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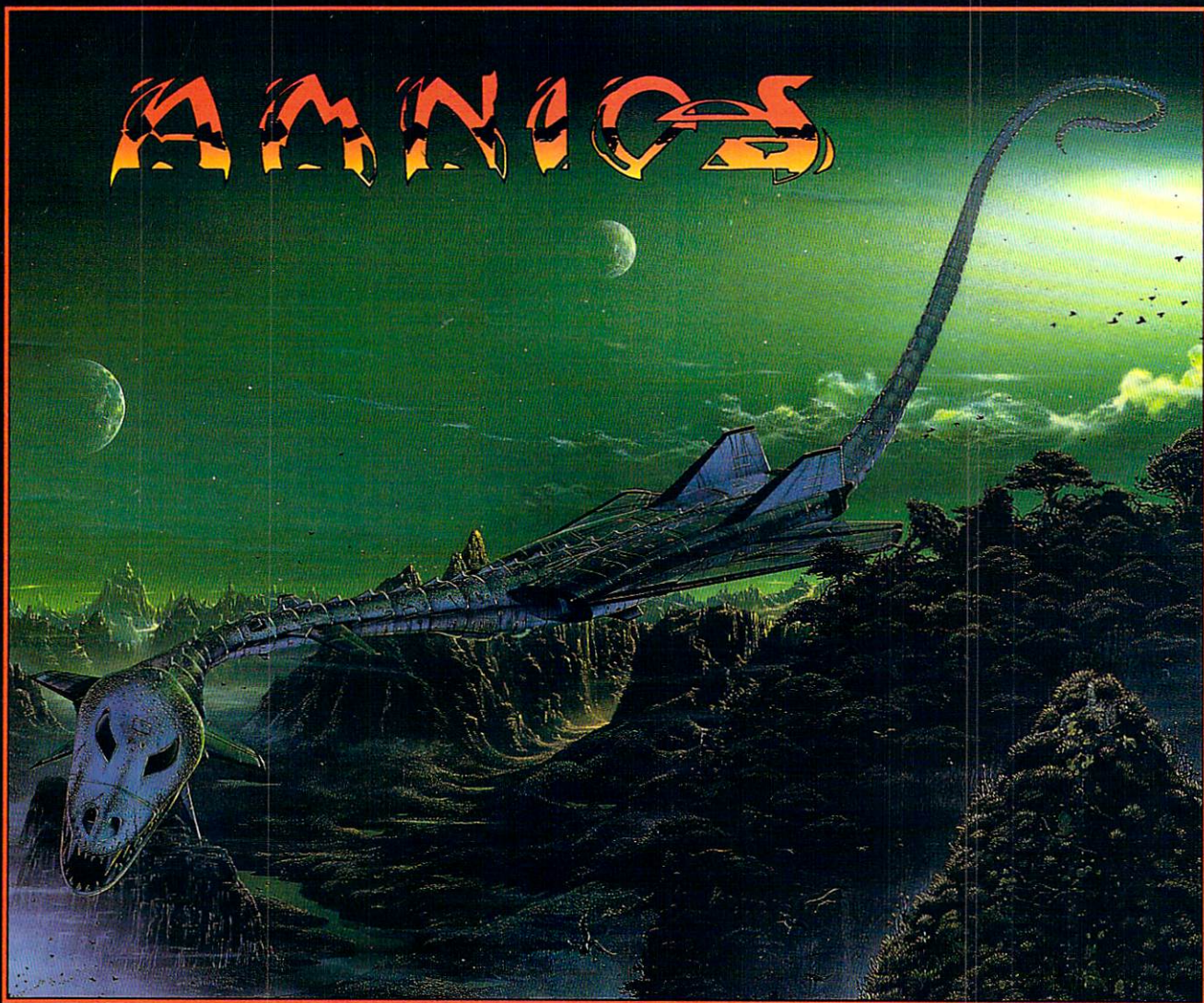
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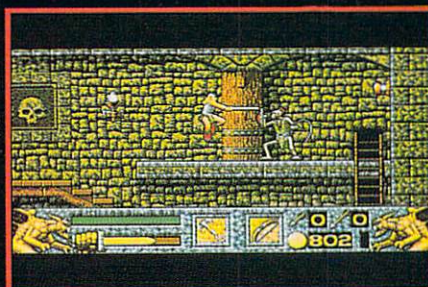
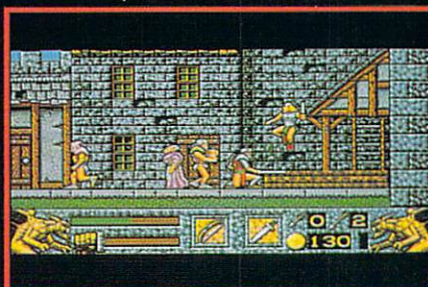
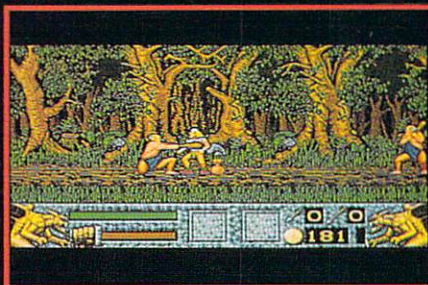
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Issue #44, November 1991

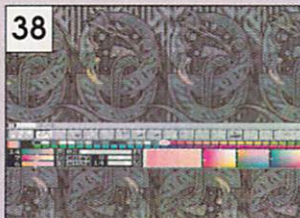


About the cover: This issue marks *.info's* eighth birthday, which makes us one of the oldest computer magazines around, and the oldest surviving Amiga magazine. To celebrate, we're giving away over \$12,000 worth of cool Amiga software and hardware. *.info* wishes to thank the many generous companies who donated products for our birthday bash. See page 34 for details. The cover illustration is a 1536 X 960 24-bit rendered with Newtek's *Lightwave 3D*. *.info* is produced and managed entirely with Amigas running off-the-shelf consumer software and peripherals.

CONTENTS CONTENTS CONTENTS CONTENTS CONTENTS

ProVisions

38



▲ Graphics page 38

Brad Schenck presents a RoundUp of the top Amiga native mode paint programs.

◆ MultiMedia page 43

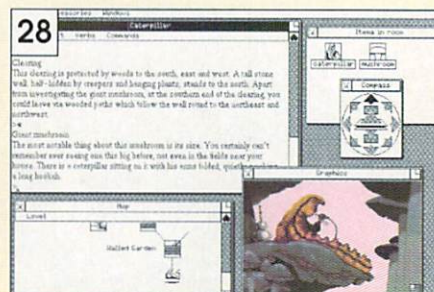
Harv Laser's *Rockin' and Boppin'* to CD+G on CDTV. (With discography!)

● Audio page 46

Bob Lindstrom examines the topic of how to add music to multimedia.

■ Video page 48

OJ Sands III puts himself in the picture with *MicroSearch's* impressive *Chromakey*.



Columns

20 Hardware

Mort Kavelson packs an A500 with ICD's internal peripherals.

23 Public Domain

Jeff Lowenthal looks at programs from GENie and CranWare.

24 Tir Na Nog

Brad Schenck explains the creative process.

28 CyberPlay

Tom reviews 4 new games, then twiddles his electronic thumbs.

36 Productivity

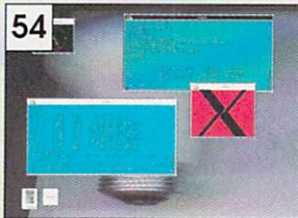
Jim Meyer backs up with *Ami-Back* and *Flashback*.

52 DevCon Report

Mark visits the Coors Brewery and the Amiga DevCon.

.info technical support

54



54 UNIX: Is It For You?

Daniel Barrett finishes his discussion with Part II: For the Programmer.

58 Quarterback Tools

David Martin reviews this Amiga utility program.

60 Point / Counterpoint

Nick Sullivan and *Chris Zamara* debate the relative virtues of the Workbench and CLI.

62 Checking Out Programs

Jim Butterfield warns that Hallowe'en and Christmas may be the same thing.

DEPARTMENTS

6 .info Monitor

8 Mail

10 New Products

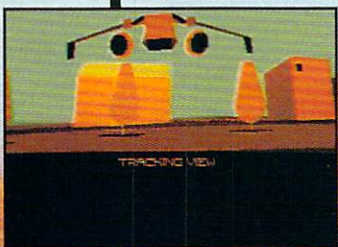
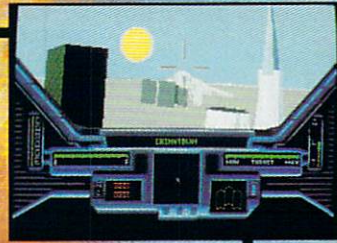
18 News & Views

18 .info Update

19 The Rumor Mill

65 Advertisers' Index

EXTENDED FORECAST FOR SAN FRANCISCO. MOSTLY CLOUDY WITH A SLIM CHANCE OF SURVIVAL.

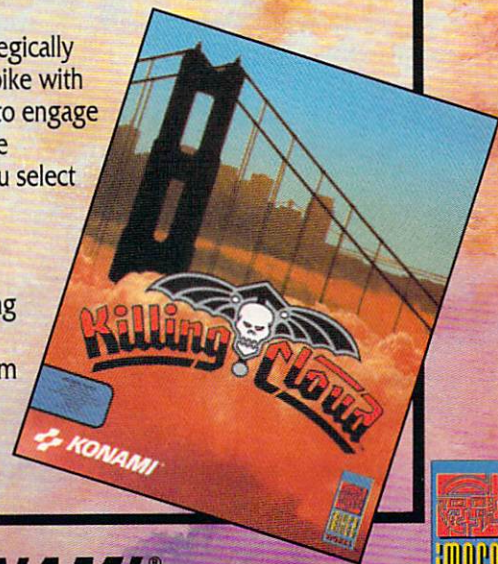


The outlook for the City by the Bay in the 21st Century is grim. A toxic cloud has billowed into town, smothering half the inhabitants. You're a hard-nosed cop called upon to soar through the cloud choked streets in your advanced XB500 hoverbike and defend the dwindling population. Especially now that the cloud provides a sinister smoke screen for the evil doings of a rabid pack of criminals, The Black Angels. Your mission is to net the ringleaders and solve the mystery of the cloud that kills.

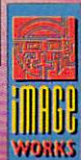
Receive each of ten daring assignments in the Briefing Room and strategically plant nets and robotic holding units throughout the city. Stoke your hoverbike with machine gun ammo, cannon rounds and a reserve fuel tank, then prepare to engage enemies in dogfights, seize robots and intercept enemy attacks. Interrogate captured suspects for key information. Exhilarating flight simulation lets you select flight or hover mode, forward and reverse thrust, refuel, radar detection, weaponry, multiple views and more. Navigate your way through an urban obstacle course of 240 authentically scaled San Francisco buildings and landmarks. To survive, you'll have to be skilled at piloting, combat, mapping strategies, and sleuthing.

It's time now to don your foul weather gear and shield the citizens from the suffocating smog. See for yourself why the Killing Cloud will take your breath away.

Available Fall 1991 for MS-DOS and Amiga.
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CHANGING TIMES

We've been quietly celebrating our eighth anniversary around the offices and doing a little reminiscing about what the world was like eight years ago. *.info* was called *The Cyborg Gazette*, later changed to *INFO-64*. There have been a few changes since then, some significant, some not. Some relevant, some not. Then again, some things haven't changed at all. We thought we'd share some of our lunch-table observations with you.

Then:

Ronald Reagan was President and George Bush was Vice President.

Leonid Brezhnev ruled the Soviet Union.

The Amiga hadn't yet been born, and the Commodore 64 was about to become the first machine to bring real computing to the masses at an affordable price.

The U. S. was in the depths of a recession, but things were starting to look up.

Computers were single-tasking.

64K was more memory than anyone could possibly use.

No one could possibly want more than 16 colors.

Software came on cassette tapes and cartridges.

Multimedia meant a slide projector, a microphone, and a long wooden pointer.

Desktop Publishing meant a typewriter and a copy machine.

Spreadsheet meant putting a cloth covering on a bed.

Marketing meant going to the grocery store to pick up a few things.

Telemarketing meant selling telephones, something Ma Bell was fighting tooth and nail.

Listening to music involved putting a vinyl record on a turntable and then scraping it with a needle.

Watching TV involved deciding whether to watch ABC, CBS, NBC, or PBS and then adjusting the antenna to get the best reception.

Computer graphics meant a few semi-recognizable blobs on the screen.

Now:

George Bush is President and Dan Quayle is Vice President.

There is no Soviet Union.

The Amiga is five years old, and IBM has brought boring computing to the masses at an exorbitant price.

The U. S. is in the depths of a recession, but things are starting to look up.

Computers are multitasking, except for IBM and Apple.

64 gigabytes isn't enough memory.

No one could possibly want more than 16 million colors.

Software comes on floppy disks and CDs.

Multimedia means whatever you want it to mean.

Desktop Publishing means a computer, page layout software, a laser printer, and a copy machine.

Spreadsheet means playing what-if with the Federal Deficit.

Marketing means having a bunch of number-crunchers decide what you're going to buy at the grocery.

Telemarketing means having a recording call while you're eating dinner and try to sell you plastic siding for your house.

Listening to music involves putting a shiny plastic disc in your portable CD player and jogging through traffic.

Watching TV involves deciding whether to watch TBS, TNT, HBO, ESPN, AMC, USA, CNN, or CNBC and then calling the cable company to complain about the fuzzy reception.

Computer graphics means raytracing, digitizing, and image processing.

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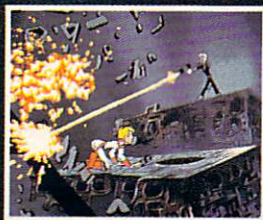
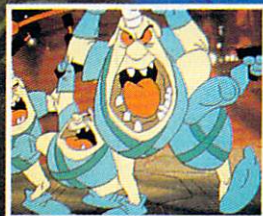
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After reading the article *Is Amiga DTP a Real Alternative?* in the Aug/Sept issue, I wanted to respond from an Amiga point of view. I am not going to condemn the Mac or IBM, I just want a chance to say that the Amiga is a good choice for DTP.

The screen shots of *FrameMaker* and *PageMaker 4.0* look great. Obviously, the reviewer spent some time to create the documents shown. Comparing these to the three Amiga "heavyweight" contenders, it looks like they did not survive the fight. Users of *PageStream*, *ProPage*, or *Saxon* would be embarrassed if their pages actually looked like the samples shown.

In my opinion, the Amiga lacks hardly anything except an expensive price tag. According to the article, Amiga DTP users lack fonts and polish. *PageStream 2.1* offers support for IBM Type 1 and Computer-Graphic Intellifont format fonts, and Soft-Logik is coming out with a PostScript type-face library, including clip-art.

The lack of interchangeable wordprocessing files is also a problem for most Mac and IBM users. Amiga DTP software does support a variety of picture formats. For example, *PageStream* supports all of them except for HPGL and CGM. Most people use *The Art Department Professional* to convert graphics into a format their DTP software supports.

You want polish? Call up an Amiga manufacturer and ask for brochures, literature,

copies of reviews, or even press releases. I can guarantee that all of them will send you colorful, professional brochures. They may have smaller budgets than their Mac and IBM counterparts, but who says you have to spend a lot of money to be professional?

- Ellen Kazmaier, Soft-Logik Publishing

There is one desktop publishing program for the Amiga that will handle long documents well. The lists of tasks for which the Amiga falls 'miserably short' on page 28 of Daryell Sipper's article reads like a list of the features of *AmigaTeX*. *AmigaTeX* handles cross-references, tables of contents, lists of figures and illustrations, tables, paragraph numbering, segmented documents, illustration linking, scientific equations, page numbering options, global changes, and much more. Any custom extensions can be coded in the powerful macro language, providing support for custom documents such as catalogs or databases. And this is only a partial list of features. On the other hand, *AmigaTeX* is not an interactive point-and-shoot program, and it is quite a bit more complex than any other Amiga publishing program. Not every user needs all of these features, and the simpler interface provided by other desktop publishing programs can be seductive. Nonetheless, for complicated documents *AmigaTeX* is an alternative that should be explored.

If any of your readers are interested, I would be happy to mail them some literature and a free demo disk if they write me at Radical Eye Software, Box 2081, Stanford, CA 94309.

- Tomas Rokicki, Radical Eye Software

The two letters above are only a sample of the mail we received about Daryell Sipper's article, and there were many more. We chose these two because they're from people from companies producing Amiga DTP software and we thought they deserved a chance to reply.

- Mark & Benn

I have a XT Bridgeboard installed in my A2000. I'm looking to upgrade my Bridgeboard to a AT. I have noticed that various companies offer to

upgrade a A1000/A500 to a A2000/A2500. Is there a company(ies) which offer the same upgrade to the Bridgeboards? If so, could you enlighten me?

In closing, I applaud your magazine for the "NO BULL" reporting your staff provides to its readers. The only request I have it that you take productivity software (wordprocessors, spreadsheets etc.) and do some comparisons and "NO BULL" reporting on them.

- Mo Morrison, CompuServe

We have a regular Productivity column, but Jim has spent most of his space so far on DTP programs. We do, however, plan to do wordprocessing, database, and spreadsheet programs in the future. Stay tuned. We know of no Bridgeboard exchange program. You should, however, be able to sell the XT board and apply the cash towards an AT board. I suggest your local BBS or user group newsletter. Good luck!

- Mark & Benn

I hate going into my favorite software store these days. The first thing I do is go to the IBM/PC shelves. I can usually pick out a dozen programs I'd like to have. I then go to the Amiga section and see if these are available for my computer. 90% of the time they're not. I'd like to see software companies even the score between IBM/PC and the Amiga. Amiga is the better computer, so why not give it the better selections? Concerned,

- Eric J. Boerner

Free Mail, Operation Provide Comfort.

As your return address indicates a military posting somewhere in the Middle East, we can only assume that the desert sun was too much for you. The Amiga may indeed be the better computer, but software developers, unlike the military, don't have truckloads of money shipped to them whenever they want. (A possible exception to this is Bill Gates at Microsoft.) They're in the business to make money, and nearly all of that cash comes from IBM sales. If you really want help in the effort to have more IBM titles converted for your Amiga, write to the publishers. They do read their mail.

- Mark & Benn

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NEW PRODUCTS



Skimming through the Grand Canyon with Natural Graphics' *Scenery Animator*



image can be compressed from about 1.1MB down to less than 30K without significant degradation of the image. And it only takes about 35 seconds to do it on an A3000. The nifty part of this is that *TAD-Pro* can perform image processing on the compressed files as they're loaded. For more information, contact ASDG at 925 Stewart Street, Madison, WI 53713. 608-273-6585. RS #204.

DP IV

We already previewed **Deluxe Paint IV** back in the June issue, but now we've gotten our hands on the release version. There have been a few changes from the alpha we told you about. The most notable had us doing backflips down the hall - you can now double-click a filename to load a picture! That has always been one of the biggest gripes about *DPaint*, and EA has listened! To summarize the major new features: HAM support, more types of fill options, a mix mode, completely reworked palette and range control (including the ability to save and load palettes and color sets independently of pictures), ordered dithering, brush morphing, a light table mode, translucency and color processing functions, and enough other stuff to keep us glued to our computers for months. A point that needs to be made here is that nearly all of the functions and tools can be used in any mode, including HAM, though some work better in some modes than others. And *DPaint IV* is intelligent about what tools can be used in what combinations, ghosting inappropriate selections. Switching screen resolutions and number of colors is smooth and seamless. Overall, it looks like *DPaint IV* is still the definitive paint program not just for the Amiga, but for any computer. Price is \$179. Owners of *DPaint III* can upgrade for \$67, and if you're still back on *DPaint II*, you can upgrade for \$97. Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA 94404. 415-571-7171. RS #205.

NEW GVP

Great Valley Products has produced a new 24-bit graphics board that

FLY-BY

Brett Casebolt, of *Scene Generator* fame, has finished a new fractal landscape generation package called **Scenery Animator**. As the title implies, the primary function is to create animated 3D fly-throughs of both real and imaginary landscapes, though it can also be used to make single images. The software takes a key-frame approach to animation, letting you graphically plot out the course your fly-through is to take and letting you specify the number of frames to generate. To save you some time, there's a preview mode so you can check your flight path for accuracy before you start rendering. *Scenery Animator* will display its results in all Amiga resolutions, has direct support for DCTV, and will also produce 24-bit IFF files. The animations are in Anim5 format and can also be saved off as individual frames. The package includes real-world digital elevation data for parts of the Grand Canyon, Yosemite, High Sierras, and Lake Tahoe, with more to be released in the future. There are two versions of *Scenery Animator* in the package, one for a stock 68000 machine and another that requires a 68020 or '030, a math coprocessor, and a minimum of 2 megs of RAM to run. *Scenery Animator* will accept files from Virtual Reality's *VistaPro* and MegageM's *ScenePro*. \$99.95 from *Natural Graphics*, PO Box 1963, Rocklin, CA 95677. 916-624-1436. RS #201.

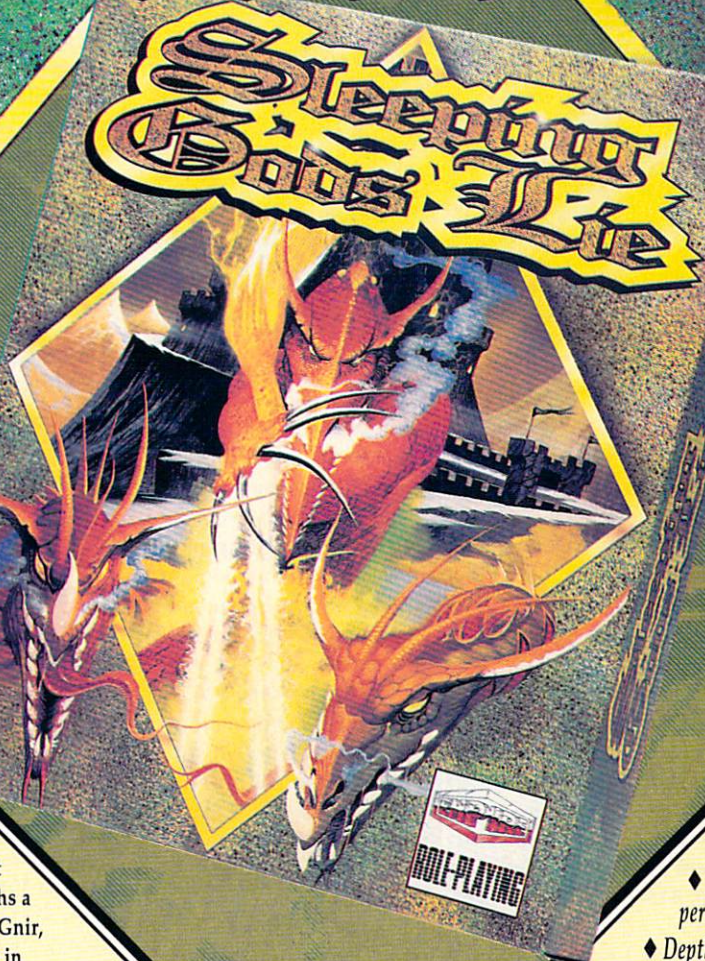
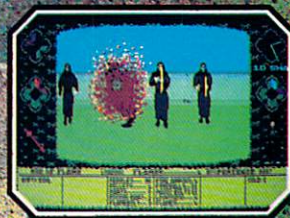
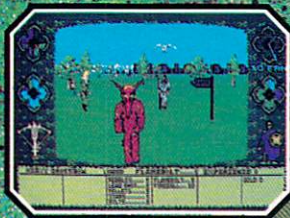
ASDG

There are a couple of new developments from *ASDG*. First, they're shipping an entirely new, ground-up rewrite of their software for the Sharp JX300, JX450, and JX600 color scanners. **Professional ScanLab II** is a hardware/software combination that gives WYSIWYG control over the scanning process. Consisting of a GPIB board, connecting cable, and two software drivers, the package offers both stand-alone control of the Sharp scanners or control from within *The Art Department Professional*. The WYSIWYG control means that using the scanners for video and publishing is far easier than before; the scanned area can be specified in either pixels or inches and, even better, the image aspect can be locked in to fit a particular space. If you've ever used a color scanner, you know the resulting files are enormous and it's very easy to run out of memory for the scan. *ASDG* has overcome this problem by allowing direct-to-disk scans. It's all 2.0-compatible and the system (excluding the scanner itself) retails for \$800. If you already have one of *ASDG*'s GPIB boards, the software is available separately for \$300.

In a separate, but somewhat related development, *ASDG* is incorporating JPEG image compression into *The Art Department Professional* as a standard feature. Widely used on IBM and Macs, the file compression can achieve some astonishing results. For example, an overscan, 24-bit

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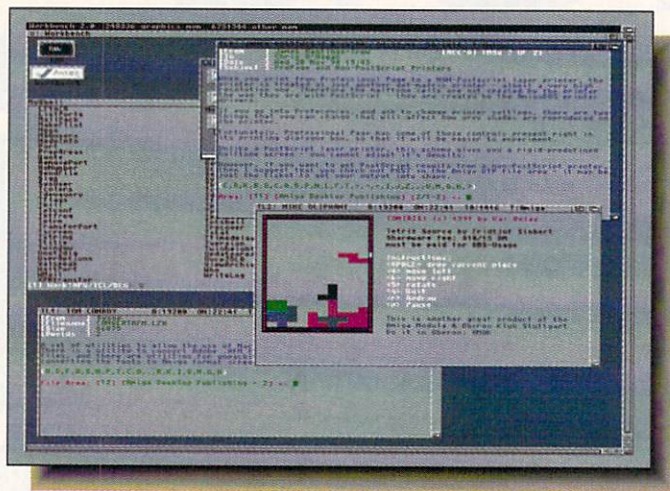
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NEW PRODUCTS



Set up your own bulletin board with *DLG BBS*

does much more than just display a 24-bit image onscreen. The **Impact Vision 24** has a built-in frame buffer, flicker fixer, and digital keyer, along with genlocks for both composite and analog RGB video. The board comes with a 2D paint program and a 3D rendering package as well. The *Impact Vision 24* is specifically designed for the A3000 and requires a small adapter board to plug into an A2000. Price is \$2199.00. If you want to add sound and music to your video, GVP can help you out there, too. The **Digital Sound Studio** (\$125) plugs into your parallel port and, via a standard RCA cable, will let you digitize and edit 8-bit sound samples with an wide array of tools, including fade-in and -out. 600 Clark Avenue, King of Prussia, PA 19406. 215-337-8770. RS #206.

DLG BBS

We've heard some whining about there not being a decent, definitive Amiga-specific bulletin board system, but **DLG Professional** may put an end to it. The press release has seven columns of features, printed in tiny type, and that still doesn't cover it all. Among the more prominent: multiple lines limited only by the number of serial ports you have installed; up to 65000 users at 255 different levels; 9999 separate file areas and a like number of message areas; online help; ANSI support; and smart menus that only show options that are currently valid. The mail and file systems appear comparable to

those of the big commercial systems. The file system even has an option to show the contents of Zip, Arc, Lharc, and Zoo files. The system supports FidoNet and UUCP/UseNet. And of course, it has multi-user realtime conferencing. There are all sorts of sysop conveniences to make living with your BBS easier. One more point that needs to be made about *DLG Professional* is that it is Amiga from the ground up and will run on any Amiga model, even a 512K 500. Of course, you'll need a little more horsepower if you're planning to start your own version of CompuServe. The program itself is built around the AmigaDOS Shell, which means that standard CLI-based programs can be used directly in your BBS setup. When you couple that with the full ARExx support, it makes an extremely powerful and expandable system. Cost of this powerhouse is \$199 and it's from *TelePro Technologies*, 20-1524 Rayner Avenue, Saskatoon, SK Canada S7N 1Y1. 306-665-3811. RS #203.

KEEPING UP

After several years of not seeing any Amiga PIMs (Personal Information Managers), those oh-so-handy computer Rolodexes and calendars that make life simpler, they've started popping up again. The latest is **Secretary**, a title that pretty much says it all. The program, which opens on a hi-res screen, includes a month-at-a-glance calendar and to-do list (unfortunately for those of us who are professional

procrastinators, the list keeps moving forward automatically until the items are completed or manually removed). There's also an address book that will accept up to five addresses and phone numbers for each person. Your book can be searched in several ways, and will do those searches based on partial strings. It will, of course, generate mailing labels and phone lists in either hardcopy or clipboard file format. \$49.95 from *Expert Services*, 5912 Centennial Circle, Florence, KY 41042. 606-371-9690. RS #207.

DATAREXX

One of the more interesting new products we've heard about lately is the **ARExxDB Records Manager** from *JMH Software of Minnesota*. The program is essentially a database manager specifically designed for ARExx. It will handle multiple open files, variable length records, unlimited indexes, record and file locking, and more functions than you can shake a hot address field at. It also uses dynamic RAM caching to make accessing your data as fast as possible. What makes this product unusual is that since it is ARExx-based, it can be customized and tailored to your own purposes using ARExx scripts and can also be accessed from any other program via ARExx. JMH also has a companion data-entry product in development. It's called - what else? - **Windexx**. Price for *ARExxDB Records Manager* is \$125. 7200 Hemlock Lane, Maple Grove, MN 55369. 612-424-5464. RS #208.

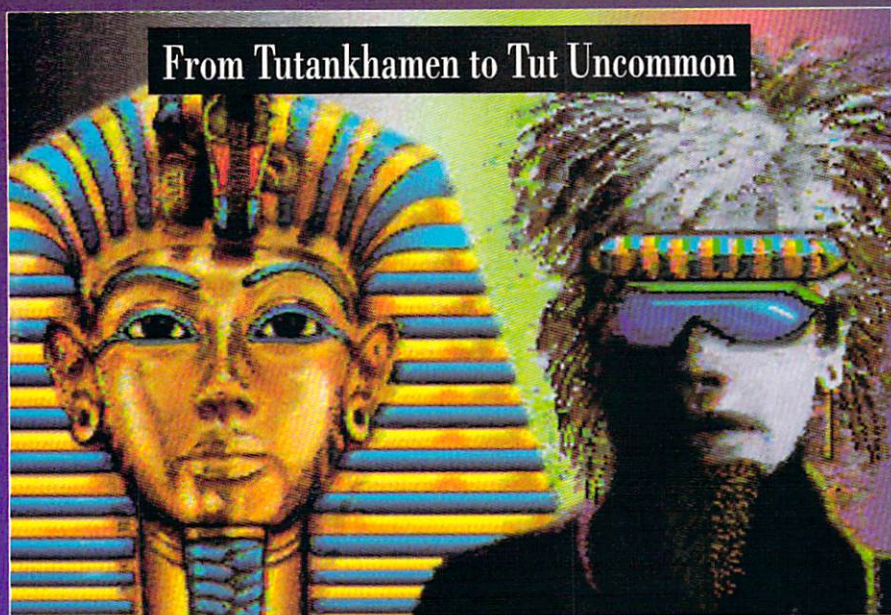
ENTHRONED

One of the first high-power UNIX programs we've seen ported to the Amiga 3000UX is **Empress**, a relational database manager with network and multi-user support. It has object-oriented capability and since it's distributed, each user can insert, delete, or otherwise alter records in multiple databases with location independence. It has ANSI standard SQL, an RDBMS kernel that can be called from C, a full-function report writer, and a 4GL applications generator with XWindows support. The interesting thing to note, and one of the

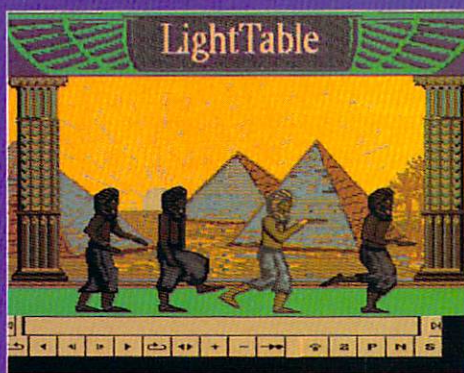
DELUXE PAINT IV

KING OF PAINT AND ANIMATION

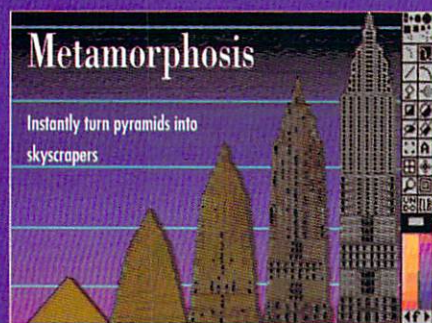
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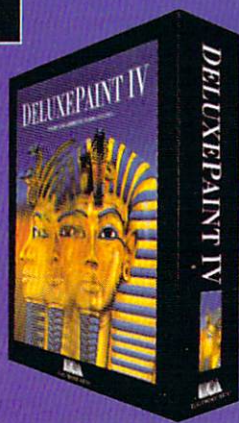
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Circle #112 on the Reader Service Card

NEW PRODUCTS



Visiting a Chinese restaurant and learning to pronounce things correctly with *Audio Gallery*



reasons this is an important release for the Amiga version of UNIX, is that since *Empress* has the ability to store arbitrary sequences of data values of any length, which includes sound and graphic data, a natural for the Amiga. Prices (hold onto your wallets, folks!) start at \$1400 for just the RDBMS up to \$4200 for the full-boat version with 4GL. *Empress Software*, 6401 Golden Triangle Drive, Greenbelt, MD 20770. 301-220-1919. RS #209.

REPEAT AFTER ME

If you're contemplating a visit to Beijing or Xianggang (Hong Kong), you will most likely want to check out *Audio Gallery*, a computerized Chinese language tutor. The version we have is for Mandarin Chinese and it employs a common-sense, point-and-hear approach to learning a language. While it won't teach you grammar (the manual does include sections on putting together the words and phrases you'll learn), it will teach you the vocabulary and pronunciation in a particularly painless way. The main menu screen lets you choose from various topics, such as going to a restaurant, household objects, relatives and other people, locations in China, and so on. Once you enter a section, a scene comes up filled with numbered objects that you can click on to hear a pronunciation. This is where the Amiga really shines as a teacher; the voice you hear is digitized and the pronunciations are crystal

clear. They're also repeatable, so you can hear it, say it, and repeat the process until you get it right. Being able to click on a particular object also makes it easy to learn what you're most interested in or what you most need to know. All in all, a very sensible system for learning a language. Versions of the *Audio Gallery* are also available for Spanish and German, with future editions to cover French, Italian, Russian, Korean, Japanese, English, and even Signing. Prices for European languages are \$89.95, while the Oriental languages go for \$129.95. *Fairbrothers*, 5054 S. 22nd Street, Arlington, VA 22206. 703-820-1954. RS #202

NEW CAD

If you use CAD software, you're certainly aware of *X-CAD*. The publisher, *Applied Vector Technology*, has now come out with three new *X-CAD* products. *X-CAD 2000* (\$199) is designed for the beginning CAD user and automates the process of creating mechanical, architectural, engineering, and other types of drawings. The resulting designs can then be projected or spun in 3D space and seen in orthographic, isometric, or perspective views. *X-CAD 3000* (\$599) is a much more sophisticated package which, besides the usual CAD functions, offers graphics tablet support, automatic hidden line removal, and 3D surfacing commands. Finally, *X-CAD 3D* (\$499) is for those who already

use *X-CAD Designer* and/or *X-CAD Professional* and need to add 3D modelling to their work. Point West, 1042 Uxbridge Road, Hayes, Middlesex, England UB4 0RJ. 081-573-9694. RS #212.

ANIMATING HAM-E

If you've been wanting to do animation on your *HAM-E* video display, now you can. *Holosoft Technologies* has released *Ham-E Workshop*, a full-featured paint and animation program based on *Holosoft's Graphics Workshop* and designed exclusively for use with *Ham-E*. In addition to all sorts of paint functions, such as color filtration, brushes that can be rippled, rolled, draped over images, and brush area masking, it supports two types of animation. Cell animation features variable movepaths, auto-animation, and an infinite number of frames that can be rotated, rolled, spun, and resized. The Page animation mode allows the user to create choreographed multi-brush animations and it also has the ability to change palettes on each page. \$60. 1637 E. Valley Parkway, Suite 172, Escondido, CA 92027. 619-747-0663. RS #213.

MAKING VIDEO

The Disc Company has a couple of things to make life with your camcorder and VCR a little easier and a lot more fun. *AlterImage Video F/X* is a video titling package that supplies fonts, clipart, and functions for putting them on the screen, moving them around, and adding special effects. It also includes drawing tools for putting borders, boxes, and the like on top of your video. The company also has a companion genlock, which is, of course, necessary for combining the video and computer graphics. This *AlterImage Genlock* can be directly controlled by the titling software, making for a complete package. Price of the software is \$199.95 and the genlock is \$249.95. A bundled package with the software, genlock, and a training videotape is also available for \$399.95. 11040 Santa Monica Blvd., Suite 300, Los Angeles, CA 90025. 213-478-6767. RS #214.

NEW PRODUCTS

ARTWORK

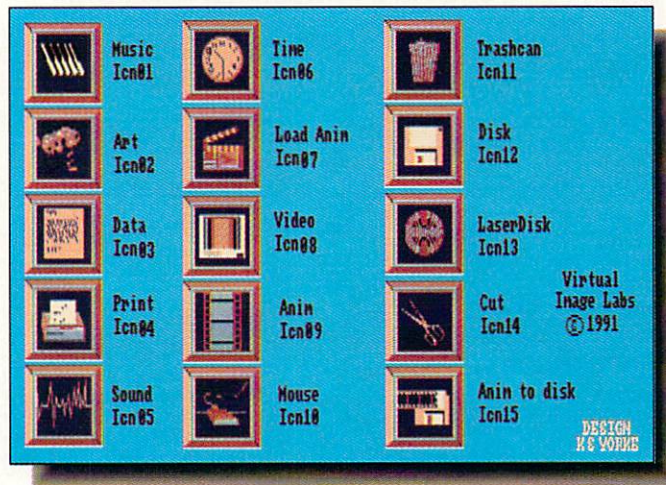
Three new packages of art are available from *INOVAtronicS*. The **Interface Design Kit** is a four-disk set of buttons, icons, and such things as are used in Amiga applications. The most obvious use for these are in *INOVAtronicS*' own *CanDo* authoring system. The images are of everything from a mouse to music to clocks and and laserdisks. They come in both medium- and high-res and cost \$59.95. The other two packages are both by Ryan Roberts, who is an animator at Warner Brothers. **Lunar Construction Set** (\$24.95) provides clips of planets, spaceships, monsters, craters, and the like. **Canvas** (\$34.95) is a collection of full-screen images and animations in a fantasy vein. 8499 Greenville Ave., #209B, Dallas, TX 75231. 214-340-4991. RS #211.

DELAYED FOR TOAST

One of the trickier aspects of using NewTek's *Toaster* is that when incorporating it into a video system as an "upstream" device", the Amiga's signal must be delayed in order to synchronize with it. What this requires is either tweaking the timing of your genlock, in which case you'll have to reset it when you're using it as a switcher, or you can delay the signal. (Take a look at Oran Sands' explanation of this in his column last issue.) What all this is leading up to is that *Allen Avionics* has produced a little box that will delay the signal anywhere from 360 to 487 nanoseconds, which is just the range needed to synchronize everything with the *Toaster*. It has toggle switches so you can set it to compensate for exactly the delay you need (it will vary a little depending on your cabling, etc.). Cost of the **Video Delay Line** is \$275 and it's available from *Allen Avionics*, 224 East Second Street, Mineola, NY 11501. 516-248-8080. RS #215.

I.DENTITY

I.DEN Videotronics is releasing two new timebase correctors that will also function as genlocks. The **TBCard** and **TBCard PLUS** are aimed, respectively, at low- to mid-range and mid- to high-end



A whole slew of icons can be found in the *Interface Design Kit*

applications. The base model will take Y/C and composite signals and offers proc amp control and the system timing can be adjusted via a potentiometer. The PLUS model adds more inputs (component, RGB/Sync, and DOC) and provides output in Y/C, composite, and component. The high-end model has proc amp control and system timing that are accessible from an exterior box. *IDEN* is also making an optional external box to house up to ten *TBCard PLUS* cards, which would allow multi-channel timebase correction. Price was unavailable at presstime. 9620 Chesapeake Drive, Suite 204, San Diego, CA 92123. 619-492-9239. RS #216.

ON THE TBC FRONT

A whole line of video timebase correctors and frame synchronizers is being produced by *Showline Video*. The array of models, features, and specs is truly mindboggling. The models break down into three basic categories. **Spectrum SC** series offers S-VHS, composite, and transcodes; models include the **Spectrum 500SC** (\$1295 - single channel, freeze/frame/field & strobe) **Spectrum 750SC** (\$1895 - adds single channel, proc amp controls, and effects), and **Spectrum 1000SC** (\$2695 - dual channel version). The **Spectrum C** series is less expensive and more consumer-oriented; these are composite only: the **Spectrum 500C** (\$850, single-channel), **Spectrum 900C** (\$1495 - the first dual-channel TBC and frame-synchronizer

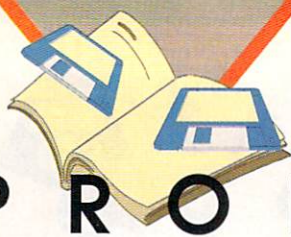
under \$1500, and squarely aimed at the *Toaster* market), and the **Spectrum 1000C** (a composite-only version of the *1000SC*). The **QuadCode QC** series is starting out with the **Spectrum 850QC**, which accepts input from NTSC composite, component Y/R-Y/B-Y, and Hi-8 and combines it with computer RGB. The specs on all of these are far too much to list here, but you can get more details from *Showline* at 120 Beacon Street, Boston, MA 02116. 617-262-6844. RS #220.

THIRD EDITIONS

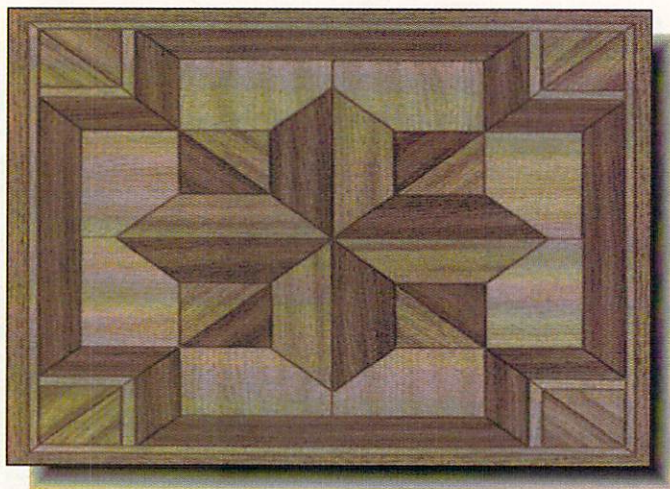
The 3rd edition of the Official *Commodore Doctrine* on AmigaDOS is now available from *Bantam Computer Books*. Covering AmigaDOS through Version 2.04, the 447-page tome includes information on every command and function of the operating system. It also has sections on startup-sequences and other scripts, the difference between CLI and Shell, error codes and messages, file structures, and all the other tidbits of information you're ever likely to need. If you're upgrading to 2.0, be sure to take a thumb-through of this book. Cover price for **The AmigaDOS Manual, 3rd Edition**, is \$24.95. 666 Fifth Avenue, New York, NY 10103. 212-554-9822.

Addison-Wesley is currently shipping the **Amiga ROM Kernel Reference Manual: Includes and Autodocs, Third Edition**.

NEW PRODUCTS



A wood parquet tile from MicroSearch's *Materials Texture Library: Volume 2*



This is, of course, the definitive reference for programmers. Its 1003 pages contain everything you could possibly want to know about the routines that make the Amiga do what it does under 2.0. It covers Libraries, Devices, and Resources, includes both C and Assembly include files, and is cross-referenced to help you wade through it all. Price is \$38.95. Addison-Wesley, Jacob Way, Reading, MA 01867. 617-944-3700. RS #217.

MAKING PROGRESS

Progressive Peripherals has announced shipment of their 68040 Amiga accelerator. It comes in two models, the **Progressive 040/2000** and **Progressive 040/3000**. The 3000 model uses 32-bit memory and installs in the A3000's processor slot. It has a "whisper-fan" on the board to keep things cool and is compatible with 16 MHz, 25 MHz, and tower models of the A3000, operating at a synchronous 25 MHz. It retails for \$1595. The version for the A2000 uses 16-bit memory, though the board itself can accept up to 32 megabytes of 32-bit memory. It's compatible with both A and B revs of the A2000 motherboard and is software switchable between 68000 and 68040 modes (the A3000 model is switchable between '030 and '040 modes). The board can accept memory expansion in 1MB x 8 (80ns, 4 or 8 MB), 4MB x 8 (80ns, 16 or 32MB configurations), Page Mode or Static Column SIMMs, and is

available with 0, 4, 8, 16, or 32 megs installed. It operates at 28 MHz asynchronously. Retail for the A2000 accelerator is \$1995 with 4 MB of RAM. It should be noted that both boards require AmigaDOS 2.0 in ROM. 464 Kalamath Street, Denver, CO 80204. 303-825-4144. RS #218.

MORE TEXTURES

MicroSearch has released the second in their *Materials Texture Library* series. **Volume 2: Tiles** is a 5-disk set containing 20 HAM images measuring 480 x 480 pixels each. Obviously, the subject matter of these images is tiles of various patterns, including everything from marble to wood to what looks like vinyl. The images are specifically designed to use with such things as *Turbo Silver*, *Imagine*, and so on. The images are also designed to be easily manipulated into the sizes and number of colors you require using *The Art Department* or other image processing software. Price is \$49.95. 9896 Southwest Freeway, Houston, TX 77074. 713-988-2818. RS #210.

EDU-WARE

Three recent edu-game titles have passed through the .info offices lately. **Mr. Robot's Speak 'n Spell** (ages 6 & up) has 204 levels of play with over 1000 pictures to expand a child's vocabulary and

help with spelling. It uses crossword puzzles and fill-in-the-blanks as a framework. (The best part, though, is that the package has a wiggle-picture on the cover - how long has it been since you've seen one of those!) \$49.95 from *Brain Technologies*, PO Box 215147, Sacramento, CA 95821. 800-272-4601. RS #222.

MicroIllusions is shipping **Discovery 2.0**, a reworking of their lesson-based educational game. The player tries to work through the many levels of a spaceship and must correctly answer questions in order to pass through doors. There are sets of questions available on math, spelling, geography, history, science, social studies, trivia, and so on. The nice thing is that the lessons come on a separate disk and you can add your own or modify existing ones. Price for the basic program (with just math and spelling questions) is \$39.95. A special *Educational Pack* with the other topics is available for \$69.95. PO Box 3475, Granada Hills, CA 91394. RS #221.

Free Spirit is converting their *Barney Bear* series in CDTV format. The latest we've seen is **Barney Bear Goes Camping**, which is designed for ages 2-6. It features cute graphics, and aims to teach small kids about nature and the environment (can't start too young!). There are many activities to participate in along the way: a coloring book, matching games, connect-the-dots, mazes, and so on. \$39.95. 58 Noble Street, Kutztown, PA 19530. 215-683-5609. RS #219.

IR RODENT

If you're tired of your mouse cord getting tangled up with everything on your desk, *Alfa Data* has a solution for you. They're shipping a new cordless, infra-red controlled mouse. It's a three-button model and comes in two pieces: one plugs into the computer and the other lives on your mousepad. The mouse itself can be recharged directly from the computer. Retail price for the **CLM-MT** is \$99.95. 602 North Country Fair Drive, Champaign, IL 61821. 217-356-1962. RS #223.

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Amiga DOS Toolbox 24	XCad Designer II 90	Impenium 26	Animfont I, II or III 30	Excellence 120	A-10 Tank Killer 30														
AssemPro 60	XCad 3D 300	Indianapolis 500 32	Headlines I 42	Scratch! Platinum 49	Black Cauldron 24														
Becker Text 10		Lost Patrol 32	Headlines II 42	The Works - Platinum 178	Codemane: Iceman 36														
DataRetrieve 48	CAPCOM	King's Bounty 33	SubHeads 48	MINDSCAPE	Codemane: Iceman Hints 10														
TextPro 48	CENTAUR	Mavis Beacon Typing 32		Looze Megahits v2 32	Colonel's Request 36														
	Dynasty Wars 31	Might & Magic II Hints 13	KARMA SOFT	Arpad 33	Conquest of Camelot 36														
ABACUS BOOKS	B.A.D. 30	Might & Magic II Hints 13	Power Pinball 24		Gold Rush 24														
3D Graphics Prog in BASIC 17	D.U.D.E. 30	PGA Tour Golf 33		KOEI	Hero's Quest 36														
AmigaDOS Quick Reference 10	My Paint 30	Populus 26	Bandit Kings China 36	Genghis Khan 36	Hoyle's Book of Games 1 or 2 31														
Best of Amiga Tricks & Tips 24	World Atlas 36	Powerdrome 16	Genghis Khan 36	Nobunaga: Ambition 36	King's Quest 4 36														
C for Beginners + 16	CENTRAL COAST	Projectyle 26	Romance of the 3 Kingdoms 32	KONAMI	Leisure Larry 2 or 3 36														
C for Advanced Programmers 26	Disk 2 Disk 30	Pro Tennis Tour II 33	Back to the Future II 25	Blades of Steel 15	Manhunter New York 30														
Desktop Video Book 16	Dos 2 Dos 43	Starflight 32	Blades of Steel 15	Casieviana 15	Manhunter San Francisco 30														
Amiga Beginners Book 14	Quarterback Tools 54	Starlight Hints 15	Casieviana 15	Double Drabble 15	Mixed Up Mother Goose 20														
Amiga Printers In Out Book 25	CINEMWARE	Street Rod I 17	Double Drabble 15	Nascar Challenge 31	Police Quest 2 36														
Amiga Basic In Out Book 19	Arcade Fever 26	Street Rod II 28	Nascar Challenge 31	Super Contra 28	Quest for Glory II 37														
Amiga Printers In Out Book 25	Federator 32	Street Rod II 28	Super Contra 28	Teenage Mutant Turtles 27	Space Quest 3 36														
Graphics In Out Book 24	TV Sports Football 32	Untouchables 26	Teenage Mutant Turtles 27	Theme Park Mystery 31	Stellar 7 23														
Prog Guide Book 24	Wings 32	Zany Golf 15	Theme Park Mystery 31																
Adv. Prog Guide Book 24	COMMODORE			LAKE FOREST LOGIC															
AmigaDOS In Out Book 16	Amiga Logo 66	ELECTRONIC ZOO		Disk Mechanic 54															
Making Music Book & Disk 25	Amigavision 95	Berlin 1948 24	LATTICE	Macro Paint 84															
+ Companion Disk Avail 13		Black Gold 24	Lattice C Development Comp 215	Omega 20															
ACADEMY SOFTWARE	COMPUTE! BOOKS	Khalain 25	Lattice C-Plus Plus 250	Ogre 20															
Typing Tutor 21	AmigaDOS Reference Guide 18	Legend of Faerghail 16	Lattice Text Utilities 16	Times Of Love 30															
	AmigaDOS Quick Reference 10	Legend of Faerghail 16		Ultima-III 27															
ACCESS	Amiga Programmers Guide 16	Spherical 17	LIVE STUDIOS	Ultima-IV 37															
Crime Wave 31	Amiga Graphics 16	Treasure Trap 24	Future Classic Collections 20	Ultima V 37															
Heavy Metal 30	Elementary Amiga Basic 13	Viking Child 24		Windwalker 24															
Mean Streets 30	ML Programming Guide 16	Xiphos 24	LUCASFILMS																
ACCOLADE	Kids & the Amiga 13		Audiotel 24																
Bar Games 27	Amiga Applications 16	ELECTRA	Moebius 33	A-Talk III 60															
Elvira 36	AmigaDOS In Out Book 16	Better Dead Than Alien 13	Ogre 20	Autoamster III 60															
Elvira Hints 13	AmigaDOS Reference Guide 18	Empire Simulations 37	Omega 20	Fast Eddie's Pool 22															
Fast Break 27	AmigaDOS Quick Reference 10	Four X Four RACING 31	PageStream v2.1 180	SpectraColor 61															
Fourth & Inches 30	Amiga Programmers Guide 16	Secret of Monkey Island 39	Owlkforms 25	Turbo Text 26															
Gold of the Aztecs 31	Amiga Graphics 16	Their Finest Hour 38	Parsec Software 30	VideoScope 3D 120															
Graphics Studio 10	Elementary Amiga Basic 13	Zac McKracken and the Alien 13	Operation Spruce 30	VideoItler 96															
Hardball II 30	ML Programming Guide 16	Indy Jones Crusade Films 18	Pelican Software 61																
Howtoforce 31	Kids & the Amiga 13	Maniac Hints 12																	
Ishido 33	Amiga Applications 16	Night Shift 26	POLARWARE																
Jack Nicklaus Unlimited 36	AmigaDOS In Out Book 16	Secret of Monkey Island 39	All Dogs Coloring 20																
Jack Nicklaus Course 1, 2 or 3 16	AmigaDOS Quick Reference 10	Secret of Monkey Island 39	Azure Bonds 32																
Jack Nicklaus Course 4 or 5 36	Amiga Programmers Guide 16	Secret of Monkey Island 39	Death Knights Hints 17																
Knights of Crystalion 37	Amiga Graphics 16	Secret of Monkey Island 39	Dragon Strike 32																
Grand Prix Circuit 18	AmigaDOS Reference Guide 18	Secret of Monkey Island 39	Dungeoon Master Asst v1 13																
Gumbart 31	AmigaDOS Quick Reference 10	Secret of Monkey Island 39	Eye of Beholder 13																
Mean 18 27	Amiga Programmers Guide 16	Secret of Monkey Island 39	Beholder Hints 13																
Rotox 30	Amiga Graphics 16	Secret of Monkey Island 39	Hillfar 15																
Search for the King 37	AmigaDOS In Out Book 16	Secret of Monkey Island 39	Hillfar Hint Book 36																
Shoot Em Up Construction 15	AmigaDOS Quick Reference 10	Secret of Monkey Island 39	Overturn 36																
Star Control 30	Amiga Programmers Guide 16	Secret of Monkey Island 39	Pool of Radiance 32																
Strike Aces 30	AmigaDOS Reference Guide 18	Secret of Monkey Island 39	Pool Hints 13																
Test Drive II 30	AmigaDOS Quick Reference 10	Secret of Monkey Island 39	Renegade Legion 32																
California Challenge 16	Amiga Programmers Guide 16	Secret of Monkey Island 39	Second Front 32																
European Challenge 16	Amiga Graphics 16	Secret of Monkey Island 39	Secret Silver Blades 33																
Super Cars 16	AmigaDOS In Out Book 16	Secret of Monkey Island 39	Silver Blades Hints 13																
Muscle Cars 16	AmigaDOS Quick Reference 10	Secret of Monkey Island 39	Storm Across Europe 26																
Vaccine 25	Amiga Programmers Guide 16	Secret of Monkey Island 39	Typhoon of Steel 38																
World Class Soccer 25	AmigaDOS Reference Guide 18	Secret of Monkey Island 39	Wargame Construction Set 26																
ACTIONWARE	AmigaDOS Quick Reference 10	Secret of Monkey Island 39	STRATEGIC STUDIES																
Actionware Phasar Gun 39	Amiga Programmers Guide 16	Secret of Monkey Island 39	Gold of the Americas 13																
Capone 13	Amiga Graphics 16	Secret of Monkey Island 39	Warlords 30																
Creature 24	AmigaDOS In Out Book 16	Secret of Monkey Island 39	SUBLOGIC																
ANTIC	AmigaDOS Quick Reference 10	Secret of Monkey Island 39	Flight Simulator-II 30																
Phasar V3 20	Amiga Programmers Guide 16	Secret of Monkey Island 39	SceneDesk 7.9 or 11, Hawaiian 42																
Phasar V4 54	Amiga Graphics 16	Secret of Monkey Island 39	W Europe or Japan Each 30																
ARTWORX	AmigaDOS Reference Guide 18	Secret of Monkey Island 39	PSYGNOSIS																
Bridge 6.0 24	AmigaDOS Quick Reference 10	Secret of Monkey Island 39	Anarchy 24																
Centerfold Squares 20	Amiga Programmers Guide 16	Secret of Monkey Island 39	Atomino 13																
Linkword French 18	AmigaDOS In Out Book 16	Secret of Monkey Island 39	Armour-Geddon 31																
Linkword German 18	AmigaDOS Quick Reference 10	Secret of Monkey Island 39	Awesome 36																
Linkword Greek 18	Amiga Programmers Guide 16	Secret of Monkey Island 39	Baal 24																
Linkword Italian 18	Amiga Graphics 16	Secret of Monkey Island 39	Blood Money 24																
Linkword Spanish 18	AmigaDOS In Out Book 16	Secret of Monkey Island 39	Captain Fizz 18																
Puzzle Mania 19	AmigaDOS Quick Reference 10	Secret of Monkey Island 39	Carthage 20																
Strip Poker II 24	Amiga Programmers Guide 16	Secret of Monkey Island 39	Chronoquest II 30																
S. Power Data 1-3 ea 15	AmigaDOS Reference Guide 18	Secret of Monkey Island 39	Inferstation 24																
ASDG	AmigaDOS Quick Reference 10	Secret of Monkey Island 39	Killing Game Show 27																
Cygnus Ed Pro 60	Amiga Programmers Guide 16	Secret of Monkey Island 39	Lemmings 31																
BETHESA SOFTWARE	Amiga Graphics 16	Secret of Monkey Island 39	Matrix Marauders 37																
Damocles 27	AmigaDOS In Out Book 16	Secret of Monkey Island 39	Obitus 36																
Dragon's Lair II 42	AmigaDOS Quick Reference 10	Secret of Monkey Island 39	Shadow of the Beast II 36																
Wayne Gretzky Hockey 30	Amiga Programmers Guide 16	Secret of Monkey Island 39	Spellbound																

N E W S & V I E W S

AGFA & COMMODORE

We hear from AGFA that the final version of Workbench 2.0 includes three of AGFA's Intellifonts: Times, Trumvirate, and LetterGothic. This scalable font technology is widely used throughout the industry. For example, Gold Disk's *Professional Page* uses scalable fonts, and Hewlett-Packard uses AGFA's Intellifont technology as the scaler for their PCL 5 language. Having Intellifonts incorporated as a part of the Amiga operating system is a big plus. It will also make for some very nice screen displays.

RELEASE 2.04

Commodore has announced shipment of the five-disk, final-release version of Version 2.04 of the Amiga Operating System for the A3000. The disks sport new rainbow labels and contain version 2.04 of Kickstart, Workbench, Extras, Ami-gaFonts, and the Install disk. Commodore doesn't charge for the upgrade and copies can be obtained by taking proof-of-purchase to your local dealer. Over 1000

people participated in the beta test process for several years, so the hope is that this will be the most bug-free operating system Commodore has ever released.

COMPATIBILITY

If you have Commodore's A2620 or A2630 accelerator installed in your Amiga and want to upgrade to the new 2.04 ROMs, be sure to check the version number of the accelerator ROMs. The new Kickstart ROMs require Rev-06 of the accelerator ROMs. If you find yours are earlier, you can get replacement pairs for \$25 from Commodore. The part numbers are 390282-06 and 390283-06. 1200 Wilson Drive, West Chester, PA 19380. 215-431-9100.

CDTV TITLES

The latest list we have of currently available and announced CDTV titles contains 65 entries. Among the more interesting ones (or at least more entertaining names) gleaned from the list: *Family Circus Home Movie Workshop* (Context,

\$79.95); *A Bun for Barney* (Multimedia Corp., \$49.95); *Heather Hits Her First Home Run* (Discis, \$49.95); *Moving Gives Me a Stomachache* (Discis, \$49.95 - and even sitting still sometimes makes us a little queasy); *Scary Poems for Rotten Kids* (Discis, \$59.95); *The Tale of Peter Rabbit* (Discis, \$59.95 - hopefully with the original Beatrix Potter illustrations); *Defender of the Crown* (CDTV Publishing, \$39.95 - done by Jim Sachs); *Xenon 2: Megablast* (Mirrorsoft, \$49.95 - arcade gaming at its best); *Psycho Killer* (On-Line, \$49.95 and Tom's personal favorite title); *The New Basics Electronic Cookbook* (Xiphias, \$59.95). Bear in mind that some of these have not yet been released, and may change their titles.

NET NEWS

CompuServe has added a new forum to their already long list. *The Crafts Forum* offers online conferences for those involved in needlework, weaving, woodworking, knitting, crochet, and any other craft you can think up. The forum is being

.info UPDATE

ADDRESS CHANGES

- ✓ Zardoz Software is now at 12036 Nevada City Highway, Suite 192, Grass Valley, CA 95945. 916-274-8311.
- ✓ Elan Designs has a new address: PO Box 3136, Half Moon Bay, CA 94019. The phone numbers are 415-726-5097 voice, 415-726-5071 fax.
- ✓ Electronic Arts has undergone a minor move. They've been in two separate buildings and have now moved across the street to a place where they can all be together. The new address is 1450 Fashion Island Blvd., San Mateo, CA 94404. The phone remains the same at 415-571-7171.

VERSIONS & ADDITIONS

- ✓ HelpDisk has added a version covering Impulse's *Imagine* to their *Buddy System* online help system series. Cost is

\$49.95. 6671 West Indiantown Rd., Suite 56360, Jupiter, FL 33458. 407-694-1756.

- ✓ New Horizons' *ProWrite* is now at version 3.2. The biggest change is the addition of direct PostScript support. The user interface has been reworked, and *ProWrite* can now read *Professional Page* text files. Registered owners of version 3.0 can upgrade to 3.2 for \$20, upgrading from 2.0 costs \$60, and from 1.0 (if there are any still out there) for \$75.

As if that weren't enough, New Horizons has also upgraded *Flow*, their outline/idea processor to version 3.0. They've added ARexx support, saveable configurations, spellchecking, headers/footers, and, most important, automatic outline numbering. Upgrading from version 2.0 will cost you \$20, from 1.0, \$30. PO Box 43167, Austin, TX 78745. 512-328-6650.

- ✓ *Scala*, the titling/presentation package from Digital Vision via Great Valley Products, has been upgraded to version 1.1.

Among the new features are continuous credit scrolling, realtime antialiasing, ARexx support, and the ability to control a Canon Xapshot digital still camera via the serial port. *Scala 1.1* also has support for colorfonts and outline fonts. Contact GVP for upgrade information. 600 Clark Avenue, King of Prussia, PA 19406. 215-337-8770.

- ✓ Octree Software is shipping version 2.1 of *Caligari Broadcast*, their 3D modeling program. They've enhanced the modelling features and added drivers for *DCTV*, *HAM-E*, *Harlequin*, and GVP's new *Impact Vision 24* display boards. An exact upgrade policy hadn't been set at presstime, though Octree tells us that the cost will be "less than \$100." They're also working on a new consumer version of *Caligari* called *Caligari 2* - look for details in New Products next issue. 311 W 43rd Street, Suite 904, New York, NY 10036. 212-262-3116.

NEWS & VIEWS



run by Susan Lazear, one of the trailblazers in the area of computer-aided craft. Lazear is the guiding force behind Cochenille Computer Knit Products, whose line includes, among other things, interfaces for connecting electronic knitting machines to personal computers, including the Amiga. Her expertise and Amiga-enthusiasm are top-notch and her appearance on this new CompuServe Forum guarantees it will be worth looking in on.

NEW UTOPIA

Todd Rundgren is the current darling of the Amiga video community, being both a rock star and an Amiga aficionado. His latest video, *Change Myself*, was Toaster made, and now Rundgren has announced the formation of NUtopia, a computer/video production company. Among those involved: Ron Thornton, who worked on special effects for such films as *Terminator II*, *Spaceballs*, and *Ghostbusters*; John Sanborn, who was director of *Alive from Off Center*, a PBS series that features short films and animations; Allen Hastings, author of *LightWave*, the Toaster rendering package Rundgren used in making *Change Myself*.

VICE VERSA

In the ordinary scheme of things, computer games are based on movies and TV shows, but in a reversal of the usual, Broderbund's *Where in the World is Carmen Sandiego?* has been made into a TV game show. A co-production of WQED in Pittsburg and WGBH in Boston, the show premiered nationwide on PBS on September 30. Using live actors, animations, studio participants, and a celebrity cameo here and there, the gameshow looks like it will be a success. The show is co-produced by Kate Taylor (*Degrassi Junior High*) and Jay Rayvid (*Wonder Works*) It's targeted at kids in the eight to 13 age group and we're in favor of anything that will help teach kids (and grown-ups, too) geography.

SHOWS

The next European AmiEXPO shows will be held in Koln, Germany from

October 31-November 3 and in London November 14-17. Over 60,000 people attended the show in Koln last year, and the 1991 show promises to be even bigger.

The second annual CyberArts International show is to be held November 15-17 at the Pasadena Center in Pasadena, CA. Devoted to computer uses in the arts, entertainment, and education fields, the show will feature sessions with industry gurus. Among those scheduled to appear are Trip Hawkins (Electronic Arts), Rand Worrell (Mattel), Charlie Richmond (responsible for many of the effects in *Siegfried & Roy's* show at the Mirage in Las Vegas as well as *Miss Saigon* on Broadway), Carl Rosendahl (Pacific Data Images), Jaron Lanier (VPL Research, a company leading the way in virtual reality), Brenda Laurel (Telepresence), and Kirk Austin (Lucas-

film). There will also be a session on NewTek's *Toaster*. The list of sessions, exhibits, and other cyber-activities goes on and on. The three-day cyber-extravaganza costs \$450 and you can get registration information from CyberArts, 20085 Stevens Creek Blvd., Cupertino, CA 95014. 800-82-CYBER.

ON THE AIR

Some cable systems are showing *Amiga Artists on the Air*, a half-hour series showcasing the work and methods of Amiga artists. If your local cable system doesn't carry the program, you can get VHS tape copies for \$15 each. For more information, contact Willow Mixed Media, PO Box 194, Lennox Ave., Glenford, NY 12433. 914-657-2914.

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.

⊃ Upgrade software from Commodore is letting developers get 15 frame per second 3/4 screen full-motion video out of CDTV. While that's not broadcast-quality, it is adequate for many applications. No word yet on who'll be first to use it.

⊃ Commodore 'let go' 33 marketing people in mid-July, then 12 software engineers in August. Will the last one out please turn off the lights?

⊃ When Free Spirit's *Sex Vixens from Space* was first released last year, a shipment was seized by British customs officials as 'pornography,' until they could be convinced it was all just good, clean fun. Well, Free Spirit got a call from Canadian customs officials a few

weeks ago -- but this time they were just *playing* the game and needed some hints! Free Spirit's tech support staff gladly provided the needed clues.

⊃ Nintendo and Sega have reportedly targeted Europe with millions of ad dollars for the Christmas season. Can they take the European games market away from Commodore? Without Europe, Commodore's sales would flatline. We'll see.

⊃ Who's buying CDTVs? According to the feedback we get, it's not 'Joe Couch Potato,' the guy Commodore's marketing plan is aimed at. It's - you guessed it - folks who already own Amigas. Who would'a thunk it? :)

Making the Most of Miniatures: ICD's Tiny Amiga Additions



Ever since the first four-bit microprocessor, small has been what microcomputing is all about. The newest microprocessors contain more than a million transistors, and 64 megabit memory chips are already on the drawing boards. ICD is striving to make the word 'small' take on a new meaning for Amiga users. They have succeeded in squeezing into the space occupied by a single large-scale chip accessories that most developers place on a full-sized Amiga 2000 card.

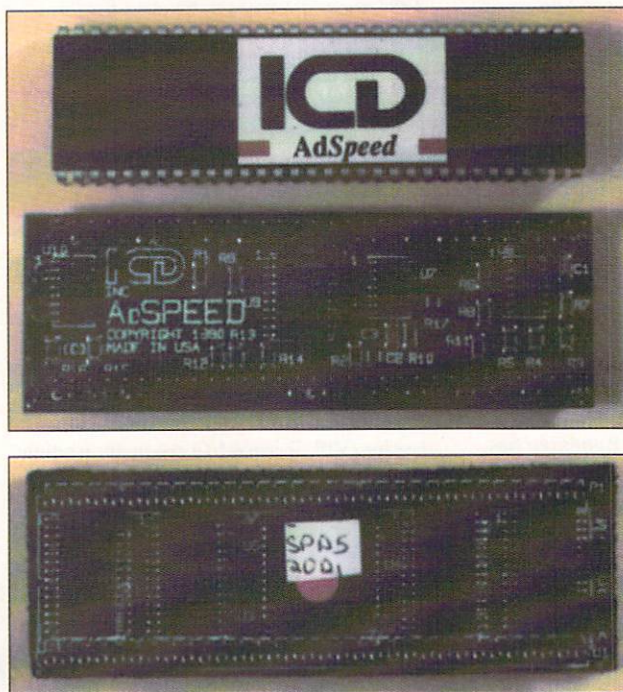
These reductions in scale without any loss of performance are made possible by the extensive use of surface mounted chips. These are standard chips in miniaturized packages whose mounting leads are soldered to the surface of the printed circuit board. (With conventional printed circuits, the chip leads are inserted into holes which have been drilled through the circuit board.) To further reduce the size of their products, ICD mounts the chips on both sides of the board. Since these accessories usually install into the socket of a standard Amiga chip, ICD also squeezes most of the components into the space between the parallel rows of mounting pins of the original chips!

Miniaturizing on this scale requires greater precision than conventional construction techniques. As a result, ICD's products are somewhat more expensive than full-size products that perform similar functions. To help offset their higher prices, the ICD products have features which cannot be obtained with full-sized devices.

With the exception of the *AdRAM* series of RAM expansion boards, all the devices that I will look at this month can be installed in an Amiga 500, an Amiga 1000, or an Amiga 2000.

ADSPEED

The concept behind *AdSpeed* is very simple; to make the Amiga run faster, simply make its 68000 microprocessor run



Top view of *AdSpeed* with the 68000 removed reveals the 32K static RAM cache. Bottom view shows additional components mounted between the socket pins.

faster. In practice, it takes a little more than speeding up the microprocessor to implement this idea. The 68000 is just a small part of what makes up an Amiga. The Amiga's custom chips and the system's RAM are designed to run at a clock speed just a bit faster than seven million cycles per second. Simply speeding up the 68000 will leave the rest of the system behind.

To install *AdSpeed* install it in place of the system's 68000 cpu chip. Since *AdSpeed* comes with its own faster 68000, the original cpu chip should be stored in a secure place. *AdSpeed's* length and width are only slightly larger than the 68000 itself, and its overall height is about three times that of the microprocessor. Four jumper pins are located at one end of the board, though only two of these are active - the second pair is for future options. If the active pins are connected, *AdSpeed* will power up at the Amiga's normal speed. If the pins are left open, it accelerates.

The instruction manual suggests the connection of an optional switch to the speed pins to let you change processor speed in midstream. You will have to pro-

vide your own switch and wire for this modification. The clock speed can also be changed by using a supplied utility program which can be run from the Workbench or CLI. ICD has found that some Amiga peripherals do not like to power up at the accelerated speed. The work-around is to set *AdSpeed* to power up at the slow speed and then switch to the fast speed. You can put the *AdSpeed* program in your startup-sequence for this purpose.

AdSpeed is built around a 68000 microprocessor running at a clock speed of about 14.3 megahertz, double the speed of your average Amiga. *AdSpeed's* actual performance increase is realized through the clever use of 32K of static RAM. This memory is equally divided between RAM cache and cache tags.

The contents of chip RAM are invisible to *AdSpeed*. Thus, the best performance gains will be realized with programs that run repetitive loops from fast RAM. Fortunately, most software falls into this category. To get some idea of what kind of performance improvement could be expected with *AdSpeed*, I ran up ASDG's *Art*

Department Professional. Loading a 1024x768 color GIF image from a Xetec CD-ROM drive required 45 seconds at the seven MHz clock speed, and only 27 seconds at the 14 MHz clock speed. Converting the same image to a hi-res interlaced 16 color screen display took 110 seconds at seven MHz and only 57 seconds at 14 MHz.

Since *AdSpeed* is simply an accelerated 68000, it cannot be used with a math coprocessor. Programs which require the presence of a math coprocessor will not find one with this accelerator. I also found that *AMax II* (the Macintosh emulator from ReadySoft) would not run with *AdSpeed* in the accelerated mode. The main advantage of using an accelerated 68000, as opposed to a 68020/68881 combination, is to ensure software compatibility with older programs that may not have been written with microprocessors other than the basic 68000 in mind. If you are looking for a modest boost in performance at the minimum possible cost, *AdSpeed* will do the job. Based on the current street prices, *AdSpeed* can be bought for less than half the cost of the lowest priced 68020/68881 accelerator on the market.

FLICKER FREE VIDEO

No, *Flicker Free Video* will not provide you with free flickers to use with your video. To the contrary, it is a de-interlacer which aims to remove the flicker which is an unavoidable result of NTSC composite video. Here is a condensed version of the mandatory lecture on NTSC video that must accompany every de-interlacer review - if you think you already know all about the video display; just skip the next paragraph.

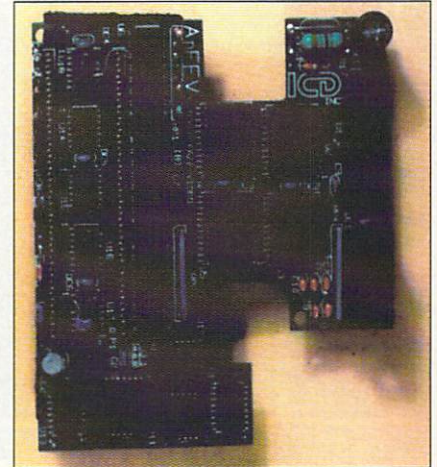
The NTSC video flashes fresh images on the video display about 30 times per second. A complete image is called a frame. The images are scanned onto the screen in two parts, or fields, and fields appear at rate of about 60 per second. An NTSC frame is built up of 525 lines with 262 1/2 lines per field. The lines are progressively scanned from the top to the bottom of the screen. The two fields are interwoven so that the adjacent lines on the screen always belong to alternate fields. The glowing phosphors on the screen fade from view at such a high rate that each line disappears before the next one is scanned. End of lecture. We now return to our regularly scheduled review.

Some simple low-cost or no-cost ways to reduce or eliminate flicker are dark sun glasses, reduced room lighting, turning down the contrast controls on the monitor, or low contrast screen colors. The best way to eliminate interlace flicker is to get rid of it entirely. This is just what a de-interlacer board such as *Flicker Free Video* does. First it memorizes an NTSC field in its on board buffer. When the second field comes along, it sends out the first line from the first field followed by the first line of the second field and so on until the entire image has been displayed. The result is that the lines from both fields are displayed in order and interlace, with its accompanying flicker, is eliminated. Of course, a normal monitor is not capable of accepting video at this accelerated rate, so you also need to buy a more expensive multi-sync monitor.

Flicker Free Video is equipped with a three megabit buffer which is just large enough for a single high-resolution field. To keep up with the doubled scan rate, *Flicker Free Video* replaces each line from the first field with the corresponding line from the next field as it displays the contents of its buffer. When the original display is non-interlaced, the resulting display looks very smooth as all the interline gaps have been neatly filled in. With a rapidly changed interlaced display, motion artifacting may occur. This happens when *Flicker Free Video* combines the fields from two successive images that have changed drastically. Fortunately, these events do not occur very often.

To install the unit you have to open the computer, locate and extract the Denise chip, insert the board into the recently vacated socket, and reinstall the Denise chip in the corresponding socket on the *Flicker Free Video* board. This leaves the video slot in the Amiga 2000 free for other applications. In the Amiga 2000, the Denise chip is located under the power supply. In the Amiga 500, Denise sits in the back to the left. In the Amiga 1000 you will have to remove the 512 kilobyte Kickstart RAM daughterboard and perform some minor modifications to the circuit board. The modifications require the installation of some components and some soldering. ICD offers to do the Amiga 1000 installation for \$40 plus shipping and handling.

If you have the enhanced chip set installed in your computer, you also have to change a couple of *FFV*'s jumpers. You complete the installation by plugging a short length of nine-conductor flat ribbon



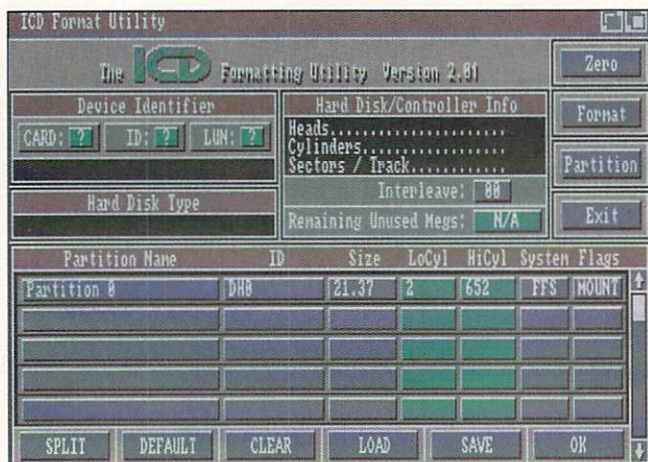
Flicker Free Video has all its components mounted on the top surface.

cable into a socket on the *FFV* board. For the Amiga 2000, the other end of the cable is fitted with a nine-pin "D" connector mounted on an expansion slot bracket. For the Amiga 500, the cable with the nine-pin socket hangs out the rear. A nine-pin to 15-pin adapter is provided for use with display monitors that use the 15-pin cable.

Once installed, *Flicker Free Video* is completely transparent to the operation of the Amiga. You can continue using the original RGB port and Amiga monitor without the benefit of the de-interlaced display. To complete the flicker-free side of the setup you will need either a VGA or a multisync monitor. The advantage of the multisync monitor is that it can be used with both the original interlaced display and the *Flicker Free Video* output. Just make sure that the monitor can synchronize with the 15 kilohertz Amiga scan rate as well as the 31 kilohertz *Flicker Free Video* scan rate. Since *FFV* does not have a bypass switch, you will also have to switch the monitor cable between its output socket and the Amiga's RGB connector.

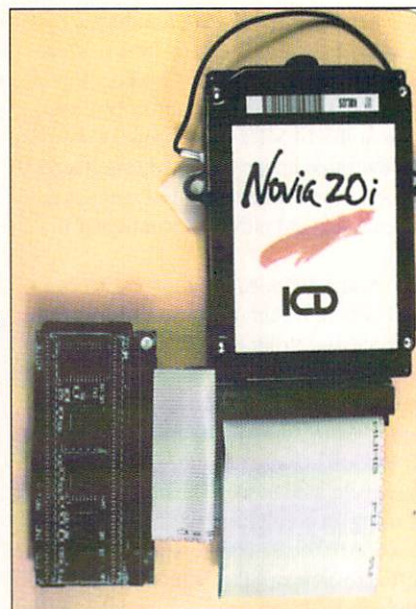
I tested *Flicker Free Video* on an NEC Multisync 3D high-resolution monitor. The results were superb.

There are not too many options when it comes to de-interlacer boards for the Amiga. I cannot say how *Flicker Free Video* stacks up against the Commodore and MicroWay de-interlacer boards. *Flicker Free Video* looks like a good choice for the A500 or A1000 computers or for the A2000 if you want to free up the video slot for another device.



ICD's painless hard drive setup software.

Complete *Novia 20* assembly. *AdSpeed* or 68000 plugs into the socket strips.



NOVIA 20i

Novia 20i is a 20 megabyte hard drive package made up of ICD's *AdIDE* host adapter and a 20 megabyte Connors 2 1/2 (yes, TWO and a half) inch IDE hard drive. *AdIDE* is an IDE host adapter that is not much larger than the 68000 microprocessor. To install *AdIDE*, you open up the computer, remove the 68000 from its socket, plug *AdIDE* into the socket in its place and reinstall the 68000 in the corresponding socket on *AdIDE*. The IDE cable connects to a 44-pin header located along the edge of the circuit board. A pair of jumper pins lets you choose between floppy booting with Kickstart 1.2 or autobooting from the hard drive with Kickstart 1.3.

The 2 1/2 inch hard drive is mounted on a matching metal plate which is then mounted directly on the Amiga's motherboard using double sided tape and three nylon feet. A ground wire connection from the mounting plate to any nearby mounting screw completes the installation. The short length of flat ribbon cable is folded in a way that the hard drive ends up in a convenient location in the Amiga 500 where the tripod mounting can straddle several key components. Since the 2 1/2 inch hard drive was designed for use in laptop computers, there should be no problem powering it from the Amiga 500's original power supply. However, I did notice that the area under and around the 68000 was a bit warmer with *AdIDE* installed. ICD claims that *AdSpeed* can be installed along with *AdIDE* and the combination will work just fine. The problem with installing both *AdSpeed* and *AdIDE* in an Amiga 500 is that their combined height prevents the closure of the computer's case.

The hard drive setup software is the

same program that ICD uses for all of its hard drive host adapters. The full-screen window makes the partitioning and formatting of the hard drive as painless as possible. Performance of *Novia 20i*, based on DiskSpeed 3.1 is about average as compared to the other host adapters I have looked at.

If you are determined to save desk space while cramming the maximum amount of power into an Amiga 500, then *Novia 20i* is certainly worth considering. The 20 megabyte capacity is a bit small by today's standards, and you will pay a premium for the compact packaging. Based on the current street prices of Amiga 500 hard drives, you should be able to buy a conventional add-on hard drive system with more than twice the capacity for about the same price as the *Novia 20i*.

ADRAM

Last, but not least, ICD's *AdRAM 540* with the *AdRAM 560D* daughterboard lets you install a battery-backed clock/calendar and up to six megabytes of RAM in the Amiga 500's belly slot. I took a close look at *AdRAM*, as well as a competing product, in issue #38. Since I have already exceeded

my allotted space for this issue, I will refer you to my earlier report for the details.

Overall, ICD's products are marvels of miniaturization. If you are in the market for several power peripherals without the desk space on which to set them up, then ICD's product line is well worth considering.

AdSpeed \$349.95

☆☆☆+

Flicker Free Video \$499.95

☆☆☆☆

Novia 20i \$559.95

☆☆☆+

AdRAM 540 \$159.95 Unpopulated

☆☆☆+

ICD, Inc.

1220 Rock Street, Rockford, IL 61101
815-968-2228

DiskSpeed 3.1 Test Results

Device: *Novia 20i*

Test Intensity: Med; Performance Stress: None

26 Files Create, 40 Files Open/Close, 117 Files Scan, 34 Files Delete, 180 Seek/Read

Buffer Size	512	4K	32K	256K
Bytes Create	66874	154628	276168	308546
Bytes Write	80817	168933	358631	438620
Bytes Read	72374	167493	367216	414892

Programs to Read, Create, Analyze, and Dial



Public domain and shareware programs are available from many sources, including disk distributors and online services. Those reviewed this month were obtained from:

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

GEnie Online Information Service, 800-638-9636.

VIEW-80 [GEnie #11795]

Sometimes as you browse the files on the electronic services, you happen across a utility that does what it does better than anything else. *View-80* is such a program. So it's an ASCII file reader - "big deal," you say. Well, this is a file reader with a difference. First of all, it's blazingly fast. Moving a slider at the bottom of the screen zips you through a text file faster than you can read it. It searches for strings, filters out ASCII garbage, and generally does everything a program of its type should. And this file reader can hold up to ten different files in as many buffers, allowing you to switch from one to another instantly. With the required library on your disk, it will also read Power-Packed text files. It prints too, including specified ranges. *View-80* is shareware (\$15), and worth it. An excellent



Pop Art from Cranberry Software

effort from Federico Giannici of Palermo, Italy.

POP ART [CranWare #156]

How shall we describe *PopArt*? It is, I guess, an image creating/painting program with a sense of humor. With a few judicious choices, you can create vivid "op art" style graphics and then combine them into a page flipping animation. This thing is fun! Also on #156: *Pop Art Lite*, a similar program, and another to produce dropshadows for video titling fonts, along with the venerable *ROT*, which generates 3D objects and moves them over 24 frames to your specifications, producing short animations.

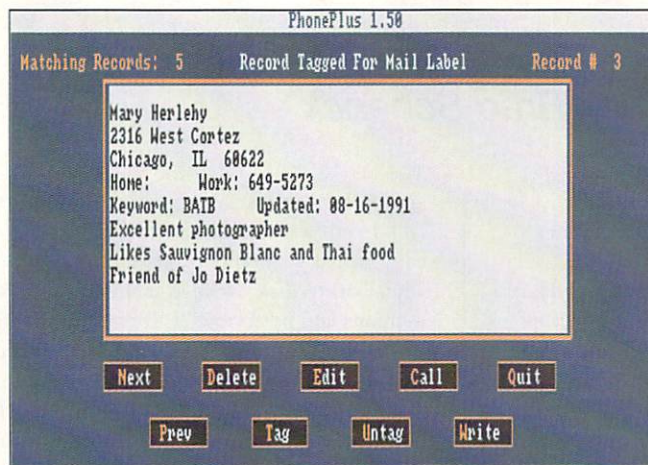
LUSCHER COLOR TEST [GEnie #11982]

The validation of psychological tests has been a matter of great controversy. If they work, how well they work, and what they tell us are ongoing questions. The Luscher Color Test has been around for more than 20 years, and seems deceptively simple on the surface. You are presented with a palette of eight colors (originally on individual cards) and told to select them in the order of your "sympathy" for them. Then you are asked to do it again, and the results are presented on screen or directed to your printer. You may be shocked, as I was, at the apparent accuracy of this test. It draws conclusions about your state of mind based on your affinity for the various colors at any given time. There is a book available (*The Luscher Color Test*) which explains the concept, though I haven't seen it in years. If psychology interests you (I'll bet you own *Mind Prober*, right?) you will want to download this. PS: Kids, don't hang out your psychologist shingle without meeting the requirements of your state, ok?

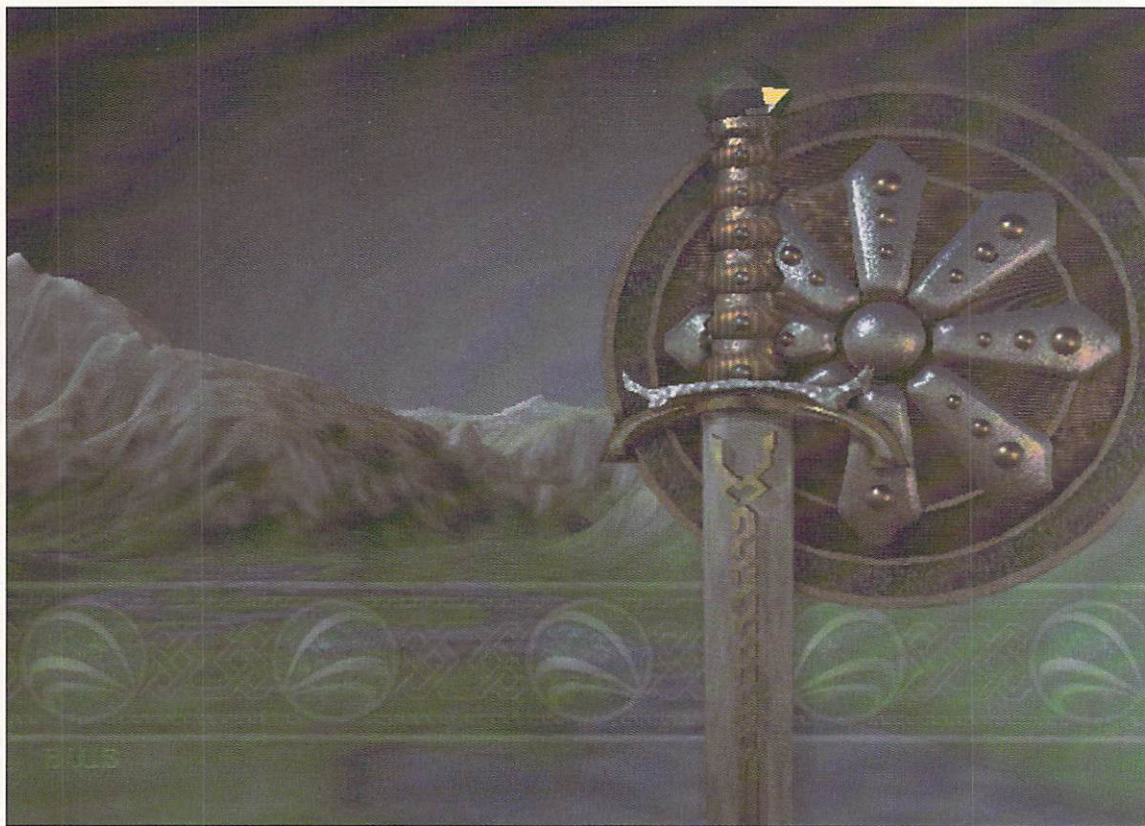
PHONEPLUS [GEnie #11872]

PhonePlus is a nice-looking phone number/address database and dialer which also prints mailing labels. The interface is appealing, and I like the way the data is presented, much like a Rolodex(TM) card.

Phone Plus address book and autodialer.



We get a chance in each issue to discuss what's new in graphics software; but in concentrating on the features in any one package we seldom see a real instance of how all these tools work together - and they must work together, since any one project is likely to require procedures that involve several different programs. Because of the early standardization of the IFF graphics format, we Amiga artists have always been able to combine the strengths of our tools, to the betterment of our work. Here's a case history of an image that passed through several different tools on its way to completion. It involves both 3D and 2D graphics software and image processing as well.



Tir Na Nog

by Brad Schenck

To the ancient Irish, Tir na Nog was 'The Land of Youth.' It's an otherworld, another plane of existence that's sometimes reachable from ours. Being an Irish legend, Tir na Nog has its share of fighting as well - it was a variation on the earthly plane with a bit more magic than we have here.

This 24-bit illustration was meant to catch some of the earthlike and yet unearthly spirit of that place.

The background was rendered with *Vista Pro* (the geo-

graphical and fractal landscape generator) in 24-bit color. I rendered two versions of the same scene in *Vista*: one with a daytime sky, the other with a starry dark one. After saving these off to disk I loaded them into *Toaster Paint*'s two screens and performed a 'Rub-Through' from one to the other. By using a highlighted fill, I rubbed a lot of blue into the night sky at the horizon, fading out to very little blue in the screen's corners. That gave me a nicely shaded twilight sky (see Figure 1). I saved the new version out and got to work with my 3D rendering tools.

The sword and shield objects were created in *Imagine* even though I intended to render the image with *Lightwave*. Since 3D objects are not saved in a standard file format, it was necessary to convert the *Imagine* objects with Syndesis' *Interchange*. *Imagine* and *Lightwave* are both recent products and aren't at this writing directly supported by *Interchange*, so this is a tricky process. An update to *Interchange* has been announced that will make the conversion much easier.

In *Lightwave* I created the 'surfaces' used on the objects. I made use of one of *Lightwave*'s algorithmic textures (wood) and also its 'fractal noise' maps for both color and bump mapping. Bump mapping makes a smooth surface appear to be rough or pitted, or gives it a simulated raised pattern. All of these features help the 3D artist avoid pictures full of smooth shiny objects that all look like chrome, plastic, and glass.

Once I had the objects and their surfaces the way I wanted them, I rendered the scene at 736x480 pixels in 24-bit color. I used my touched-up *Vista* image as a 'Backdrop' in *Lightwave*, so that it appeared as a background behind the objects in the scene.

I then loaded the rendered image into *Toaster Paint* for some retouching. Arriving at the perfect lighting for a 3D scene is as challenging as building the objects; in the case of still images it can be faster to retouch a little than to experiment with the lighting until it's exactly right. So I made some adjustments to the shadows in the piece, after which it was ready for the next step.

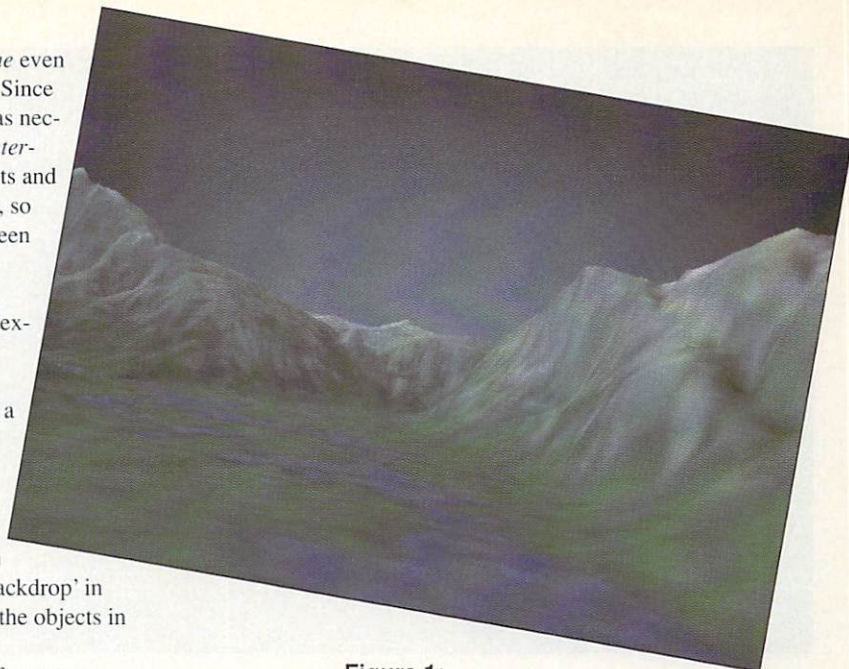


Figure 1:

Here, two *Vista Pro* renderings have been combined into a single image that will become the background for the picture.



Figure 2:

A decorative border is designed in *Deluxe Paint III* in just 16 colors.

I planned to add a decorative strip across the lower part of the image. This uses a combination of Celtic and Art Nouveau elements. I painted the border alone (Figure 2) in *Deluxe Paint III*, using just 16 colors. This was more than adequate, since I would be 'mixing' this into the 24-bit image using a transparent effect; the 16 color image would modify the far more colorful picture it was to be composited into.

ASDG's *Art Department Professional* allows just this sort of compositing, and that's where I turned next. First I loaded in the 24-bit picture, already a veteran of *Vista*, *Imagine*, *Toaster Paint* and *Lightwave*, and then composited the 16 color border image into it with a 'Mix' value of seventy per cent (see Figure 3). This wasn't strictly necessary; I planned to do some more 'mixing' later in *Toaster Paint*, but I wanted to see roughly what I was getting. The result, Figure 4, shows the *Lightwave* rendering with a border strip laid straight across it. This wasn't quite what I wanted, but I was nearly there.

Figure 3:

The *Art Department Professional*'s R, G, and B values are set at zero: this makes all blacks in the border picture completely transparent.

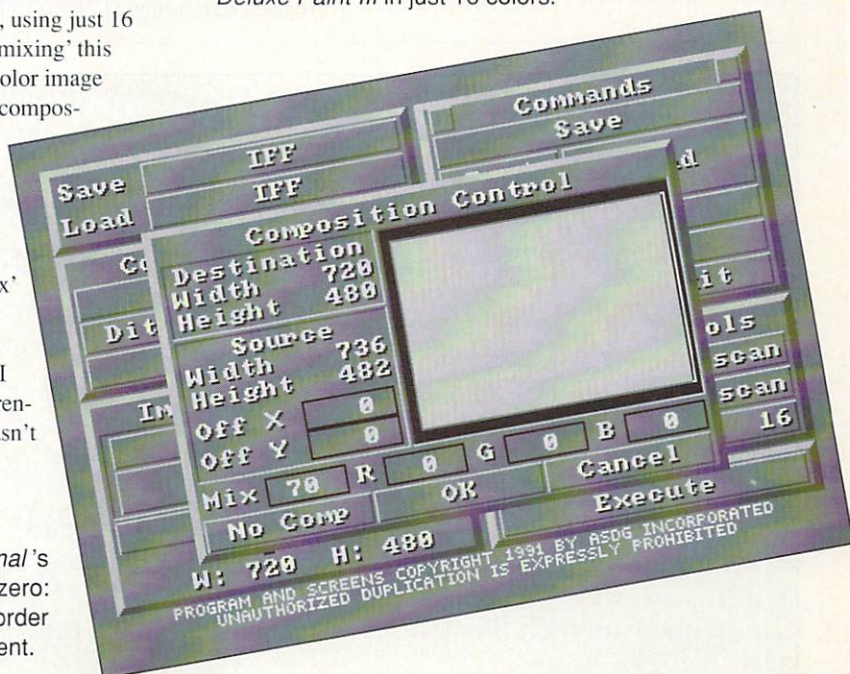




Figure 4:

At this stage, the backdrop has been used in a *Lightwave 3D* rendering, and the border design mixed into it. The picture just needs one more excursion into *Toaster Paint*.

Once again I loaded the image into *Toaster Paint*, both the composited and the original versions (one on the spare screen). Again I used transparency (this time without a highlight effect) and the Rub Through painting mode. I worked on the original image's screen and rubbed through to the composited picture 'behind' the sword and shield, leaving them standing in front of the border. This created the layered effect I was after, as you see in the completed painting.

There would have been several other ways to accomplish some of these same effects; this is simply a description of the steps I took this time, with the most appropriate tools I had. While it probably sounds very involved and awkward, I can assure you that it wasn't; once you're familiar

with a set of tools, it's second nature to go from one to another as you work, taking advantage of the strong points in each.

If you *want* awkward, let me tell you about... oh, never mind. Another time.

Addresses

Vista Pro, \$149.95

Virtual Reality Laboratories, Inc.
2341 Ganador Court
San Luis Obispo, California 93401
(805) 545-8515

Lightwave 3D and *Toaster Paint*, (bundled with the Video Toaster, \$1595.00)

NewTek, Inc.
215 E. 8th Street
Topeka, Kansas 66603 (800) 843-8934

Imagine, \$350.00

Impulse, Inc.
6870 Shingle Creek Parkway #112
Minneapolis, Minnesota 55430
(612) 566-0221

Deluxe Paint III, \$149.00

Electronic Arts
1450 Fashion Island Boulevard
San Mateo, California 94404
(800) 245-4525

Art Department Professional, \$240.00

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

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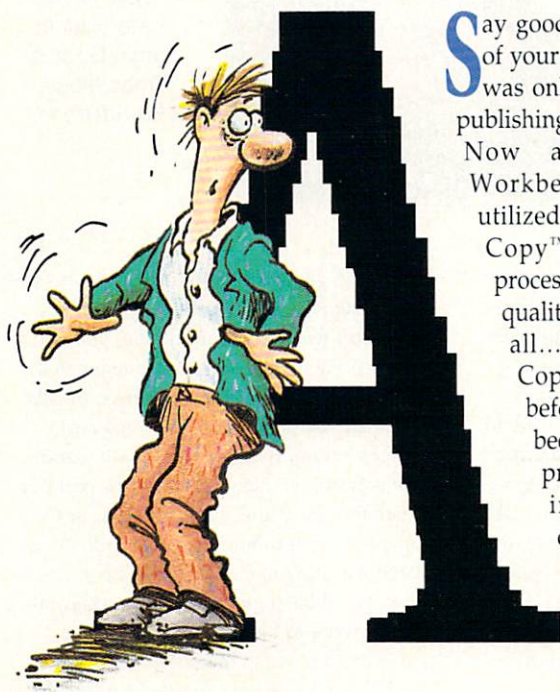
.info

And our tech section is FREE.
.info technical support

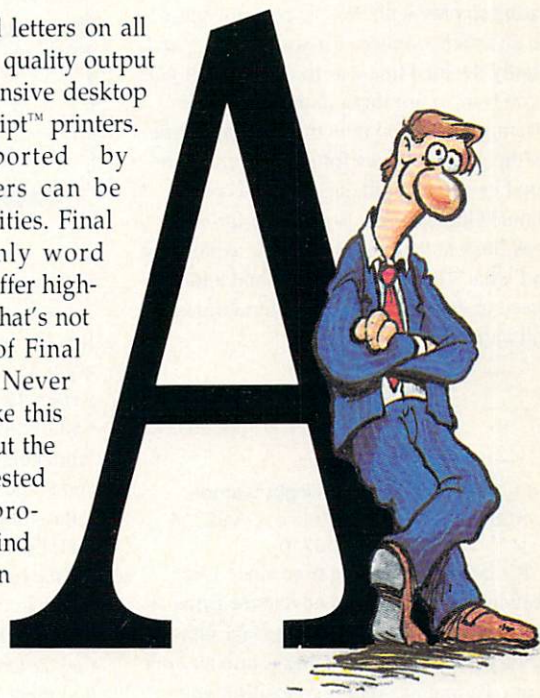
This issue includes Unix, Quarterback Tools, and more starting on page 54

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Computer Thumb Twiddling and Other Idle Pursuits



We are taking a little time off from the standard Cyberplay this issue. Mark and I are longtime fans of software ephemera, those little bits of code that don't do anything productive, but are fascinating to play with. We've been meaning to do an article on them for several years and finally decided this was the time to fill you in on how to use them in the fine art of wasting time. We know this skimps a little on the game reviews for this issue, but the good news is that the next issue is our annual Games issue. Stay tuned for our look back at the best of the year, what's hot and what's not in new games, and a look ahead at what's coming in entertainment software.

WONDERLAND



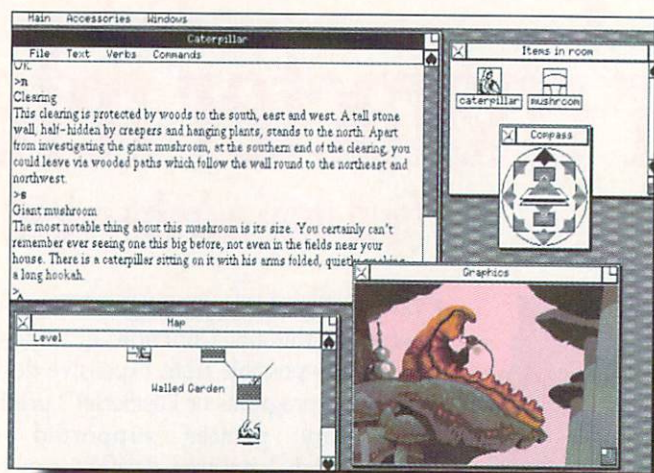
Magnetic Scrolls/Virgin Games

18061 Fitch Avenue, Irvine, CA 92714, 714-833-8710

It's been a long, long time since I've been as smitten with an adventure game as I am with *Wonderland*. Taking any famous literary work and translating it into an interactive format is a risky proposition, but Magnetic Scrolls has succeeded in a way that not only retains the nonsensical flavor of *Alice in Wonderland*, but also revives and rejuvenates the text-adventure genre.

Wonderland doesn't try to be *Alice in Wonderland*, taking instead the approach of putting you in the role of Alice and letting you explore the weird realm of the White Rabbit and the Queen of Hearts in your own way. It's all a dream, of course, just as in Lewis Carroll's classic novel, and the object of the game is to complete the dream.

Most computer games these days don't seem to much care about literary quality, but *Wonderland* clearly does. The writing is sharp, clear, and true to the spirit of the original. It is also grammatically correct and spelled properly, something far too rare



Visiting the caterpillar in Virgin Games' marvelous *Wonderland*.

in computer games (and everywhere else, for that matter) of the past couple of years. It is literate without being ponderous, literary without being pompous. The game's writers have kept Carroll's world intact without intruding on it, or, heaven forfend, 'enhancing' it. The graphics are stunning, and some have bits of animation. They retain much of the style of the original Tenniel illustrations, but have the same respect for the original book as the text. In general, the characters aren't shown, leaving them intact in the player's imagination where they belong. There are bits of music here and there in the game, though there are few sound effects. There's so much going on visually, though, that I didn't miss them.

I had a tough time deciding to give *Wonderland* five stars. It most definitely doesn't look like an Amiga game and in fact, looks like it's running on the IBM it was ported from. I suppose I've mellowed a little over the years; if something is good, it's good. It doesn't matter where it comes from. *Wonderland* uses a multiple window system; there are separate windows for the text, graphics, map, inventory, compass, and so on. You can have any or all of the windows open, drag them around the screen, resize

them, and generally tailor the display to suit your taste. The interface is so good that if you don't want to do any typing, you don't have to. There are two sets of menus that, when combined with the windows, mostly eliminate the need to use the keyboard.

Wonderland is one of those rare works that is far more than the sum of its parts. It is suitable for adults and kids both. In fact, one of the first things I did after playing the game was dig out a copy of the book and reread it. What a great way to introduce this classic work to kids - let them play the game and then read the book. They'll certainly want to. *Wonderland* is, pardon me, wonderful; I'll be playing it for years to come.

BIG BUSINESS



DigiTek

1916 Twisting Lane, Wesley Chapel, FL 33543, 813-973-7733

This is the first laugh-out-loud game I've played since New World's *Nuclear War*. In fact, it has much the same sense of lunatic humor that made *Nuclear War* such a success. *Big Business* is right on-target with its

Incredible	Very Good	Average	Poor	Drek
★★★★★	★★★★★	★★★	★★	★

jobs at every aspect of the business world. The game pits you against two other players (human or computer) and you must out-wit them in such things as sales, research & development, commodities trading, pricing, and other aspects of the greedy business of coming out on top.

The game is entirely point and click, making the mechanics nearly transparent. The graphics are cartoonish, and even though they only use 16 colors, you'll never notice. There are innumerable weird little touches of animation that add immensely to the game - be sure to click on everything on every screen. You'll be delighted with what you find. The sound effects are minimal, though, and I found myself wishing there had been more of them.

Good as *Big Business* is, DigiTek has also included a second, separate bonus game in the box. *Wallstreet* is a far more realistic game of stock trading and portfolio management. It isn't even close to *Big Business* in entertainment value, but its inclusion is a generous touch and it's certainly worth looking at.

Big Business is an absolutely hilarious game. Invite a couple of friends over to play and you'll have a terrific time. Do it on a weekend, though. Your ribs will hurt too badly to go to work the next day.

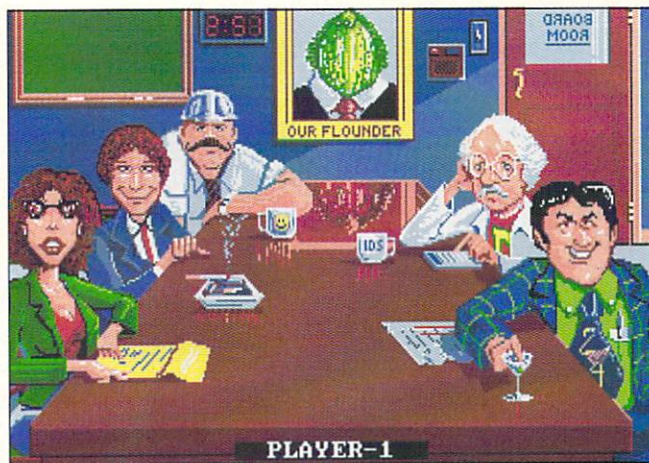
BILL ELLIOTT'S NASCAR CHALLENGE



Konami

900 Deerfield Parkway, Buffalo Grove, IL 60089, 708-215-5100

Similar to EA's *Indianapolis 500*, Bill Elliott is set in the world of NASCAR rac-



DigiTek's wickedly funny *Big Business*.

ing instead of Formula One. Developed by Distinctive Software (*Test Drive* and many other racing simulations), there really isn't much to set this game apart from others of the genre except the Bill Elliott name.

The graphics are a combination of bitmaps and vector, and are handled with plenty of speed. I think the controls, like several other DSI-developed titles, are a little too touchy. The manual recommends using the keyboard instead of the joystick, and while I found that helpful, I don't like playing a racing game with the keyboard. I would much rather have some provision for calibrating the joystick response.

You are given three racecars to choose from, and you can tune and tweak them to your heart's content. Several different raceways are included, from Daytona to Talladega, and you can race the whole season to become the NASCAR champ.

If you're not a die-hard racing fan and you already have a car racing game on your

shelf, I'd give *Bill Elliott* a miss, but if you're a fanatic where racetracks and fast cars are concerned, you'll certainly want to check this one out. It's not at all bad, it just isn't anything new.

BATTLE CHESS II: CHINESE CHESS



Interplay

3710 S. Susan, Santa Ana, CA 92704, 714-549-2411

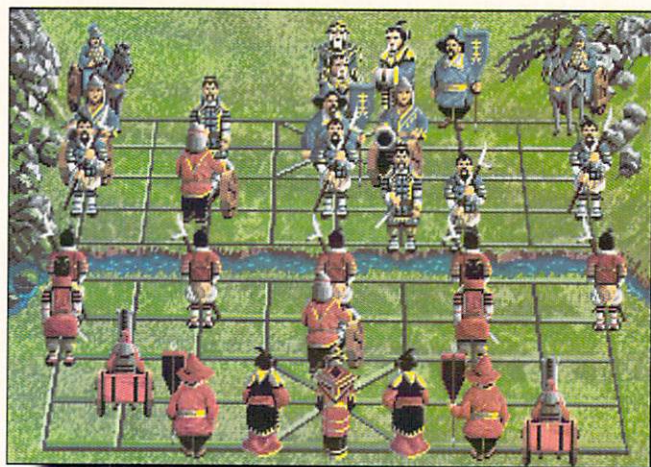
I don't want to be disappointed in this game, but I just can't help it. The original *Battle Chess* is one of the two or three best things ever done on the Amiga. Benn and I couldn't wait to get the sequel booted up, but after about three minutes we both had the same reaction: "Why bother?" The problem isn't the execution, which is exceptional; it's the underlying concept. There's already been a Chinese chess game (published by Eagle Tree Software), and it proved that the Chinese version of the game isn't very interesting to Western audiences.

Battle Chess II is just as skillfully programmed as the original, and the animations are extremely well done, but I just can't work up any interest in playing it. It works fine as an extended demo if you set both sides as computer players, but it all has a hollow feeling. Part of the reason the original *Battle Chess* was so successful was because the pieces were familiar and we knew the characters; that's not the case with *Chinese Chess*. The Western version of chess is deeply ingrained in our cultural imagery, and the unfamiliar layout and



NASCAR racing with *Bill Elliott*.

Animated
Chinese
Chess in
Battle Chess II.



pieces of the Chinese game don't have the same impact. Seeing a piece turn into a dragon and flame another piece doesn't have the same effect as seeing a rook from the original game turn into a monster and devour the queen. Benn and I discussed it at length and agreed that we would much rather have seen Interplay release a new animation disk for the original instead of changing the game itself. How about a comedy set, with Mae West the queen and W.C. Fields as the king? Now *that* would have piqued our interest.

Battle Chess II is a fine game in itself, and I would have been bowled over if I hadn't seen the original. As it is, it's one of those unfortunate ideas that probably seemed wonderful at the time, but just didn't work when it was put into practice.

COMPUTER THUMB-TWIDDLING

The fine art of doing nothing is a tradition that goes back to the days when man's ancestors developed opposable thumbs and found that they could be satisfyingly rotated around one another to no good purpose. Time-wasting was born. We've come a considerable distance since then, but the art of fiddling around has come even further. Now we have computers to take the burden off our thumbs; we have software that's much more entertaining to play with than any digits, pedal or carpal. What I'm talking about here aren't games, but software of another sort altogether: programs that are utterly useless for anything but wasting a chunk of time, and preferably time that should have been used doing

something productive. They're things to relax with, ephemera, sort of like computer-age worry beads.

Most of the programs used in computer thumb-twiddling produce eye-candy, fleeting patterns and images that serve no purpose but are interesting to look at. The first, and still one of the greatest, of these is Dan Silva's *Polyscope*, which Commodore shipped with the Amiga 1000. It produces kaleidoscopic patterns on the screen and illustrates another point about this ephemeral type of software: its often hypnotic qualities. Ideally, thumb-twiddling software should require a minimum of interaction; it's best when you can sit back in your chair (or better, lie down) and veg out in front of the screen. Of course, not all software achieves this level of oblivion, nor should it. There are degrees of interaction and satisfaction.

Thumb-twiddling software doesn't necessarily have to be written for that purpose

alone; anything will serve, including productivity titles. Commercial or public domain, it doesn't matter as long as the goal of squandering a few minutes or a few hours is achieved. *Deluxe Paint* is one of the best time-wasters ever and probably the best Amiga entertainment title ever written. Megan plays with *ProPage*, which isn't everyone's idea of a good time, but illustrates the principle that thumb-twiddling is a very personal thing.

There are a few established traditions in using this type of software. First, never, ever save anything. I don't care how pretty the result of your labor is. If you save a file from something, you're doing something productive. Stop it right now! Second, and most important, you don't have to know how to use the software to waste time with it. Many of the titles in the list are mathematically oriented, but don't let that throw you. You don't have to know a single thing about math to waste time with them. Just look for examples included with the programs and alter them slightly to get the hang of how things work. If the program has alterable default settings, fiddle with them. Read the documentation only as a last resort. After all, we're not interested in learning anything, we only care about frittering our lives away. Finally, if you get bored with one thing, move on to another. Build yourself a library of these things so you'll have some variety in your time-wasting.

The numbers after the PD titles indicate which Fish disk they can be found on. Nearly all are also available on BBSs and online services as well. Some of the titles are so ancient we can't remember where they came from. Look around online and you'll find them. (Yet another good way to



A fleeting
pattern from
Sizzlers
(FF #90).

waste some time!) The best way to ferret them out these programs is to search through *Aquarium* (the Fred Fish index program), or do a keyword search on the online services. Keywords to use include *graphics, music, demo, fractal, mandelbrot, julia*, and so on.

LINES

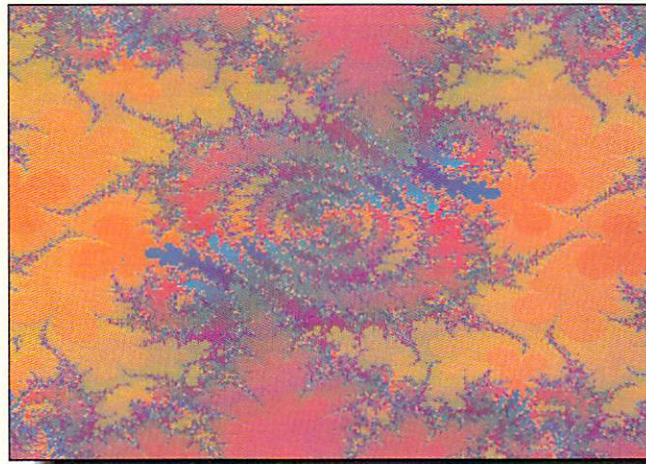
There are any number of line-generating programs, including *SuperLines* (FF#243), *Hypno* (FF#297), *Klide* (FF#268), *Spliner*, *Kaleidoscope*, *Mackie* (FF#305), *Sizzlers* (FF#90), and many more. They use lines, boxes, and other shapes, including some spectacular spline-based ones, to create patterns on the screen. Most will change themselves, morphing through a series of different patterns as they swim across the screen. The best are *SuperLines*, which is the definitive of the Lines-type programs, and *Spliner* (written by Tom Rokicki, this is a new version of *Mackie*). There are also a couple of screen-blankers that will not only blank your screen, but your mind, too. *Pyro* (FF#199) is the best and explodes little multicolored skyrockets on your screen at a slow, majestic pace. There are also several variations on *Stars* (FF#118) and *Star-Blanker* (FF#308), which display moving starfields to watch if you're feeling otherworldly.

SOLIDS

This category includes *Polyscope*, released to the public domain by Electronic Arts and available on BIX (*polyscope.lzh*). As mentioned above, this early classic by Dan Silva will make patterns to keep you hypnotized for hours. It has never been updated and should be. Strangely, it runs under Kickstart 1.0 to 1.2, won't under 1.3 (unless *FixHunked*), and will again under 2.0. Also take a look at such treasures as *Worm* (FF#218), *Mondrian*, *Circles* (FF#304) *Blobs* (FF#15), *Tunnel* (FF#174), *HAMmmm2* (FF#239), *Dance* (FF#126), and variations on several of them. They operate for the most part like their line-based counterparts, but with the addition of solid shapes.

SOME ASSEMBLY REQUIRED

While the following programs require some interaction to produce the unproductive effect we're looking for, they're well worth lolling back in your chair and wasting some time with. Be sure to have every-



An exotic fractal from Ronnie Johansson's *Fractals*.

thing you need for the next few hours within arms' reach.

Deluxe Paint is the champion here. Do some experimenting with the symmetry function, color cycling, and the move requester. I've wasted months fiddling with these. While it's not strictly in the spirit of time-wasting to save the results of any of your electronic doodling, you can put together slideshows of these screens and keep yourself vegged out for a few hours. (See the *Mindlight*, below.) If you're idling away a few hours with a paint program, don't forget that you can waste even more time by running the results through image processing software such as *Butcher* (Eagle Tree Software), *Pixmate* (Progressive Peripherals), or *The Art Department* (ASDG). After that, you can fiddle with the colors using *Doug's Color Commander* (Seven Seas).

This brings us to another matter. You can waste incredible amounts of time waiting for screens to render. Always keep in mind, though, that it is strictly forbidden to get up from your chair (recliner preferred) to do anything besides make a trip to the kitchen for refreshments. Correct time-wasting etiquette requires watching every moment of the rendering.

Some of the possibilities for this type of inactivity include rendering packages like *Sculpt*, *Turbo Silver*, *Real3D*, *Imagine*, and so on. By the way, remember to turn off any accelerators you might have installed so the screens don't render too fast. The biggest portion of this class of software is mathematical and includes all the fractal programs. There are scores, if not hundreds, some for exploring Mandelbrot-type num-

ber sets, some for generating fractal landscapes, and still others for rendering purely mathematical formulas. There are also many purely unique entries. When you dive into (perhaps sink into would be a better phrase) them, don't limit yourself to just the mainstream packages like *MathVision* and *VistaPro*. Some of the more obscure titles have odd functions and capabilities that can eat up weeks of your time. I'll list a few of the best and most unusual here along with a brief description:

MathVision (Seven Seas Software) - The ultimate mathematical fooling-around toy. Don't let a lack of mathematical knowledge put you off. Just load in a formula, change a number or two, and space out while the screen renders.

FracGen - basic fractal shape generator written by Doug Houck of *Seven Seas*

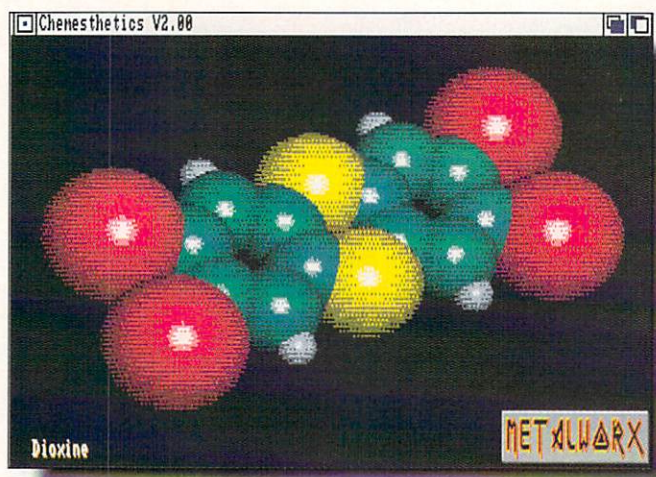
Anything by Terry Gintz - These include such PD titles as *PolySys* (FF#389), *ZPlot* (FF#389), *FractalLab* (FF#391), *Plot* (FF#389), *CPlot* (FF#392), and others. They offer different types of fractal and mathematical renderings that produce a variety of interesting patterns and images. The interfaces are fairly uniform, so after you figure out how to use one, the others are easy to learn.

VistaPro (Virtual Reality Laboratories) - Generates landscapes based on real-world data or on fractal seed numbers. The screens take a satisfyingly long time to render.

Roses (Fish #345) - Generates sine roses (sort of like string-art).

Scene Animator (Natural Graphics) - This new landscape generating software from

Making molecules with *Chemesthetics*.



- Brett Casebolt (*Scene Generator*, FF#155) is a complete reworking and includes some terrific animation tools you can spend months with.
- Anything from MegageM - *HAMandel*, *ScapMaker*, *FractalPro*
- Genesis* (Microillusions) - Similar to *VistaPro* and *Scene Animator*, it has even more functions and menu options to fiddle with.
- Fractals* (FF #371) - Written by Sweden's Ronnie Johansson, this fractal generator has, in addition to the standard Mandelbrot and Julia sets, several more exotic types.
- IceFrac* (FF #303) - This one grows fractal icicles up from the bottom of your screen.
- Cloud* (FF #216) - Makes fractal cloudscapes that will save you having to go outside and look up at the sky.
- ifs* (FF#321) - an Iterated Function System viewer which has considerable flexibility.

Another branch of mathematical software is concerned with Life as simulated electronically, cellular automata, and chaos. (Mark says he'll get around to writing about these someday.)

ADDING SOUND

So far, I've only talked about graphics, but sound and music software also have fine potential for some serious wasted hours. For pure sound fiddling (pun intended), try The Other Guys' *E-Z FM Synthesizer*. It's an easy-to-use sound and

instrument generator that will not only entertain you, but also drive your family and neighbors to distraction. For hours. Sound digitizers and editors can also eat up a few hours. Make sure to try all the weird effects, too. From there, if you don't mind a slight stigma of productivity, you can use the instruments in EA's *Deluxe Music Construction Set*. Be careful here, though, not to actually produce any finished music. Just noodling around is the best way. Other music packages also offer of entertainment value, particularly *MED* (FF#476). While *MED* isn't pretty to look at, it is complicated enough that you can sit down to start making some music (or noise, in my case) and look up from the screen only to find that six hours have passed.

There is a hybrid category of time-wasting software that incorporates both graphics and sound. The ultimate is Visual Aural Animation's *Mindlight 7*. This hardware/software combination takes an incoming audio signal and generates patterns on the screen that are driven by the audio. This is the one thing I have wasted more time with than anything else. It's the ultimate video wallpaper. Unfortunately, the *Mindlight* is no longer being produced, but Geodesic Publications is working on a new version called *LightShow*. Another title in this category is from Hologramophone (available from Centaur Software). *Pixound* will take any IFF screen, analyze the RGB values, and play them as music. It will work with both internal Amiga sound and MIDI. *Hyperchord*, another of Hologramophone's titles is also a good timewaster. It's basically a riff processor that lets you generate random or user-designed riffs, put

them together, and play them in a variety of ways: computer-composed music. *SeeHear* (FF#335) goes the opposite direction of *Pixound*, generating colorful spectrographs of sound samples.

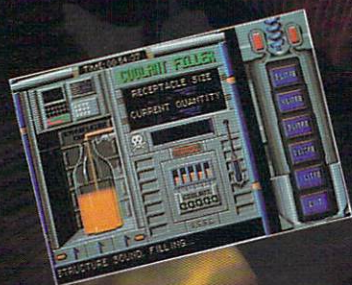
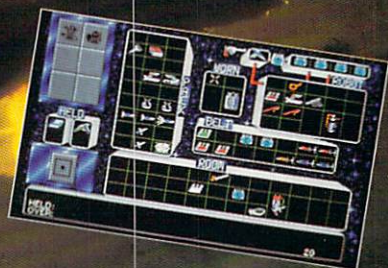
MISCELLANY

There are many programs of this sort which fall into no category at all. For example, take a look at *Chemesthetics* (FF#427), which renders pictures of molecules based on the atoms you specify. *Tess* lets you design tiles and put them together in various patterns. Another whole class of time-wasting software are European demos. You can find them on all the online services, and though most are very large files, they will dazzle you with music and graphics.

Idle pursuits are their own reward. There's something about playing with software for its own sake that seems to get the creative juices flowing. Time-wasting isn't such a bad thing at all. Give some of these eye-catchers a spin and you'll see what I mean.

SOURCES

- Electronic Arts**, 1450 Fashion Island Blvd., San Mateo, CA 94404, 415-571-7171
- Seven Seas Software**, 35 Cape George Wye, Port Townsend, WA 98368, 206-385-1956
- Virtual Realities Laboratory**, 2341 Ganador Court, San Luis Obispo, CA 93401, 805-545-8515
- Centaur Software**, 14040 Tahiti Way, Suite 528, Marina Del Ray, CA 90292, 213-542-2226
- Geodesic Publications**, PO Box 956068, Duluth, GA 30136, 404-822-0566
- Eagle Tree Software**, PO Box 164, Hopewell, VA 23860, 804-452-0623
- Progressive Peripherals**, 464 Kalamath Street, Denver, CO 80204, 303-825-4144
- ASDG**, 925 Stewart Street, Madison, WI 52713, 608-273-6585
- The Other Guys**, 55 N. Main St., Suite 301D, Logan, UT 84321, 801-753-7620
- Natural Graphics**, PO Box 1963, Rocklin, CA 95677, 916-624-1436
- MegageM**, 1903 Adria, Santa Maria, CA 93454, 805-349-1104



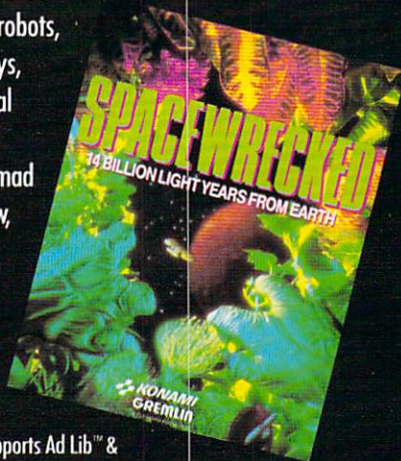
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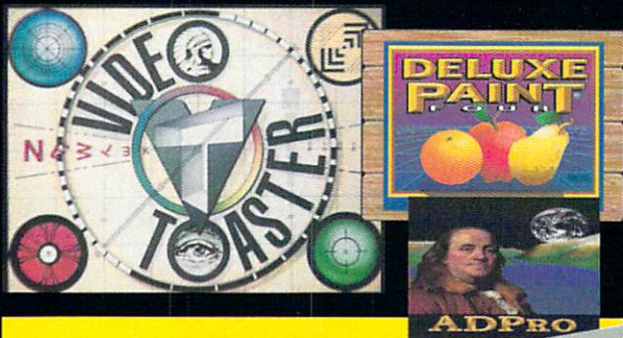
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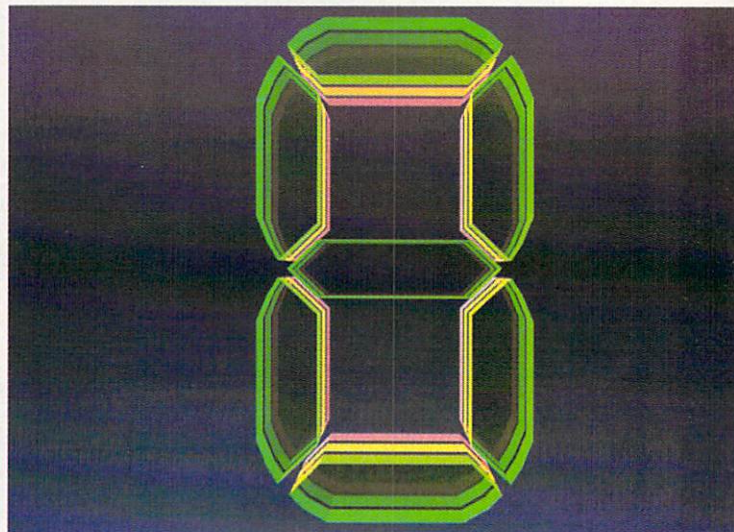
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Quarterback Tools |
| Commodore | 2.0 ROM Chip Key Chain
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| GVP | Scala |
| ICD | AdSpeed |
| Interplay | Battle Chess II |
| IntraCorp | Big Deal
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PowerPacker Professional |
| Kara Graphics | Kara Fonts - Toaster Fonts 1 & 2 |
| Maxis | SimCity
SimCity Graphics Sets 1&2 |
| MicroSearch | Material Textures Library vol. II |
| New Horizons | ProWrite |
| NewTek | Video Toaster |
| Progressive | DiskMaster II |
| Peripherals | IntroCADD
PIXmate |
| Psygnosis | Amnios
Lemmings |
| ReadySoft | Dragon's Lair I & II
Space Ace
Team Yankee |
| Right Answers | The Director Version 2 |
| SoftWood | Clip Art: Animals / People
Clip Art: Classic / Collectors
Electric Thesaurus
Proper Grammar
Maverick V3 for the Amiga
SupraModem 2400ZI Plus
Brigade Commander
MRBackup Professional
RXTools
Teachers Toolkit
Workbench Management System
Amiga Graphics Reference Card
Vista Pro |
| SSI | |
| Supra | |
| TTR | |
| Vidia | |
| Virtual Reality | |



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|--------------------------|--|
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| Blue Ribbon | Bars & Pipes |
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Top 25 Devware PD Picks |
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| Dr. T's Music | Deluxe Paint IV |
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| Kara Graphics | ChromaKey |
| MicroSearch | DesignWorks |
| New Horizons | Amnios |
| Psygnosis | Lemmings |
| ReadySoft | Dragon's Lair I & II
Space Ace
Team Yankee
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Archive Your Disks: Two Backup Programs

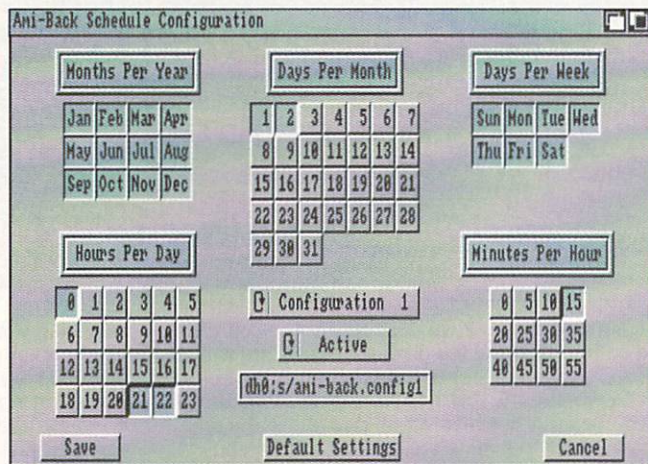


here are two primary axioms in the computer world. One of them is: Stuff expands to fill available space. If you have a floppy-based system, that axiom means that you can either risk being drowned in a sea of disks, or you can buy a hard disk drive. Once you have a hard drive, however, you run into Murphy's Law: Whatever can go wrong will, when you least expect it. Hard drives are a Murphy disaster waiting to happen: large amounts of data concentrated in one area - especially if it's vital data - seems to increase the odds of having someone trip over the power cord. If you absolutely, positively *have* to have the data, something terrible will happen.

I can't emphasize this enough: **BACK UP YOUR DATA!** Regular backups will add years to your life. If you're worried that you'll spend those extra years backing up your drives, let me put your mind at ease. The programs I tested for this column - *Ami-Back* and *FlashBack* - were fast, convenient, and reliable.

COMMON GROUND

Before I introduce the players, I'd like to mention the operations both have in common. Both will do full backups, archival backups (only files which have been added or changed since the last backup), and selective backups and restores. Both will backup to floppy disks, SCSI tape, and hard



The *Ami-Back* schedule configuration panel.

drives, and both feature a verify option. And both perform "fast-disk" floppy backups. In this mode, AmigaDOS is bypassed and data is written to the disks on a track-by-track basis. Both programs log their results, including errors, to an ASCII file. And, lastly, both programs sport the spiffy 3D look that heralds the coming of Workbench 2.0.

Ami-Back

Ami-Back, from Moonlighter Software Development, comes in two flavors: *Ami-Back13*, for Workbench 1.3, and *Ami-Back20*, for Workbench 2.0. These comments apply to the 1.3 version. When you first boot *Ami-Back*, you'll be greeted by three gadgets: Backup, Restore, and Quit. Additional options are available from the menu. *Ami-Back* gets its defaults from configuration files. If you always backup the same partition and always use the same options, you can just click on Backup or Restore and go. If you need to change the defaults, the menu options will summon the appropriate panel.

One of the Backup options enables you to perform an Image backup. In this mode, the entire contents of a partition are copied, byte-by-byte, to the backup medium. If you have a non-AmigaDOS partition such as *AMax*, this option simplifies backups for

you. *Ami-Back* allows you to define exclusion filters. If, for example, you don't want to backup any files with an '.lzh' suffix, just add '*.lzh' to the exclusion filter list. In addition to the normal incremental backup mode, *Ami-Back* allows you to backup files added *after* a certain date. In Selective backup mode, you can choose to include *or* exclude the files you select. *Ami-Back* also gives you the option to perform an AmigaDOS backup. This saves the backed-up data as one large AmigaDOS file.

Backing up to floppy disks is a smooth operation with *Ami-Back*. Disk insertion and removal is automatically sensed, so if you have more than one drive you can always stay one step ahead of the operation. *Ami-Back* allows you to backup in either fast disk mode or in AmigaDOS mode. A handy timer shows you not only elapsed time, but an estimate of the time remaining. If you're backing up to something other than floppies, you'll know if you have time to get that snack.

When it's time to restore your backed-up files, *Ami-Back* gives you a Compare Information option to save you from restoring duplicate files. There are five comparison items: Filename, data, time and date, protection bits, and comment. If you'd like to keep duplicate files without writing over the original, *Ami-Back* includes an option to rename duplicate files.

Ami-Back



\$79.95

Moonlighter Software
Development, Inc.

3208-C East Colonial Drive Suite 204
Orlando, Florida 32803
(407) 628-3005

CHECK THE SCHEDULE

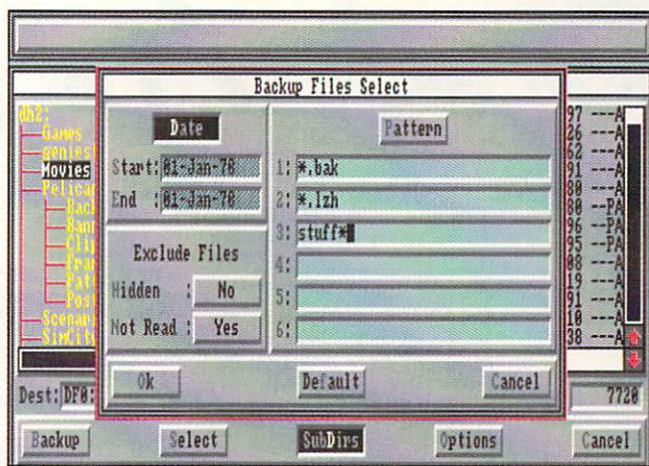
One of the more interesting options available with *Ami-Back* is the ability to schedule backups. You can define as many as ten different backup schemes, each with its own backup schedule. If, for example, your DH1: partition gets a lot of activity, while DH0: is fairly dormant, you can have *Ami-Sched* (a companion program to *Ami-Back*) back up the data in DH1: once a day, while backing up DH0: only once a month. *Ami-Sched* lets you set the hours of the day, the days of the week and month, and the amount of time each hour that it will backup your data. If you have the appropriate device - streaming tape or Syquest, for example - *Ami-Sched* looks like a painless way to insure your data.

FlashBack

The opening screen for *FlashBack* from Advanced Storage Systems presents you with the primary options: Backup (or restore) Image or File, and Load or Save Configuration. There's also a handy Help button. Once you've selected the backup method, you'll be taken to the Options panel, where you specify the source (where the data's coming from) and the destination. Any mounted device can be specified as the destination, including a file in RAM: (although not RAM: itself). The Options panel lets you select a full or archive backup, as well as whether existing files will be overwritten, and whether the archive bits will be set or ignored.

Once you've set your options, *FlashBack* reads the source device, builds a catalog, and displays a new screen. If you've selected File backup mode, the directories and subdirectories from the source device will be displayed in a visible tree, in one of two file windows. The other window displays the files in a selected directory. This screen allows you to select files to be excluded from the backup, and gives you access to the Backup Files Select panel. This panel lets you define certain parameters that will determine which files are backed up. The Date gadgets let you specify a start and end date; files created before or after these dates are not backed up. You can also use wildcards to define what kinds of files are included. If you entered '*.*lzh' as one of the patterns, all files with the suffix of '*.lzh' would be selected for backup.

Backing up to floppy is as painless with *FlashBack* as it is with *Ami-Back*. Thanks



Selecting file patterns in *FlashBack*.

to the automatic disk insertion/removal detection, you can stay one floppy ahead of the process. Restoring the data is quick and easy, too. The Restore panel lets you determine whether directories will be created, whether archive bits will be set, and whether you'll get a warning when a file is about to be overwritten. The Copy Files option enables you to restore only files that exist on the destination drive, in case you don't want deleted files to reappear. Like the Backup operation, Restore (once the catalog is generated) brings up a display of the directories and subdirectories to be restored. The options are the same here as they are for backup - you can manually exclude directories and/or files from the restoration process.

In the course of testing *FlashBack*, I was able to investigate its error-handling capabilities. I purposely used ancient, much-used floppies for the backup, and I was rewarded (?) with a few unreadable files. *FlashBack* gave me the option to retry the read (which failed, of course) and then allowed me to abort the restoration. I was able to complete the restoration by excluding the faulty files and re-starting the restore process. Don't try this at home, though - if you're going to back up to floppies, invest in a fresh batch.

WHAT'S IN A TAPE? LET ME COUNT THE WOES

Ami-Back supports SCSI tape drives two ways. The first way is through SCSI-direct commands. If your tape drive understands these commands, you don't need a tape handler. My drive, of course, doesn't. After

consulting with the program's author, I managed to convince my unit - a 3M 40-meg drive - to talk to *Ami-Back* through *BTN*, a public domain tape handler. *FlashBack* requires the services of a tape handler. So far, it doesn't work with *BTN*, but I've contacted the programmer and hope to have better news to report next month.

HOW DO THE BACKUPS STACK UP?

Both *Ami-Back* and *FlashBack* are quality programs. They're easy to use, and they get the job done quickly, with a minimum of fuss. Although I gave both of them the same rating, *Ami-Back* had a few advantages over *FlashBack*. The automatic scheduling utility is one, although you can set up a script to run *FlashBack* automatically. Another advantage is the more flexible approach to devices like tape drives. Note that each program has a few features that the other doesn't. That might make the difference in your decision. You won't go wrong with either one, though.

FlashBack



\$79.00

Advanced Storage Systems
14540 East Beltwood Parkway
Dallas, Texas 75244
(214) 702-9191

ProVisions

Contents

- ▲ **Graphics** . . . 38 A RoundUp of Amiga Paint Programs.
- ◆ **MultiMedia** . 43 CDTV plays and displays CD+G disks.
- **Audio** 46 How to add music to your productions.
- **Video** 48 Do your own TV forecast with *Choma Key*.

ProVisions

GRAPHICS

by Brad Schenck

While the availability of 24-bit composite video and other advanced display devices is the most exciting of the recent developments in Amiga graphics, the standard Amiga graphics modes have certainly not gone away. If you're new to the Amiga, it's most likely that you're working with these stock graphic displays. Long-time users may also be waiting out the inrush of new display enhancers

to the market before deciding which of them is best for their particular use.

This month, we'll be taking a look at paint software that's available for the Amiga's standard display modes, with a comparison of the programs' features. Keep in mind that any comparison is certain to overlook the finer points of each product. As always, you should, if possible, evaluate a program at your local dealer, discuss your choice with other users, and read specific reviews if they're available.

Lastly, remember that reviewers like me are just human beings like every-

one else, and our conclusions may be based on personal prejudices, not objective fact.

ADVANTAGES

If you are just beginning to work with paint software, you'll find that computer graphics automatically offer many advantages over traditional media. The simple presence of an 'Undo' feature may be the most empowering thing you'll notice at first. 'Undo' and the ability to

save multiple versions of a project to disk free the artist to experiment widely with techniques. I know from my own experience that my skills improved far more rapidly once I had that freedom to experiment without ruining the work in progress.

The fact that the images are made using a computer gives you abilities very similar to a writer working with wordprocessing software - or an accountant, for that matter, working with a spreadsheet. It's a simple matter to copy one area of an image and place it elsewhere. Take this a step further and you can use that 'brush' to paint an entirely new shape, shrink or expand it, or import it into a different program to modify it in untold ways.

None of these features replaces the artist or his artistic vision. It's true that they may be used to quickly produce a rough version of a good effect, which is laziness; but it's also true that these features can and should be used to *simplify* the artist's work, letting the computer do tedious and repetitive tasks that would tax a human's patience. As I pointed out before, that is exactly what wordprocessing software does for a writer.

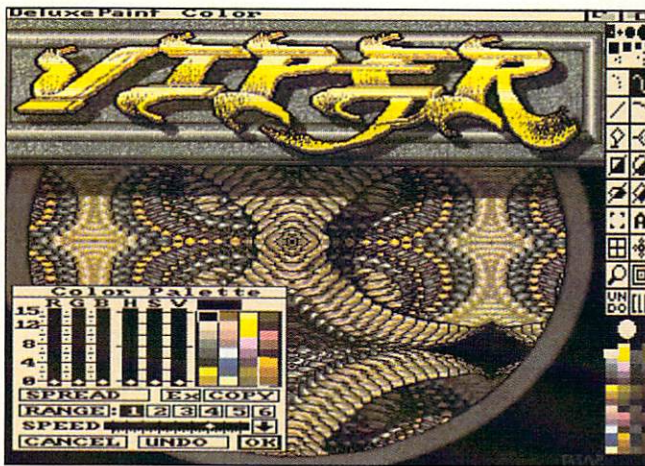
BASICS

The Amiga's standard display modes are first identified by their *resolution*, or dimensions in *pixels* (the tiny dots of color that make up an image). *Low resolution* screens are 320 pixels wide; *high resolution* screens are 640 pixels wide. Either resolution may be *interlaced*, with a screen height of 400 pixels, or *non-interlaced*, 200 pixels high. In addition, a screen may be *overscanned*. This means that it extends beyond the normal screen borders, filling the entire monitor. Overscan sizes vary, but a

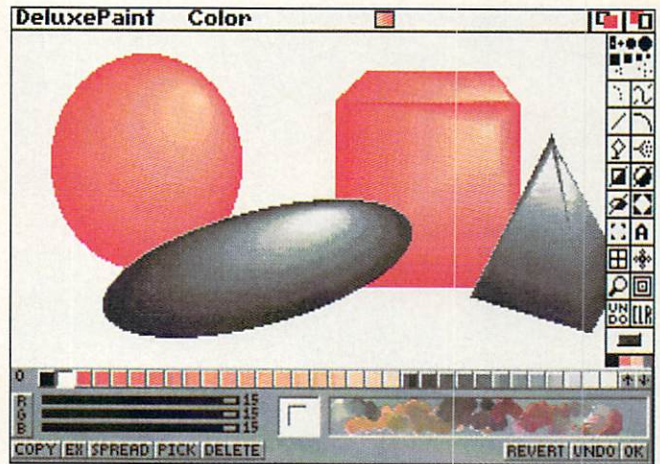


Join Brad as he presents a RoundUp of the top Amiga paint programs.





Deluxe Paint III, the definitive Amiga paint program from Electronic Arts.



Deluxe Paint IV, with many new features including HAM mode, will be available by the time you read this.

common one for high resolution interlaced screens is 736x480 pixels.

In the 'normal' screen modes, a low resolution screen may have up to 32 colors out of a palette of 4096. A high resolution screen can have up to 16 colors out of 4096. Colors are mixed by adjusting the amount of *Red*, *Green*, and *Blue* that define them - these RGB values represent the primary colors in computer graphics, which is a bit of a shock at first to artists accustomed to mixing red, blue, and yellow.

Low resolution screens can also use two additional graphic modes: *extra halfbright* and *HAM* (Hold-and-Modify).

Halfbright images still offer 32 'mixable' colors, but add 32 additional colors that are exactly half the brightness of the hues in the first 32. These limited extra colors are especially useful in shading effects. Keep in mind when you work in halfbright that those darker shades will tend toward grey, and make the first 32 colors relatively bright.

In HAM mode you can use any number of the 4096 possible colors in a single image. Before you decide to work only in HAM, you should be aware that it has technical side effects that cause some combinations of color to 'fringe' to the right of the area you're painting. For this reason it's often practical to do the layout for a HAM image in fewer colors, and then import the layout to a HAM paint program for the more painterly work. While the sheer number of colors available in HAM is very attractive, you may find that it's not appropriate for many applications, particularly those involving text displays or in which you need smaller pixels for a smoother appearance. Working in HAM is often more frustrating than the 'normal' modes because of its unique limitations.

Antialiasing is a technique in which diagonal or

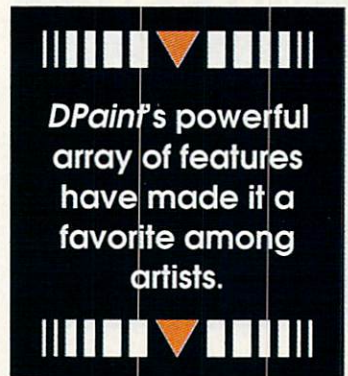
curved lines are smoothed to remove the jagged stairstep effect that results from drawing with rectangular pixels. Intermediate colors are applied to the jagged edges to smooth the transition between one color and another. The smaller your pixels are (as in high resolution), the less noticeable these 'jaggies' are.

DELUXE PAINT

Deluxe Paint has been with us for almost as long as there have been Amigas to run it on. At the time of writing the most recent version is *DPaint III*, though *DPaint IV* (previewed in *.info #40*) will be available by the time you read this.

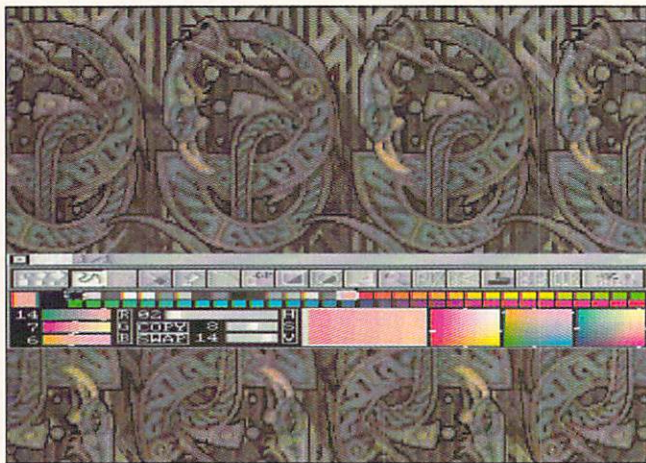
DPaint's user interface has the elusive quality of transparency that is an ideal for software. The mechanics of the program almost never interfere with its use, and it rewards experienced users with shortcuts and advanced features. *DPaint III* added powerful animation features. The only thing most users missed at that point in the program's evolution was HAM painting, which is coming in *DPaint IV*.

While other products listed have brush warping abilities that allow the artist to simulate perspective effects, *DPaint* is alone in offering a true perspective drawing mode in which a movable vanishing point constrains perspective effects in a realistic way. On the whole, *DPaint's* powerful array of features have made it a favorite among artists. If the support for HAM mode is as well designed and implemented as one expects from *DPaint*, the new version may set a new standard.





Deluxe Photolab Paint, until *Deluxe Paint IV* the only paint program to handle both standard and HAM.



Spectracolor, an update of the HAM paint program *Photon Paint* from Aegis/OXXI.

DELUXE PHOTOLAB PAINT

Although it hasn't been updated since its introduction in 1988, this suite of programs - now bundled together with *Deluxe Video III* - has a good deal to offer. Until the advent of *DPaint IV*, *Photolab* remained the only paint software that works in every standard Amiga graphics mode.

The *Photolab* package includes *Paint*, *Posters*, and *Colors*, which respectively are painting, printing, and image processing programs. *Photolab Paint* doesn't offer any animation features, but its painting tools are quite useful. Like a few of the other listed products, it features not only 'Undo,' but 'Redo' - a function that repeats the last action, allowing the artist to alter some paint settings and try again, or overlay the area last worked on. That's a very useful feature. A unique pair of functions is *Photolab's* 'Save From' and 'Load At.' These allow the artist to clip a rectangular part of an image and load it to a precise location in

another, and has great potential when working with animation frames.

The program is beginning to show its age, but still holds up very well. It doesn't offer as much in the non-HAM modes as *DPaint* does, but it does do all the graphic modes and is credible enough as an all-in-one paint package. It deals well with superbmap images (that is, images much larger than a displayed screen, although when working on an overscan picture the entire image is not visible at once - the artist has to scroll around to work on the edges.

SPECTRACOLOR

Those of you who've been using Amiga software for a while will recognize *Spectracolor* as an improved version of Microillusions' *Photon Paint 2*. *Photon Paint* was one of the earlier HAM-only paint programs, and included some basic features for working with compressed ANIM files. Now *Spectracolor* builds on those capabilities with new paint and animation functions (for a full review, see *info* #43).

Spectracolor still works only in Hold-and-Modify mode, and most of its painting tools are designed to take full advantage of that. It offers minute control of painting both for foreground and background color, and has several unique tools (like pantograph) that none of the other products include. Its stencils are limited to a single filled shape, unfortunately, but keep in mind that the other HAM-only programs don't offer stencils at all (except the new *DPaint IV*). There are some other nuances that don't show in our comparison chart: for example, *Spectracolor* will accept and preserve unusual screen shapes for ANIM files, like 'letterboxed' animations, which may be overscanned horizontally but are less than a screen tall.

While animation features are somewhat outside the scope of a paint software comparison, these are a major point in *Spectracolor's* favor. Its paint features are also quite good and it's a program well worth looking into if a HAM-only paint program will suit your needs.

DIGIPAIN III

Despite aggressive marketing that compares this program to *DPaint*, *DigiPaint III* is a relatively simple paint system for working only in Hold-and-Modify mode. *DigiPaint's* original incarnation was the first HAM paint

Animation features are a major point in *Spectracolor's* favor.

AMIGA PAINT PROGRAM COMPARISON CHART

	DPaint III	DPaint IV	Spectracolor	Photolab Paint	Digipaint III	Graphics Workshop
Company	Electronic Arts	Electronic Arts	Oxxi/Aegis	Electronic Arts	NewTek	Holosoft Technologies
Rating	☆☆☆☆	PREVIEW	☆☆☆+	☆☆☆☆	☆☆☆+	NOT RATED
Price	\$149.00	\$179.00	\$149.95	\$149.00	\$99.95	\$100.00
Low Res/32	Yes	Yes	No	Yes	No	Yes
High Res/16	Yes	Yes	No	Yes	No	Yes
Halfbright	Yes	Yes	No	Yes	No	Yes
HAM	No	Yes	Yes	Yes	Yes	No
Interlace	Yes	Yes	Yes	Yes	Yes	Yes
Overscan	Yes	Yes	Yes	Not Displayed	Not Displayed	Yes
Image Size	To Memory Limit	To Memory Limit	To Overscan Only	To Memory Limit	To 1024 by 1000	To 1024 by 1024
Perspective	Yes	Yes	No	No	No	No
2 1/2 D Brush	Yes	Yes	Yes	No	No	Yes
Brushes	1	Multiple	1	1	2	Multiple
Brush Painting	Yes	Yes	Yes	Yes	No	Yes
Pattern Fill	Yes	Yes	Yes	Yes	Yes	Yes
Brush Warping	Yes	Yes	Yes	Yes	Yes	Yes
Stencil	By Color	By Color or Area	By Area	No	No	By Area
Antialias	Yes	Yes	No	Yes	Yes	Yes
Gradient	Yes	Yes	Yes	Yes	Yes	Yes
Rub-Through	No	No	No	No	Yes	No
Shadow	Yes	Yes	Yes	No	No	Yes
Transparency	No	Yes	Yes	Yes	Yes	No
Blur/Smooth	Yes	Yes	No	No	Yes	No
Redo	No	No	Yes	Yes	Yes	No
Color Cycling	Yes	Yes	Yes	No	No	Yes
Animation	Yes	Yes	Yes	No	No	Yes
ANIM Files	Yes	Yes	Yes	No	No	Yes
ANIM Brushes	Yes	Yes	Yes	No	No	Yes
Fonts	Yes	Yes	Yes	Yes	Yes	Yes
Colorfonts	Yes	Yes	Yes	No	No	No
Printing	Yes	Yes	Yes	Yes	Yes	Yes
AREXX	No	No	No	No	Yes	No
Other Software	ANIM Player	ANIM Player	None	Image Processing; 'Poster' printing	Image Processing	Animation player (non-ANIM)

Addresses

Electronic Arts
1450 Fashion Island Blvd.
San Mateo, CA 94403
415-571-7171

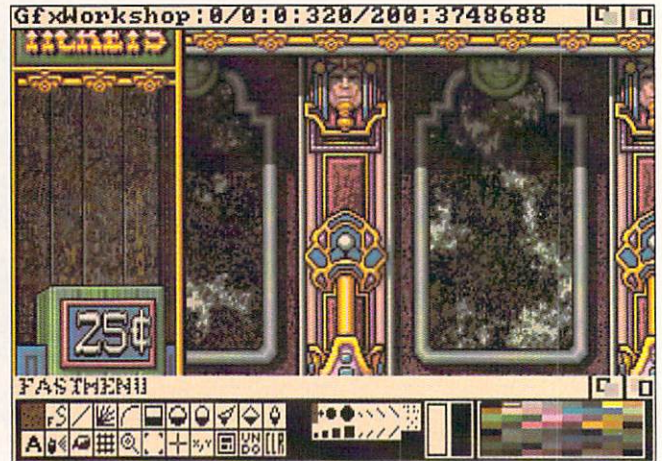
Oxxi
PO Box 90309
Long Beach, CA 90809
213-427-1227

NewTek
215 East 8th St.
Topeka, KS 66603
800-843-8934

Holosoft Technologies
1637 E. Valley Parkway,
Suite 172
Escondido, CA 92027
619-747-0663



NewTek's *DigiPaint III* HAM paint program with menus by Jim Sachs.



Graphics Workshop from HoloSoft Technologies.

program, which underwent quite a lot of changes in the update to version III. It has a reasonable array of painting tools (with the remarkable exception of a straight line) and good control over graduated transparency in its fill modes. Color gradients are a bit less sophisticated, but again, quite usable.

Like *Photolab* and *Spectracolor*, *DigiPaint* has a 'Redo' feature that is invaluable. Also like *Photolab*,

overscanned images can be edited, but not while viewing them in full over-scan - the artist must scroll the image to see the edges of the picture. While the artist can pick up and stamp brushes on the image, it's not possible to paint freely with a brush as one can in most paint software.

The single most exciting feature in *DigiPaint* is its ARexx port, which none of the other programs offer. This makes a wide variety of applications possible, since other programs can

assume full control over *DigiPaint*; that partly overcomes its lack of ANIM support, since third-party products (or user-written programs) can add animation features through ARexx. That may be of little immediate benefit to the artist, but it's a strong advantage for the program in the long run.

GRAPHICS WORKSHOP

This non-HAM package is basically the reverse of the others listed, since it's essentially an animation program with an array of paint features. While the program supports the compressed ANIM file format, it stresses its own realtime brush animation features, in the same vein as Gold Disk's *Moviesetter*.

Strong points are a very useful antialiasing tool and (due to its brush animation functions) good control over the placement and manipulation of multiple brushes.

The reason *Graphics Workshop* is not rated in our chart as the others are is not a limitation of the program, but of the reviewer. I simply haven't worked with it enough to rate it fairly.

Based on a little experience with it and its selection of features, I do recommend that artists take a closer look at the program, which is now at version 1.1 to correct a few problems in the original release.

ABOUT THE COMPARISON CHART

In a chart like this, oversimplification is a real threat. As you look over the lists of features, bear in mind that the programs approach problems in different ways: often it's possible to get an effect by using one or more tools, so that things which aren't directly supported are still possible.

If your main needs are for video and animation, you should place special emphasis on color and animation features. If your work is going to print or to slides, resolution may be more important to you and you should look for tools that allow you to work on superbitmap images.

The difference between 'Perspective' and '2 1/2 D Brush' is the presence of a constraining vanishing point for true perspective drawing. A '2 1/2 D Brush' may be rotated on three axes to simulate a 3D effect. This is what most software offers as 'perspective' but I've had to separate the two for reasons of clarity. 'Other Software' lists bonus programs included with the product which enhance its capabilities.

Note: the images used in this article are shown for illustrative purposes; they were not necessarily created with the software shown.



The single most exciting feature in *DigiPaint* is its ARexx port



On the back of CDTV's fancy sales package you'll see a box that reads: "It's a CD Player Too! Plays all standard audio CDs in stereo (8x oversampling) and a growing library of CD+Graphics (CD+G) discs from major artists."

As an *.info* reader, you already know CDTV can play regular music CDs, controlled using a slick graphical interface designed by Jim Sachs and Leo Schwab. But you might not know about CD+G. In fact, even though you may have never seen any CD+G graphics, there's a chance you might already own one or more of these discs without even knowing it. The ability to play and display CD+G discs is one of the most intriguing and least talked-about aspects of CDTV.

Way back in the dark ages (1983) JVC developed and released the CD+G data specs. CDs with graphical information encoded alongside music, per the CD/CD+G standard, had to be 100% compatible with all non-CD+G CD players or decks. It's been part of, and one of the best-kept secrets about CD technology ever since. This probably has more to do with the lack of CD+G capable players and decks than anything else. Another self-fulfilling prophecy: few decks, few CD+G discs. The advent of CDTV could well spell a renaissance in CD+G.

The CD+G format is a screen of 288x192 pixels made up of 12x6 pixel "blocks." Sixteen colors out of a palette of 4096 (or 16 shades of gray) can be displayed at once. On first blush, this might sound like a fairly crude resolution, but don't pre-judge before you see what it can do when talented artists are driving it. The graphics can be slow-scrolled, faded in or out, dissolved onto the screen in various wipes and patterns (including wiping multiple regions of the screen with different patterns simultaneously) and color-cycled.

CD+G discs cost the same as regular CDs, and the graphics on them in no way limit the amount of music



+G graphic from Jimi Hendrix's "Smash Hits."

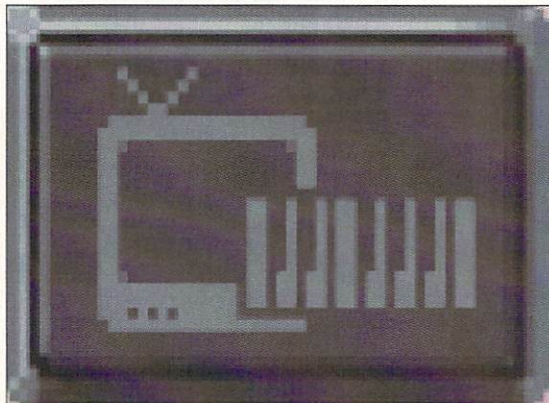
they can hold, nor the music's audio quality. If you're CD shopping, I'd suggest you pick up a few. Even if you don't own a CDTV yet, you'll be all set when you or your friends take the plunge.

PLAYING CD+G

To play a CD+G disc on CDTV, you simply insert the disc into a caddy, shove it into the player, and, when the CDTV audio interface appears, move the cursor to the lower right hand icon - the one that has a television set and a piano keyboard on it. (This same button also launches CD+MIDI discs, but that's a whole 'nuther story). When you click that icon, the player screen vanishes and is replaced with some pictograms of CDTV's front panel buttons (play, stop, etc.).

Unfortunately, you lose all the nifty disc-controlling features of the pretty player interface to get to CD+G graphics, but you can still use your remote or the buttons on the CDTV itself to navigate the disc's tracks. The deck's front panel blue LED display will show you which track you're watching/listening to, but its clock stays on the current time of day. If you pause during play, the graphics tend to break up or vanish, but reappear when play mode is engaged again.

So what kind of graphics will you find on CD+G discs? These pages have some samples I captured with a CDTV and a Time Base Corrector (to freeze the graphics) from the discs I own, which are commented in the

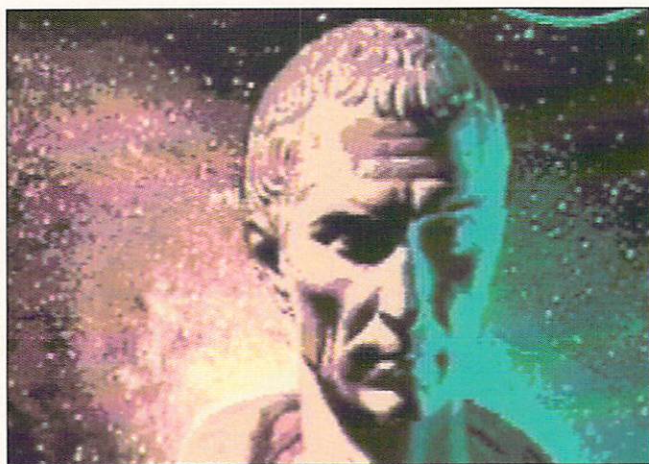


CDTV's '+G' and '+MIDI' icon.



Harv flips over
CD+G (CD audio
disks with
graphics),
playable
on CDTV.





A still from "The Planets", conducted by Zubin Mehta.



From Little Feat's CD+G disk "Representing the Mambo."

lists below. These static images really don't do justice to the swirling, constantly evolving montages you'll find on CD+G discs. Some of them are incredible Multi-Media experiences. Many discs have song lyrics, some in multiple languages.

FINDING CD+G

Digging up information about CD+G (never mind finding the discs themselves!) became an exercise in frustration. There's no list of current discs packed with CDTV.

Most record store personnel I dealt with locally were woefully ignorant about the CD+G titles available (there are close to 50 discs now), even in their own shops. In visiting half a dozen local record stores, ranging from Mom'n'Pop holes-in-the-wall to huge chains (Tower, The Warehouse, Music+), not one clerk, or manager for that matter, knew what I was talking about when I asked for CD+G discs. My shopping turned into a scavenger hunt - digging through the usual bins of thou-

sands of "long boxes" looking for a special yellow CD+G sticker affixed to a scant few titles.

Further, none of the stores had a CD+G capable player deck of any kind. Here's a golden opportunity for Commodore's sales folk to get their act in gear and get CDTVs into these stores, wired up to their audio and video systems. They'll draw customers like moths to a flame. Unlike bookstore clerks who usually seem willing to hike all over their store to help a customer find

Here's the most complete list of CD+G discs I could paste together from various sources:

Alphaville "Breathtaking Blue" Atlantic 81943
 Laura Branigan "Laura Branigan" Atlantic 82086
 Ella Fitzgerald "Ella/Things Ain't What They Used to Be" Sire 26023
 Flamin' Groovies "Groovies' Greatest Grooves" Sire 25948
 Fleetwood Mac "Behind the Mask" Warner Bros 26111
 Emmylou Harris "Pieces of the Sky" Reprise 2284
 Jimi Hendrix "Smash Hits" Reprise 2276
 This digitally remastered collection of songs has wildly psychedelic graphics, like a Fillmore poster come to life. Mandalas, lots of digitized and colorized thematic pictures, and shots of Jimi. Various fades and scrolling are used. Colors pulse to the beat in many songs. No lyrics. An absolute MUST for Hendrix fans.
 Information Society "Information Society" Tommy Boy 25691
 Chris Isaak "Silvertone" Warner Bros. 25156
 Little Feat "Hoy, Hoy" Warner Bros. 3538

Little Feat "Representing the Mambo" Warner Bros 26163

Graphically, the best pop/rock CD+G I've seen so far. Each song is represented by excellent scrolling thematic graphics. Considering the limited color palette of CD+G and its low resolution, this one is quite an achievement. English lyrics display with the graphics for many of the songs.
 Van Dyke Parks "Tokyo Rose" Warner Bros 25968
 Gram Parsons "GP/Grievous Angel" Warner Bros 26108
 Bonnie Raitt "Green Light" Warner Bros. 3630
 Bonnie Raitt "Nine Lives" Warner Bros 25486
 Lou Reed "New York" Sire 25819

A title screen, some digitized scenes, and then lyrics for each song take over the screen. CD+G is capable of 15 "channels" of language information and this disc has multi-language lyric graphics in English, German, Spanish, French and etc. available at screen bottom. Some interesting/depressing New York graphics in some of the songs. The whole album is pretty depressing, but hey, that's Lou Reed. You won't hear this one on the radio.

Various Artists "Woody Guthrie Tribute" Warner Bros 26036

something, most record store clerks actually take offense at a customer knowing about something they don't. Perhaps things are better in your neck of the woods than they are in mine.

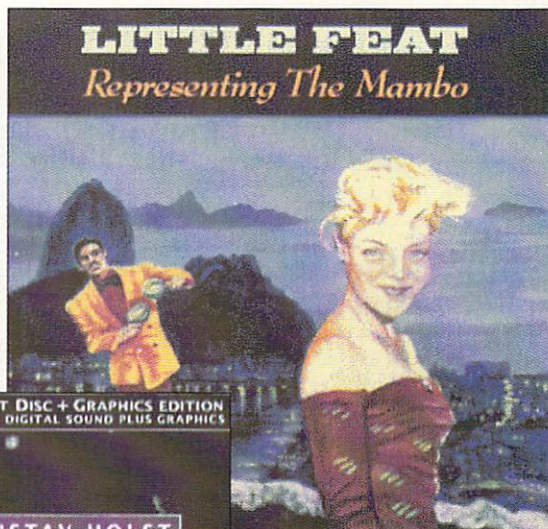
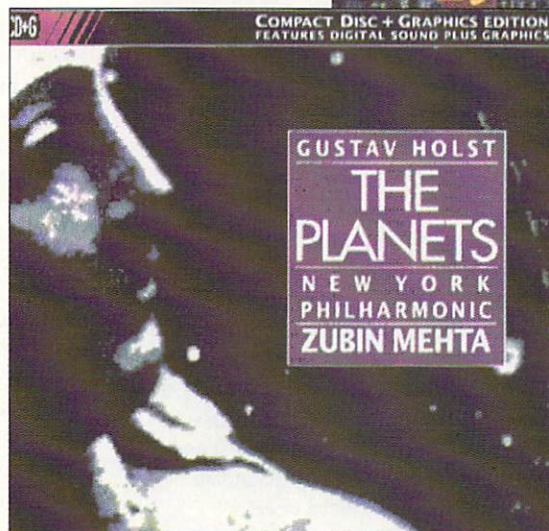
CD+G discs will usually be found comingled with regular discs in the regular bins. Warner Brothers Records, and its house labels, and Warner New Media are the main purveyors of CD+G discs, in fact, they dominate this still-small realm. The older Warner Brothers discs are quickly identified by a bright yellow CD+G sticker on the outside of the standard long box, but not always on the front of the box. The new series of WNM discs come in redesigned long boxes with the CD+G info printed right on it, and on the disc itself.

Besides CDTV, machines which can handle CD+G graphics include (but are not necessarily limited to) high-end consumer decks such as the JVC XLG-512NBK, and CD-ROM based game machines such as the NEC TurboGrafx-16 unit with CD-ROM and Sega Genesis CD-ROM game unit.

Warner New Media

3500 Olive Avenue
Burbank, CA 91505
818-955-9999

Two of the better CD+G discs so far



The jewel boxes of these two CD+G discs only hint at the images inside.

Johann Sebastian Bach "St. Matthew Passion" WNM (Warner New Media) 15010

Ludwig Van Beethoven "String Quartet NO. 14" WNM 15011

Ludwig Van Beethoven "Symphony No. 7" WNM 15008

Beethoven/Liszt "Symphony No. 9" WNM 15009

Anton Bruckner "Symphony No. 9" WNM 15004

Gustav Holst "The Planets" WNM 15001

Whew! I thought Little Feat's album was good - this one is unbelievable. With Warner New Media's second generation CD+G graphics, this is an absolute sonic and visual masterpiece. It goes miles beyond other CD+G discs I've seen. Beautiful, mind-boggling, often spine-tingling scrolling "collages" interpret each of the "planet" movements beautifully. This is a full digital (DDD) recording too. A must have.

Gustav Mahler "Symphony No. 5" WNM 15007

Felix Mendelssohn "Symphony No. 3" WNM 15003

Wolfgang Amadeus Mozart "Abduction from the Seraglio" WNM 15006

Henry Purcell "Dido and Aeneas" WNM 15005

The following CD+G titles were made in very limited quantities and may be difficult to locate:

Anita Baker "Rapture"

Crosby, Stills & Nash "Live it Up"

Frozen Ghost "A Nice Place to Visit"

Honeymoon Suite "Racing after Midnight"

Simply Red "Picture Book"

Phoebe Snow "Something Real"

Donna Summer "Another Place and Time"

Talking Heads "Naked"

10,000 Maniacs "Blind Man's Zoo"

I also found one non Warner's label CD+G disc:

The Home Video Album RCA Victor 60354-2-RC

This disc contains some atmospheric music from motion pictures (Studio Fanfares, Overtures, Intermissions, etc.) plus a few dozen somewhat hokey graphics screens, the intent being to spice up homemade video tape footage by running the video-out of your CD+G player into your tape deck. This disc is usually found in stores' "Sound Effects" bins.



AmigaVision's music requester.

Any boob with \$20,000 worth of audio equipment, a degree in sound engineering, and ten years of audio post-production experience can go into the studio and sync up a tightly conceived and recorded soundtrack for a multimedia presentation. It takes real fortitude, determination, and perhaps a bit of brain damage to tackle the same task with no money, modest talents, a cheap parallel port sound sampler, a couple pieces of used MIDI gear, and an Amiga. But it can be done.

Unfortunately, every musician knows that we tend to be the last ones to get the great tools. If the rest of the world was excavating with a steam shovel, we'd still be scraping the bottom of the Panama Canal with a nail file and spade.

Unless you accidentally grabbed this magazine on the newsstand while reaching for *Industrial Gasses Magazine*, chances are good that you already know the Amiga is the best hardware choice for multimedia development. But even the computer that fired the first shot in that revolution lacks a clear-cut solution for combining first-rate images with first-rate sounds and tunes.

[With the possible exception of Gold Disk's ShowMaker - see OJ's review in next issue's Video column. -Ed.]

The newer, more powerful programs only achieve multimedia max-out when combined with other applications, a slightly costly proposition. The older products tend to be more self-contained, more widely used, and less expensive; but because they are older, they are

inclined to be less comprehensive in their sound support.

Still, all you need is something that works. So, here's a brief, biased whistlestop tour through four venerable and not-so-venerable software tools to combine images, animation, and sound. They're all relatively affordable, as opposed to state-of-the-art, and sport somewhat different feature sets. Maybe one has the right stuff for your project.

AMIGAVISION

Slap Commodore's imprimatur on it and you have an Amiga standard. The world is now full of Amiga owners who know the names and capitals of all the United States, can whistle a Bach two-part invention, and haven't a clue on how to do anything but load the prefab demos in *AmigaVision*.

Even so, you shouldn't eyeball the demos and then avoid the learning curve. The *AmigaVision Authoring System* boasts a logical icon-based interface (in many ways superior to the overrated *Hypercard* on the Macintosh) and an easily understood object-oriented structure that effectively can combine separate pieces of Amiga artistry into polished interactive presentations.

Musically, though, *AmigaVision* is somewhat limited by its reliance on the SMUS (Simple Music) file format. Music composed for *AmigaVision* presentations must be generated in a SMUS-oriented program such as *Sonix* or *Deluxe Music*, or composed as a four-track MIDI file and then converted to the SMUS format.

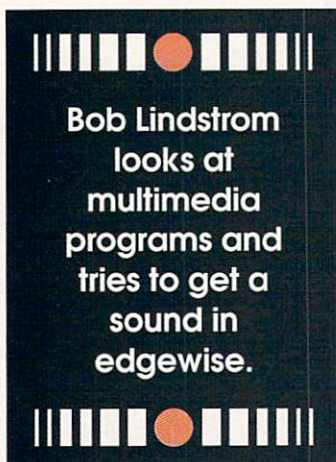
The limits are more severe for MIDI musicians. Only four MIDI tracks are allowed, each with only one voice. So, while you can send MIDI data out of *AmigaVision*, it hardly exploits the capabilities of a good synth. One might almost wonder if they hamstrung the MIDI support to make the Amiga sound better.

DELUXE VIDEO III

Like *AmigaVision*, *Deluxe Video III* from Electronic Arts (EA) is an authoring environment for generating interactive presentations. Though each program has its fans, *DVideo* provides more built-in animation and presentation tools at the cost of a more complex interface. *AmigaVision* is more effective as the multimedia "glue" between the outputs of disparate applications.

Yet, both products have similar sound support. Like *AmigaVision*, *DVideo III* supports only the SMUS file format, but links to MIDI devices in a somewhat more sophisticated way.

DVideo III accepts multiple MIDI channels and program change information embedded in a SMUS file. In short, it supports the level of MIDI implementation seen in EA's *Deluxe Music*, making this the logical companion product if you intend to make much use of MIDI within *DVideo III*.



Support for digital samples, either as musical instruments or sound effects, is similar to *AmigaVision*. It works. It sounds. It syncs.

The non-musical choice between *AmigaVision* and *DVideo III* is one of interface (slightly easier in *AmigaVision*), brush animation routines (superior in *DVideo III*), and the number of built-in effects and features you require (*DVideo* is conceived to be more self-contained overall than *AmigaVision*).

For the musician, it's very much a toss-up for internal Amiga sampled sounds. But *DVideo III* offers better MIDI support.

AREXX

Some of the more knowledgeable among you may be muttering, "ARexx, ARexx," by now. You're dismayed because I seem to be overlooking the power that this interprocess communication language adds to both *AmigaVision* and *DVideo III*.

While a sequencer such as Blue Ribbon Soundworks' *Bars & Pipes* can be controlled through an ARExx port, the limited bandwidth of that port makes it inappropriate for the passing of MIDI information. You can, however, add stand-alone MIDI support to authoring programs that otherwise support only SMUS files and gimpy MIDI.

Still, the need to learn ARExx commands, for a musician who is probably already up to his guitar pick in MIDI jargon, renders this option somewhat less than attractive, in my opinion.

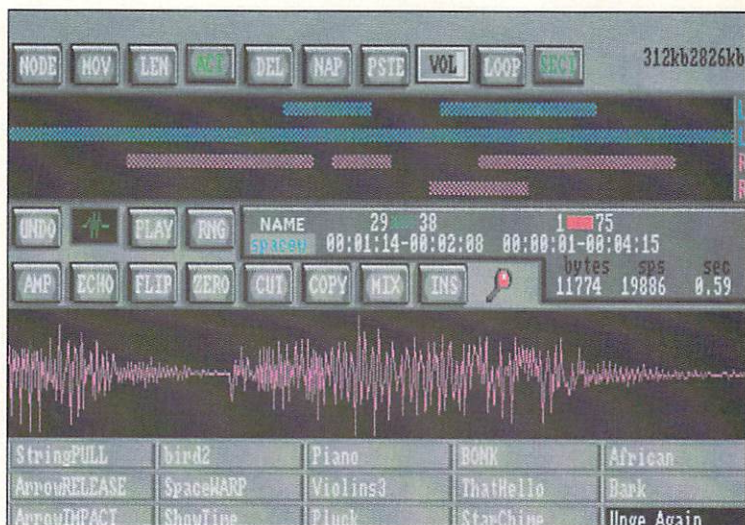
NOISY CARTOONS

If you don't give a dissonance for multimedia interactivity and just want to put cartoons on screen with sound effects and some music, I have a pair of suggestions from left field.

Disney Software's *The Animation Studio* is primarily for creating character animations. Just don't overlook the fact that its Exposure Sheet module permits you to combine SMUS files, digital instruments, sound effects and ANIM files into polished and, more to the point, tightly synchronized presentations. It has a thorough set of internal voice commands, including control over tempo and volume and instruments; but no MIDI.

Even more specialized is *ANIMATION: Soundtrack* from Hash Enterprises. This utility specifically targets the task of recording and editing digital samples, then syncing them up with ANIM files. If you're trying to lip sync dialogue with on-screen images (not a musical task, but, face it guys, we generally end up doing sound effects, too), this is the most complete tool I know.

Samples are recorded within the program, then timed out down to the individual frame per second (with settings for all the film and video rates from 24 fps to 30 fps dropframe). The numbers within the program allow the



Samples may be synchronized with ANIM files in *Soundtrack*.

sound technician to create very precise timing sheets for the animator.

With animation complete, the sound technician/musician returns to *Soundtrack* with a range of options that permit him to align sound and image down to individual phonemes, a must for precise lip syncing.

The limit here is a musical one. Unless you're prepared to digitally sample huge music files, *Soundtrack* is best used for integration of sampled sound effects and dialogue. If you need to add a musical soundtrack as well, you're back to the studio, the engineering degree and the decade of experience.

Or you could just whip out that stereo Walkman and do the best you can.

Addresses

AmigaVision, \$149.95

Commodore, 1200 Wilson Drive,
West Chester PA 19380, 215-
431-9100

DeluxeVideo III, \$149.95

Electronic Arts, 1450 Fashion Island Blvd., San
Mateo CA 94404, 415-571-7171

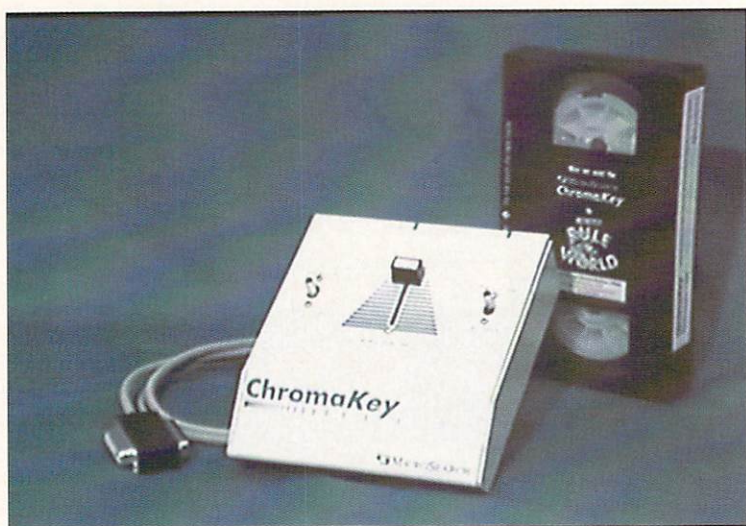
The Animation Studio, \$179.00

Walt Disney Software, 3900 W. Alameda Avenue,
23rd Floor, Burbank CA 91505, 818-567-5360

Soundtrack, \$119.95

Hash Enterprises, 2800 E. Evergreen Boulevard,
Vancouver WA 98661, 206-256-8567





ChromaKey with tape, cable, and blue chromakey cloth.

We video professionals like to think of ourselves as being in the imagination business: You imagine it, and we'll produce it. (Or at least we'll make you think we did!) And one of the more powerful tools we use is the chroma keyer. Its magic can place weathermen in front of weather maps and float an astronaut over the planet Earth. It's all smoke and mirrors, perhaps, but the 'virtual reality' people have little on us when it comes to creating impossible or improbable scenes.

WHAT IT IS

The chromakey process is really very simple. The chroma keying unit looks for the color blue in your video image and removes it, replacing it with video from a second source. Don't confuse chroma keying with luminance keying where the determining factor for replacing the video is the video's brightness level. Although in theory any color can be used, in practice blue is the more predominant because it's so far removed from skin tones (Lime green is a close runner-up). This process was originally only usable with three-tube color cameras with RGB outputs.

Today, composite color outputs are usable because methods of cleanly decoding the signal back into the RGB component signals has become possible. The price is still high, though - often several thousand dollars.

FOR THE AMIGA

Of course, time marches onward and electronic devices get better and cheaper. So I suppose I really shouldn't be surprised that a chroma keyer for the Amiga is not only available, but inexpensive. MicroSearch, a company best known for its *Color Splitter* box for video digitizers, is shipping the world's first desktop video chroma keyer, named appropriately enough, *ChromaKey*. The surprise is that it's much better than I had hoped. For \$395, I didn't expect much, but this little box works well enough to be used for typical garage-video and local cable productions. With careful usage, the industrial and educational market could even put it to use.

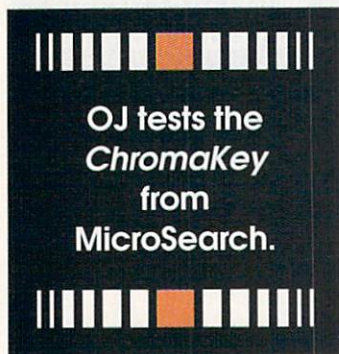
The *ChromaKey* isn't quite a 'normal' chroma keyer, though. It strips the blue out of your first video source, but the second video source *must* be the Amiga. Of course that's hardly a limitation. Connecting between your Amiga and an external genlock, the *ChromaKey* intercepts the necessary signals to process the video. The *ChromaKey* does the color detection while the genlock is used to do the keying portion of the chroma key process - a very nice implementation that cuts the cost.

INSTALLATION

The *ChromaKey* installs easily. Simply follow the manual's diagrams and you'll be hooked up in less than a minute. The *ChromaKey* has its own power supply, so it won't load down your Amiga. That makes it safe for A500 owners. Rummaging around in the box will find several other interesting items. MicroSearch figured you might need a ready source of blue backgrounds, so they included a large piece of blue cloth. They also figured you'd need some computer graphics to use as background graphics, so there's a disk of those as well. And finally, there's a *ChromaKey* tape demo that may have you scratching your head wondering "how'd they do that?" (Read the manual and find out!)

The manual included with the *ChromaKey* is clear and concise, with plenty of illustrations for the criminally klutzy. It addresses all the controls, adjustments, and techniques you'll need to know to produce good chroma key images. You'll even find an appendix that lists sources of chroma key blue cloth and paint.

The controls on the *ChromaKey* are simple and few. There is a large slider for adjusting the key level, and a toggle switch for selecting regular genlock operation or chroma key mode. Another toggle inverts the keying effects. The connections are also few in number: one BNC for the video input, one for the output, a power connector, and a special connector for the cable that hooks up between the Amiga and your genlock. (Take note: the *ChromaKey* does not work with internal genlocks or on *Video Toaster*-equipped machines, though MicroSearch is working on new versions that will.)





"MotoOran" - OJ has always wanted to ride Jim Sachs' motorcycle!



The author points out important results of the latest satellite pics.

USING THE CHROMAKEY

Using the *ChromaKey* can be a little tricky. That's not due to any problem with the *ChromaKey*; it's a problem with every chroma keyer. The blue component of a color video signal is inherently noisy, which makes keyed edges ragged or 'fringy.' This can be reduced by careful lighting and color balance of both the lights and the camera. A great deal of caution must be used to properly set up a scene for chroma keying. I must admit that the *ChromaKey* seems to be a little less touchy than some more expensive units I've used, though.

There are several steps to setting up a chroma key scene. First, make sure you have a blue background; preferably all the same color blue - same tint, same brightness. If using a cloth, try to remove wrinkles or sags. Light it evenly and brightly. Put your subject in front of the background and light it separately. Be very sure that the subject doesn't cast a shadow on the background. That creates a darker blue than the rest of the background and might make a noisy key. Angle the lighting so the shadows fall short of the background. Remember that blue clothing will also key out, so stay away from that color unless that's the effect you're looking for. Make sure your Amiga-produced background graphics cover the screen from edge to edge, or you may ruin the illusion you're trying to create. After all these things are in place, you need to adjust the *ChromaKey* itself.

TWEAKING THE CHROMAKEY

The most obvious adjustment to make is the key level. Moving the slider will take you from all video to all graphics. Somewhere in between you'll find the blue disappearing and the graphics showing through. Careful adjustment will produce an image with very little fring-

ing around the edges. If this point isn't easily achievable, then your lighting is probably the culprit. Examination of the subject's image will show a leading or lagging shadow or outline. This can be reduced by opening up the *ChromaKey* and changing the Delay adjustment. This correction is necessary as no two brands of genlock have the same amount of key delay. Charts and diagrams are included to make this easy, with suggested settings for the more popular genlocks. A Hue adjustment is also possible to make sure the *ChromaKey* is keying on the same hue of blue that you are using. With these tweaks completed, you should now have the imaginary image you were trying to complete.

I expect to see some really interesting videos put together with a *ChromaKey*-equipped Amiga. Remember the old tv show *The Invisible Man*? (Okay, so I'm showing my age!) My favorite scene was where he'd unwrap the bandages from his head and there would be nothing there! He merely had his head in a blue cloth bag. Blue gloves under his white ones created the same illusion for his hands. Godzilla stomping over Tokyo is another possibility with your *ChromaKey*. Let your imagination run wild! I predict that this will quickly become the one of the more entertaining and useful video devices you'll own. Reality is virtually just around the corner with the *ChromaKey*.

NOTE: The screenshots were done using DCTV to digitize a videotape of the *ChromaKey*'s output.



ChromaKey



\$395.00

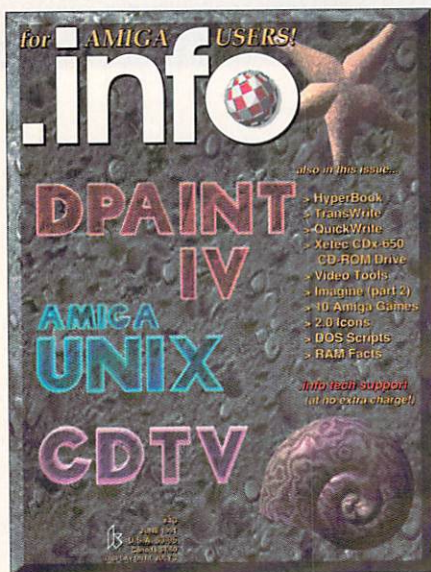
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Rocky Mountain High

THE 1991 AMIGA DEVELOPERS CONFERENCE

by Mark R. Brown

The 1991 Amiga Developers Conference was held the first week in September at the Denver Marriott City Center, just a few blocks from the U.S. Mint. I was there. So were 265 other attendees from six countries.

Commodore handed out over 800 pages of documentation and four disks of sample code to attendees. There were about four dozen formal sessions, concentrating on new hardware under development (top-secret stuff!), CDTV, international marketing, 2.0, and other topics. The whole works was kicked off with a barbeque Tuesday night, and a speech by CATS head Jeff Scherb early Wednesday morning. I really liked the barbeque.

We were told that the A3000 Power Up program had been very successful - so successful that it caused a temporary shortage of 3000s. We were also told that 3000s are substantially outselling the A2000. Video and presentation markets are the emphasis of present Commodore ad campaigns, and the Amiga has about 70% of the video computer market. Commodore is now targeting the corporate training and kiosk markets with both Amiga and CDTV.

Commodore announced the release of the Workbench 2.0 *Enhancer Kits* with 2.0 ROM, disks, and manual. It will be available by the time you read this. Rev 2.0 ROMs will also be 'phased in' to new units.

Commodore will bundle *Grolier's New*

Electronic Encyclopedia and Psygnosis' *Lemmings* with new CDTV units for the Christmas season. CDTV sessions demoed Commodore's CDXL straight-off-the-CD data technology, which is capable of displaying 1/4 screen, 12 frame-per-second video with stereo audio in real-time. That may not sound like much, but it's more than CD-I can deliver, and CDXL demos much better than it sounds. With the right software, it should really help sell CDTV. Commodore spokespeople said they are 'keenly aware' of the suggestions of the public and press for improvements and additions to CDTV, and there was much talk of a 'CDTV Family' of products. The keyboard, mouse, and disk drive for CDTV will be coming 'after the first of the year,' and the new IR trackball should be available by the time you read this. There will be an intensive advertising 'test campaign' in the San Francisco Bay area for Christmas, with CDTV slated to be in 10-15 major urban markets by the holidays. If you can't find CDTV in your area, call 800-662-6442 for dealer information. Mail order CDTV software is available by calling Commodore at 800-468-CDTV. CDTV units are also available by mail order through Hammacher-Schlemmer and Montgomery Ward.

85% of Commodore Amiga sales are overseas, and many sessions concentrated on 'localization' of products for the international market. CBM is helping developers find translators for software and manuals and has created a new 'locale.library' which will considerably speed up the software translation process. They are also assisting developers in their efforts to link up with European distributors.

But did Commodore announce any hot new products, you ask? There are, as usual, many top-secret new machines, boards, and chips under development behind the doors of the Commodore Engineering Department, and some prototypes were shown and discussed at DevCon. We can't talk about

them here, since we signed a non-disclosure agreement. But the folks we talked to assured us that Commodore is always working on the next generation of machines, and they are keenly aware of the need to compete against other computers with enhanced capabilities, such as 256 color VGA-type displays, 24-bit graphics, and 16-bit CD-quality stereo audio.

Commodore is doing really, really well in Europe. They turned a profit this fiscal year, and posted over a billion dollars in sales for the first time since the C64 days. Unfortunately, U.S. sales don't seem to be following along. Though Commodore has some good plans for the video, education, and presentation specialty markets, don't expect to see a big general-purpose marketing and advertising push in the U.S.

With CDXL, CDTV is a CD-I killer. It will sell CDTVs when consumers see software that takes advantage of it. There are now 50 CDTV titles available, with 50 more by Christmas, and 100 more in first quarter 1992. Remember, software drives hardware sales.

Workbench 2.0 is out, and looks great. It should do a lot to improve the Amiga's professional image.

Impressive new hardware is under development. The CBM engineering department is again in the process of proving themselves the top wizards in the computer industry.

In the meantime, we all own the best computers available on the third planet from the sun. Let's put 'em to good use.

For Subscribers Only! For more DevCon News That Just Wouldn't Fit, see this issue's WrapUp! In the Wrap: Fun Things We Did in Denver; 1991 Developers' Choice Awards; New 3rd Party Products Announced.



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CONTENTS

page 54

UNIX: Is It For You?

Daniel Barrett finishes his discussion with Part II: For The Programmer.

page 58

Quarterback Tools

David Martin reviews this indispensable Amiga utility program.

page 60

Point/Counterpoint

Nick Sullivan and Chris Zamara debate the relative virtues of the Workbench and the CLI.

page 62

Checking Out Programs

Jim Butterfield warns that Hallowe'en and Christmas may sometimes be the same thing.

UNIX: Is It For You?

Part II: For The Programmer

by Daniel Barrett

In Part I, we discussed some differences between the UNIX and Amiga operating systems that affect all users. We now discuss issues relevant to programmers and power-users: sophisticated UNIX use, programming, and systems administration.

The UNIX Power User

UNIX has lots of opportunities for users who like to get the most out of their computers. Most UNIX programs, including the shell user interface, are highly configurable. Some of them even let you define the behavior of every single keystroke and mouseclick (or you can accept the defaults).

Once you have mastered various UNIX programs, the power doesn't stop there. The UNIX shell lets you build sophisticated 'pipelines' that send data from one program into another. As an example, let's find out the most common first name of all the users on a UNIX machine. In a single command, you can get a list of all user names from the file "/etc/passwd," extract the first names, sort them, count adjacent identical names, sort the resulting numbers, and then find the largest:

```
Command:  cut -d: -f5
/etc/passwd \
| cut -d' ' -f1 \
| sort \
| uniq -c \
| sort -nr \
| head -1 \
```

Response: 12 John

(The backslashes '\ ' mean "continued on the next line"; I used them to emphasize the different components of the command.) The command probably looks cryptic to you now, but this kind of operation quickly becomes second-nature as you use UNIX. Because all of the above programs (cut, sort, uniq, head) come standard with UNIX, you can expect the command to work on almost anybody's UNIX machine.

How does one become a UNIX power user? Mainly by exploring the system directories and becoming familiar with many programs. In my experience, if you spend time learning a new UNIX utility, you gain the time back (and more) in your first week of use.

Program Development

The most popular UNIX programming language is C. In fact, UNIX itself is written almost entirely in C. (Some

assembly required.) Many people consider UNIX to be one of the most versatile and productive programming environments available, for several reasons. First, it has many programmer's tools. Second, it does not allow individual programs to crash the machine. Third, the source code for many UNIX utilities is generally available.

All commercial Amiga C compilers come with a utility called *make* which helps the programmer keep track of large programs. Would you like to guess where *make* originated? It was written for UNIX by Stu Feldman of Bell Laboratories. UNIX provides a veritable arsenal of programmer's tools. There's *lex* and *yacc* to help you write complicated input routines, *sccs* and *rcs* for maintaining multiple versions of programs, *lint* to spot-check your C code for common errors, *ctags* for jumping quickly between functions in your text editor, *ctrace* for tracing program execution, *prof* for identifying the slowest parts of your code, various debuggers, and much more. Combine these tools with a powerful shell and a multitasking operating system, and you have one *serious* programming environment. (Some of these tools have been ported to the Amiga and are available on Fish Disks.)

Virtually Speaking...

UNIX has three important features for programmers that AmigaDOS does not: memory protection, virtual memory, and resource tracking. These features come at a price, however: UNIX has much more overhead than does the Amiga kernel, and therefore runs more slowly.

Memory protection prevents one program from affecting the memory owned by another program. On the Amiga, this is not true: programs are free to scribble all over each other's memory. This is why individual programs are capable of crashing the computer (the famous guru meditation). When a UNIX program crashes, it doesn't bring down the whole machine; instead, UNIX takes a 'photograph' of the program's memory, stores it in a file, and then terminates the program. This file, called a 'core dump,' may now be examined with a

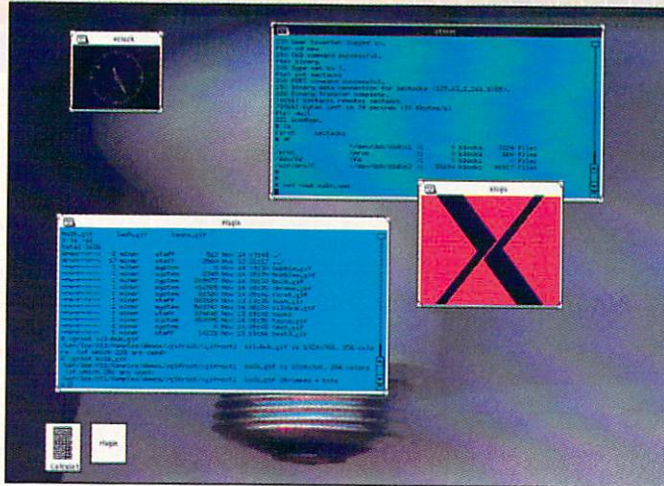
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debugger to determine the cause of the crash.

Virtual memory allows a program to access more RAM (Random-Access Memory) than actually exists on the machine. This is done by causing a section of your hard disk to act as if it were RAM. The operating system moves running programs between the hard disk and true RAM as needed.

Resource tracking means that the programmer doesn't have to free all the resources that he allocates. When a program exits, all of its allocated memory, files, devices, and so on, are deallocated automatically. This means that the operating system can kill a running program and be sure that everything gets cleaned up properly. On the Amiga, this is not the case: programs are required to keep track of their own allocated resources and explicitly deallocate them. There is no completely reliable way to make the operating system kill a running program, although some clever programs such as *xoper* make a good attempt.

According to rumors floating around the Amiga community, the Amiga operating system may one day incorporate memory protection, virtual memory, and/or resource tracking. However, the addition of some of these features would cause serious incompatibility with many existing programs, and some people do not want to sacrifice the CPU



Color XWindows running under UNIX VSr4.

cycles that these features will require. Let's hope that Commodore comes up with a solution that makes most users and developers happy.

Systems Programming

Like AmigaDOS, UNIX provides programmers with hundreds of system functions and structures for manipulating UNIX-specific information. For example, if you want to learn the username of the owner of a file, you can call `stat()` to find the user ID number of the owner, pass that value to `getpwuid()` to look up the user's name, and then print the answer. (See listing.)

A major programming advantage of UNIX is that the operating system itself may be modified conveniently: some or all of its source code comes supplied with the UNIX distribution. Recompiling the kernel (the low-level part of UNIX) requires just a few commands. The catch is that the kernel source code itself can be difficult to understand.

Systems Administration

Remember when you first started using an Amiga? Although you could do some fun things right away, it probably took you a while to set up the Amiga just the way you like it: modifying the *Startup-Sequence* and the *MountList* files, setting up your printer with *Preferences*, changing the screen colors and fonts, installing commercial and public domain software packages, organizing files on the hard drive, making a search path, and so on. A similar process must be done on almost any other computer before you feel completely comfortable using it.

Under UNIX, this process of 'systems administration' is much more complex than under the Amiga operating system, for several reasons. First of all, there is no consistent method for tailoring a UNIX machine. For example, printer setup is done totally differently from network management or electronic mail configuration. There's no equivalent of *Preferences* on UNIX. (Some companies have tried to make such programs, like IBM's *smit* program for AIX UNIX, but these have, interestingly enough, been accused of being

```
/* Given a filename as argv[1], print the name of the owner. */

#include <stdio.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <pwd.h>

main(int argc, char *argv[])
{
    struct stat info;      /* A buffer for file information. */
    struct passwd *pw;     /* Pointer to to user information. */

    if (argc != 2)
        fprintf(stderr, "Usage: %s filename", argv[0]);

    else if (stat(argv[1], &info) < 0)
        fprintf(stderr, "File %s does not exist.", argv[1]);

    else if ((pw = getpwuid(info.st_uid)) == NULL)
        fprintf(stderr, "I can't find the owner's name!");

    else
        printf("The owner of file %s is named %s.",
```


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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

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.

New Disks

FD66: GameTease2 - Contains playable demos of ChuckRock and Torvak
FD65: GameTease1 - Contains playable demos of Atomino and Turrican II
FD64: Games - Wizzy's Quest - a "great" 50 level game with great graphics, Cubus - a 3-dimensional Tetris type game (rotate and move in 3 dimensions). Husker Du - Colors and pattern rather than shape in this Tetris-esque game; 5 screens and 3 levels of difficulty. Requires Fat Agnus (1 Meg of Chip)
FD63: Quizzsho! - 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: PomPom Gunner. An extremely smooth and well done World War II gunner simulation. Requires 1 meg chip memory.
FD61: Games Solitaire; great graphics, plays two versions. Kludge: an interesting piece of eye candy. Extreme Violence; 2 player kill or be killed game. YATC; A Tetris clone with Artificial Intelligence. Genesis; create realistic 3d fractal worlds.
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?
WB97: Molecule3D - An Interactive 3d solid modeling program for molecules; creates stunning 3D pictures of molecules. Disk also includes a mailing list manager.
WB96: Dupers - Contains XcopyIII & Nib which will backup copy-protected programs. FreeCopy removes copy protection from several programs, and SuperDuper will crank-out fast AmigaDOS copies.
WB95: Checkbook Accountant 2.0 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.
WB93: Workbench Extras #2 This disk contains the utilities that Commodore would have shipped with the Amiga; VirusX4.0, Snap, FixDisk (recover corrupt/deleted files), Disk Optimizer (floppy & hard), MachIII (screen blanker, hotkey, mouse accel., macro, clock utility), GOMF (a gurbuster) and PrintStudio.
DD80: VFont System - A font rendering system that extends the Amiga so that it will be able to use vectorized outline fonts. Fast rendering, rotating, and sizing. Use in your own programs!

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 graphic interface. Play time several weeks!
FD11: Las Vegas and Card Games - Las Vegas Craps - The best Las Vegas Craps simulation every written for any computer. Contains extensive HELP features, Also Thirty-One, VideoPoker and more.
FD12A, FD12B: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great game play. Counts as 2 disks. Req. 1Mb and two drives (or hd).
FD13: Board Games - contains multiplayer Monopoly, Dominoes, Paranoids, and others.
FD14: Dungeon Master Hints and Arcade Games - DM maps, spells, item location, and hints and more, also on this disk, Hball - an arkanoid/breakout type game, Trix - a Qix type clone.
FD17: Educational Games - This disk includes several games for the younger members including geography, math, science, and word games, also includes Wheel of Fortune.
FD20: Tactical Games - MechForce(3.72); A game that simulates combat between two or more giant, robot-like machines. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.
FD26: Arcade Games - Marble_slide, this is a truly commercial quality game. Similar to a Lucas game named PipeDreams,

excellent playability and entertainment. Mutants, a small version of the arcade game of the same name, also SuperBreakout a pong/arkanoids type game.
FD27: Arcade Games - This disk is loaded with some great games. Includes, Raceorama a great racing car game with ten different courses, MiniBlast a helicopter gunship type clone, Shark in the same class as frogger, and SBreakout the original breakout with more.
FD29: Shoot'em up's - WWII - you're the pilot of a WWII plane flying through enemy territory, you've just been spotted, good luck on your mission, SpKiller - try and penetrate enemy lines with this game, and Retaliator - another great game.
FD31: Games! - Air Traffic Control - a good ATC simulation 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 modern, 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 wetroids a wonderful version of asteroids with a hilarious twist.
FD35 Omega (v 1.3) - A new outstanding dungeon and outdoors adventure game in a similar vein as hack, rouge, and



moria. This version is considerably faster and better 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-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.
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...
FD49: Chaos Cheats - This disk contains an everything you wanted to know about cheat set for Chaos Strikes Back, including full maps, spells, object locations, super characters and more.
FD50: Submarine Game - Sealance, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.
FD52: Classics Games - PetersQuest a well done Mario brothers type of game, Jymbc a two player missile command clone, and Vstank a tank commander game.
FD53: Great Arcade - On this disk is a wonderful implementation of the ever popular classic arcade game Defender, also contain Air Race a WWII flying ace arcade game, and Psycoblast new creation idea game.
FD56: Arcade - Includes SpaceWar, HueyRaid a well done helicopter arcade game, and PowerPong a great expanded pong game.
FD57: Arcade Games Includes 2 true commercial quality games. MegaBall is the successor to Ball; features 5 full musical scores, multiple levels and addicting game play. Gravity Attack is a psychadelic trip through several different worlds--each distinctly different.
FD58: GAMES! Includes Steinschlag; a great Tetris clone from Germany with music. SCombat: simulate battle between up to 40 players & monsters. Imperium Romanum: Battle up to 4 players for control of the Mediterranean in this Risk-esque game.
FD59: Game Potpourri Xenon III is an almost exact clone of the commercial game of the same name...a great shoot'em up. Crossword will take lists of words & automatically generate crossword puzzles for any Epson compatible printer.
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, TexED(v2.8) an enhanced Emacs type editor, and a spell checker.
WB20: General Interest - DiskSalv V1.42 a disk recovery

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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 powerful features.
WB27: Nagel - 26 Patrick Nagel pictures of beautiful women.
WB29: Graphics and Sound - This disk has several different Mandelbrot type programs for generating stunning graphics. Includes, MandelMountains - a realistic terrain generator, Fracgen - generated recursive fractals from user input, Mandelbrot and Tmandel - two fast mandelbrot generators, also Mostra - the best IFF display program to date, will display ALL IFF's including Dynamic HAM, and Sound - a great IFF sound player, will play anything. Try this disk!
WB33: Circuit Board Design - several terrific routines for the electronic enthusiast, including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for insertion into schematics.
WB34: Utilities - Several well done utilities, some will require moderate knowledge of a CLI or Shell for setup, Chatter Box - this one will play any user defined sound after any event (ie. disk insert, mouse click, disk removal...), Artm - The Amiga real time monitor, gives you full control of the Amiga OS, very powerful program, Helper - help program to make learning the CLI easier, and more!
WB35: 3d Graphics - This disk contains several neat programs to use with your 3d modeling/raytracing programs 3dFonts - Full vector font set for use with 3d programs, FontMaker - make 3d fonts from any system font, Make3DShape - create 3d shapes from any image, DumptolIFF - create 3d animations preserves pallet, and

WB35: 3d Graphics Cont. - 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 workbench screen, and RayShade - a very good raytracing program, create your own beautiful 3d graphic models with this one! **WB37: Educational** - Educational games and puzzles that cover math, geography, spelling, and books. Ages 6 - 15

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

WB46: Clip Art - HighRes clip art with the following motifs - embellishments (borders, dodads, ...), people, and transportation.

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

WB49abc: Animation Sampler - On this three disk sampler set (counts as two disks) are some of the best animations that

display midi info, file sequence player, and a few scores.

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

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

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

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

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

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 (bubler, 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 Ckbaacct - the most complete checkbook accounting program going, LCDCalc - this well done calculator has a very large display and operates from the keyboard or mouse, Mileage master - monitor your automobile mileage with this mileage log, Grammar - a grammar checker, and Worldtime - find out what time it is in up to 50 global cities.

WB81: Great Applications - DataEasy a very easy to use, database program. Don't let the ease of use fool you, this is a very full featured database program including full printer control for address labels and mail merge applications. Also includes, TypeTut a good typing tutor, FLC 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, Juggler1, 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 lff 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, PopCL14 - The latest of a must have utility.

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

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

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



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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), Lhwpac(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 start-up sequence, plus 25 more programs.

DD62: Basic and Xscheme - Cursor - a full featured Amiga Basic compiler, sbasic and ttext - 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 menus 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 system configuration, memory usage, load and many other important utilizations.

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.

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have been created over the last three years. Several examples of "Movie" type animations some with spectacular raytraced reality (coolroby, watch, spigot and egg). Also several european style or "Demo" animation with incredible graphics and outstanding electronic music (akrilight, copersine, doc, dps2010, impact, and logodemo). These truly show off the creative edge of an Amiga!

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

WB53: Graphics - Raytracing programs generate absolutely stunning realistic looking planes, rockets, buildings..., and surreal images often consisting of highly polished spheres and objects. C-Light is the most powerful EASY-TO-USE of it's kind we have seen to date. This is easily better, and more full featured, than similar commercial programs costing in the hundreds of dollars. Also, sMovie - a full featured video text titler similar to ProVideo, Broadcast Tittler. Great video scrolling, wipes, special effects, and more...

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

WB55: Application - XCopyIII - a full featured disk copier, make backups of write protected disks, RoadRoute - find the quickest route from one city to another, highway description included, Diary - a diary program like "Dougy Howard M.D.", Cal - a calendar program, Magman - a database tailored to maintain records on articles and publications.

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

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

WB61: Intermediate Utilities - Includes programs to help to 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 midi programs to midi, a midi sysex handler, a midi recorder with timebase,

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'un-UNIX-like' by members of the UNIX community.)

What is the reason for this inconsistency? Realize that UNIX was written by hundreds of different people over a 20-year period. Although many of the individual programs were carefully crafted in advance, the overall framework was not. UNIX was originally written by programmers and for programmers.

Another reason that UNIX administration is more difficult than the Amiga's is that there simply are more things to administrate! You have multiple printers being used by many machines simultaneously, network connection and data routing, electronic mail, automatic lookup of other computer addresses ('name service'), adding and removing users, automatic startup of programs at regular intervals, system accounting and usage statistics, security tools, and more. And don't forget that these services may be used by many users at once, adding to the complication.

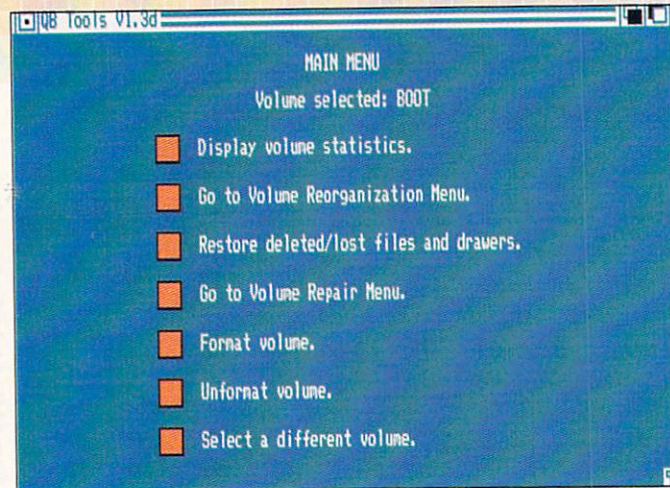
Don't let this difficulty discourage you from using UNIX! If you are a reasonably intelligent person with programming experience who likes to learn about computers, then UNIX systems administration is within your abilities. If you encounter problems that you do not know how to solve, don't panic. UNIX has been around long enough that many problems have already been solved by someone else. If you have access to USENET or other electronic news services, you will find thousands of people willing to help you.

Do I Need UNIX?

Serious programmers should definitely check out UNIX. With its large selection of languages, tools, and shells, UNIX can be a great development environment. Amiga power users may also find UNIX to be useful and fun, especially if they like to explore and tailor the computer environment to its fullest.

Suggested Reading

Assuming that you already know C, here are some good UNIX programming books. *Using C On The UNIX System* by David A. Curry (O'Reilly & Associates, Inc., 1989) is an excellent



QuarterBack Tools main menu screen

guide containing many example programs. This book is one in a series of 'Nutshell Handbooks' that are enjoyed and recommended by many UNIX programmers. After this introduction, check out *Advanced UNIX Programming* by Marc J. Rochkind (Prentice-Hall, 1985) for more in-depth information. Low-level operating system information may be found in *The Design Of The UNIX Operating System* by Maurice Bach (Prentice-Hall, 1986). To learn more about systems administration, see *UNIX System Administration* by David Fiedler and Bruce Hunter (Hayden Book Company, 1986). ■

About the Author

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Quarterback Tools

by David Martin

If you were to ask my brother Andrew about the kind of software that I buy he'd probably respond with a sour face and spit out the word "Utilities!" I must confess that this is very true. Much to my brother's disappointment, I tend to purchase utilities more than anything else. This doesn't mean that I'm not any fun - I do

have some favorite games (i.e. *Lemmings*, *Pocoman*), but I'm always looking for something to make my computing life safer and easier.

As a programmer, the protection of my data is very important to me. That's why I back up my hard disk on a regular basis. But even though backing up software *is* important, there have been times when I needed more than just a good backup to save a file or program. That's where a product like *Quarterback Tools (QBT)* comes in. Just having it around makes me feel a little bit safer. Imagine accidentally deleting the newest version of the source file for a program you're writing, or getting the dreaded "Read/Write Error" requester. What would you do? Panic? No, you would use *QBT* to save the day!

Vrooom!

One of *QBT's* major attractions is its ability to reorganize a disk so that data access is faster. This is done by rewriting the files so that they are not fragmented. Fragmented files have their data blocks spread all over a disk, but once they are reorganized they appear as one long list of contiguous blocks. This speeds up data access by reducing head movement.

Using *QBT's* reorganizer is easy. First you select the type of reorganization you wish to perform: Workbench or CLI. The Workbench version optimizes access to icon files, while the CLI version treats all files equally. Before starting the reorganization, *QBT* suggests that you back up the disk you wish to

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reorganize, just in case there's a power failure or other disaster halfway through.

The actual reorganization process begins after an integrity check of the disk, which is provided as a means of making sure the media being written to is valid. Failure to check the media can result in disaster during the reorganization. By doing this test, *QBT* can lock out bad blocks and prevent them from being used.

After the integrity check, *QBT* begins reorganization. This process can take a considerable amount of time, depending on the size of your disk.

File Restoration

QBT also offers features that let you recover lost or deleted files and directories. This "undeletion" feature saves your keister in those situations when you've misused a wildcard or accidentally deleted that all-important source file you worked so hard to perfect. Unfortunately, recovery of deleted AmigaDOS

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files under the Original File System is not 100% reliable due to the way AmigaDOS (V1.2 and V1.3) works. Some loss of data may occur, with one or more files being unrecoverable. Overall, *QBT* works well when undeleting, though it works better with FFS files.

Disk Repair

QBT can also be used to repair damaged AmigaDOS disks. Using this utility, you can recover many lost and damaged files or directories that may be corrupted due to bad characters in a file name, illegal date/time stamps,

bitmap errors, checksum errors, etc. You can even have *QBT* mark unreadable disk blocks as "out of service," preventing them from being used to store data later.

The repair process is quite extensive, but not even *QBT* can save every piece of data on a disk. Once again, 100% reliability cannot be expected because of the nature of the media. The manual fully explains the limitations of the program, but overall it does a fine job of repairing most problems that occur.

Disk Formatting

QBT's disk formatting feature lets you format disks in a safe manner, according to the manual. How is this accomplished? *QBT* does not actually format the disk - it only modifies the disk's root and bitmap blocks. After doing so, AmigaDOS now thinks the disk contains no data. (Actually it does contain one small file called 'QBT.FMT' which contains the old root and bitmap block information. Using the data in this

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file, *QBT* can perform an 'unformat.')

The whole idea here is that *QBT* never completely formats the disk. It performs a high-level format similar to AmigaDOS's 'quick' format option. The lack of a low-level format bothers me, since without one a disk can continue to accumulate errors that would otherwise be taken care of. This does not mean that *QBT* does not support a full format: it does, but only when a disk is invalid.

I personally do not think that it is wise to substitute *QBT*'s format as a replacement for the AmigaDOS format command. Instead, keep both at hand and ready-to-use as their purpose suits you. The special formatting methods used by *QBT* are the only features of the package that I will not be using myself.

ARexx Support

Like most powerful Amiga programs of the past year, *QBT* offers an extensive ARexx port that allows you to fully automate its execution. This means you can schedule reorganizations after backups, etc. There is no end to the uses you can think up for this feature. ARexx support is definitely a welcome addition.

Conclusion

As I mentioned at the beginning of this review, the protection of data on my disks is very important to me. *Quarterback Tools* gives me some measure of safety, and a great deal of peace of mind. So my brother is out of luck again, since I'm off to the store to buy my own copy of *Quarterback Tools*. I can just see his face now: "Blech!" ■

Point/CounterPoint

Workbench vs. CLI

by Nick Sullivan and
Chris Zamara

Normally in this section, we would present a technical topic in the form of a standard article. Some topics, however, are best explored in a dialogue of opposing viewpoints. While the authors for the most part enjoy an agreeable, collabo-

rative working relationship, there are a few bones of contention that serve to make life a little more interesting. Here we thrash out one of these.

Long before the mouse and icons of the GUI (Graphical User Interface), computer users typed commands at consoles and saw text printed out or displayed on a screen. MS/DOS is an example of a command-based user interface, while the Macintosh uses a GUI. On the Amiga, we have both: the CLI/Shell for commands, and the Workbench for point-and-click. Which is better? Is the GUI really a step forward, or just a gimmick? A friendly debate may be a good way to explore some of the arguments on both sides...

Nick: Sure, Workbench and its icons can be helpful, to beginners - just as children learn to read with the aid of a picture-book. But once you know a bit about the computer and the filing system, it's only through the command interface that you can realize their full potential.

Chris: Just because something is easy to learn doesn't mean it's useful *only* for beginners. Maybe you *can* do more from the CLI, but for 95% of what you do, the Workbench is easier, faster, and more intuitive.

Nick: Intuitive? That's a word I hear a lot. Who says that pictures are more intuitive than words, once you've mastered the concepts? I don't find anything un-intuitive about typing a command or a command-line option, thank you very much. As for easier and faster, baloney! Given a well-written set of shell aliases, I'll match your mouse clicks with my command lines any day of the week.

Chris: Well, I don't know about you, but it seems to me that dropping an icon into a drawer to move a file is a just wee bit more intuitive than using a 'Rename' command and typing the same file name twice. And a fair bit quicker, too, especially for long filenames. This is just one example, of course, and I can supply several more if you have the time.

Nick: Come on, Chris, a symbol is a

symbol whether it's text or graphics. And while you're fumbling around with both the mouse *and* the keyboard, I'll be done in half the time, even if I do have a few extra characters to type. You'll still be struggling to rename that file, while I'm down sunbathing in Rio!

Chris: Just the place to go if you insist on burying your head in the sand! But seriously, who *needs* two different input methods? I plop a disk in the machine, and I instantly see what it's called without typing 'Info' or whatever command you need these days. A simple click shows me what's there, and the program I need is up and running in seconds. No 'Dir' or 'List' to see what's on the disk and what the files are called. And I can always tell programs from data by the look of the icons!

Nick: You mean 'tools' from 'projects'...

Chris: I was translating for your benefit.

Nick: Well, I agree with you. Surprised? In the circumstances you describe, the Workbench may have certain advantages. But - and this is a big 'but' - those circumstances aren't typical operations for me. Normally, when I want to run a program, I type its name - I don't have to go looking for it. The kind of browsing you're talking about is a special case, and even for that there are several utilities that give me functionality comparable to the Workbench - if not quite as appealing to the eye.

Chris: You can talk all you like about specific programs that you can run from the CLI, but from an overall perspective, life in the Workbench is just more pleasant. Tasks seem easier and more efficient, and I prefer to work that way even if a speedy typist *could* keep up to me using a flurry of CLI commands.

Nick: Let's face it, Chris: the Workbench is only useful if the only thing you do is run application programs. The serious computerist - and I'm talking about hobbyists here, too, not just professionals - needs the flexibility you only get with a command line. Want an example? How about pattern matching? How about searching your

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documents directory for that particular fragment of text? It all goes back to what I said in the first place - if you're a novice, the Workbench may be all you need. Otherwise, uh-uh.

Chris: I didn't say you should *never* use the CLI. But if you don't take advantage of the Workbench, and simply stick to typing commands, you're missing out on a whole lot of what makes the Amiga great. If you want an MS/DOS machine, why don't you buy one? The fact that we can use either type of interface - or both - is what gives us the best of the Macintosh *and* the PC. And if command-based computing is superior to the GUI, why is the world turning away from it? Can you say, "Windows?"

Nick: I thought we were talking about *using* computers, not selling them. Just because IBM and Microsoft can see the profit potential behind the "GUI" buzzword, doesn't persuade me it's a better way of doing things. Besides, I like the

Amiga for the *real* advances it represents - the multitasking, the custom chips. The Workbench is just window-dressing (or should I say, "Windows"-dressing), as far as I'm concerned!

Chris: Sneer if you must, but marketing only works if it appeals to what people want. Look what happened to the IBM PCjr - it doesn't matter what IBM sells if it's no good. Let's face it - the GUI is the way of the future, and so is Workbench on the Amiga.

Nick: Okay, I'll tell you the truth: I do use the Workbench from time to time, and I'm glad - really - that Commodore realized the importance of a GUI for the Amiga. I'll even grant you that some users might never 'graduate' to the CLI or the Shell - and never realize that they've missed anything. But I still maintain that if you want to exploit the full power of the Amiga, the CLI is the only way to go.

Chris: Well, to tell *you* the truth, I don't

use the Workbench exclusively myself. When I'm programming, for example, I use the Shell. And there *are* some things it lets me do that would be impractical or even impossible from the Workbench. But that's more a reflection of the limitations of current software than of the Workbench *per se*. Macintosh users get along quite well without a CLI - without a command interface - because software has evolved in that environment. On the other hand, I wouldn't give up the CLI on my Amiga for a whole diskful of icons!

Nick: I guess only time will tell whether Workbench really is the wave of the future. We'll have to get together in twenty years or so and discuss this again! ■

About the Authors

Nick Sullivan and Chris Zamara are the editors of .info technical support. They were once the editors of the *Amiga Transactor*.

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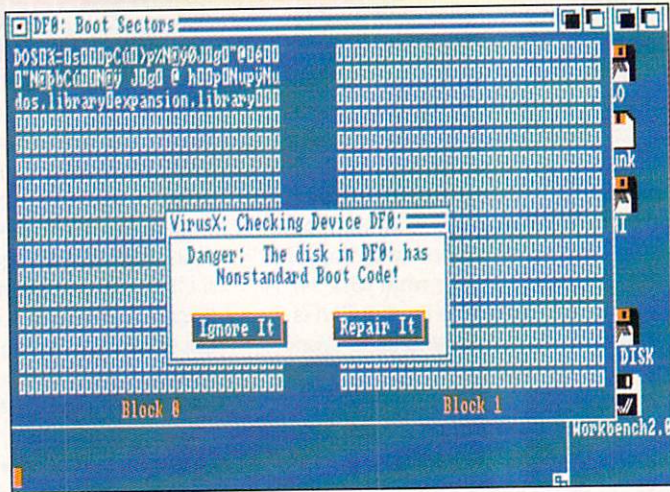
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V4 of Steve Tibbett's VirusX doesn't like Workbench 2.0.



Checking Out Programs

When Hallowe'en is the same as Christmas

by Jim Butterfield

User group librarians and bulletin board system (BBS) operators have a common problem. They get a lot of programs, and it's hard to tell the good ones from the bad.

Users get most programs from their user group, or by means of downloads from BBS services. A librarian or BBS operator works hard to gather this material. Is most of the feedback from grateful users? Nope. Most often, it will be cries of protest if a 'bad' program should happen to find its way into the collection.

What makes a bad program - and how can you spot such a beast before it goes into distribution? On another level: can one person find a program quite acceptable, while another does not? Is the question of 'bad' and 'good' programs often just an exercise in coding snobbery?

I'm not sure I have answers to these questions, but I'll be putting forth some ideas in the paragraphs that follow.

Types of 'BAD' Programs

A Virus program: Such a program secretly makes copies of itself to other disks; you may not know it's there. There are many types of virus, some relatively harmless and some

very nasty indeed. There's even one that says that its purpose is to keep other viruses away. Regardless, a virus is an unplanned activity within your Amiga: you don't want it there, and you don't want it to spread further.

A Trojan/Bomb program: A cousin to the virus. This kind of program doesn't propagate itself. It seems useful; then, one day (Friday the 13th, for example) it strikes out with a completely unexpected action. Perhaps it just says BOO! Then again, perhaps it wipes all programs from your disk.

Commercial theft: A commercial program, perhaps with its protection scheme and copyright statement removed, possibly with some features changed. You can end up in court if you handle these; nobody wants that kind of hassle.

Enemy of multitasking: A program that won't co-exist with other programs within the Amiga. Maybe it grabs the whole screen and won't let go; maybe it wrecks other programs by using their memory; maybe it insists on a specific drive, say df0:, even when some other program is trying to use it. Use one of these, and you're throwing away one of the most attractive features of the Amiga.

Litterbug program: Most often, this kind of program asks the Amiga for memory, and then never gives it

back. Every time you run it, your computer has less memory - until you reboot. There are other types of resource grabs: a badly written program could seal off various parts of your computer's I/O, such as the audio channel, the serial port, or your printer. And I hate programs that start to play music, but won't stop.

Doesn't work right: If your distance-calculating program tells you that New York to Dallas is five miles, you have good reason to doubt the correctness of the program or its data files. There's little point in having a mortgage program that calculates incorrect amounts, a word processor that sometimes loses part of your document, or a chess game that makes illegal moves. It's a programming witticism that Hallowe'en is the same as Christmas, since OCT 31 = DEC 25 (if you're not familiar with octal numbering, ask a technical friend). But you don't really want a calendar program that mixes up the two dates.

Not Good Coding Practice: people argue about this one. If a program works correctly, can those on the upper cloud levels fairly argue that it's unacceptable because it doesn't follow good coding rules? They often can, on the Amiga. A program has to do more than work correctly: it must also live harmoniously with other programs... and if it's well constructed, it will probably pass happily through upgrades such as DOS 2.0 and those beyond.

I get nervous When . . .

Perhaps I'm paranoid about programs of uncertain origin, but it seems to me you can't be too careful. Here are some items I've seen lately. Some of them are, well, okay... but they still ring warning bells.

A coding fragment received from the Middle East created a program pause by fiddling with the hardware timer (up in the \$BFE.. area of memory). Wrong! DOS function Delay() would do the job just as well, and would allow other tasks to run during the pause time. In addition: You don't play with the hardware without first making application to

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cia.resource; by doing so, you avoid collision with other programs trying to do the same thing.

A screen-blanker program usually works at a high priority. Such a program tells the timer to wake it up after a set delay, and also awakes occasionally to sniff the input stream for activity. But a recent blanker program reverses the process; this one works at a very low priority and runs all the time unless a higher priority task interrupts it. Well... possible, but you must realize that only one task can pull that trick: once you've grabbed all the Amiga's remaining time, lower priority tasks will never see daylight. Not too serious, and the author does document this. But this particular program features another gimmick: timing and input are detected by looking directly at the hardware chips. As already mentioned, that's not too good a practice. A lone program can get away with this kind of thing... but the multitasking Amiga may get unhappy with many tasks roaming around the hardware area.

Lately, I've started to see programs that contain unreadable sections. They may be encrypted to prevent anyone from looking at them; or they may simply be compacted to save disk space. But they make me nervous; any program that seems to contain secrets might possibly contain surprises.

How to spot them

There are many facilities available to the knowledgeable librarian. Even more are in the hands of registered Commodore developers. Some are mentioned below.

I'll talk about some less technical considerations in a moment. But first, the mechanics.

Virus programs: Many virus programs reside in the disk 'bootblock' and propagate to other disks by writing a copy of themselves into their bootblock sectors. The classic bootblock virus checker is VirusX, by Steve Tibbett; it's re-issued periodically, so

look for a recent version. VirusX usually comes with a program names KV to detect the 'IRQ' style virus, which propagates without using the disk bootblock.

The New Orleans Commodore Computer Klub (NOCK) issues a disk called 'InNockulation,' which is full of anti-virus material. Write NOCK for information on the current version at: 3701 Division St., Suite 140, Metairie, LA 70002.

There are other programs to detect or remove viruses from your Amiga. I've heard good reports about a new compilation of programs, the 'Speedy Gonzales Superkillers' disk.

Trojan/Bomb programs: These are difficult to spot. Source code supplied with the program can be of great help in assuring you that there are no surprises lying in wait for you. Technically adept users can investigate the inner workings of a program using debug packages or disassemblers such as *ReSource*.

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Commercial thefts: A memory scan (the crude way is *type hex*) will often turn up information on the commercial source, even if the copyright screen and protection systems have been removed.

Enemies of multitasking: Some programs make it obvious: they take over the machine. For others, it's best to have somebody with a technical background examine the program.

Litterbug programs: To test for memory gobblers: open a CLI window, run the program, type AVAIL, run the program again and type AVAIL again. Provided you don't do anything silly like changing the size of your CLI window, you should get the same memory each time. Note that this isn't true if you type AVAIL at the start: the first run of program may bring in libraries or other items that will legitimately stay in memory after the run. (They will be kicked out if you become short of space).

Don't work right: Check out the most obvious things, such as if the program loads and saves data correctly. If there are calculations, check them by hand or against reference data, if possible. If your astronomy program says the sun will rise today at 5:10 am, get up early, or stay awake, and check it out.

Not Good Coding Practice: Somebody has to look at the coding. Then you must decide how to classify any reported difficulty. Is it trivial, so that you can ignore it or add a small note to the distribution? Moderate, so that it should be released with cautionary notes?

Know Your Source

There are practical checks that are often more useful than technical considerations. If you know that the program was written by a trustworthy person - or a person that you know you can get back to in case of problems - you can feel relatively safe. If the program is readable - in Basic, or accompanied by source code - you can be

Program Sources

VirusX: Updated periodically, and a new version is said to be imminent. Check for the most recent version on recent AmigaLibDisk ('Fish') releases.

XOper: Again, the most direct source is AmigaLibDisk. My current version is *XOper12*.

ReSource: There's more than one version, depending on the model of Amiga you have. Write: The Puzzle Factory, PO Box 986 Veneta, OR 97487. Phone: (503) 935-3709.

reassured. And if the program came through a trustworthy pipeline, it can likely be trusted.

Sadly, there have been virus programs carrying fake author identities; be sure the program is really from the claimed author. A phone number or address is reassuring; it generally means that the author will take responsibility for what's in the program.

Major distribution networks: National BBS download or disk libraries such as the 'Fish' disks are fairly secure. Even if a problem slips through, it will be spotted and reported quickly.

Source included: Even Steve Tibbett's *VirusX* comes with the 'source program,' to help guard against fake versions. You may read such a source file and assemble it yourself to confirm that it indeed does what it claims to do. BBS/librarians would find source code reassuring, even if not intended for distribution.

Technical Resources

There are many programs that will help the technical type snoop a program's performance. Some are included as part of the disk collections mentioned above. Here are some others that I've found useful.

XOper: This is a rich program for peering into the inner workings of your Amiga. There's a whole labyrinth of

mechanisms in there, ticking along like clockwork; if you're looking for the cuckoo, pay special attention to Tasks. Some programs spin off extra tasks that have an independent life of their own. Sometimes that's good. But if a program stops, yet leaves some part of itself running in the system, you should know why.

Debug programs: Many debug programs allow you to load a program into memory without starting it up. You may then inspect memory for unpleasant messages or curious code. If part of the program is encrypted, it's even possible to put a breakpoint into the program, and allow it to run the decryption routines... but no more.

ReSource: this commercial program by Glen McDiarmid will perform a disassembly of most programs with little effort on your part. You don't need to read the code, although sometimes that's interesting, too. Just look for peculiar messages and encrypted sections. With a little more effort, you can identify the system calls made by the program. So, for example, if you see a music program hitting hardware addresses or invoking Trackdisk... look out! It may be marching to the beat of a different drummer.

Commodore Developer Debug Tools: Commodore supplies registered developers with a whole set of debugging and testing tools. Many of them call for the use of an extra 9600-baud terminal, and some must be run on an Amiga that's fitted with an MMU (Memory-Management Unit) chip or 68030 processor. But they are very good at spotting a program that's breaking the rules.

Last Thought

If you plan to look at a program that you suspect of possible problems, there are a few precautions you can take. The programs that I look at most closely are those that involve themselves with disk operations: copying, file reorganization, protection system defeat, and similar items.

If you have a hard disk system, take it out (logically, not physically) when

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you're doing such tests. Hard disks don't have write protect tabs; if a bad program wants to do damage there, it can really make a mess. The way to take out your hard disk: boot your Amiga from a Workbench floppy in df0: and your hard disk won't be mounted for this session. Start by installing a resident virus checker into your system. Something like *VirusX* will run in the background, and will check all disks that are subsequently inserted.

Any floppy disks of your own that you insert in the test system should be copies, not originals. Keep the write protect on, unless you're testing a program that is intended to write to a disk. In the latter case, check the changed floppy *very* carefully, comparing its contents and size to that of the original.

And when you're finished: turn the power switch off. Don't use the three-key reboot (Ctrl, Left-Amiga, Right-Amiga) unless you're sure the system is safe. ■

Commodore Development Tools

Request an application for the Commodore-Amiga development programs by writing: CATS-Information, 1200 West Wilson Drive, West Chester, PA 19380-4231. Include a self-addressed, stamped, 9" x 12" envelope.

Commodore's Test Programs for Developers.

memung and *mungwall* - watches memory, especially for illegal calls to FreeMem. It also watches to check that a program does not write outside the memory area that it has requested.

io_torture - watches IO requests.

Enforcer - uses the MMU; reports any attempts made by a program to access "illegal" memory.

memoration (William S. Hawes) - fakes a low memory situation and observes program behavior.

There are many other programs: *flush* and *wack*, for example. The above are recently introduced powerful test tools.

Advertisers' Index

Reader Service #	Advertiser	Page
143	Consultron	65
140	Devware	56, 57
112	Electronic Arts	13
110	Expansion Systems	61
177	Grapevine Group, The	63
104	Konami	5
103	Konami	33
169	Montgomery Grant	66
130	NewTek	68
173	Power Computing	53
102	Psygnosis	3
115	Psygnosis	2
170	RCS Management	67
106	ReadySoft, Inc	7
107	ReadySoft, Inc	11
136	Software Support International	17
114	Software Support International	59
160	SoftWood, Inc	27
165	U.S. Gold	9

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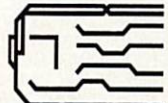
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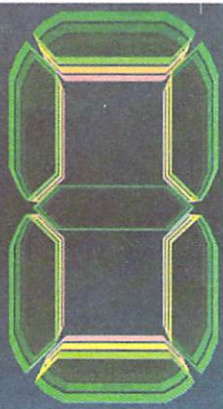
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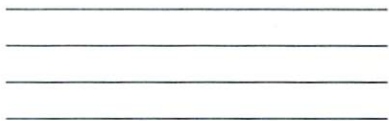
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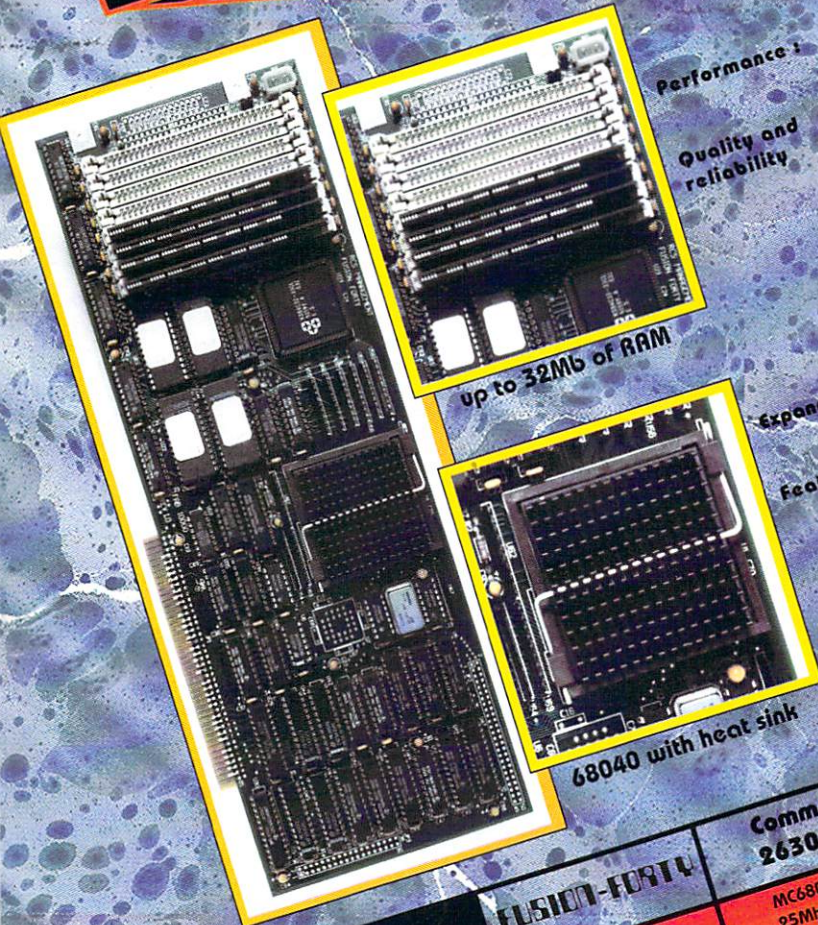


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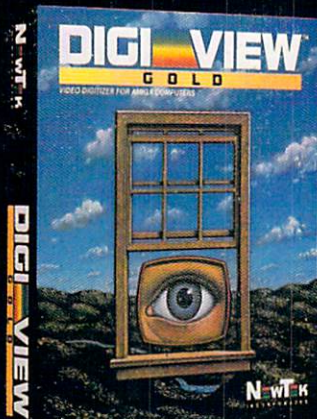


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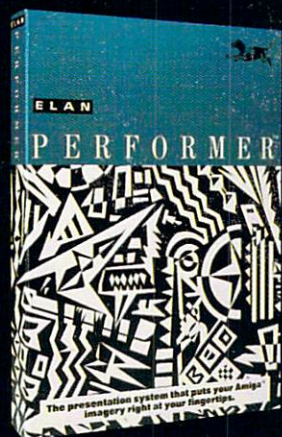
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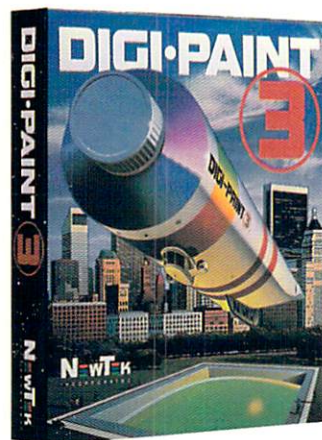
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