest lives.	The gnarled child playing: It is the smiling cavern. Wandering, I turn.
Bare rock, lofty root. The small, supple valley glows. Quick wave, damp hunter.	Always weak, but white, The man knows all free lanterns. Gladdened, he bubbles.

← create new page of haiku →

and then it caught me and ate me.

The first pair of words, "and then," occurs three times in this sentence (and, we'll assume, nowhere else in the document). Twice it is followed by "I," and once by "it." Accordingly, the entry in the table for the word pair "and then" contains two words, "I" and "it," with counts of two and one respectively. It so happens that none of the words involved in this entry is followed by punctuation, but if punctuation is present it is considered to be part of the word itself: the "me" in "caught me" and the "me." in "ate me." count as two different words.

When the table has been set up with similar entries for every word-pair in the document, the task of text synthesis can begin. The first two words in the output are the seed for the whole. Any word pair in the table could be used; a reasonable choice would be to use the pair that begins the source document, "And then." The next step is to look up the list of words that can follow "And then" in the table, and to select among them randomly using probabilities based on the stored frequencies. For example, there would be a two-thirds probability that the next word would be "I," and a one-third probability that it would be "it." The output document now has three words. A new word-pair is constructed consisting of the second and third words, and the process is repeated. It may or may not be self-limiting, depending on whether the last two words in the source document had been used earlier on.

A sample page from a haiku-generating program implemented in *HyperBook*. The ARexx script uses rules based on the number of syllables along with templates that define several possible structures that a line of text can take.

Considering the very mechanical method, *Shaney's* output is surprisingly lucid-sounding, and quite often grammatically correct. Here is part of an example that was quoted by A.K. Dewdney in *Scientific American*. The source document given to the program was an elementary chemistry text:

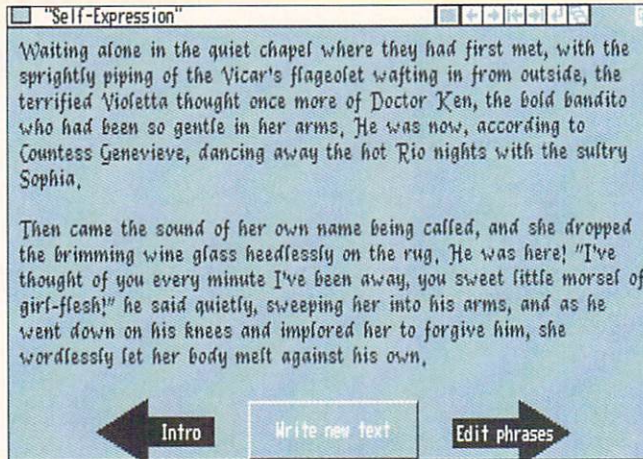
Why do we count things in groups of five. When people learned how to count many things, they matched them against their fingers. First they counted out enough things to match the fingers of both hands. Then they put these things aside in one quart. A giant-size bottle that will hold four quarts is a three-digit number. A digit gets its value from the top of a sidewalk are straight, and straight lines mark off the tennis court and baseball diamond.

Well, some of it does sound pretty odd. More troubling is the idea that *Shaney* is probably an evolutionary dead-end for computer writing. It seems doubtful that the method can be extended or enhanced in any significant way to improve the quality of the output, though perhaps it could somehow be combined with other, more linguistically-oriented, techniques.

An ARexx text-writer

We have room to discuss only one more technique, or rather to demonstrate the principle in a very brief program. If you have ever seen the type of children's book that has a drawing of an animal on each page, and in which the

Romance uses a simple text generating algorithm similar to that used by the short ARexx script listed in the article. By getting the data from lists of words in the hyperbook, the list of stock phrases can be modified without changing the ARexx script.



pages are divided into three sections that can be independently flipped allowing the animal pictures to be arbitrarily recombined; you already know the principle:

```
/* Write text using a →
template */
call random(1,1000,time('s'))
/* seed RNG */
phr1.1 = "Fair lady"
phr1.2 = "My dear Miss →
Overstreet"
phr1.3 = "Good gravy, →
Clarissa"
phr2.1 = "purred"
phr2.2 = "boozily intoned"
phr2.3 = "spluttered, in →
a voice that shook with →
indignation"
phr3.1 = "the cat is"
phr3.2 = "the house is"
phr3.3 = "my shoes are"
phr4.1 = "on fire again"
phr4.2 = "a perfect match →
for your lovely eyes"
phr4.3 = "a complete →
laughing stock, thanks to you"
p1=random(1,3); →
p2=random(1,3); p3=random(1,3); →
p4=random(1,3)
say "'phr1.p1', " he' →
phr2.p2', "'phr3.p3 phr4.p4'!"'
```

To see the results, enter the above program into a text editor and save it in your current directory or in 'REXX:' as 'writer.rexx.' Try running it a few times by typing 'rx writer' and see what you get. You can easily extend the program's vocabulary by adding new phrases in the 'phr...' compound variables and changing the random number limits in the next to the last line.

The advantages of this method, besides its extreme simplicity, are that it can produce a very high proportion of tolerably readable, even amusing, results, and that it gives free rein to your literary creativity. The disadvantage is that it's quite inflexible: however hilarious the phrase combinations may sometimes be, you'll never get more out of a program like this than you put into it. Still, if you make the phrase lists large enough, and exercise some originality in designing the template (which is expressed here in the single SAY instruction), you can achieve some interesting results. The romance excerpt and the haikus that accompany this article illustrate some of the variety available with this technique.

Programs to try

There are several interesting text manipulation programs available for the Amiga. In the early days of the Amiga, a version of *Racter* was available commercially from Mindscape - you may still be able to locate a copy. In the Public Domain, we suggest you check out *VaiSpeak* and *Jive* (both on Fish Disk #46), which translate standard English text files into slang; *Spew* (Fish #69), which generates pseudorandom "National Enquirer" headlines from a phrase database; and Steve Fawiszewski's Amiga port of *Travesty* (available in Portal's Amiga Zone libraries), which reassembles text into gibberish based on letter sequence recombinations. ■

Memory Alignment and BPTRS

Maybe those dreaded BPTRs aren't so bad after all

by Jim Butterfield

This article deals with machine-level programming, but contains some useful tidbits of information for non-programmers as well. We start with math operations and memory addressing on the 68000-series microprocessor, move on to the Amiga's memory organization, and end up at a defense of the much-detested BCPL structures that are found within the Amiga.

Powers of 2 & BPTRs

In last month's article, "Don't Multiply - Never Divide," I talked about a microprocessor division/multiplication shortcut - using a *shift* instruction instead of the slower multiplication and division instructions.

Amiga programs do a lot of multiplying and dividing by four. That's because the AmigaDOS system uses two special pointers called 'B-Pointers' and 'B-Strings' (often abbreviated *BPTR* and *BSTR*). Both of these pointers contain not an address, but *an address divided by four*. Figure 1 shows how it works.

A quick word about B-strings, in case you meet them: the pointer (times four) points at the string itself, which is organized differently from the well-known 'C string.' With a B-string, the first byte gives the length of the string; it's followed by the string itself. In contrast, a C-string starts with the string itself, and is terminated by a binary zero byte. Thus, a B-string is limited to 255 characters in length, but may contain any character. A C-string may be of any length, but may not contain a binary zero character.

Your program must multiply the value of such a pointer by four so that the appropriate address can be accessed. Alternatively, if you need to supply a B-style pointer to a program, you must make sure that the address you are using divides evenly by four - and then divide it by four to make the BPTR.

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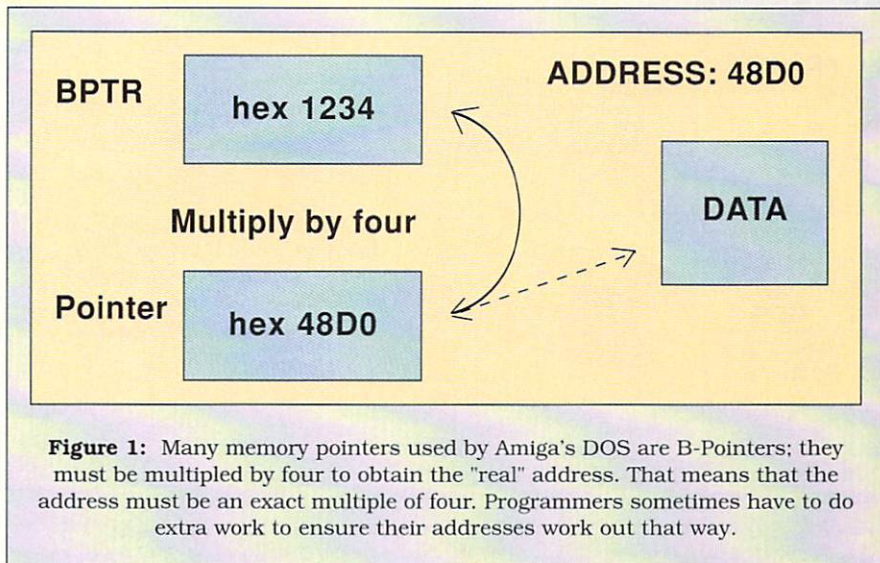
You'll run across these B pointers when you're working with DOS. You'll need to read B pointers when you track inner details of structures such as *CLI*, *FileLock*, or *FileHandle*. Conversely, you'll need to create B pointers when you send DOS packets.

Multiplying and dividing by four is a snap in any language, of course. Just shift twice, left or right. In assembler, LSL.L or LSR.L will do the trick; in C, use the << and >> operators.

68000

The 68000 CPU references memory in a word-oriented manner; a word is 16 bits. No matter whether the instruction asks for a byte (8 bits), a word (16 bits), or a longword (32 bits), the 68000 reaches for 16 bits at a time.

Figure 2 shows how the 68000 taps memory. If the program asks for a single byte of data, say at address 1235, the processor trims the address down an even number; that would be 1234 in this case. The whole word is accessed



- that would be the two bytes at 1234 and 1235. Only the requested byte is used.

In the case of a word access, the 68000 shows its power by performing a single memory access in order to grab

both bytes. But there's a limitation: the address supplied must be even (say, 1234). If the program asked for an odd address, say, 1235, the two bytes involved - 1235 and 1236 - would cross a memory boundary. Two memory

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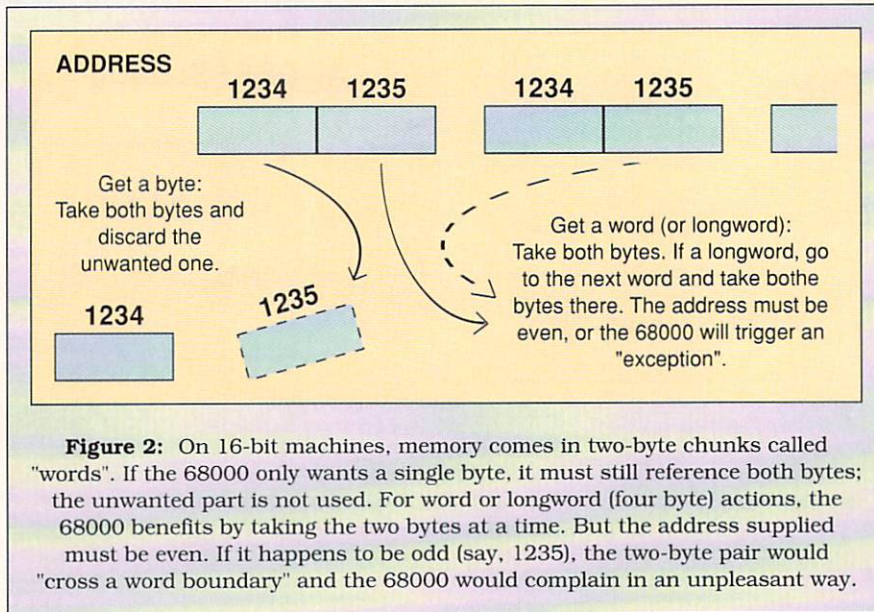
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accesses would be needed, plus some juggling to get the two bytes correctly positioned. The 68000 can't handle that. If asked to do a word or longword action with an odd address, it will trigger exception number 3, and you'll end up with a GURU message. This won't happen on a 68020 or later CPU; we'll discuss that in a minute. Most assemblers and compilers place code at even boundary addresses automatically. Assembly language programmers may need to make occasional use of command *CNOP*; *CNOP 0,2* aligns following code so that it will begin at an even address. And they must be very careful in playing with the stack (register A7), since a stack containing an odd address triggers a system failure.

68020+

The 68020 and its successors have two memory features not found on the 68000. They are capable of handling 32-bit memory - that's 4 bytes per memory access. And they will handle unaligned addresses, so that you can access a word with an odd address, or a longword whose address does not divide exactly by four.

Figure 3 shows how one of these processors will access 32-bit memory. A good speed advantage may be obtained with 32-bit memory by accessing a longword in a single memory shot. To do this, the longword address must

divide exactly by four.

If an address is not memory-aligned - a word access whose address is odd, or a longword access whose address does not divide evenly by four - these processors will still do the job. They perform a double-dip into memory (two fetches) and put the various bytes together correctly. But in so doing, they lose some of their speed advantage. The chips are quite versatile; they also cope cheerfully with 16-bit memory if that's what they find.

For speed on the faster CPUs fitted with 32-bit memory, you might commit

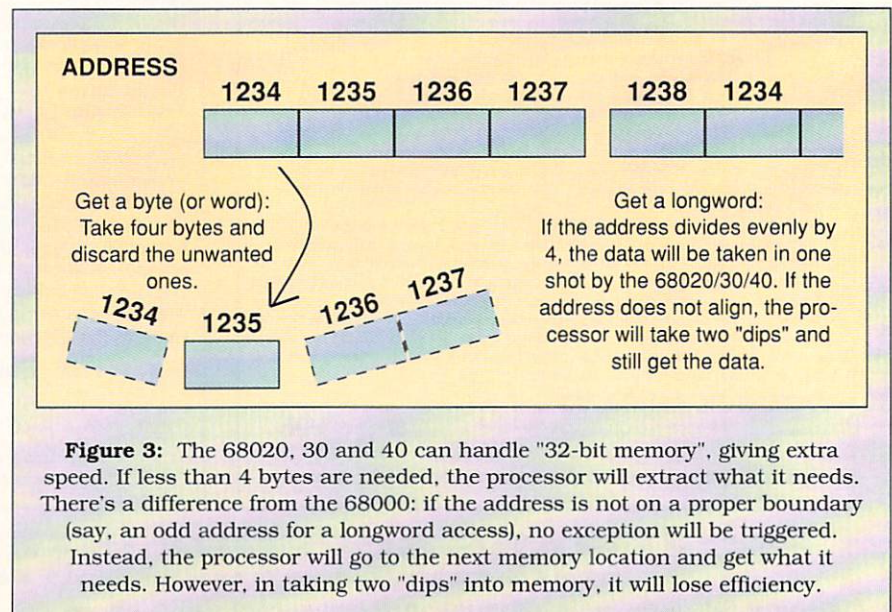
some coding techniques to memory. (No pun intended.) Compilers do their best to help align data in the best way possible. Users of the *SAS/C* (formerly *Lattice C*) compiler should study options *-l* and *-ma*, and avoid *-w*. Assembly language programmers should use *CNOP 0,4* where appropriate and try to perform stack operations with four-byte data exclusively.

Back to BCPL

To some extent, the above arguments tend to redeem the hated B-style pointers. If there's an advantage to having addresses that divide evenly by four, and if B-pointers insist on the use of just this kind of address, then they are pointing us in the right direction. (No pun intended.)

Yes, it's a small annoyance to have to remember to do a couple of left-shift operations before you use a B-style pointer. And C programmers grouch about such pointers because they lose their identity when multiplied by four, and need to be 'cast'. For my part, I grump greatly about needing to copy a string so that its address will be correctly aligned to allow it to be made into a B-String.

But really, they aren't too bad. And perhaps they help shed a little light on the changing memory-alignment situation within the Amiga. ■



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AMIGADOS SCRIPTS, PART 3

Simple tricks for high-power scripts

by Chris Zamara

The first two articles of this series covered the basics of writing AmigaDOS scripts, along with a few tricks. There are still more script techniques that can make normally-tedious operations a cinch, and this article explains one of the most powerful.

Using List

Since AmigaDOS version 1.3, the *List* command has incorporated a few capabilities designed specifically for helping with scripts. The *LFORMAT* keyword lets you specify the format of every file name displayed in *List's* output, including any additional text you would like to include. How is this useful? Consider the following command:

```
list #? lformat="Type %s"
```

The basic *List* command - without the *LFORMAT* keyword - would just list all the files in your current directory in a standard format. Assuming a current directory containing the files 'ReadMe.txt,' 'Docs.tw,' and 'Diagram.pic,' the *LFORMAT* argument used above causes the following output instead:

```
Type ReadMe.txt
Type Docs.tw
Type Diagram.pic
```

As you can see, the text in the *LFORMAT* argument was printed for each file listed, with the '%s' part of the string replaced by the file's name. If the resulting directory listing looks suspiciously like a simple DOS script, you're getting the idea. By redirecting the output of *List* to a file, you can create a script which, when executed, will perform any command on all files in a

directory, or only on files whose names match a given pattern. In the examples above, we can create a script that will *Type* all files in the given directory. Since this may not be very useful (typing the contents of a picture file isn't very helpful), we can use *List's* pattern-matching abilities to only type files ending in '.txt,' which are presumably text files. The entire operation to type out all files in the current directory ending in '.txt' might be:

```
list >ram:temp #?.txt →
lformat="Type %s"
execute ram:temp
```

The first of the above commands uses *List* with *LFORMAT* to output the *Type* instructions, and redirects the output to a temporary file called 'ram:temp.' The second command executes the 'temp' file as a DOS script, causing the *Type* commands to take effect. In the example given above, only a single file - 'ReadMe.txt' - would be typed out. Depending on the contents of your cur-

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SPAT

```
.key com/a,pat/a,opt1,opt2,opt3,opt4
failat 21
list >t:q<$$> <pat> lformat="<com> *"%s%s*" <opt1> <opt2> →
<opt3> <opt4>"
IF NOT FAIL
execute t:q<$$>
ELSE
echo "<pat> not found"
ENDIF
failat 10
;do wildcards for single arg command
```

Commodore's SPAT script from the S: directory of Workbench 1.3

rent directory, any number of files could be operated on.

The operation performed, of course, is not limited to *Type* or any other single command. Any time you wish to use a command on a number of files, and the command doesn't support pattern matching for processing multiple files, you can use the *List* technique. Other examples might be displaying a number of pictures, playing several sound files, or showing one animation after another. All of these can be accomplished by putting the appropriate program name in the LFORMAT argument of the *List* command.

The LFORMAT argument

In the above examples, we used 'Type %s' as the LFORMAT argument to the *List* command. The text in this string is printed out on a separate line for each file listed, but the "%s" part is special. In the output, "%s" is substituted with the name of the file. If you use two %s codes, the first is replaced with the path name of each file, and the second with the file name itself. This lets you use the entire path name of each file in the output. For example, the command

```
list ram: lformat="%s"
```

Might produce the following list of files (actually, directory names in this case):

```
env
clipboards
t
```

Using the command with two %s codes:

```
list ram: lformat="%s%s"
```

Produces the complete names of the files:

```
Ram Disk:env
Ram Disk:clipboards
Ram Disk:t
```

You can also separate the two %s codes and specify the file's directory path and name separately. A third %s can be used to use the file's name in the command again, and a second pair of %s codes (four codes altogether) gives two sets of path/names. In other words,

```
list ram: lformat="%s%s %s"
```

produces:

```
Ram Disk:env env
Ram Disk:clipboards clipboards
Ram Disk:t t
```

While the command using four '%s' codes:

```
list ram: lformat="%s%s →
*"%s%s*"
```

produces:

```
Ram Disk:env "Ram Disk:env"
Ram Disk:clipboards "Ram →
Disk:clipboards"
Ram Disk:t "Ram Disk:t"
```

Note the use of the "*" delimiter characters in the last example to put the quotes around the second path name. This may be required for path names that contain a space, such as "Ram

Disk," and is a good idea to use for general scripts that need to work with any file names.

Also remember that you can use any of the other *List* keywords along with LFORMAT, for example FILES to list files only, or DIRS to list directories only.

SPAT and DPAT

While the above technique can be extremely useful, it is usually not necessary to do it yourself, thanks to two scripts provided in the 'S:' directory of the Workbench 1.3 release disk. These scripts, SPAT and DPAT, use the LFORMAT technique to allow you to run any command on all listed files. SPAT works with commands taking a single filename argument, and is used as follows:

```
spat <command> <pattern> →
<command options>
```

SPAT is just a simple DOS script, but since it has the script protection bit set, you can use it just like a regular program: it's not necessary to use 'execute spat,' although that will work as well.

Let's take that animation example: you wish to use the program 'PlayAnim' to show all animation files (names ending in '.anim') in your 'graphics' directory on the disk volume 'dh0:.' This could be done using SPAT as follows:

```
spat PlayAnim →
dh0:graphics/#?.anim
```

You can see how SPAT uses *List* with LFORMAT to do its trick: just type s:spat to see the script. The temporary file is named 'q{\$\$},' which AmigaDOS translates as 'q1,' 'q2,' etc. depending on the CLI number that launched the script. This makes SPAT compatible with multitasking CLI windows.

The DPAT script is similar, but uses three '%s' codes and a user-specified directory name to provide the command with two complete path names. Consider the following use of DPAT:

```
dpat Rename dh0:graphic/#?.anim
dh0:animations →
```

This has the effect of moving all '.anim' files in the 'graphics' directory on dh0:

.info technical support

to the 'animations' directory (if one exists!). It works by creating a list of appropriate Rename commands - one for each matching file - that have this format:

```
Rename dh0:graphics/FILE →
dh0:animations/FILE
```

This particular example is a useful one, but in AmigaDOS Version 2, the *Rename* command has improved pattern-matching abilities so that it can handle the task by itself without requiring help from DPAT. This is true of most of the new shell commands, but the SPAT, DPAT and LFORMAT techniques are still useful for non-shell programs that don't support file pattern matching.

If you type the DPAT script to see how it works, note the *Echo* command early in the script, using the 'FIRST=256' argument. This has the effect of displaying the last character only of the argument to *Echo*, which in this case is the directory name supplied

by the user. The output of *Echo* is redirected to a temporary environment variable, which is then checked by several IF statements in the script. This shows how clever use of *Echo* and its options, along with environment variables, can be used to add a simple form of string-handling to AmigaDOS scripts.

LFORMAT & V2.0

Almost everything about AmigaDOS has been significantly reworked for Version 2, and the *List* command is no exception. Instead of just using %s in the LFORMAT argument to include the name of a file and directory path, a whole range of information about the file can be included using other special codes. Here is a list:

- %a file attributes (protection bits)
- %b size of file in blocks (or "Dir" for directories)
- %c file comment

- %d file date-stamp
- %k key (starting block position on storage device)
- %l file length in bytes ("Dir" for directories)
- %n file name
- %p file path (directory/)
- %s name or path/name string (see text)
- %tfile time-stamp

You can also precede any of these codes with a number to indicate the minimum number of characters used by the output string. For example, using the code "%16n" would always use 16 characters for the filename, showing the name right-justified in the 16-character field. To left-justify instead, you can use a minus-sign, as in: "%-16n".

These additional formatting codes make *List* a useful file-listing formatter for a number of purposes, including making customized printouts of the contents of your disks. ■

DPAT

```
.key com/a,pat/a,dir/a,opt1,opt2,opt3,opt4
failat 21
echo >ENV:qw<$$> "<dir>" first=256
IF $qw<$$> EQ ":"
list >t:q<$$> <pat> lformat="<com> *"%s%s*"→
*"%<dir>%s*" <opt1> <opt2> <opt3> <opt4>"
skip doit
ENDIF
IF $qw<$$> EQ "/"
list >t:q<$$> <pat> lformat="<com> *"%s%s*"→
*"%<dir>%s*" <opt1> <opt2> <opt3> <opt4>"
skip doit
ENDIF
IF EXISTS <dir>
list >t:q<$$> <pat> lformat="<com> *"%s%s*"→
*"%<dir>/%s*" <opt1> <opt2> <opt3> <OPT4>"
ELSE
list >t:q<$$> <pat> lformat="<com> *"%s%s*"→
*"%<dir>*" <opt1> <opt2> <opt3> <OPT4>"
ENDIF
lab doit
IF NOT FAIL
execute t:q<$$>
ELSE
echo "<pat> not found"
ENDIF
failat 10
;do wildcards for double arg command
```

Commodore's DPAT script from the S: directory of Workbench 1.3

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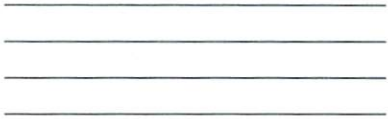
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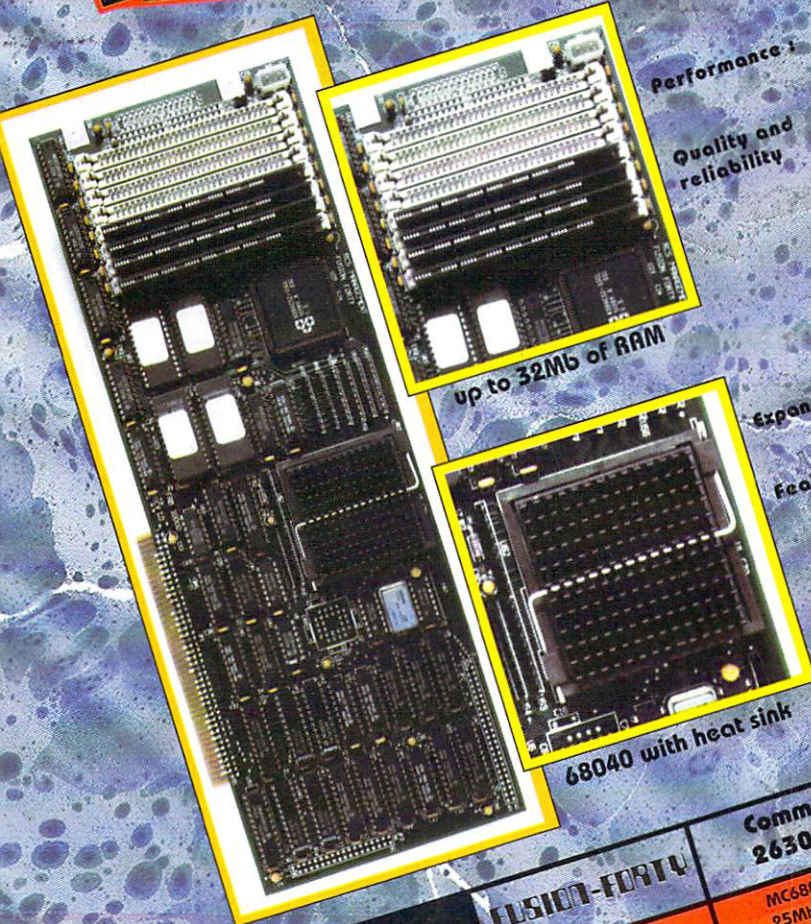


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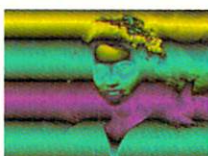
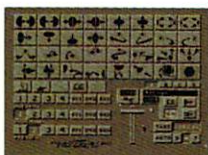
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