BUILD A SUCCESSFUL ANIMATION CAREER, PAGE 58

VIDEO TOASTER® USER™

YOUR GUIDE TO VIDEO FX/LIGHTWAVE 3D®/TV GRAPHICS

NOVEMBER 1995

THE INCREDIBLE ILLUSIONS OF SPACE: ABOVE AND BEYOND

1995 LIGHTWAVE AWARD WINNERS

TPAINT GRAPHICS II

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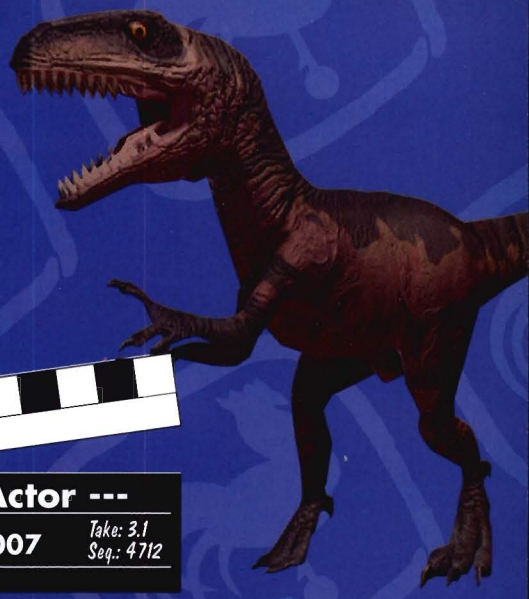
MainActor Broadcast



MainActor Broadcast is a completely new animation-program. It works on all Amigas with at least 512kB RAM und Amiga OS2.04 or higher.

Features:

- More than 20 load- and save-modules for animations and pictures (AVI, BMP, DL, FLI, FLC, IFF, IFF-Anim3/5/7/8/J, JPEG, PCX, Quicktime...)
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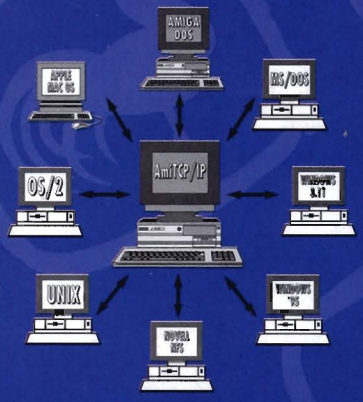
AmiTCP/IP



The most popular TCP/IP-implementation for the Amiga.

- connect your AMIGA to heterogeneous networks and the InterNet
- supports Network-File-System (NFS) as a client
- uses SANA-II interface
- optimized version for 68020 CPU included
- printed german or english manual
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System requirements:

AMIGA with at least Workbench and Kickstart 2.0, 1 MB RAM and ca. 2 MB free space on harddisk.

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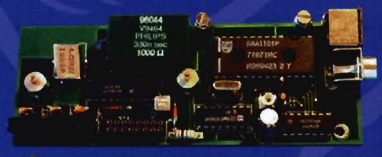

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If you want to speed up your AMIGA 1200, the BLIZZARD 1230-IV TURBO BOARD is your accelerator of choice! Being the fourth generation of the award-winning BLIZZARD series for the A1200, this new accelerator integrates the most features and expandability for an even lower price than it's predecessors. It is up to you to compare the features that are a must for an A1200 accelerator that sets the standard:

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Full 50 MHz 68030 CPU with MMU

Socket for optional 68882 math coprocessor with 50 MHz

Memory Expansion: option for up to 128 MB of autoconfiguring RAM using industry standard SIMMs

Ultrafast memory interface for highest performance - 2 times faster than a stock A4000/030

Battery backed, self recharging clock and calendar

68030 may be disabled with a simple keystroke on boot up to enable A1200 to revert to 68020 allowing full game compatibility - even with badly programmed software (e.g. old games)

High performance Direct Memory Access (DMA) expansion port with full 32-Bit wide DMA

Fits easily into trapdoor expansion slot

Highest quality of manufacturing incorporating latest SMD technology

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with 50 MHz 68030 CPU

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Supplied with a comprehensive software bundle including a CD ROM filesystem and DynamiCache

BLIZZARD 1230-IV SCSI Kit ***$ 129***
with Dynamicache and CD-ROM filesystem

Want to make a speed demon out of your AMIGA 1200? Wait no longer! For a sensational price you now can join that group of AMIGA users who own one of the fastest AMIGAs on the planet! With phase 5's brand new BLIZZARD 1260 TURBO BOARD you can add the latest technology of the world's leading accelerator manufacturer to your A1200. Experience the performance of the 68060 CPU that will make your AMIGA fly:

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Ultrafast memory interface for highest performance - up to 4-5 times faster than a stock A4000/040 with a peak rate of more than 80 MIPS

Battery backed, self recharging clock and calendar

68060 may be disabled with a simple keystroke on boot up to enable A1200 to revert to 68020 allowing full game compatibility - even with badly programmed software (e.g. old games)

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Fits easily into trapdoor expansion slot

Highest quality of manufacturing incorporating latest SMD technology

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with 50 MHz 68060 CPU

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Additional SIMM socket allowing additional memory expansion up to 192 MB, using industry standard SIMMs

External SCSI connector, fully autobooting

Supplied with a comprehensive software bundle including a CD ROM filesystem and DynamiCache

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Full 50 MHz 68060 CPU with FPU and MMU

Memory expansion for up to 128 MB of autoconfiguring RAM using industry standard SIMMs

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68060 may be disabled with a keystroke on boot up to enable A2000 to revert to 68020 allowing full software compatibility

On-board Fast SCSI-II DMA Controller - up to 10 MB/s transfer rate at maximum possible free CPU time, with internal and external SCSI ports, active SCSI termination, and a comprehensive software bundle including a CD ROM filesystem and DynamiCache

Highest quality of manufacturing incorporating latest SMD technology

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with 50 MHz 68060 CPU

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Just released and already considered to be the best graphics card that was ever built for the AMIGA by many leading developers, magazine editors and other AMIGA experts all over the world! Multiple times faster than any common graphics board it redefines the meaning of the word performance - for a price that's more than attractive. Just check the main features:

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Integral digital monitor switcher with video amplifiers

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An additional expansion connector is provided for an optional FBAS/ SVHS module to allow video recording of the CyberVision64 signal

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The CyberGraphics driver software offers highly compatible emulation of the AMIGA Workbench and all standard AMIGA display modes, while its High Colour and True Colour modes are supported by the leading AMIGA graphics software packages

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CyberVision64 — ***$ 599***
with 4 MB display memory

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VIDEO TOASTER USER

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by Tom Patrick McAuliffe

"And the winners were...!" LightWave animators from around the world competed in our first annual animation contest last August. Find out who won, who was there and what prizes you could have nabbed if you had gotten off your duff and entered.

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58 PURE MAGIC: CONQUERING THE ANIMATION BUSINESS

by Joe Clasen and Susan Ishida

What's it take to make it in today's market? Gain insight and ideas from experts in a variety of animation specialties.

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62 REACH BEYOND THE STARS: AREA 51 GIVES *SPACE* A POWERFUL NEW LOOK

by Corey Cohen

For sci-fi and CGI fans alike, TV has never seemed better. FOX's *Space: Above and Beyond* offers an intriguing premise, a talented production team, and some truly amazing effects from the LightWave veterans at Area 51. *Also*: two mini-tutorials!

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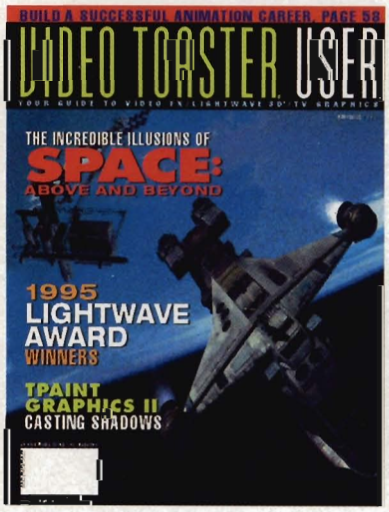

Cover image ©1995 20th Century FOX
Objects modeled and animated by Scott Wheeler and textured by Karl Denham, both from Area 51.

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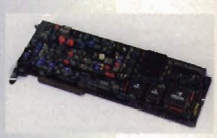
The review you've been waiting for: DPS' new PCI Digital Disk Recorder video board.



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by R. Shamms Mortier

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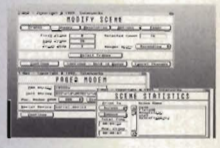

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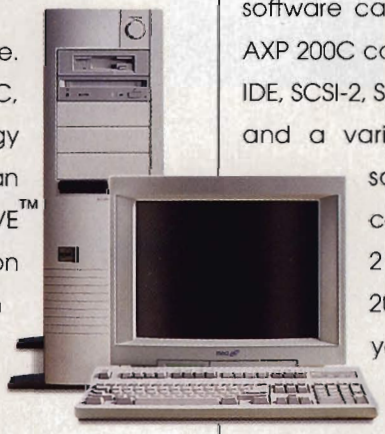

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As seen in the May 1995* ***LIGHTWAVEPRO* *™ newsletter article, "LIGHTWAVE 4.0 Benchmarks"*

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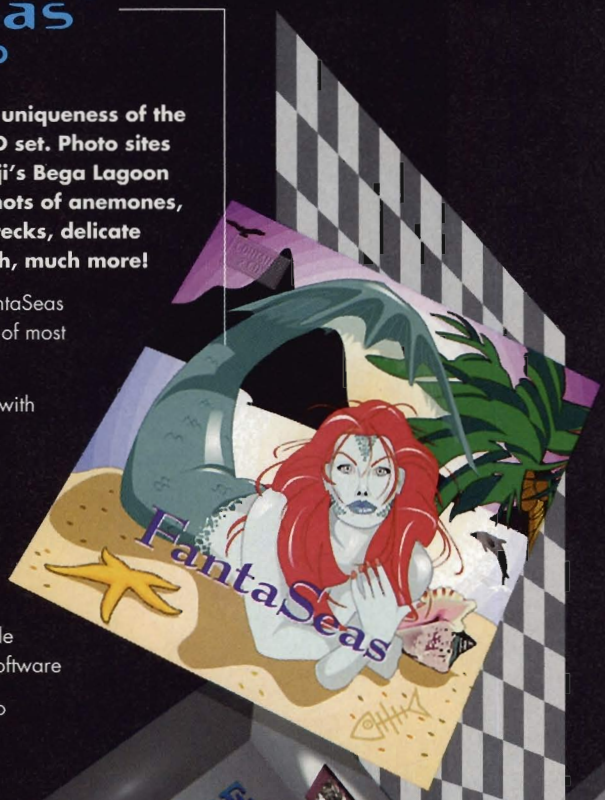

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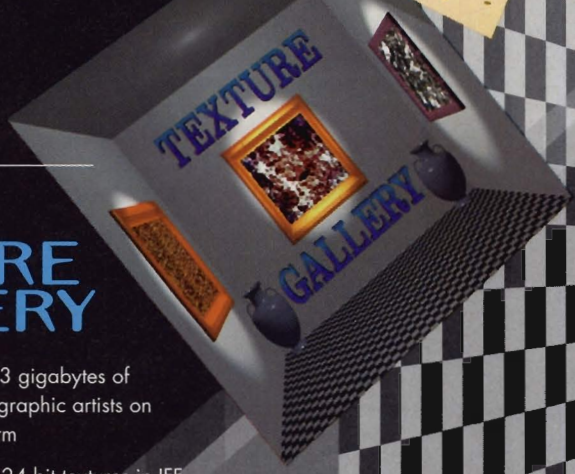

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This month we recognize Sherry Thomas-Zon for contributing extraordinary accomplishments to our company.

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BPA International membership has been applied for

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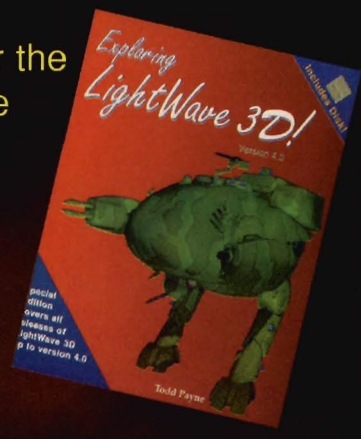
Exploring LightWave 3D!™

Published by New Era Press

"The most complete LightWave 3D book to date. Enough basic info for the new user to get his feet wet while having enough advanced info for the experienced LW user. The color photos are outstanding!"

-Tom Patrick McAuliffe, Editor in Chief, Video Toaster User Magazine



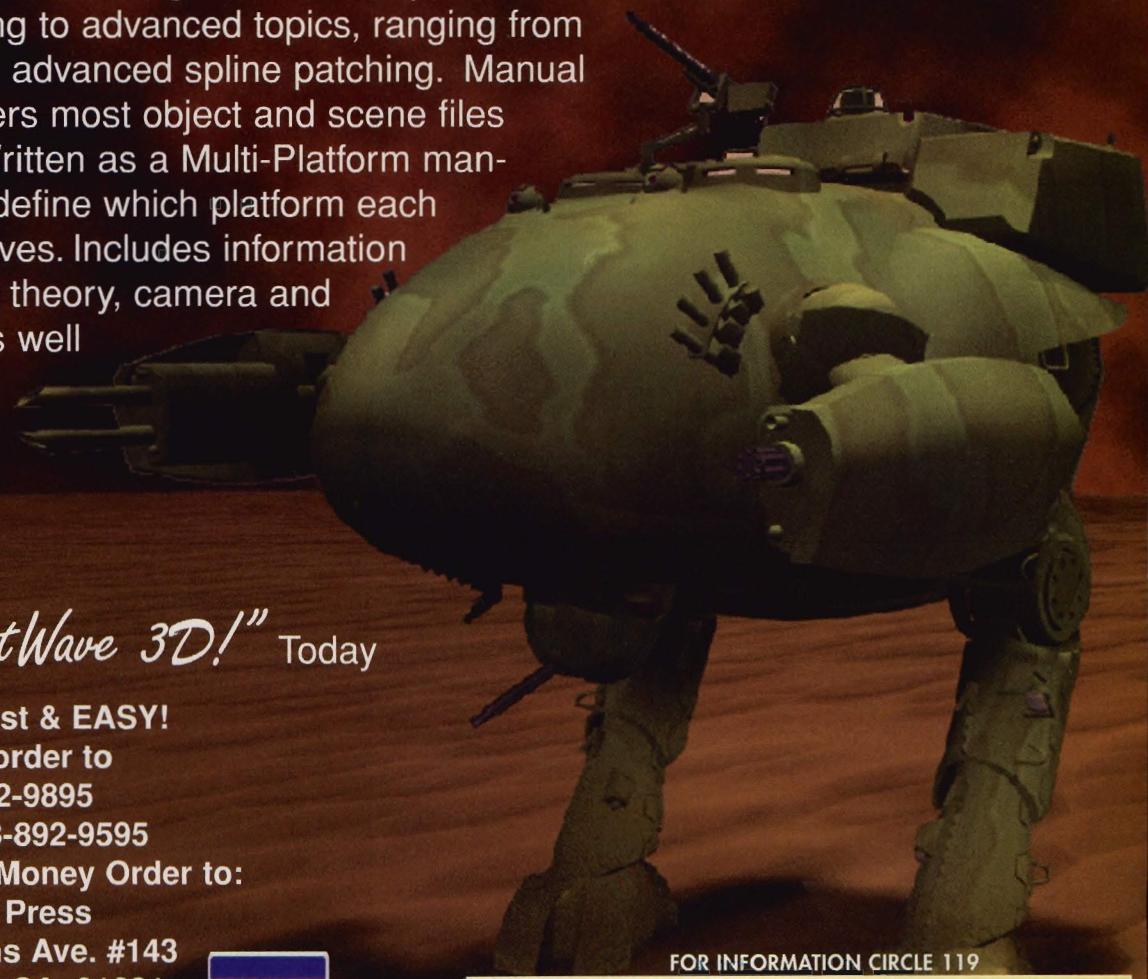
"BIG, BIG, BIG! This is cool. The nicest looking LightWave piece I've seen. I Love it. It is worthy!

-Frank Kelly, Spot Productions, Contributing writer to various CG magazines.

As an experienced college educator and LightWave user and writer, I think that this is the book that should accompany every LightWave package. It is going to be the required text for LightWave students in classroom settings for a long time to come.

- R. Shamms Mortier, PhD., contributing writer & editor to various publications including VTU.

Coverage includes functions of LightWave 3D, up to version 4.0. Tutorials cover beginning to advanced topics, ranging from the use of primitives, to advanced spline patching. Manual includes disk which offers most object and scene files used in the tutorials. Written as a Multi-Platform manual, care was taken to define which platform each topic or command involves. Includes information on color theory, lighting theory, camera and directing techniques, as well as production and resource management for producing animations.



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SYSTEMS OFFER TECHNOLOGY VIDEO MORE EXCITING. ALWAYS NEED IT.

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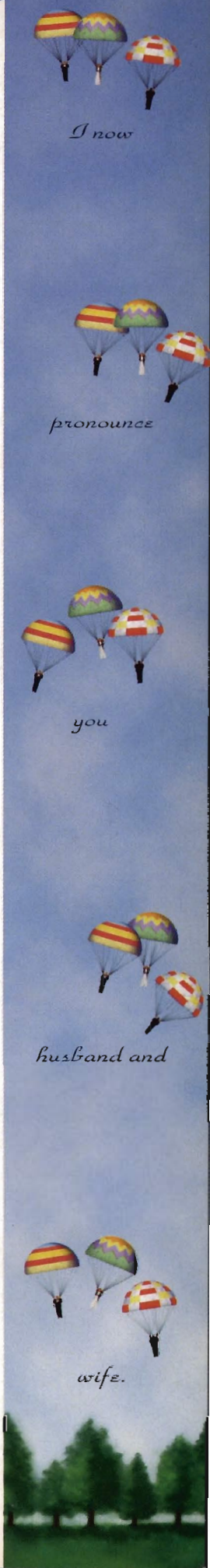

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1995 digital news & review TARGET AWARDS WINNER

FOR INFORMATION CIRCLE 122

TOASTER TALK

WWW and VTU Expo

Giving Thanks as We Look Forward

by Tom Patrick McAuliffe

I drove across the bridge toward home and began thinking about our talk this month, feeling thankful for being able to do what I do and live where I live (San Francisco, or Babylon-by-the-Bay as it is called by some). It's challenging to sift though all that's going on and mold it into information you'll find useful. After reading the stories for the month over the weekend (everybody say Awwww), a certain theme developed—if only in my mind. The theme was that of Thanksgiving, a fitting subject for the nearing season, especially this year. While some may find it hard to swallow, most would say we do have lot's to be thankful for.

LightWave 4.0 is shipping on multiple platforms, along with Video Toaster 4.0 for the Amiga and Toaster Flyer 4.1, allowing thousands of Toaster and LightWave users all over the world to learn, enjoy, grow and prosper. The soon-to-be-released Toaster for Windows will make professional, affordable video production a reality for thousands of PC users. With rave reviews of LightWave and Toaster, both at home and abroad, vast numbers of new users will be joining the ranks of Toasterdom. I'm thankful that we still live in a world where, for the most part, just about anyone can start his or her own business or share what's on their mind by producing a videotape and broadcasting it (although there are a few in Washington, D.C., who are trying to take this opportunity away, but that's another column). I'm thankful for NewTek and its hard-working team, who are producing great video tools, and for the staff, writers and columnists at *VTU* and *LIGHTWAVEPRO*. Most of all, I'm thankful to you, without whom none of this would be possible. Enough already—I'm starting to morph into a marshmallow!

However, speaking of thank yous, a big one goes out to Rex Olson of RAVE Video in Burbank, Calif., who produced and directed the 1995 LightWave Wavey Awards. The ceremony, held during SIGGRAPH in Los Angeles, was top-notch, and the near-1,000 people who attended had a great time. A tape is also available from Desktop Images. The story appears on page 46.

Fun in the Sun

About the time you read this a chill will fill the air and Toaster users everywhere should start to get that itchy travelfoot. It's time to migrate to sunny southern California for the annual Toasterfest of animation, framestores and fun. Video Toaster User Expo 1995 is happening Nov. 1-4 at Universal City near Hollywierd. With all the new and exciting animation and video production options, this year's get-together is more vital than ever. This really is a great way to mix business with pleasure. The Hilton Convention Center is a short walk from Universal Studios and CityWalk, with fun for the whole family. Having worked at the Expo last year for a major software company, I can tell you that people come here to take advantage of the great deals that over 50 hardware and software developers have to offer. Toaster users also come here to learn. We've gathered together the crème de la creme of Toaster Educators and are offering more courses than ever before. These courses are specially designed to help you quickly get the most from your Toaster. Class size is kept small so you can get the most from the training and have your specific questions answered. Add in the fact that we'll have lots of surprises *AND* you'll get to meet yours truly, and you have the makings of a truly great trip. A complete guide is included in this issue. I'm looking forward to seeing you there!

VTU and LWP Go WWW!

Video Toaster User and *LIGHTWAVEPRO* are proud to announce our new home on the Internet and World Wide Web at HTTP://WWW.Portal.Com/~AMG. With more and more of our readers going online, we're glad to be able to offer you an alternative way to get the information you need. Officially opened on Oct. 1, the home page allows both magazines to better communicate with and receive feedback from the reader. The site includes selected articles, reviews and images from current issues, as well as an area for readers' comments. The page also offers a hot link to the NewTek web page. We plan to expand the site, which is still under construction, so we look forward to your ideas and input!

As We Go to Press...

Video Toaster User exhibited in New York City at the 1995 Image World Expo during September. I'll have details on that when we visit next time. By the way, we will also be at COMDEX-Fall in Lost Wages, Nev. Nov. 18-22 in NewTek's booth. Stop by and say hi!

This month we have a piece by our new Managing Editor, Corey Cohen, on the new hit TV show *Space: Above and Beyond*, and a review on the Perception video board from DPS. We also take an in-depth look at what it takes to make it as an animator today, and scope out the new Flyerware. Next month? Ask me on the WWW or at the Expo!

TOASTER TIMES

THE REAL DEAL ON OS 3.1

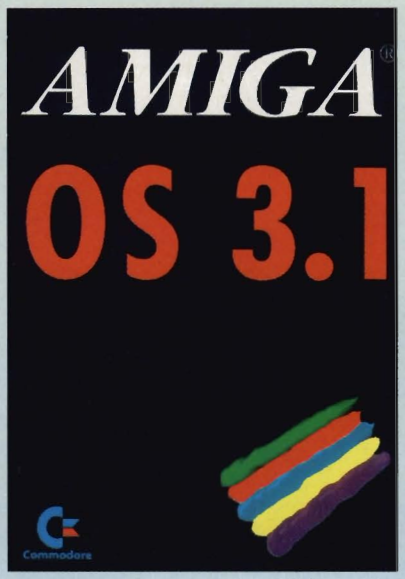
by Chuck Baker and T. P. McAuliffe

As new machines from Amiga Technologies show up on the store shelves and new people join the ranks of Video Toaster users, questions on software and hardware compatibility abound. During a recent interview, Chuck Baker of NewTek's Technical Support Department discussed the challenges Toaster and Flyer users face under the semi-released AmigaDos 3.1 Operating System.

"The belief that users' support from NewTek will disappear if they install 3.1 is not accurate. However, as a responsible developer, we work only with official Operating System (OS) releases from platform manufacturers," Baker said. NewTek does support the only official release of Amiga OS 3.1, which was implemented in the Amiga 4000 Tower.

"Other than on the 200 Amiga 4000T systems, which shipped prior to the bankruptcy, primarily to developers, Commodore Business Machines (CBM) made no official release of OS 3.1 for any other Amiga model," Baker stated. "For users of 3.1 on any Amiga system other than the A4000T, we will offer what assistance we can. However, we will not modify any product to work with an unofficial release of an operating system."

For software developers to support the new release of an Operating System, they must have both an advance release of the system itself and a toolkit with documentation for developing with that OS. This never happened with AmigaDOS 3.1, since CBM provided no such materials to its certified developers before going bankrupt in April of 1994. "Commodore and ESCOM are not the source of the OS 3.1 packages which have been for sale as upgrades on Amiga machines," Baker explained. "Commodore granted limited licenses for OS 3.1 on the A2000 and other systems, to companies who needed the support 3.1 provides for the operation of third-party display boards. According to a conversation I had with a CBM engineer, those licenses restricted sale of OS 3.1 by the licensee to purchasers of the licensee's hardware product. The version licensed was not the version Commodore would have released had it not gone under. Their programmers and engineers were still making revisions, extensions, and fixes to the code. What CBM licensed was certainly serviceable, but was not the official release they would have ultimately produced and licensed."



Whether or not the companies which released 3.1 kits to the open market may or may not have development kits and documentation is irrelevant, according to not just NewTek, but most other developers who were contacted. "I'll develop for it when ESCOM releases it!" was the response from one developer who preferred to remain anonymous. "The AmigaDOS 3.1 OS has no real, official standing, and was not in a form the manufacturer would have released. In any case, NewTek was never offered any such development materials," said Baker.

Depending on the system you have now and in the future, OS 3.1 can work with your Video Toaster system. "We do have A4000T systems with 3.1 and in our development process we do test new software on those systems. We have not seen the difficulties in compatibility which users of other Amiga models report when attempting to use the 3.1 OS," Baker said. NewTek's Technical Support Department has provided answers through telephone and online venues that the following Operating Systems are the required versions for Amiga models and the various releases of the Toaster or Flyer software:

- For Flyer/Video Toaster 4.xx Software: A2000, A2500, A3000, A3000T: OS 2.1
  A4000: OS 3.0
  A4000T: OS 3.1

- For Video Toaster 3.x:
  A2000, A2500, A3000, A3000T: OS 2.04, 2.05, 2.1
  A4000: OS 3.0
  A4000T: OS 3.1

- For Video Toaster 2.0:
  A2000, A2500: OS 1.3, OS 2.04, OS 2.05, OS 2.1
  A3000, A3000T: OS 2.04, OS 2.05, OS 2.1

- For Video Toaster 1.0:
  A2000, A2500: Will only install under OS 1.3; will operate after install under OS 1.3, OS 2.04, OS 2.05, OS 2.1.

The OS requirements list for Flyer/VT software has also been provided to dealers through NewTek's Sales Department, and is also provided by the Customer Service Department to callers upon request. Baker also handles most of the online Tech Support requests for NewTek.

Since ESCOM has acquired the Commodore assets, the ball game may change. "If Escom releases official OS 3.1 versions for the various Amiga machines, then certainly our future software development on the Amiga platform will fall in line with that," Baker said. "We cannot, of course, retrofit older software versions (VT 1.0 through VT 3.xx) to work with new OS versions, so users of those versions would need to

continued on page 16

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FOR INFORMATION CIRCLE 112

The Way I See It

Adventures in La-La Land

by Mike Danger

This column comes written from the only place where you can experience the thrill of a Burger King encased by three-inch-thick, bulletproof glass, guided tours of O.J.'s villa along with Hugh Grant's reserved special parking place, and the Los Angeles Convention Center, which hosted this year's SIGGRAPH—all in a single day. So pack up the kids and get ready for a column containing your monthly requirement of gossip, rumors and information.

News has been abundant concerning the Escom/Amiga situation. First, if you didn't know by now, all Amiga 4000s are being built in the United States. There have been pictures and renderings showing up on the Internet and in magazines of the new 4000 Tower, which should be shipping by now. Well, if you are waiting for one of these babies, don't get your hopes up, cause they'll go fast. You may have heard the tower is a re-vamped PC tower. Don't fret! Escom's towers are of the highest quality and will do well against most of the PC cases on the market.

Also causing my phone system a nervous breakdown from overuse are rumors that the Toaster card will no longer be available for the Amiga when the existing stock runs out, due to unavailable parts. If this is true, then wouldn't that mean no PC-influenced Toaster products also? Well, a couple of inquiries assured me that this statement bore no truth, and that there will be enough Toaster cards to fill the demand. While I'm on the subject of the Toaster card, I have heard that NewTek Founder/President Tim Jenison has been secretly working on new peripherals and heavy integration, but nobody is talking. I'm guessing that possibly a PAL version of the company's famous hardware might soon be available, or a modification and reducing program might be in order to slim down the card size for better placement in future machines. Whatever it is, I bet it is gonna be cool!

For all of you out there who are Flyer-obsessed, the High-Quality 5 (HQ5) feature is now fully accessible due to the super-quick hard drives now available. By using this feature, you'll get the best quality as you digitize video onto your hard drive. As we all know, finding the correct firmware on which drives work makes shopping at your computer super store an Excedrin

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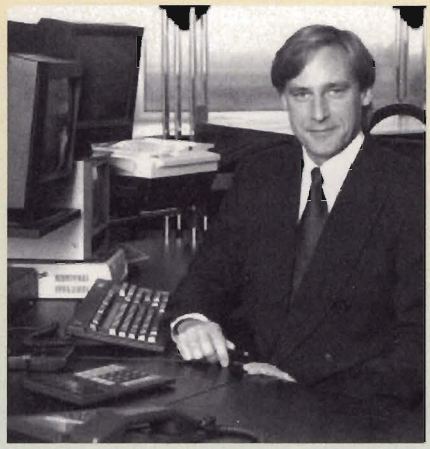
FOR INFORMATION CIRCLE 103

nightmare. While not well publicized, I have found that most hard drive manufacturers will upgrade your unit's firmware for either a small fee or for some heavy-duty pleading.

In a past issue I reported on the Weird TV phenomenon on a boob tube near you. This series, which is replacing the much-outdated *Night Flight* late-night show (try saying that 10 times) in many markets, is now in 40 markets. But get this: among the hip crowd at the 1995 LightWave Animation Wavey Awards I ran into Arthur Medeira, who told me the show is using the Flyer to produce segments for this hour thriller. I also ran into Marmalade President and past LATUG President Mark Strauss, also connected with the show, who told me about all the oddities forthcoming. Weird TV is also looking for your animations with a home-grown segment called "Your Video Here." If you don't get this program, bug you local station or cable operator until you do.

The Waveys was a fun fest. [See the Wavey Awards feature in this issue, page 47.) Thanks to all involved. Standouts of the evening included Penn Jillette and his hot-breathed monologue, Tim Jenison and his organ solo, and the guy



who did the double award-winning *Johnny Quasar* video.

As we complete this month's cornucopia of gossip, let's frame-in the end with the Framestore of the Month. Coming from the same place that gave us farvernugen, the German measles and the VW is a photo of Escom CEO and head honcho Manfred Schmitt. Now you have a face to place with the name. Hopefully, it's a face that will be around for a long time.

Let me remind you that framegrabs, information or questions can also be mailed, faxed, phoned in or willed to me at the address below. Keep reading *VTU*—I'm sure you will like all the surprises from his beloved magazine. And remember: the way to a video producer's heart is through his Timebase Corrector. See you soon!

Mike Danger
P.O. Box 11802
Pensacola, FL 32524
(904) 469-1001

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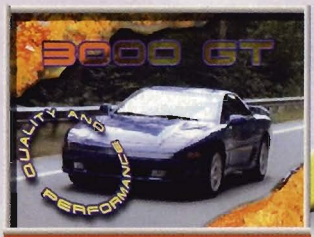
ALPHA PAINT



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Brent Malnack, AV Video Magazine

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Zoe Edgerton, CBS Television Productions

"Alpha Paint is a remarkable step forward for the Video Toaster...Alpha Paint is a must-have for anyone using the Toaster in a professional environment."
Frank Kelly, Video Toaster User Magazine

"If you do any graphics work with the Video Toaster, there is no question that Alpha Paint is the only game in town. It's fast, video ready, quite complete and a joy to use...Text operations that used to take many steps in ToasterPaint can now be done in one fell swoop...Roll over, ToasterPaint."
Michael Hanish, Digital Video Magazine

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FOR INFORMATION CIRCLE 118

Real Deal OS 3.1

continued from page 12

upgrade to the current Toaster software revision that would work with and take advantage of a new OS."

Baker also offered some advice to users having difficulties. "Users would be advised to see if something in the OS configuration is causing the difficulty, since reports from users indicate that some have difficulties, while others do not. Any items run from your user-startup or WBStartup, which stay resident in memory, may also cause difficulties," he added, "Also turn off any commodities you may have active."

As users of the MAC and PC know so well, and Amiga/Toaster users are discovering, it is never wise to make the assumption that your current software will work just fine if you upgrade your computer's Operating System. "Software compatibility is not a matter of what is reasonable or what is logical, it is very strictly a matter of what works in practice," Baker concluded. *VTU* will keep you posted! VTU

A special thanks to Paul T. Roberts of Denver, Colo., for assistance with this article.

NEWS & NOTES

NewTek Developers Conference

NewTek Inc. recently announced that a Developer's Conference will be held the two days prior to the 1995 Video Toaster User Expo, Oct. 30 and 31, at the Universal City Hilton near L.A. Subjects covered will include the new PC-based Toaster, LightWave plug-ins and more. The $400 fee will be waived for all Expo exhibitors and those developers who have recently joined NewTek's Developer Support Program. This marks the third time in the past year that a Developers Conference has been held by NewTek! Those that have attended past conferences have reported that the intensive sessions yield quick and positive results. Printed information and sample codes are provided. The Summer DevCon in Kansas City saw over 40 major hardware and software developers from around the country provide feedback and receive information. For additional information contact Tami Holmes at 1-800-TOASTER.

VTU Unveils New WWW Page

Video Toaster User and *LIGHTWAVEPRO* have opened a home page on the Internet and World Wide Web. The new site is operational and located at **HTTP://WWW.Portal.Com/~AMG** and offers improved communication among readers of the magazines. Included on the page, which is still under construction, are various columns, articles, tutorials and reviews, which will be updated on a regular basis. Additionally images from the popular *VTU* Gallery will be available. Users are invited to submit ideas and images for the online area.

Desktop Video RoadTour '95

VFX Video, Inc., a leading supplier of computer video solutions, is again hosting its tour to bring Toaster technology to communities in Western Canada. The RoadTour, an annual event, will stop in 9 cities and towns. Call 1-800-661-4007 for information.

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FOR INFORMATION CIRCLE 198

NEW PRODUCTS

Compiled by Corey Cohen

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Product: LightWave 3D in.focus
Description: LightWave tutorial tape/CD-ROM
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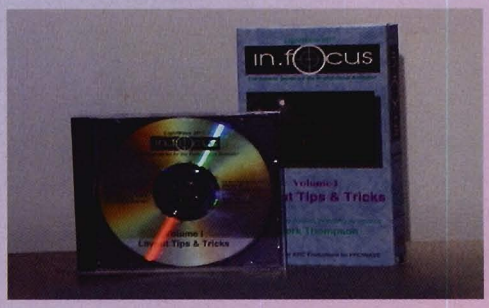
(205) 830-2767

ProWave has announced the first release in its *LightWave 3D in.focus* tutorial series. Volume 1, Layout Tips and Tricks, hosted by award-winning animator Mark Thompson, covers a wide range of LightWave techniques, and takes you step-by-step through some of the program's most powerful features. A supplementary CD-ROM containing some of Thompson's completed work lets users follow along with the tutorial and, at their leisure, explore many additional methods not discussed in detail on the tape. The disc also allows distribution of scene files complete with background image sequences, image maps, objects and textures. Besides discussing techniques used in a popular Thompson animation, the CD discusses inverse kinematics and compositing CG over live video, and contains PAR files



of all the animations. Also included: hundreds of royalty-free objects, demos of LightWave utility programs such as IMPACT! and image maps/sequences for professional libraries. The CD-ROM works on all platforms with LightWave.

FOR INFORMATION CIRCLE 1

Comin' Through

Product: The Stampede
Description: Storage systems
Price: $1,750
MountainGate Data Systems Inc.
9393 Gateway Dr.
Reno, NV 89511-8910
(800) 556-0222

MountainGate's *Stampede* is a new line of high-capacity, removable and transportable storage systems capable of storing up to 400GB of data on a single SCSI bus. The Stampede is a versatile solution that allows users to employ any combination of 3.5-inch and 5.25-inch drives within a single docking station. Ideal for online and storage requirements of electronic prepress and desktop publishing professionals, Stampede drives are available in capacities of 1.0GB, 1.7GB, 2.1GB, 4.2GB and 9.0GB. Stampede is available with a SCSI expander device for increased usability, and for professionals working with larger amounts of data, Stampede docking stations can also be daisy-chained together. Stampede is available in 2-bay, 4-bay and 8-bay desktop docking stations, an 8-bay deskside pedestal and an 8-bay rack mount configuration. The drives offer outstanding hard disk performance with access times as fast as 8 ms and transfer rates up to 20MB/sec. Stampede drive modules are hot swappable and thus allow users to replace or switch drives without shutting down the entire system. Each drive has its own activity and power indicator, making it easy for users to see when it is safe to remove the drive. Stampede's drive interface connectors are certified up to 25,000 cycles (insertions), ensuring a long life cycle without loss of data or decrease in performance. Stampede is compatible with most major computing systems.

FOR INFORMATION CIRCLE 2

Royalty-Free Riches

Products: New Age Variety; fortysomething; Bluegrass II; SportTracks; New Age Melancholy; Dramatic Underscore I
Description: Music CDs
Price: $75 each (15% discount for music library subscribers)
Gene Michael Productions
1105 North Front Street, Ste. 29
Niles, MI 49120
(800) 955-0619

Gene Michael Productions has announced the addition of six new volumes to its buy-out music library. *New Age Variety*, a collection of original New Age soundscapes, features piano and other acoustic sounds, with a variety of mood textures. *fortysomething*, the premier volume in a new series by grammy-winning composer/producer William Pearson, has warm, inviting music with just a touch of nostalgia. American folk classics highlight *Bluegrass II*, a sampling of mountain music, in tempos ranging from poignant and reflective to lively barn dance. The danceable grooves on *SportTracks* are an ideal complement to high-energy sports and industrial and dramatic applications. *New Age Melancholy* is a collection of flowing, melancholy backdrop music lending itself to technical and celestial themes, but also retaining an earthy quality. The truly "visual" music of *Dramatic Underscore I* features dynamic music with an exceptional major motion picture feel. All discs except *New Age Melancholy* (with themes only) contain both themes and broadcast/stinger cuts.

FOR INFORMATION CIRCLE 3

Amazing Audio

Products: Easy Listening; Nature; Production Toolbox Volume 3
Description: Music CDs
Price: $99 for three discs
Chameleon Music
P.O. Box 339
Agawam, MA 01001
(413) 789-1917 Voice/Fax

Chameleon Music has announced the addition of three discs to its CD audio collection. *Easy Listening* features middle-of-the-road, FM-

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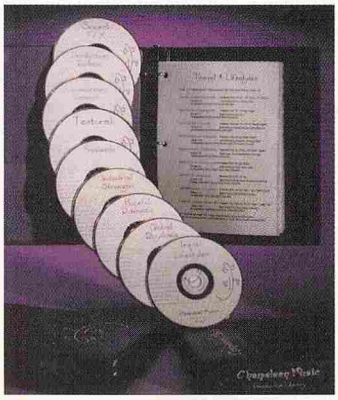
style tunes with a Kenny G. feel. With its drumless, ambience-type music, *Nature* is much like Chameleon's Textural CD, but more somber, laidback, collage-style music intended for mood setting. Production *Toolbox Volume 3*'s 99 clips lean more toward



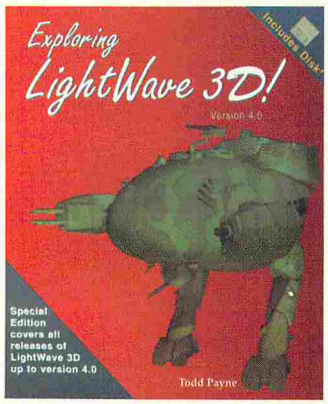
soft acoustic music. All discs contain approximately 72 minutes of music, with an average of 50-60 cuts, and include main themes of about 4-6 minutes in length and matching edits (underscore) consisting of 30- to 60-second stingers or tags for broadcast.

FOR INFORMATION CIRCLE 4

LightWave Lessons

Product: "Exploring LightWave 3D!"
Description: LightWave instructional book
Price: $59.95
New Era Press
23120 West Lyons Ave. #143
Santa Clarita, CA 91321
(818) 892-7555

Designed to lead users through all of the available features and functions in LightWave 3D, "Exploring



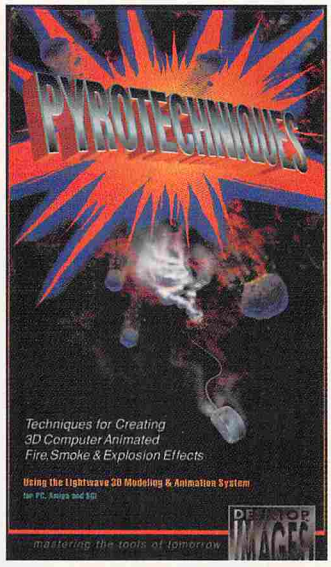
LightWave 3D!" promises comprehensive coverage of the software up through the 4.0 pre-release version. Chapter topics include Understanding 3D, LightWave Basics, Exploring LightWave's Interface, LightWave's Modeling Tools, Creating and Using Surfaces, Using Lights and Lighting Effects, The LightWave Camera & Rendering, Advanced Projects, Theories of 3D, Lighting & Color, Pre- and Post-Production and more. An enclosed disk contains all geometry files used in in the book's ttutorials.

FOR INFORMATION CIRCLE 5

Spaceships, Fire and Smashing Graphics

Products: Great Toaster Graphics, Pyrotechniques, Spacecraft Model Design, Spacecraft Surfacing Techniques
Description: Toaster and LightWave training tapes
Price: $49.95 each
Desktop Images
RAVE Video Productions Inc.
P.O. Box 10908
Burbank, CA 91505
(800) 377-1039
http://www.desktopimages.com/desktop/

Desktop Images has released four new instructional videos for LightWave and Video Toaster users. The tapes offer high production values and insightful information, and average 90 minutes in length. A handy reference index with VCR counter numbers for easy subject access is provided. *Great Toaster Graphics* provides powerful video graphic ideas and techniques while using Video Toaster Flyer or Toaster 4.0. Host Bob Anderson offers tips for great-looking titles and graphics. Techniques for creating 3D animated fire, smoke and explosion effects are covered in *Pyrotechniques,* hosted by Brad Peebler. All versions of LightWave are discussed. *Spacecraft Model Design* and *Spacecraft Surfacing Techniques* feature Ron Thornton, president of Foundation Imaging and Emmy award-winning CGI artist on *Babylon 5*. Topics include model design, layout and detailing, as well as custom surfaces, diffusion and image maps.



FOR INFORMATION CIRCLE 6

Sea of Success

Products: Frozen Fish, August '95; FreshFish, Volume 10
Description: PD utilities on disc
Price: $24.95; $19.95
Amiga Library Services
610 N. Alma School Rd., Ste. 18
Chandler, AZ 85224
(800) 804-0833

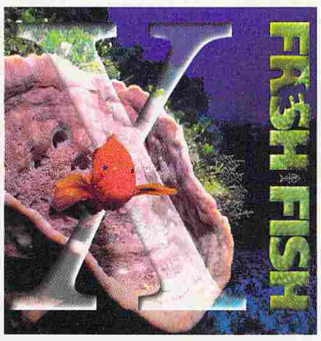
Frozen Fish, August '95 is a special edition of the 1994 FrozenFish, and the first of the line to be PC-compatible, offering PC-owning, CD-ROMless Amiga users a new way to net the "fish disk" archives. Frozen Fish contains the original 1000 fish disks and the latest 100, making it the most complete library of Fish material available. Archived on a per-floppy basis, this multi-platform CD is fully readable on all systems, including Amiga, MS-DOS, OS/2, Mac and UNIX. Each directory contains a standard "FILES.BBS" file that BBS programs can use to access the vast material on the CD-ROM. *FreshFish 10* marks an attempt by Fred Fish to create more user-friendly access with a system that allows more programs to be reviewed and executed from one centralized interface. Loaded with the latest material, FreshFish 10 also catches the last 100 "fish disks" providing demos, telecommunications programs, fonts, mods, reference material and specialty items such as MiniMorph 1.1d, a small morphing package used to create smooth morphs and warps between images to create an animation. Reminder 6.0 is a terrific utility that notifies users of their "things to do, places to go, people to see" schedule.

FOR INFORMATION CIRCLE 7

Flyer Tools, Amiga Billing

Products: FlyerCOM 1.0 and 2.0; Job Tracker
Description: Command system for VT Flyer; Amiga cost/billing tool
Prices: $295; $59.95
MegageM Digital Media
1903 Adria Ave.
Santa Maria, CA 93454
(805) 349-1104

FlyerCom 1.0 is ideal for timed automatic operation of the



Flyer, with no user intervention, for commercial insertion. The product lets you perform manual operations, frame by frame, with the ease of typing commands into an Amiga Shell or from an ARexx macro or even a remote site with another computer. And FlyerCOM gives you a new freedom of action with your Flyer, answering many needs of Flyer users that fall outside

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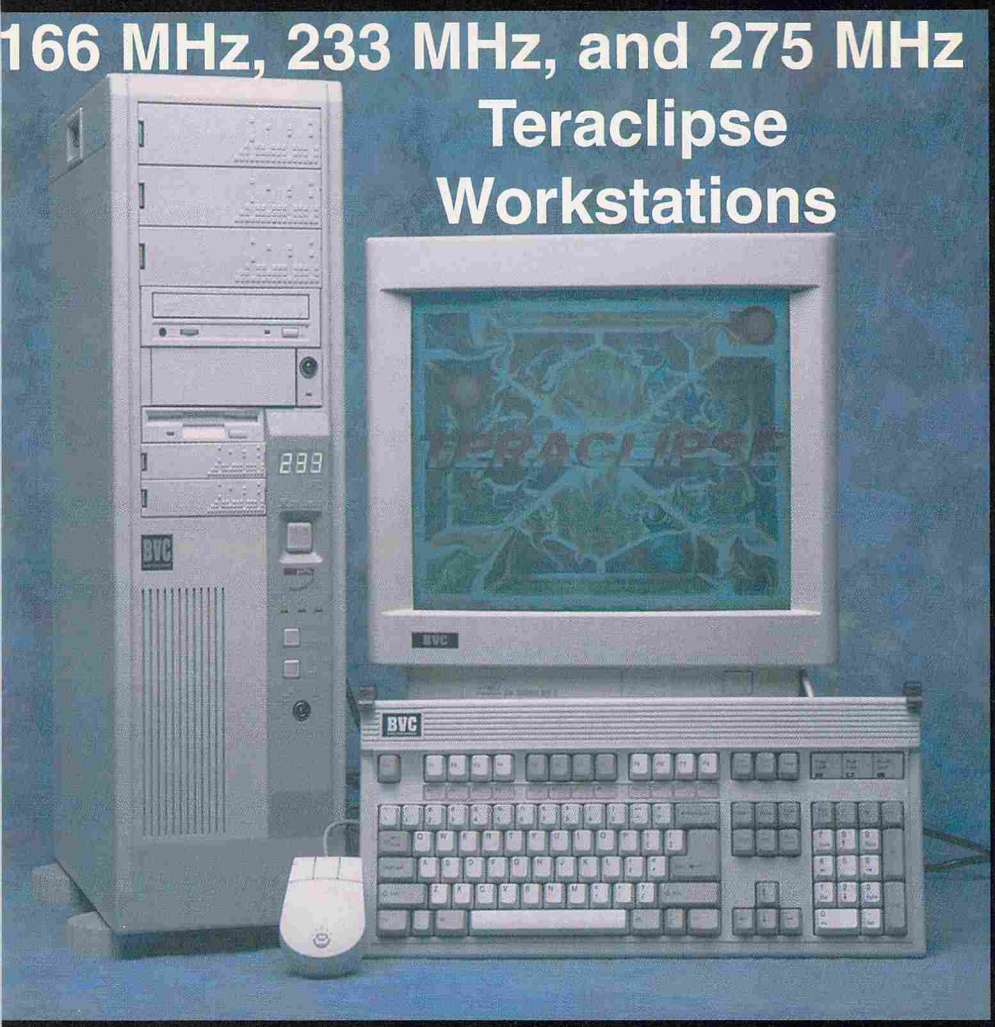

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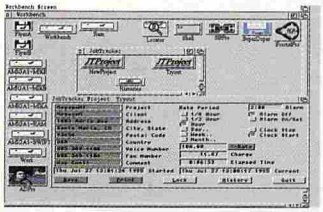
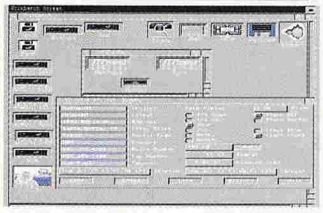
FOR INFORMATION CIRCLE 109

the boundaries imposed by the hands-on graphical user interface. *FlyerCOM 2.0* adds support for Flyer operation from the J. L. Cooper CS-1 control module. The J. L. Cooper CS-1 has VCR-like buttons and a jog-shuttle wheel so users can edit on the Flyer without touching the Amiga mouse or keyboard at





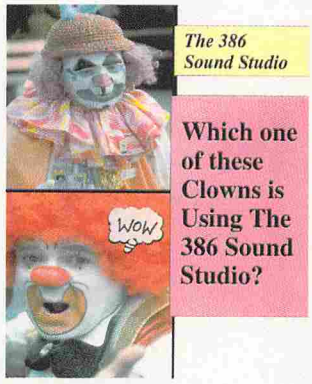
all. MegageM's *JobTracker* is a full-featured project cost and billing tool for the Amiga. JobTracker lets professionals keep track of muliple clients' project work sessions for accounting and billing. It also functions as a recorder of time and charges for work time allocated to individual projects or accounts.

FOR INFORMATION CIRCLE 8

Make Your Own Music

Product: The 386 Sound Studio
Description: instructional video
Price: $29.95
Dwight Johnson & Associates
4010 Moorpark Ave., Ste. 105
San Jose, CA 95117
(408) 224-5555

If you're looking for a cost-effective method of producing high-quality, royalty-free background music for multimedia productions, *The 386 Music Studio* may help. This 30-minute instructional tape shows Video Toaster users how to take a 386 computer running Win 3.1 and specific hardware/software (typical cost of $280) and turn it into an inexpensive music-studio-in-a-box. Hosts Dwight Johnson and Ernie Fracchia cover the step-by-step process of installing unrelated hardware and software, and how the resulting music Studio

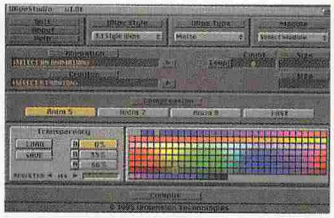


was used with the Toaster to produce music for product release demo videos. Samples of music produced by the 386 music studio are also included.

FOR INFORMATION CIRCLE 9

Handy Wipes

Product: Wipe Studio
Description: Color wipe maker
Price: $199.95
Dimension Technologies
1156 W. 8th St.
Erie, PA 16502
(814) 838-2184



With Dimension Technologies' Wipe Studio, Amiga 4000 owners can create their very own color wipes. The software lets you produce custom color wipes that can be triggered in real time from your Switcher screen. The program compiles your color or matte wipes in both 3.1 and the new 4.0 formats. Wipe Studio's easy converter program is currently the only way to update your 3.1 wipes to run with Toaster 4.0. Included with the software is a free video that gets users up to speed, and able to make their first wipe in minutes.

FOR INFORMATION CIRCLE 10

NEW UPDATES

Connectivity

Product: Matchbox II
Description: Level and impedance converter
Price: $195
Henry Engineering
503 Key Vista Dr.
Sierra Madre, CA 91024
(818) 355-3656

The Matchbox II, the newest version of Henry Engineering's level and impedance converter, is an ideal way to correctly interconnect "consumer" or semi-pro equipment with professional gear. This bi-directional unit employs four independent amplifiers to convert stereo inputs and outputs from unbalanced -10 dBv levels to +4 dBm balanced 600 ohm lines. All four outputs can be adjusted to accommodate a wide range of operating levels. The Matchbox II also features a special HI GAIN mode to properly match the low-level unbalanced outputs of computer sound cards. The unit's direct-coupled circuitry and exceptional dynamic range provide absolute sonic transparency, making Matchbox II ideal for use with digital editors, DAT recorders and other digital audio sources.

FOR INFORMATION CIRCLE 11

PC Digitizing

Product: VertiSketch 2.0
Description: 3D digitizing system
Price: $995; free with interfacing systems
Blevins Enterprises Inc.
121 Sweet Ave.
Moscow, ID 83843
(208) 885-3805
Fax (208) 885-3803

Blevins Enterprises has announced the release of *VertiSketch 2.0*, a plug-in for LightWave 3D version 4.0. With VertiSketch 2.0 and the use of any supported 3D digitizer, animators, artists and designers can now effortlessly create lifelike models on the PC, making a complex organic 3D model from a physical object in minutes. VertiSketch sends sampled data directly into LightWave's Modeler, thus

eliminating unnecessary file conversion and time spent learning another modeling program. With the software's plug-in nature, users retain access to the complete suite of modeling tools by LightWave 3D. VertiSketch 2.0 comes with a complete set of utility functions that accelerate the digitizing process, and supports numerous digitizers.

FOR INFORMATION CIRCLE 12

PRODUCT ANNOUNCEMENTS

Send your company's new product announcements and information to: Video Toaster User, Attn: New Products, 273 N. Mathilda Avenue, Sunnyvale, CA 94086. Or call us at (408) 774-6770; fax (408) 774-6783.

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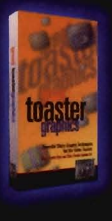

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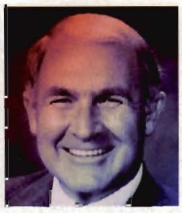
FOR INFORMATION CIRCLE 108

TOASTER POST

Animations 'On The Cheap'

The Never-Ending Search For Improvement



by Burt Wilson

A person called me up the other day and asked, "If I just keep reading your column in *VTU*, will I eventually have read your whole book?" No! About 90 percent of what I write in this column is stuff not in "Post-Production With the Video Toaster." I do confess to having taken non-tutorial themes from this work and expanded on them in my column, but hey, I keep learning, too—and as I learn it, I pass it on.

Which brings me to the area of cheap animations. Although I cover the basics on this in my book, I want to pass along to you an advanced tutorial on a project I recently completed for an auto dealer in Simi Valley. His plan was to advertise in the San Fernando Valley to get people to drive over the hill into Simi for a better deal on a new car. To illustrate that it was only a 15-minute drive and show how to get to the dealership, I conjured up a small animation on the cheap. First I went into Scenery Animator and, in the Yosemite landscape area, moved my point of view around until I found a hill that nearly matched the actual one I was representing. I rendered it out with blue sky and clouds and imported it into ToasterPaint. There, I used the straight-line tool and a one-pixel brush to draw a simulation of city streets, one for each valley. Then I used the rectangle and fill tools in the Blur mode to give the whole thing a softer look, blurring it again and again with the (A) key until it was how I wanted it. Next, I saved this scene as Framestore #1 for the cheap animation (Figure 1).

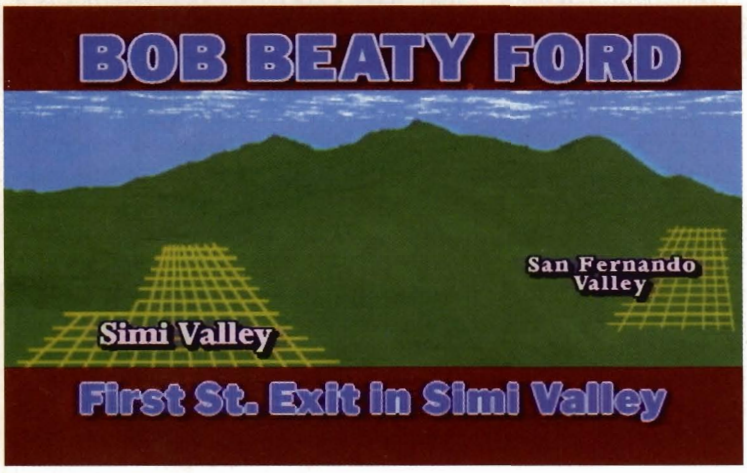


Figure 1: Scenery Animator was used to create the two cities, then ToasterPaint was used to blur the lines before adding the animated freeway.

With the graphic still up in TPaint, I took the largest rectangle brush and, using both the freehand and straightline tools, drew in the freeway up over the mountain and down into Simi, to where it straightens out. At the end, I drew the freeway offramp that leads to the Ford dealership (Figure 2) and saved it as Framestore #2. Then I made a brush of the logo picture of the dealership and texture-mapped it into a little square where the dealership is in relation to the freeway. I put a yellow border around the square to make it stand out more. I know you can hardly tell what's in the square, but the idea here is that anything is better than just a solid color used to represent the location. This gives it a bit of a personality, even if it is small. The eye tends to fill in the missing details. To make sure people would know this is the dealership, I texture-mapped in, over the square, the big Ford sign I had shot earlier. I saved this as Framestore #3 (Figure 3). Leaving this last Framestore up in ToasterPaint, I exited to the Switcher (Shift + Q) and entered the CG. After loading a background page, I entered the color palette mode, brought up the PAINT button and clicked on that to bring in the Framestore I had left up in TPaint as a background page in the CG. Then I loaded my type style and proceeded to input the location names and the freeway numbers (see all three Framestores). I exited to the Switcher and went to the Setup Screen to save the Framestore with the text over Framestore #3. I now had my completed Framestore for use in the animation.

At this point I went back into the CG and, without changing the position of the text, brought in the other two Framestores, rendered them and saved them over the original Framestores #2 and #3 (Figures 1, 2 and 3 show the final result). Note that I eliminated the text of the freeway number from Framestore #1 because I wanted that to be revealed when the animation occurred. And I added the text of the name of the Ford dealership to Framestore #3. Now comes the fun! I put Framestore #1 in the Main Bus and Framestore #2 in the Preview Bus, then went to Bank "D" (In Toaster 4000 3.5) and clicked on the Wipe Left effect. In the Setup Screen I switched the effect speed to "variable" and, back at the Switcher Screen, set the numbers to 100—a nice, smooth-running amount of time for the effect. You set up your edit points, set your GPI to trigger at the edit point and hit the make-edit button. At the edit

point, the yellow freeway will appear to be traveling from right to left, from the San Fernando Valley to Simi Valley. Neat, eh?

Now, to complete the cheap animation, use your jog/shuttle knob to make your next edit-in point at the frame just before the off-ramp part of the animation heads down. Switch the two Framestores back to where they were by hitting the TAKE button. Click on the Wipe Down effect and set the speed to "S" for slow. Set your GPI to trigger the effect at the edit point again and hit the make-edit button. You'll now see the yellow freeway line reach the end, turn left and stop. Next, load Framestore #3 in your Preview Buffer and leave Framestore #2 in the Main Buffer where it is now. Then click on the Wipe Up effect and leave the speed on slow. Move your edit-in point to where the offramp comes down all the way and set your GPI trigger as before. Hit the make-edit button and you will now see the image of the car dealership and the sign spring up as if by magic! Run these edits back and look at them. You'll see the yellow freeway run from one valley to the other, head down the offramp and then reveal the Ford dealership!

My client was very impressed with this animation and ordered the spots on the air right away. You can impress your customers with similar animations and never have to say they were done on the cheap. Actually, "on the cheap" is a term relative to doing an animation in LightWave 3D, so it's a little unfair. You still put in a lot of work, but the visual results are far greater than the total time spent producing them. Once you know the principles behind doing such animations (and they've just been laid out for you here), you can use those principles to do any type of animation you can conceive. Use it in good health!

The other Framestore example shown is a composite of a number of different techniques and paint programs. I did it for a financial institution that's trying to attract people who need loans. I needed a lot of different areas requiring

FOR INFORMATION CIRCLE 125

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FOR INFORMATION CIRCLE 127

change, so I came up with this sequence of work. First, I rendered the basic template from my Composite Studio program. I needed a text bar at the top of the screen, so I cut out the bar at the bottom, flipped it horizontally in TPaint's Effects Mode and stamped it down at the top. Then I enlarged the three boxes at the side so they would show larger images. In fact, I completely manipulated the whole Framestore to the point where you see it here. The color scheme—which I liked very much—is the Composite Studio original. The idea is that the main image in the larger box will change all the time while the smaller images in the three boxes to the right will change three times during the commercial. So I made the larger square a deep purple color and the smaller squares a purple-green gradient (done in TPaint's Transparency & Warping mode).

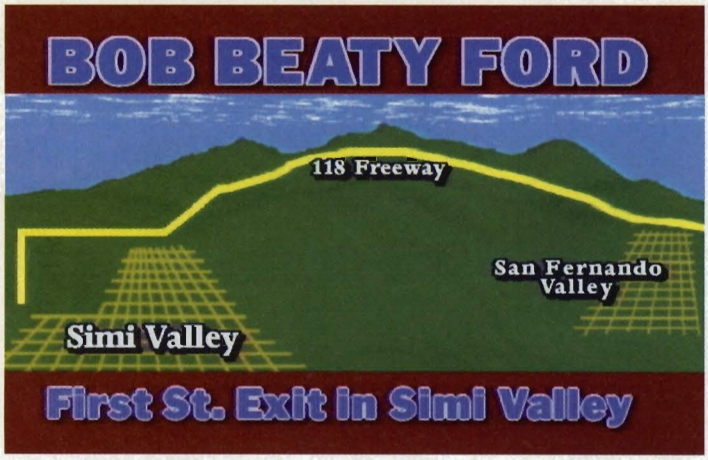

Figure 2. Lay down your animated freeway by using the largest square tool with the freehand and the straightline tool.

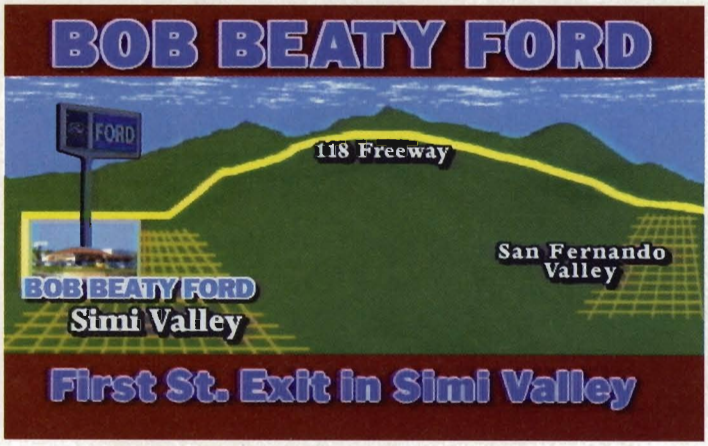

Figure 3: The finished frame with title. The dealership and Ford logo are texture maps.

Alpha Paint, Composite Studio and TPaint were combined to create this image.

With the basic template now set, I went into Alpha Paint and loaded in my images (in this case the car). Using Alpha Paint's circular gradient Alpha channel pattern, I rendered out the images so they were solid in the center while fading to black at the outer edges. I saved these scenes as Images and then, back in TPaint, brought up my template, put it in the Swap screen and loaded the image of the car. I cut out the entire image of the car by clicking on the cut-out tool and hitting the (w) key, and then saved it as a brush. Next, I went into the Transparency & Warping mode and moved the righthand slider all the way down to the bottom. This sets up a gradient transparency. I went into the Texture-Map (TxMap) mode and, clicking on the fill tool and the rectangle tool, I texture-mapped the image over the purple box. The image is strong in the middle and gives way around the edges, blending into the purple background.

I used the same procedure to do the three smaller boxes. The result is a high-quality, professional-looking series of framestores that, combined as a 30-second commercial, conveys a subliminal essence of beauty and strength along with the sales message. The shame is that we Toaster users produce all kinds of good stuff and never get paid what we should for it. But there's great satisfaction in doing a good job at any price. I think it's appropriate to end this column with a sage piece of advice. I always try to make the next commercial better than the last one. I think that's the best way to approach this job and keep yourself from going stale. Each project has its own peculiarities and challenges and there is always a creative solution to each. I personally believe that if we keep trying to improve—to make an art of our work—we will succeed. I know, there are times when it seems appropriate to put together a slap-dash commercial, but I fight that feeling with all my might. I only want my best work out there. I find that if I'm enthusiastic about what I'm doing, the client will pick up on that and have more confidence in what I do. One of the finest compliments I get from clients is, "It's easy to see you like what you're doing!"

Reach Burt Wilson online at burtwilson@aol.com.

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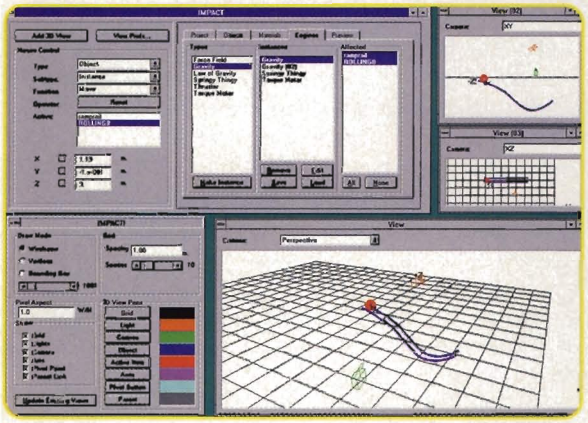

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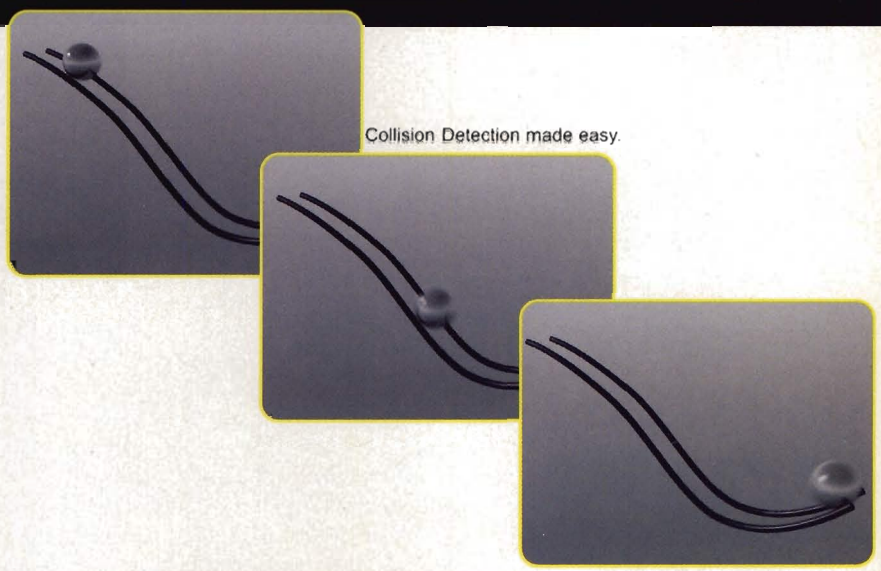

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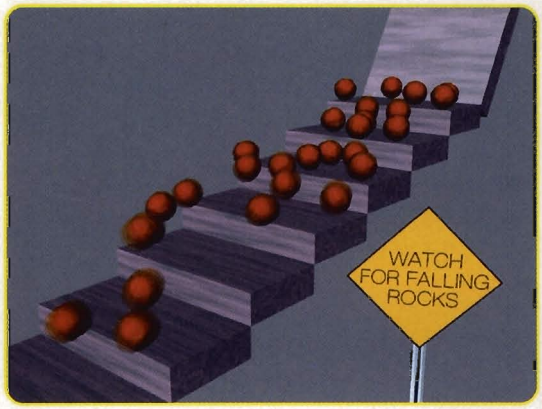

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THE FLYER SUITE

New Flyer Software!

Hard Drives, Editing to Music

by Frank Kelly

Since the last column there have been some exciting changes to the Flyer software, which we'll cover after answering questions received from Flyerneers (a term for Flyer pioneers coined by NewTek's founder Tim Jenison) on the nets and via fax to the *VTU* offices. The first question comes via CompuServe's Amiga Vendor Forum.

"Dear Frank,

If I have a third drive in a separate case, how do I attach it to the SCSI cables?"

Fred Berney

A short question, but a lengthy answer! Attaching an external drive usually isn't any great hassle (assuming you have the appropriate SCSI cables available). Are you using an external housing (such as a Flight Recorder or similar tower) for your other drives? Assuming that you are, and that you were issued one of NewTek's "octopus" SCSI cable assemblies, here are the steps.

First, turn the power off to your hard drives and the Flyer. Attach one of the three octopus cables to the external drive, then use a SCSI cable (Centronics-style male at both ends) to run from the external drive into the drive tower, which contains your other drives. Make certain that the SCSI address of this new HD conforms to the protocol that NewTek specifies for the SCSI chain. In other words, if adding a new drive to the "B" SCSI chain where one already exists, verify first (by using the Flyer format utility) that the existing drive is using SCSI address 0. Then physically remove the termination from that drive (remember to power off the unit first). Finally, make certain that the new drive you are attaching externally is set for SCSI address 1 and that it is terminated. There are usually physical terminating resistors or a jumper that will set termination for you. There are also jumpers on the drive itself that will change the SCSI address. On most externally installed drives, these jumpers are attached to externally mounted switches that can be used to set the SCSI address.

A few things to remember: Your Flyer expects to see all video-capable drives on SCSI chains A or B, and for all audio (and other SCSI storage devices not used for video) to reside on SCSI chain C. It is possible (and often desirable) to use a separate SCSI controller to address devices that are not being used for Flyer audio/video purposes. In this case, the procedures below are not required.

Once you have added the drive to the desired SCSI channel, it will need to be formatted by the Flyer format utility (assuming that it is either a Flyer audio or video drive). Before the Flyer can recognize this new drive, you will need to add a device driver and reboot the machine.

To add a device driver, locate the system drive on your computer and the Storage/DOS drivers drawer. Open it on the workbench screen or use a utility such as Directory Opus to examine the directory of the drive. Then open the Storage/DOS drivers drawer. The required device driver that you are looking for is specific to the SCSI chain and physical address of the new drive. For example, if you are attaching the new drive to the "B" channel, and there is already one drive present (using FB0 as its device driver), you would copy or move the file called FB1 from the Storage/DOS drivers drawer into the Devs/DOS drivers drawer. This would correspond to the SCSI address "1" that you have set for the new drive you have attached to drive channel B. If attaching the new drive to the "A" SCSI bus, you would use the corresponding device driver with an "A" as its prefix (such as A01, A02, etc.).

Remember that when you use the Flyer format utility, you will have the opportunity to give a name to the drive that will be used by AmigaDos to mount the drive on the Workbench, and for the Flyer to access the drive. Once you name the drive, be certain not to change it via the workbench anytime afterward. Otherwise, it's highly probable that your software will no longer mount or recognize the drives or the contents of previously saved projects.

If you are using a Toaster Oven or a similar case, you will not have an octopus cable, so the procedure will vary a little from the one I described. In this instance you may need to purchase or make a special ribbon cable that will attach to conventional SCSI/Centronics-style connectors.

Here's another question from CompuServe.

"What firmware is required on NewTek approved Quantum drives for HQ-5 performance?"

Rev 576D or F76D is required for the Quantum Atlas 2GB XP32150L (which will support HQ5 over the entire surface of the drive) or Atlas 4GB XP34300 (only HQ5-capable over a portion of the surface—usually about 80 percent). No other Quantum models have tested as workable.

On other drive-related issues: Micropolis is now working directly with NewTek to modify the firmware on their current drives (even the A/V models!) so that they will provide high enough performance to work in the HQ-5 mode. Seagate and NewTek have developed a program for those who purchased NewTek-approved drives that exhibited stuttering and dropped frames on video capture. The firmware upgrade will be handled by Seagate after an RMA is issued by NewTek Technical Support. All drives must be shipped to Seagate packaged in Seagate's shipping boxes.

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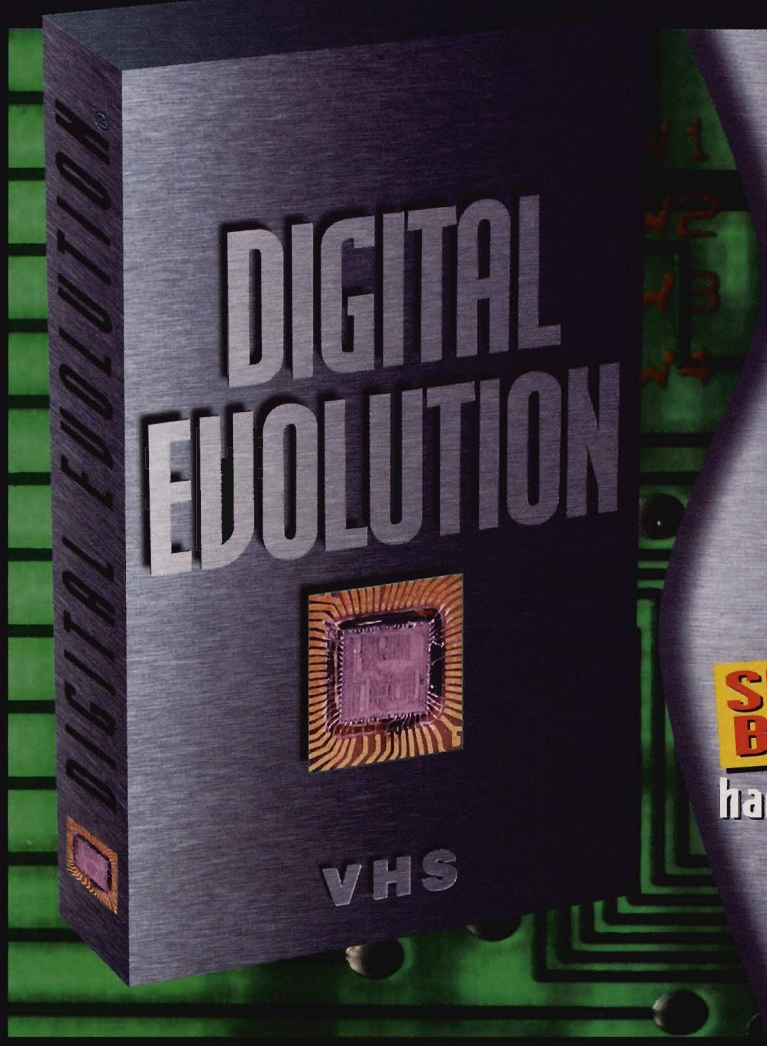

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FOR INFORMATION CIRCLE 106

NewTek has issued a procedure whereby those who purchased their drives already pre-installed by dealers can obtain appropriate shipping materials.

Flyer's New Bag-o-Tricks

I found an interesting feature in the latest release of the Flyer software that was available at press time. The sequencing code (the heart of the Flyer) has undergone a complete overhaul.

It's a very useful (I would say nearly invaluable) add-on called the Edit-to-Music feature. This answers a need for those of us accustomed to editing our video to a soundtrack. In the linear edit domain, this option would normally be referred to as "Insert Editing." Though in Non-Linear terms, insert-style editing may be considered less efficient by those currently designing the hardware and software, those of us who use this stuff for a living absolutely require this capability. Previous versions of the Flyer software could be made to work with video-to-audio edit projects, but lacked a simple procedure to make this type of editing precise and painless. I very glad to say that after using the Edit Music feature for a brief time, I can n begin to see the time when my Flyer n in fact replace my linear edit suite.

To accomplish an insert-style edit soundtrack sequence, drag all your vi clips up into the Flyer's edit screen, al with the Flyer audio clip you wish to ma your edits to. Set all your video cl inpoints (don't worry about the outpoi Place your audio clip at the beginning the edit sequence; from the audio con panel, select "Lock to Program Tim Make certain that the program time listed the panel is set to zero and that you c on the continue gadget to close the con panel.

The next step is to highlight the v first video clip in your edit sequence. Th hold down the Alt key on your keybo while using the mouse to select play press the Tab key, then release). A pa will appear that will allow you begin y Edit-to-Music sequence. Once your au begins to play, "mark" each of your points by pressing the space bar. Each t you hit the space bar, a small padlock appear on the current clip and the next becomes highlighted.

Continue to press the space bar at e point in the audio where you would like edit to occur. You can exit the Edit-to-Mu mode at anytime by pressing the ESC or clicking the right mouse button. Flyer will then query you as to whether want it to automatically set all the outpo to correspond to the beginning edit po of the following clips. By responding the Flyer will neatly set your sequence order, and all you need to do is play b the sequence to verify that all edits where you want them to be.

Though this procedure is ideal for "c only" editing, you can add effects as ne ed after unlocking each clip and mak the appropriate minor adjustments nec sary to get the rest of the sequence back time" with your original edit points. easiest way to make sure that a given won't change when effects are added i lock the clip from its control panel. M features and hot keys are also implemen now and theses are fully described in a "read me" file that accompanies the s ware. Software upgrades can be obtai from your dealer or on-line at NewTe BBS (913) 271-9299 and other sites.

Frank Kelly can reached on-line 76527.723@Compuserve.Com.

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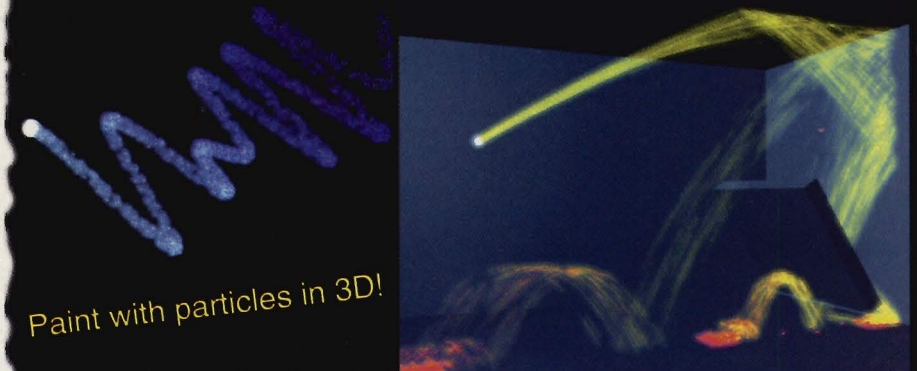

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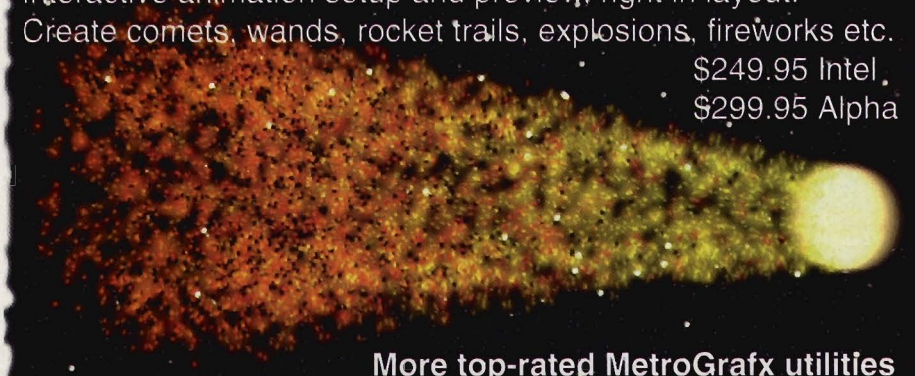

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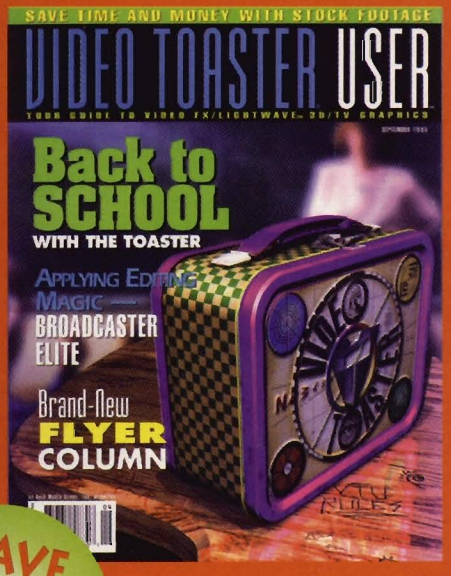

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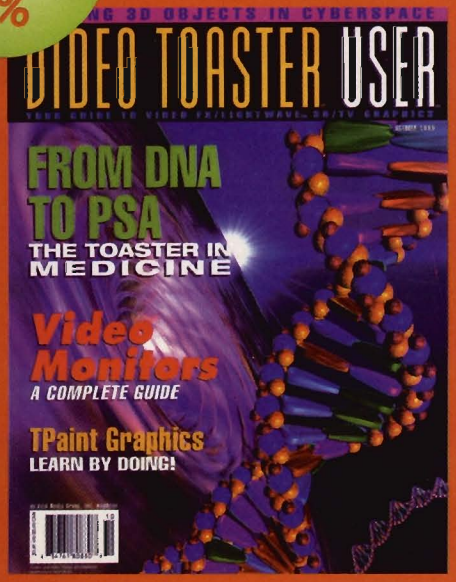

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SLICES

Thanksgiving 1995

Unsung Heroes and New Software

by James Hebert

By the time you read this, it will be cold in Kansas. But you should see two terrific items on your computer store shelves: System 4.1 for the Flyer and Video Toaster System 4.1 (the stand-alone Amiga upgrade).

At Long Last

"Doing the right thing" is sometimes a difficult prospect. It can mean putting off other projects and putting in long hours just to get one aspect of a product just right. It can mean long nights fixing bugs that result from the inclusion of one feature. And it can mean putting your entire company on the line until you're satisfied.

The development of System 4.1 has been a long haul for NewTek. During this period, a number of staff members have left, a number have been picked up, and a number have worked longer hours than I can ever recall. At times it appeared as though even the rumor mill had given up on NewTek. Through it all, a small number of dedicated people have attempted to steer a steady course through viciously choppy waters. Their names are not on any list that you will see, and yet their names should be known. They have taken an unwieldy beast, tamed it, and made it friendly. You should be aware of their Herculean contributions to NewTek's products. I have left no one out intentionally, and I apologize for any errors.

Chris Richardson of NewTek's product testing department has worked incomprehensible hours searching for bugs. His beta site contacts and internal testing actually made the process of debugging code tolerable, and his up-to-the-minute bug list helped out a lot. He always has the user in mind.

Todd Hayes, also of product testing, has written more 11th-hour software installation programs than anyone I know. They're powerful, accurate and flexible. He wrote the DriveSpeed utility for testing Flyer drives. Todd could probably just hold a drive in his hands and tell you if it would work!

Bob Caron, also of product testing, has assumed the dual role of "the ARexx guy" and "the CD-ROM guy." Bob has slipped more features into the Toaster and Flyer via ARexx than you can count. He agonizes over every detail. Considering the sheer volume of details to worry about, this is no small feat. Take a look at the number of files on the CD-ROM sometime.

Marty Flickinger, Alcatraz programmer. You know you're in the hands of an extremely talented programmer when, hour after hour, he consistently enters your office and announces that the bug you found an hour ago has been fixed, three features you asked about have been added, and one old feature that was lost is now working again. Marty took the Flyer and made it sing and dance. Thanks–it's fun again!

Pat Brouliette, Alcatraz programmer, is a neat guy who likes to make beer. He also has a keen interest in writing sleek code that does not require further maintenance. Many aspects of the Flyer have been sped up due to Pat. He also handled the gargantuan job of designing a backup utility for the Flyer. Lately, he's been spending a lot of time making the Video Toaster for Windows do some incredibly cool things. Many of these features have already trickled over to Toaster System 4.1. You'll see lots more in the future.

David Holt, Alcatraz programmer. David worked his way up at NewTek the hard way. He started in technical support and displayed considerable prowess at programming. David then moved into the vacant ToasterPaint slot and manhandled it into a more sensible package, adding some nifty features along the way. He has worked some difficult hours tracking down Switcher bugs and addressing the Toaster's graphics and buffer handling. Little-seen things that you'll sleep better knowing they've been taken care of.

The hardware guys: Karl, Bob and Les. These guys have a hard job—they have to fix everything! They've been a big help to both me and the testing department, ensuring that we know what's happening with the hardware and helping us to better understand how it works as an ensemble (with the Amiga, the Toaster and the Flyer). Karl and Co. can dress-down a Flyer faster than I can dress up my 2-year-old. As you see more and more technical documentation accompanying NewTek products, you'll have them to thank!

Randy Pierce. Now, Randy probably never figured I'd mention his name. In fact, the moment he sees this he'll likely groan and dodge into his office to unplug the phone. However, to set the record straight, Randy is one of those people whom you always turn to when you need to get something done. No matter what it is, no matter how far-off from his job description it may be, Randy can pull it off. He will always keep his word, or he will know not to give it. Not only would I want him on my side in a fight, I'd like him betting on the outcome, too. Randy's a trusted friend and a good buddy.

There are more names that I should point out, such as Scott for handling domestic and international sales (and for making sure that we send electronic versions of our documentation overseas for transla-

tion); the guys in tech support for their help and ideas (and pizza); my manager for giving me the latitude to make the LightWave manual the best ever (with color covers, color plates, and more screen shots than any other 3D manual I've ever seen); Brad Peebler for wrestling LightWave into a finished product; and others. Also, FryeAllen Inc., of Topeka, who made the LightWave manual a reality.

And then there's Tim Jenison, who, as you probably know, invented the Toaster and Flyer. Tim's got the hardest job of all: trying to coax a dozen other "chefs" into making the product he envisions at the end of the tunnel a reality. A rewarding and frustrating task, if you've ever had that responsibility. Thanks for making these neat products that I get to travel with, write about, and use in my life!

By the way, I just realized that this column sounds like a big send-off. Forget it. It's not. (So don't get your hopes up.) I have the fortune to be one of NewTek's "voices" through this column and the position I hold at the company. It's easy for me to spout off about what I love and what I do. The people I mentioned above don't get that chance, and they are typically not acknowledged to the degree that they deserve. They work behind the scenes, and there's no credit roll at the end of the movie for them to receive their kudos. Hell, they've earned it.

Good Reading?

If you are a LightWave 3D user looking for additional information on 3D graphics, there are some excellent books you may be interested in. Andrew Glassner's "3D Computer Graphics: A User's Guide for Artists and Designers" remains one of the better volumes on 3D. It contains very good information for beginners and intermediate animators alike. In a future column I will have information for you on another superb beginner/intermediate book on 3D graphics.

Neither text focuses on a specific software package. Instead, each covers the overall 3D animation field. All the same, both books have a distinct "LightWave feel" that you will find familiar.

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FOR INFORMATION CIRCLE 115

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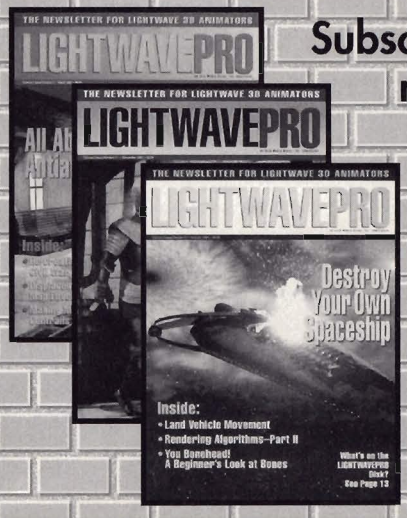

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TimeSavers

The following scripts have been assigned to the function keys of ToasterCG 4.0 (and higher).

- Alt+F1 —File requester to launch CG ARexx scripts.
- Alt+F2 —Save page as ASCII text file.
- Alt+F3 —Save current font list for all future startups.
- Alt+F4 —Save Page
- Alt+F5 —Save Attributes to file.
- Alt+F6 —BumpLines (spread lines evenly on a scroll page).
- Alt+F7 —Runs Spell-checker.
- Alt+F8 —Runs the DOS Command.
- Alt+F9 —SizeUp Increase Text size by five lines.
- Alt+F10—CopyAttrib saves currently selected attributes to temporary file.
- Shift+Alt+F1—Import allows you to load multiple file format images.
- Shift+Alt+F2—RmWord removes words from the spell check dictionary.
- Shift+Alt+F3—same as Alt+F3
- Shift+Alt+F4—EPSLoad will load an EPS file and make it an IFF file.
- Shift+Alt+F5—CGHaiku. Pure fun!
- Shift+Alt+F9—SizeDown. Decreases currently selected text by five lines.
- Shift+Alt+F10—Pastes attributes from current temporary file.

The remaining Shift+Alt functions (F6-F8) have not been assigned. You can edit the file <drivename>-:Toaster/Programs/CG_Support/cg-config to add or reassign the keys.

By the way, I have yet to see an advanced animation book that I can recommend at this time. (Nor have I seen any of the LightWave-specific volumes. When I do, I will pass my analysis on to you.) Most efforts on 3D tend to discuss the variety of approaches to animating. None cover the tricks and techniques you need to make it actually work. Character animation is especially tricky. For now, your best course of study is to watch the "classics" of animation and take careful note of how hand animators achieve natural-looking motion, anticipation and behavior.

By the Time You Read This...

System 4.05 (or 4.1) will be out in the world. There are many new features. With either of these releases (4.1 is essentially the 4.05 release with any bugs ironed out), the Flyer becomes the product that NewTek originally wanted to release.

The new version features editing-to-audio, the ability to time video edits to a single audio track (or to all of the audio tracks in a project). You can also edit-to-video, which allows you to time sound effects (or musical events) to the video as it plays. Both editing techniques involve "locking" croutons in place so that adding or removing other croutons will not affect their locked place in time. The result is that you spend less time tweaking and retweaking a project, since a locked crouton always happens at the same time—every time.

ToasterPaint has received two new painting modes, which are available when you have the Air Brush drawing tool selected. The ARexx scripts for ToasterCG have also been improved.

LightWave now fully supports the Flyer in that you can render animations directly to a Flyer drive. If your Flyer drive supports the newer High-Quality 5 recording mode, you'll be able to lay down even cleaner-looking animation footage than before.

In the End

ARexx is a powerful tool in the Video Toaster (and Flyer). If you're like me, you can use ARexx scripts as long as someone else writes the code and ties it in to a button that you can press. All of the Toaster's ARexx scripts have been set up for you. You owe it to yourself and your productivity to take a look at them and determine if they might work for you. I recently taught a class on ToasterCG and learned that the majority of the group was unaware of the ability to load a single font in a dozen sizes with one command (an ARexx script that you can activate with a single keystroke). One person commented that learning this trick alone had saved him an hour a day. That's valuable time! There are about 15 ARexx script shortcuts that make ToasterCG faster and easier to work with. Try them out: press (Alt + F1) sometime when in ToasterCG 4.0.

VTU

James Hebert is NewTek's technical writer and documentation expert. We'd like to thank him for all his hard work and great information over the past year!

TimeSavers 2

The following scripts have not been assigned, but can be accessed by pressing Alt + F1 (in ToasterCG 4.0 and higher) to launch them. Have fun!

- ASCIIin—Enter characters based on their ASCII keyboard values.
- ASCIIout—Gives you ASCII values for characters.
- BatchFonts—Load multiple sizes of a font in one operation.
- BoxMaker—Save current Box(es) on screen to a file. Launching those saved files retrieves the saved box(es) to another page.
- ChartFont—Charts out the Shift, Alt, and "dead" characters in a font.
- RandomAttrib—Creates random attrib utes combinations. Some are useful.
- SaveAllPages—Saves all pages in curent book as separate page files.
- Startup—Do not run this script. It's the one that SaveState creates and consults whenever CG starts up.

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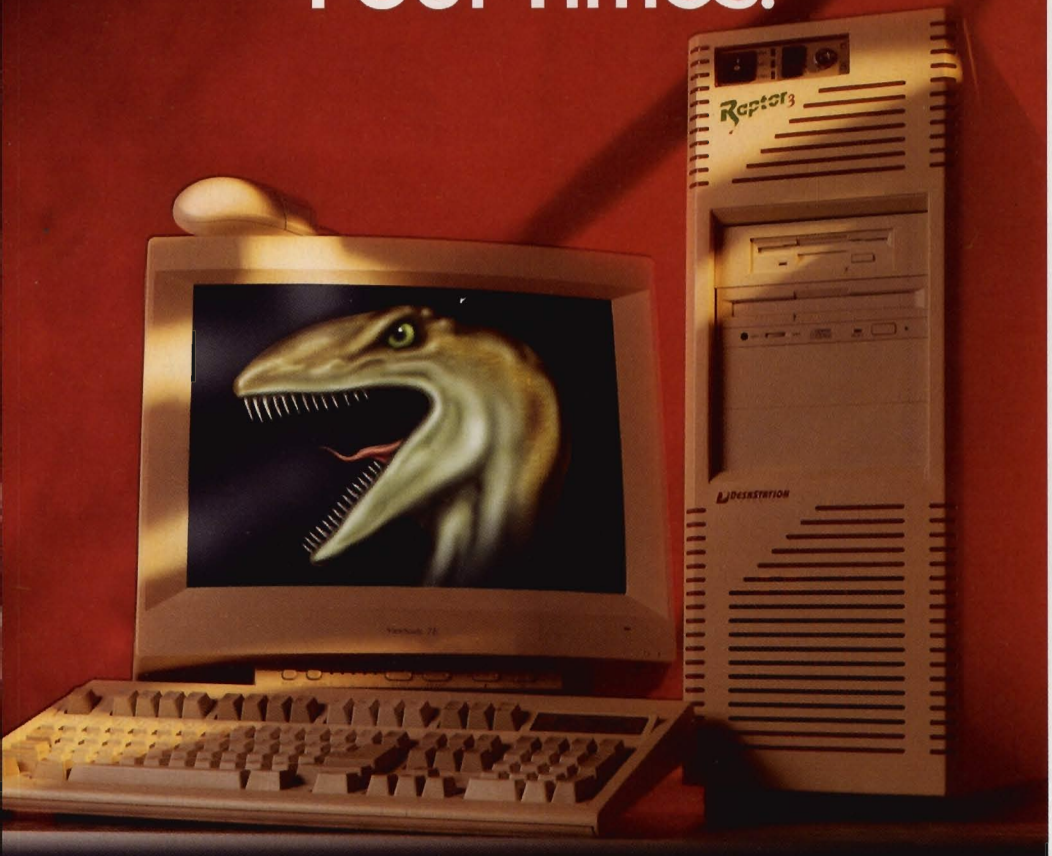

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FOR INFORMATION CIRCLE 111

CYBERSPACE

Combing the Net

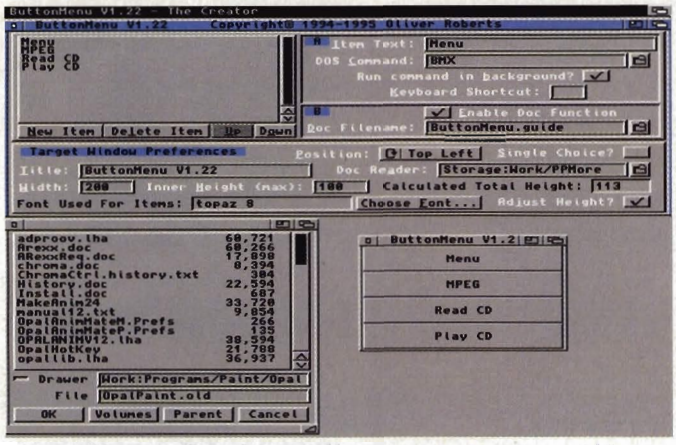
Finding Sites and CLI Utilities

by Geoffrey Williams

It's not easy coming up with enough material on a single subject to fill a column, and as the holidays are almost here, I must admit to feeling a little too relaxed. This month, I am taking it easy by just writing about a variety of things I have found that might be of interest but might not fit into a specific category.

Finding Sites and BBS Numbers

There is a new on-line publication in AmigaGuide format called AmigaPD, and it's available on the nets dedicated to public domain software for the Amiga. AmigaPD is on the Internet in the docs/mags directory. Edited by Roy Milican and Brett Williams, this guide is not specific to graphics and video applications, but does include World Wide Web and ftp sites, along with a variety of reviews. It's fairly new as I write this, but it looks like it could grow into something quite useful, even if you just need something to guide you to other interesting sites.



Automate CLI programs from a button or add requesters using ButtonMenu or AskEnv.

One of the best ways to find local BBS numbers that support the Amiga is to consult Ed Dukeshire's World Amiga BBS List (WABL.lha), which contains detailed listings of over 1,300 Amiga-supporting BBSs. The listings are sorted by state, country and area code, so finding something near you is easy. The entries tell you if they are connected to a network (such as FidoNet), how many incoming lines, the type of software they use, and their highest-supported modem baud rate.

Amiga CD

Did you know that many Amiga CD-ROMs can't be accessed from a PC? Considering that CDs are supposed to be a universal format, this might come as a bit of a surprise. The Aminet and many of the Fred Fish discs have this limitation, as do a number of others. You can still read almost all discs from your Amiga, assuming you have a CD-ROM drive and a driver—it's just going the other way that can be a problem with some Amiga CD-ROMs. Sure, it's not important if you have a CD-ROM of Amiga programs, but what if there are graphics or fonts you want to use? Many PC programs such as Adobe Photoshop can load Amiga IFF files directly, and most PD fonts are in PC-compatible formats already. You might also be in the situation I was, of having an internal CD-ROM on your PC and not having one on your Amiga. Neil Balharie wrote CDR to solve this problem, and he also has a UNIX version available by mail. CDR runs on the PC and allows you to access the files from an Amiga CD-ROM and copy the files to a directory on the PC. You can even write script files to automate the copying process.

There is also a proprietary animation format created for use on CDs for CDTV. It's called CDXL, and is a video (animation + audio) format. A utility by Wayne D. Lutz, CDGSXL, can play CDXL animations from CDTV, CD32 and the Amiga hard drive. CDGSXL is Command Line Interface (CLI)-based and there were no instructions in the archive I found other than the template you get by typing a question mark after the program name in the command line.

Taming CLI-Based Programs

I have a fondness for automating things and making life a little easier, and this is especially true with things that must be run from the Amiga's CLI. Here are a couple of utilities that, with a little effort, will allow you to run many CLI and other programs very simply. The little bit of time necessary for setting them up will be more than returned in the amount of time you save each time you use them.

Many CLI-based programs require you to type in the command line and the program name, followed by the file you want the program to load. This means finding the file manually and typing in the name. There is a simple utility that allows you to

continued on page 85

VIDEO TOASTER & LIGHTWAVE 3D TRAINING SEMINARS

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8:30am - 10:30am

LightWave & Modeler Essentials ..... John Gross

John Gross, Supervising Animator of Amblin Imaging and Editor of LIGHTWAVEPRO is currently supervising effects for Star Trek Voyager. John is the writer of the LightWave Layout Users Guide for 4.0 and also writes Video Toaster User's popular monthly column, Dear John.

11:00am - 1:00pm

Organic Modeling ..... Grant Boucher

2:30pm - 4:30pm

Character Animation — Beginnings ..... John Parenteau

Friday, December 15

8:30am - 10:30am

Advanced LightWave & Modeler—Open Forum Q & A ..... John Gross

11:00am - 1:00pm

Advanced Displacement Mapping ..... Grant Boucher

Grant Boucher, Head of Special Projects at Amblin Imaging, has been animating for 18 yrs. and currently supervises CGI effects for Star Trek Voyager, seaQuest DSV, Baywatch, Legend and Slider.

2:30pm - 4:30pm

Character Animation — Motion ..... John Parenteau

Saturday, December 16

8:30am - 10:30am

Lighting & Camera Angles - Production Workshop ..... John Parenteau

John Parenteau, Vice President/General Manager at Amblin Imaging, is a seasoned expert in all aspects of production — lighting, cinematography, camera design and character animation.

11:00am - 1:00pm

3D Compositing for Video ..... John Gross

2:30pm - 4:30pm

Real-World Special Effects ..... Grant Boucher

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TAMING THE WAVE

Something for Everyone

Fog, Readouts and Nudity

by David Hopkins

Alright, fellow LightWave users, this month we're going to reach into the grab bag and see what interesting new ideas we can come up with.

A few issues ago I explained the technique I used to create an extremely long planet-approach shot for *Space Marines*, the film I'm currently working on. As you've probably discovered, rendering that scene at high resolutions takes a fair amount of time. Of course, the script called for a shot virtually identical to this one, but with a pack of enemy fighters rising from the surface. Time to take advantage of LightWave's compositing functions!

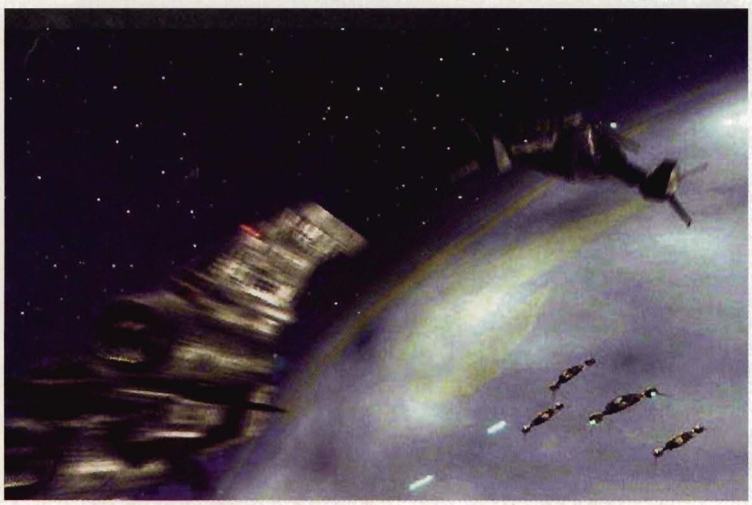

Figure 1

The first order of business was to specify the rendered planet sequence as the Background Image Sequence. With that out of the way I loaded the fighters, and with the help of Show BG Image (in the Options Panel), I built the paths my fighters would follow away from the planet and toward the camera.

Remember how neat and cloudy the planet's atmosphere looked in motion (you did build the scene, right?)? Well, since it's now been reduced to a flat image sequence, you can't have the fighters rise up through it convincingly. Or can you?

The solution is to use Backdrop Fog. I set the Maximum Fog Distance to a value just in front of the fighters' initial positions and the Minimum Fog Distance to somewhere midway between the camera and fighter starting positions. The result is seen in Figure 1.

There is one catch to this technique, but it's minor. Backdrop Fog makes the fog the "color" of whatever image you are using. In my example, the fighter sitting in the haze between the "camera" and the "planet" would use the whites and blues of the atmosphere. This, of course, is exactly what we want. But if the craft were to still be within the fog and cross the edge of the planet into the surrounding "space," the faux fog will be dark blue/black. For this reason the fighters in my shot do not cross the planet's edge until they are completely clear of the fog. This is a difficult concept to explain in writing, but experiment with a multi-colored background image and you'll get it.

From the Machine

Have you ever needed a computer readout effect in your animation? Use DeluxePaint (or any other text-capable paint program) to create your text, as seen in Figure 2. Pick it up as a brush, making sure to clip as close to the text as possible. In Modeler, construct a flat plane box (probably facing along the Z axis) that approximates the size of the text brush you just made. Give it a distinctive surface name, save it, then change the surface name to "RevealFull" (or something else of the sort) and save it as a separate object. Now, grab the points that make up the top of this box and drag them down until they are in the same place as the lower two. This will result in what appears to be a straight line. Don't merge the points, but do rename the surface "RevealTiny," and save it as a separate object.

Load all three of these objects and the display image into LightWave. You'll want to use the text image as a Surface Color Planar Image Map on the original polygon. Set the "Reveal" surfaces to match the background (e.g., if your background is black, the revealers should be black). If you are using an image as a backdrop, use the same image with a Front Projection Image Map on the Reveals. Position the large Reveal panel a microscopic amount in front of the text polygon, so that it covers the polygon completely but doesn't cover anything else.

To make the whole thing work, simply morph the large Reveal panel into the tiny Reveal panel over time. The panel (which you can't see in the

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RAPID TURN AROUND!

FOR INFORMATION CIRCLE 152

final rendered image) will cover the text but will uncover it as the Reveal polygon changes shape. You can test-render a few frames to get an idea of how much of the text will be visible in any given frame, and make morph timing adjustments. Try to set it up so that one complete line of text is revealed at a time. Of course, this same trick can be applied to a horizontal line of text, producing the effect of a computer typing. Add a little flashing cursor and you've got yourself a convincing display! An example of the result is seen in Figure 3.

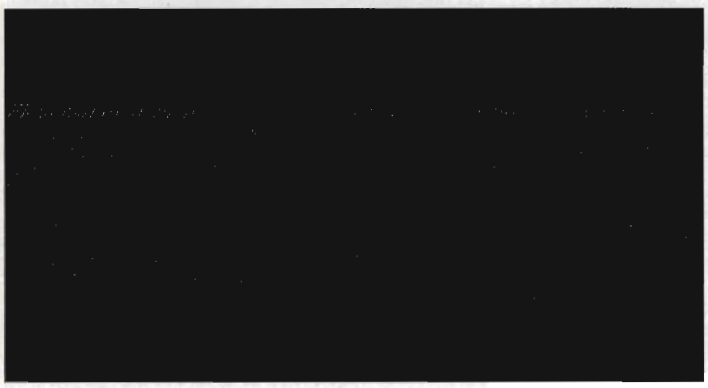

Figure 2

Put Some Clothes On!

What's next? Oh, here we go! Are you tired of your Humanoid being naked? Here's a great way to make clothes (and lots of other stuff): Load a body part into Modeler (the chest, for example). Place it in a background layer and put an empty layer in the foreground. Now, using the Sketch tool, draw the outline of a shirt, blouse, suit, etc. Make the outline into a polygon using the Freeze option. Extrude the outline so that it extends in front of and behind the body part (Figure 4). Press the (') key to swap the foreground and background, then press (shift + C). Select Stencil from the pop-up window and set the adjacent surface name to "Shirt" or whatever you like. When the operation has finished, the body part will have the item of clothing "tattooed" on it. It is always important to Merge Points whenever you perform a Boolean-type operation, so try to do that.

Next, switch to Polygon Select Mode and use the Polygon Stats panel to select only the polygons named "Shirt." You'll see that the clothing becomes selected. At this point, the clothing is literally skin-tight. Let's add a bit of substance to it. Cut the clothes polygons and paste them in another blank layer. Place the body part in the background and the clothing in the foreground. Here's the part I'll bet you've never used: SmoothShift. SmoothShift allows polygons to be extruded in all directions at once. After you've tried it you'll understand better, so let's do it. Select SmoothShift from the Multiply menu (SmShift). Set the offset to be very small, maybe 5 mm, and leave the smoothing angle alone.

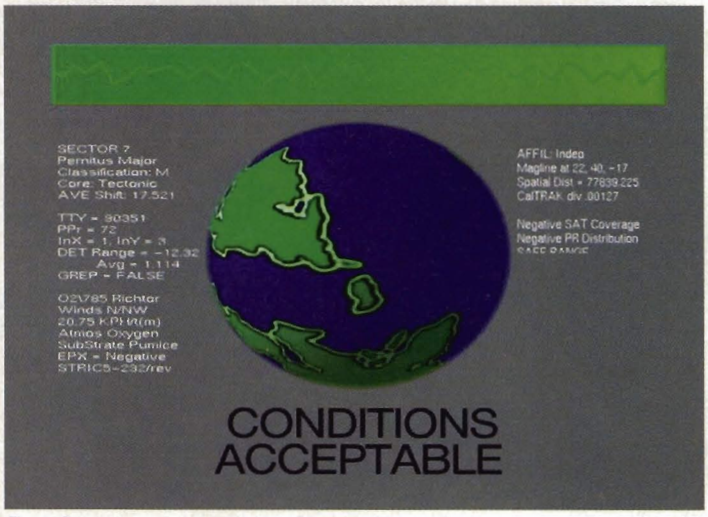

Figure 3

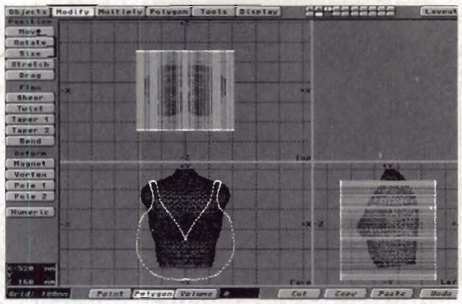

Figure 4

Click OK. You'll see that the clothes have inflated a little! The best part is that they still conform to the general shape of the body (Figure 5).

From here you could go on to add a shirt pocket, collar, even buttons. Of course, you'll probably want to do further modification on the individual parts, but at least this process provides you with a place to start. A good example is a pocket. You would draw the pocket, stencil it, smoothshift the form, then manually cut a Boolean opening in the pocket. One suggestion: Save each bit of clothing as an object of its own, not as an element of the associated body part. This will give you the added flexibility of being able to remove the clothes. You know, there might be a market for Humanoid garments! If you jump on this idea and make money from it, I want a piece of the action!

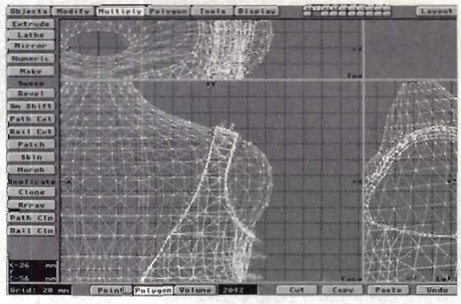

Figure 5

Modeler Shortcut

I was surprised to learn during a recent conversation with some animator friends that they were unfamiliar with a keyboard command I use every day. I'm referring to the (G) key, which centers the Modeler view screens around the pointer position. A combination of (G), (<) and (>)

keys allows you to quickly and easily move your models around. Another, similar command, (j), is frequently overlooked as well. The (j) key—not to be confused with the (J) key—will move selected objects to the pointer's location. By the way, the last point you select is the one that will reside at the actual pointer location.

The key LightWave commands of the month are (+) and (-) on the numeric keypad. The (+) key will make a clone of the currently selected item, and the (-) key will remove the selected item from the scene. Make sure to check out those key commands by pressing the Help key. You'll find a number of interesting things.

That's about all there is this month. Let me just remind you yet again, if you want to become a LightWave expert, spend as much time as you possibly can using it. I quite literally spend about 10 to 12 hours per day animating, and I mean just about every day. Once you understand how the various options work, you'll spend more time creating and less time frustrated. Good luck and see you next month!

VTU

Try to set it up so that one complete line of text is revealed at a time. Of course, this same trick can be applied to a horizontal line of text, producing the effect of a computer typing. Add a little flashing cursor and you've got yourself a convincing display!

David Hopkins is the founder of Mach Universe, a graphics production house based in Orange County, Calif. He can be reached at Mach Universe, 8102 Dabny Lane, La Palma, CA 90623.

EDITORIAL EVALUATION

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FOR INFORMATION CIRCLE 105

THE WAVEY AWARDS™

BY TOM PATRICK MCAULIFFE

Few things in life are classic upon creation—Paintings, the VW, the Amiga. One of people's favorite classic pastimes is watching animation; it has been since man first drew sequential pictures on the walls of caves. Remember those self-made, paper-pad flip-page animations? Kids love animations, and adults, though sometimes secretly, do as well. You may admit to sometimes feeling guilty when you find the Cartoon Network more entertaining than HBO. Honestly appraised, most of the truly innovative, cutting-edge ideas are using CGI as the major medium of exploration, and LightWave 3D has put that power in the hands of many up and coming video/film makers.

Show host Penn Jillette took command of the ceremonies and provided a laugh a minute!

The first annual LightWave 3D Animation contest awarding excellence in 3D animations was held in Los Angeles during the 1995 SIGGRAPH convention. Named the "Waveys" after the LightWave logo, approximately 200 qualifying entries from around the world competed in 11 categories along with a Best of Show and Judge's Choice award. Prizes included the Wavey statuette, The Video Toaster Flyer, LightWave 3D software on various platforms, *LIGHTWAVEPRO* subscriptions and various software packages. In all, well over $10,000 in prizes was awarded.

Evening festivities began with a reception in the grand lobby of the Orpheum Theater, one of the last art deco theaters in the nation. Door prizes were given away. The theater saw approximately 750-plus people attend the free event. The ceremony was hosted by Penn Jillette, of the comedy duo Penn &

NewTek President Tim Jenisan (left) made a surprise appearance to offer his congratulations to the winners.

Teller, who entertained the crowd with humor and magic. This included swallowing fire and swallowing a bean that then came out of his eye! A surprise appearance featured NewTek founder Tim Jenison dressed as *The Phantom of the Opera* and playing on a huge pipe organ while rising through smoke from below the stage. The audience loved it! Other guests included Walter Williams of Mr. Bill fame and David Stipes, Visual Effects Supervisor for *Star Trek: Voyager*.

The show was produced and directed by Rex Olson of RAVE Video in Burbank, Calif., who has done several other high-end award shows in the past. "We did the American Music Awards and the open/close for the Olympics in L.A. Live shows are always a challenge—it's not tape and there are no second chances," said Olson. "The Waveys offered some special hurdles since there

Norm Pickthall of Moving Graphics in Canada won in the Forensic and Legal category for his rendition of a ship crash.

Left: Traveling all the way from Belgium, Frank De Wulf of GRID Productions received the Best Compositing award as well as the Judges Award for *Countdown*, which is shown here.

THE WINNERS!

Logo Animation
"Fusion Films' Logo Animation"
Mark Thompson
Fusion Films

Best Logo Still
"Lunar Media"
Pam Moss / 2pm Productions

Best Youth Animation
"UFO Invasion"
Christian Stoehr

Best Character Animation & Best of Show
"Johnny Quasar"
John Davis
DNA Productions

Best Organic Effects
"Sunset Ripple"
A. Tsirbas / Trimension

Instructional/Educational
"Tour of an Animal Cell"
Tim Doherty
TKD Animation

Forensic and Legal Animation
"Legal Re-Creation Ship Crash"
Norm Pickthall
Moving Graphics

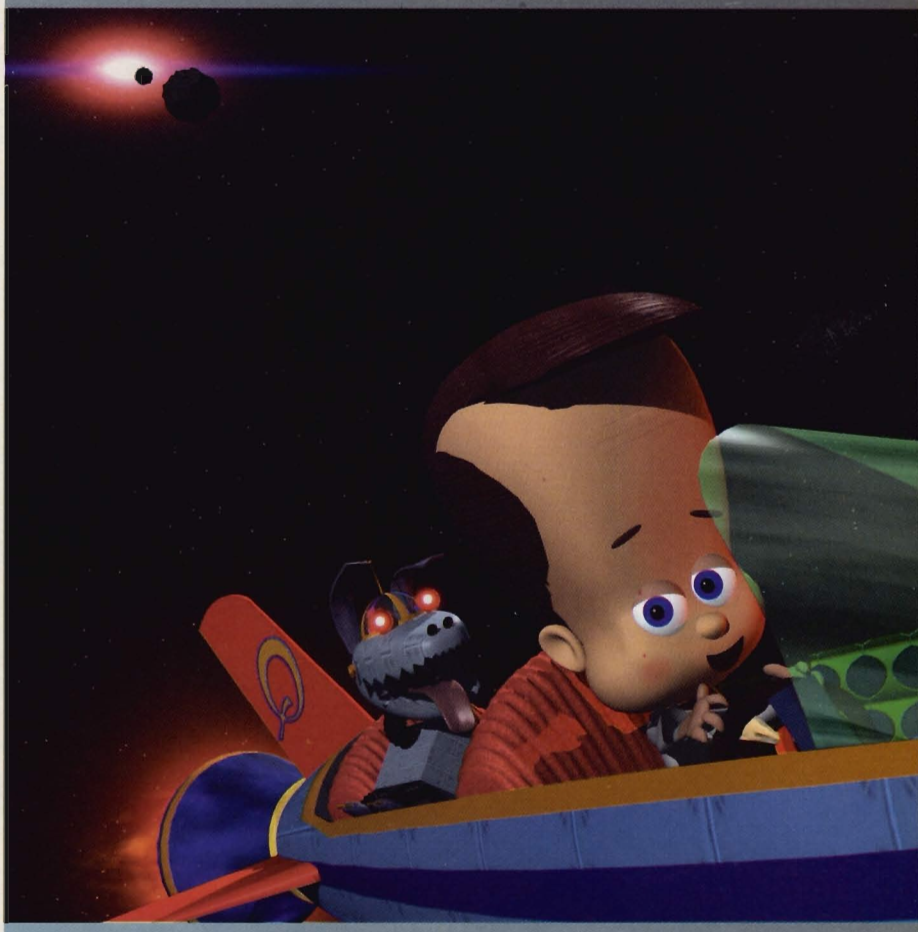
Funniest LightWave Animation
"Cat-Can-Do"
David S. Phoebus

Best Short Story
"Eat at Joe's"
Michael Radencich

Best Use of LightWave in a TV Commercial
"Stephen King Book-of-the-Month Club"
Jim Bresnahan, Sean Hannon, Chuck Jepson

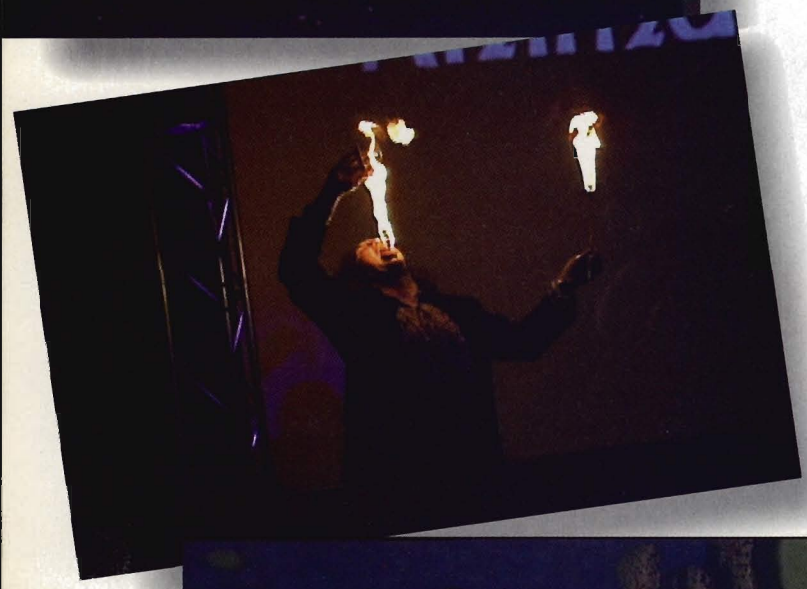
Best Compositing
Yves Day
Frank De Wulf
GRID Productions

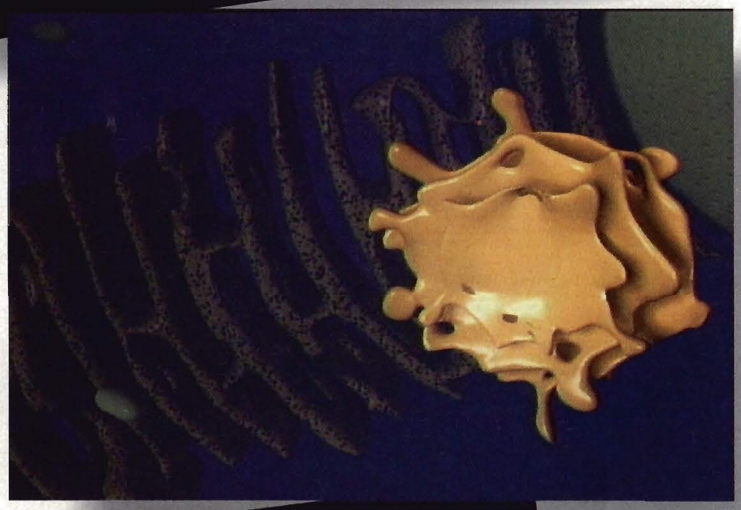
Judges Award
"Countdown"
Frank De Wulf / GRID Productions



Best Use of LightWave in a TV Commercial honors went to Ball and Chain Productions in Stamford, Conn. The spot, *Stephen King Book of the Month Club*, was produced by Jim Bresnahan, Sean Hannon and Chuck Jepson.

Above: A frame from the Best of Show animation, *Johnny Quasar*, which also won in the Character Animation category and was created by John Davis of DNA Productions in Dallas, Texas. Davis was awarded a Video Toaster Flyer and other valuable prizes.





was a short timeline and a limited budget." A film crew also taped the event and a video is available through Desktop Images, a subsidiary of RAVE. "I'm really happy with the way it turned out. To pull off a show like this you need to have a great crew running like a well-oiled machine," Olson asserted, "and we did! I'm really looking forward to next year's awards."

With steep competition the judging was difficult according to Judges Alan Hastings, Stuart Ferguson, Tony Stutterheim and *LIGHTWAVEPRO* Editor John Gross. Best of Show honors went to DNA Productions Inc. and John Davis from Dallas, Texas, for his animation *Johnny Quasar*, which will be a Saturday morning TV show in the near future. "I was astonished at winning The Waveys. It is a real honor!" exclaimed Davis. DNA and Davis are not new to the animation business. "We've been in business for eight years and have built up a following during that time," Davis said. "We started with basic 2D cell animation and went from there. I was self-taught back then because there wasn't really any good training available."

"LightWave is the most cost-effective way to get high-quality ideas and images onto film or video quickly and easily," according to Davis. "It provides a high-end look at a fraction of the cost of other options. It was LightWave's speed, ease of use and overall look that started us using it. We got started and never looked back!"

As far as concepts go, Davis and DNA have a system worked out. "Taking pictures from our heads and putting them on tape is the goal. We start with an idea and then do a few drawings. Once the concept is solid, we do storyboards. Only when done with these do we sit down at the computer," explained Davis. The process must be a sound one, as DNA enjoys a wide range of clients, including Showtime, Fox and Comedy Central. Davis' partners in this growing business are Debbie Dunning, Paul Claerhout and Keith Alcorn.

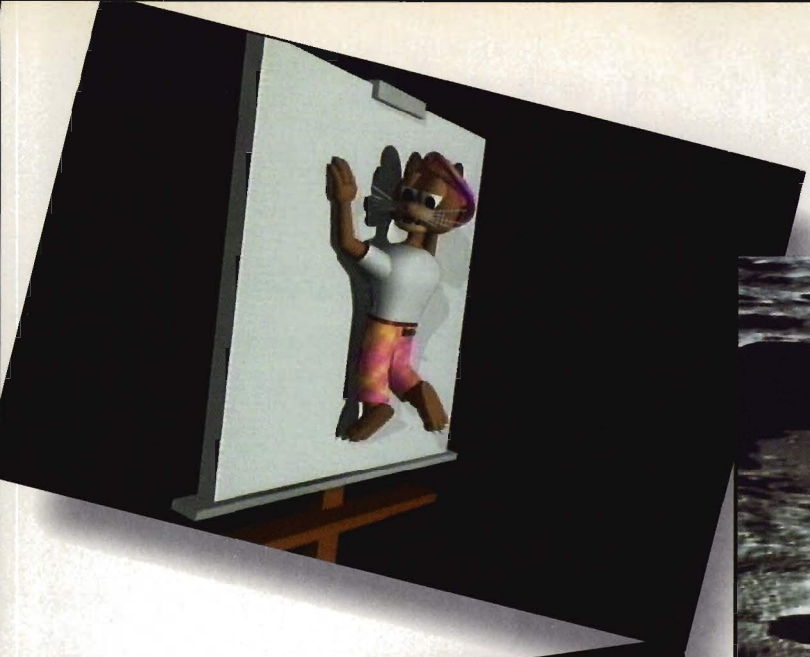
To aspiring animators, Davis has a bit of advice: "Just do it—buy a computer and get started! If you can see it in your mind, you can achieve it in LightWave."

The general opinion is that The 1995 LightWave 3D Wavey Awards will become the Emmy Awards of animation. Many have already started working on submissions for next year's contest. A call for entries will be in an upcoming issue of *VTU*. On behalf of the sponsors, *Video Toaster User*, NewTek and Desktop Images, congratulations to the 1995 winners. Good luck next year!

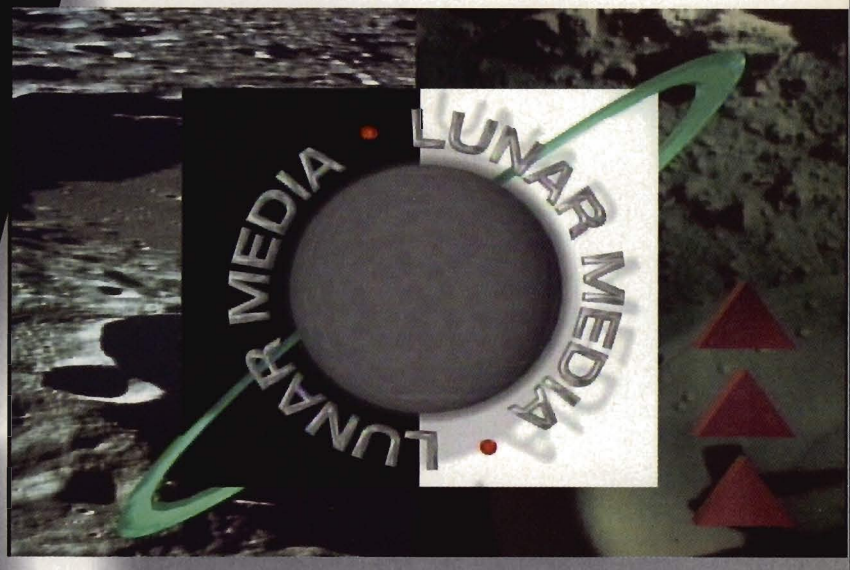
VTU

Top to bottom:

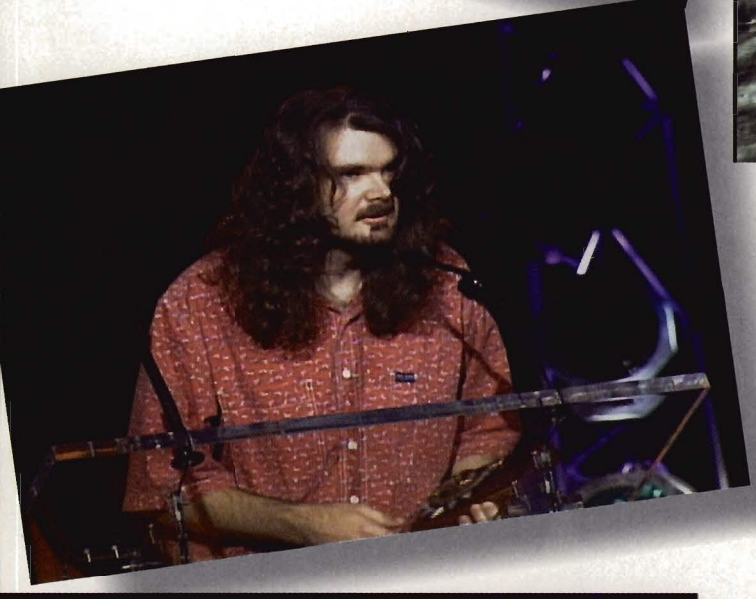
- 16-year-old Christion Stoehr became a winner with *UFO-Invasion* for Best Youth Animation.
- Wavey Host Penn Jillette wows the audience with his fire-eating techniques.
- Regular *VTU* writer Tim Doherty of TKD Animation was awarded a Wavey for best Educational Animation with *Tour of an Animal Cell.*
- From Belgium's GRID Productions, Frank De Wulf won in two categories. Pictured here is a frame from *Yves Day*, which won for Best Compositing.
- Best Short Story went to Michael Radencich of Holt, Mo., for his intriguing tale called *Eat at Joe's*, which features a walking guitar and pink flamingo.

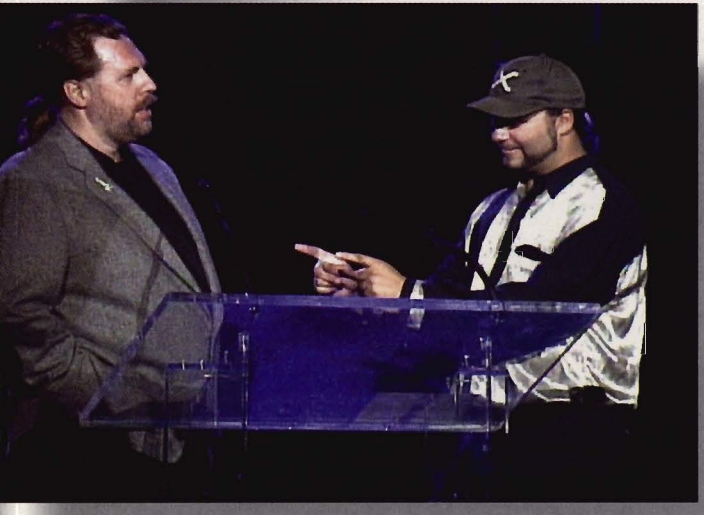


Cat-Can-Do (left) by David S. Phoebus of Vision Productions in Palm Beach, Fla., had the audience in stitches and won for Funniest Animation.



In the only non-animated category, Pam Moss of 2pm Productions in Chandler, Ariz., was awarded Best Still Logo (above).





Middle: John Davis of DNA Productions accepts the Best of Show award for *Johnny Quasar*.

Bottom: Paul Bryant and Mojo of Foundation Imaging joke about the nature of animation and prepare to present a Wavey.

Right: Westwood Productions' Rick Porks and Felix Kupis were a few of the celebrity presenters who also showed their work.

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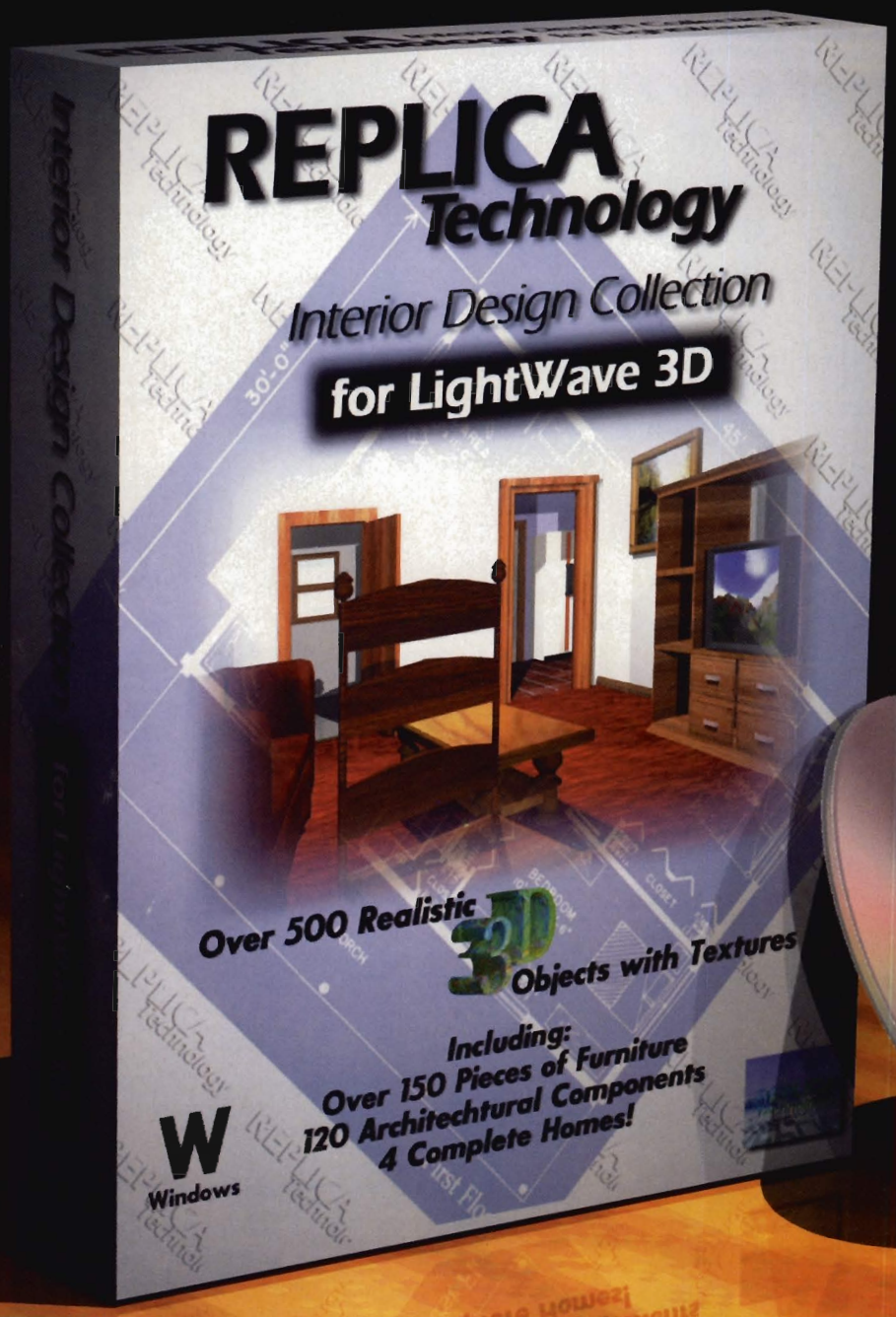

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Thursday

10:00 a.m. Keynote: TBA

11:00 a.m. Keynote: NewTek President Tim Jenison

12:00 p.m. - 6:00 p.m. Exhibits Open

Friday

10:00 a.m. - 6:00 p.m. Exhibits Open

12:00 p.m. Open Session: "The Future of LightWave 3D" with creators Allen Hastings & Stuart Ferguson and LightWave Product Manager Brad Peebler

Saturday

10:00 a.m. - 3:00 pm Exhibits Open

12:00 p.m. Open Session: "The Future of the Video Toaster and the Flyer" with NewTek Director of Product Management Jim Parsons.

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Wednesday, November 1

9:30am - 11:30am

- **Toaster Essentials: A Beginner's Guide** ..... **Bob Anderson**
  Take a fast-paced tour of all the Video Toaster's features, and see for yourself why this is the standard setting piece of video gear. This class will cover the basics of the Switcher (including effects, and freezing and saving images), the Video Toaster Flyer (non-linear editing system), the Character Generator, ToasterPaint, and 3D animation with LightWave 3D.

••• **Advanced Logos and Corporate Graphics** ..... **Dan Ablan**
Although they'renot always the most glamorous animations, producing corporate graphics helps many of us pay the bills. Learn how to spice up the sometimes routine job of creating outstanding corporate graphics.

1:00pm - 3:00pm

- **Modeler Essentials: A Beginner's Guide** ..... **Bob Anderson**
  From flying logos to broadcast television, LightWave 3D's Modeler is able to create simple text objects or complex spaceships. This beginner's class will introduce you to the basic operations required for getting started in the program. The basic modeling tools will be demonstrated and easy-to-follow techniques for creating great logos will be covered.

••• **Organic Modeling** ..... **Jason Linhart**
Copy Nature in LightWave! Re-create what Mother Nature did long ago. This class will cover using Modeler to create landscapes, trees and other organic objects, along with surfaces, lighting and other "cheats" necessary for completing these effects in LightWave.

3:30pm - 5:30pm

- **LightWave Essentials: A Beginner's Guide** ..... **Brad Hayes**
  If you are new to LightWave or just want to review the basics, this is the class for you. We will go through LightWave's Layout in detail, including Camera, Lights and Surfaces. We will also cover an array of helpful tips, workarounds and shortcuts.

••• **Bones & Character Animation** ..... **Jason Linhart**
Learn the techniques that can bring your characters to life. Character creation in Modeler and animation with Bones are the major topics of this course.

Thursday, November 2

9:30am - 11:30am

- **Power ToasterPaint Techniques** ..... **Bob Anderson**
  In this class, Bob Anderson will reveal the secrets he uses to create great-looking broadcast graphics. All of the new (4.0) features and tools will be covered, as well as many power tips and tricks for all versions of the program. Image compositing, broadcast backgrounds and text tricks will be explored, as well as the Toaster/Flyer processing tools for rotoscoping and animating. Attendees should know the very basic operations (loading, saving, modes, and drawing tools), as they will *not* be covered.

••• **More Character Animation—Techniques from Amblin Imaging** ..... **Fred Tepper**
This class will cover the three important elements of successful character animation: planning the shot, setting up the scene (inverse kinematics, hierarchies, bones, etc.), and the animation itself. The goal is to enhance both the quality and the efficiency of your character animation. Although geared toward the experienced LightWave animator, this class will be helpful to anyone already familiar with LightWave and its terminology who would like to explore the world of character animation.

1:00pm - 3:00pm

•• **Envelopes, Motion Graphs & Keyframing** ..... **Brad Peebler**
Learn the ins and outs of these powerful animation tools, including how to use spline controls and achieving advanced morphing effects.

••• **Displacement Mapping & Surfaces** ..... **Dan Ablan**
Displacement mapping, though often overlooked, has many useful and interesting applications. Even your everyday animations can have a unique look with proper displacement mapping and surfacing. Get away from the usual, boring surfacing and learn how to make grungy, dirty-looking surfaces and more...

3:30pm - 5:30pm

- **3D Logo Basics** ..... **Dan Ablan**
  Everyone curses them, but it's a fact— 3D logos pay the bills. Learn what you need to do to create a 3D logo, from business card to TV. Explore unique avenues of animating simple but effective 3D logos.

••• **3D Compositing for Video** ..... **Brad Hayes**
Add reality to your animations. In this seminar Brad will show you techniques for seamlessly blending video with your animation to produce exceptional layered effects. The class will include discussion of Digital Image Compositing with LightWave 3D and the Video Toaster.

DON'T MISS THE YEAR'S MOST INFORMATION-PACKED TRAINING EVENT!

Friday, November 3

9:30am - 11:30am

- **Flying Logos** ..... Dan Ablan
  In this class, we will get creative with Flying Logos; not only the logos will fly. Learn how to expand that ever-typical flying logo to create something that really soars.

••• **Metaform and Spline-based Modeling—LightWave Techniques** ..... Jason Linhart
From telephones to creatures, Metaform is one of the most powerful modeling tools available for object creation. Spline-based modeling rounds out the field to provide a complete set of tools for complex objects. This advanced course in LightWave Modeler covers the use of splines and Metaform.

1:00pm - 3:00pm

- **Forensic Animation** ..... Don Pence
  A wide range of forensic graphics and animation are used in litigation. This class will give you an overview of the types of projects you can provide attorneys. We will focus on the methodology of gathering and using necessary data to create valid and admissible reconstructions and the basic math formulas involved in reconstructing accidents. Calculator recommended.

••• **Advanced Modeler—Tips, Tricks & Problem Solving** ..... Brad Peebler
This class will be an open forum Q&A covering advanced Modeler techniques such as Metaform, Boolean operations and Text options. Bring your questions to be answered and problems to be solved.

3:30pm - 5:30pm

•• **Editing with the Video Toaster Flyer** ..... James Hebert
Learn the Video Toaster Flyer non-linear editing system in this intensive class. Topics will include integration of the Flyer with LightWave 3D, creating Flyer DVEs in LightWave 3D, integrating graphics into your show, and high-end audio editing tricks.

••• **Advanced LightWave & Modeler—Open Forum Q&A** ..... John Gross
Now is your chance to get your questions answered and those tricky problems solved. This class is an open forum for advanced LightWave 3D users. We will cover some advanced LightWave/Modeler tips and tricks. Feel free to bring examples of your work demonstrating problems with which you need help.

Saturday, November 4

9:30am - 11:30am

- **Lighting & Camera Angles—Production Workshop** ..... John Parenteau
  The ultimate goal of the digital cinematographer is understanding a real-world camera and lighting design, and having the ability to re-create this in the computer. This seminar will cover lighting with practical lights and how to create different moods with the camera. You will then learn how to take these techniques and re-create them with the computer tools at hand.

••• **Forensic Animation II—Advanced Techniques** ..... Don Pence
Finally, you can use that math you learned in school! This class goes into detail regarding the requirements necessary to set up complex animations for use in trials. We will focus on the areas you must consider when animating for courtroom playback— i.e., what you need to know in order to verify the data from engineers and reconstruction experts in a case. Designed for those who have a working knowledge of LightWave and want to create valid, admissible animations for trials.

1:00pm - 3:00pm

•• **Live Production with the Video Toaster and the Flyer** ..... Chris Fenwick
This class will cover the live and live-to-tape production techniques which, though at the very roots of television, are extremely necessary and profitable in today's market. Learn valuable pointers and steps to build your system to best cope in the demanding world of Live Production.

••• **Advanced LightWave—Tips, Tricks & Problem Solving** ..... Grant Boucher
This class is an open forum Q&A for advanced LightWave 3D animators. We will cover things like fall-off, radio fall-off, animated textures, layering and image sequences. Feel free to bring examples of your work demonstrating problems with which you need help.

3:30pm - 5:30pm

•• **Video Titling with the Toaster Character Generator** ..... James Hebert
Learn the ins and outs of Toaster CG. This class will focus on Toaster CG 3.0, 3.1, and the new 4.0 versions, and show you many "little-known facts" about quirks and tricks in Toaster CG. Extensive Q&A session included.

••• **Real-World Special Effects** ..... Grant Boucher
Learn how to do broadcast special effects like the professionals in *seaQuest DSV* and *Star Trek: Voyager*. Explosions, Compositing and Lighting Techniques—including soft-edged, ray-traced shadows, proper use of depth of field, and shadow alpha—will be covered in depth, with extensive Q&A throughout.

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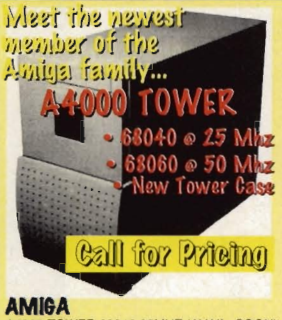

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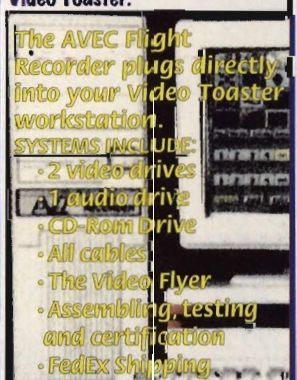

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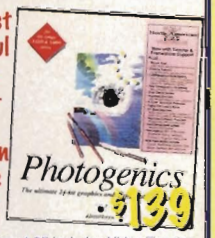

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The ANIMATOR

Pure Magic: Conquering the Animation Business

by Joe Clasen and Susan Ishida

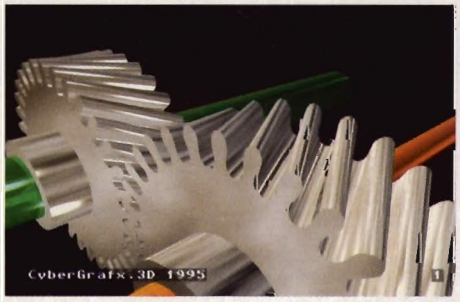
Breaking in, staying afloat, surviving pitfalls, emerging victorious. It's more than a job—it's a magical 3D adventure.

You've just crawled from the dark dungeon where you've spent months, perhaps years, mastering a powerful new sorcery called LightWave 3D. Armed with your killer demo reel, you're ready to conquer the world, to win fame and fortune as a professional LightWave animator. Alas, you find yourself lost instead in an endless maze of twisting passages, none of which seems to lead to employment. Which way should you turn? What should you do? Where the heck are all the cool jobs? Patience. Whether you're a newcomer in the land of animation or just temporarily stuck on Dungeon Level 2 (Realm of the Eternally Flying Logos), we've gathered some information, hints and advice from professional animators to help you win at this game.

As a professional animator, you're facing challenges you never worried about as a hobbyist. You have to meet your clients' needs. You have to meet their deadlines. Perhaps trickiest of all, you have to actually *meet* some clients. Where should you start? We asked a variety of LightWave pros how they got started and what advice they'd give new and struggling animators.

Educational Television

TKD Animation's Tim Doherty is an Emmy and Telly award-winning animator whose stunning LightWave work can be seen on public television channels featuring *Universe: The Final Frontier,* a telecourse produced by KOCE-TV in Huntington Beach, Calif. Doherty is currently working on animations for a biology telecourse and is rarely, if ever, without work.



Illustrating very complex ideas is 3D animation's forte.

Doherty started off as a photographer, living in Hawaii. He was fascinated by the early computer animations he saw, and when the Amiga 1000 became available in the mid-'80s, he bought one and joined an Amiga user's group. A fellow group member turned out to be a news group director for NBC; they formed a company and began producing a series on childcare for the network. That series led to another, while Doherty's 2D graphics led to 3D animations and, eventually, to LightWave. Doherty was so excited about the just-released Video Toaster that he flew from Hawaii to Los Angeles to attend the very first meeting of the L.A. Video Toaster User's Group. It wasn't a wasted trip. That meeting led to another NBC referral, this time for a nationally syndicated children's show. Countless freelance jobs, a move to Southern California and several LightWave versions later, Doherty is one of the best and busiest LightWave animators.

Doherty advises other animators to look beyond computers, suggesting books on lighting and conventional animation subjects such as timing and anticipation. He also offers three favorite working phrases. The first is, "Less is more." Doherty adds, "That's a phrase I believe in wholeheartedly. It's more elegant if you don't go overboard on things." The second phrase is, "Just do it!" That was probably what he repeated to himself as he took the fateful flight from Hawaii to Los Angeles. The third phrase comes from a lighting director whose advice has influenced him: "Light through shadows."

Network Graphics

Brad Hayes is the one-man art department for the independent, nationally broadcast Network One. Hayes discovered the Radio/TV Department at his local community college, and later landed a job as stage tech and video cameraman at Disneyland. From there he moved on to work at the Disney Channel and got his first Video Toaster. After being laid off in 1993, he accepted a freelance referral from a friend at a local user group. That one shot assignment at Network One turned into a series of projects that's lasted almost two years.

Besides producing work for commercials, bumpers, IDs, print and Internet graphics for the network, Hayes teaches *VTU* LightWave classes. He believes that the secret to breaking into the animation business is so simple that people often overlook it. "Make sure people see your stuff. Make a demo reel and send it out to everybody. Market yourself!" Hayes also reminds us, "Make sure you save a copy of everything you do for possible use in your demo reel. Your demo should be 3 to 5 minutes long, with only your very best work. A music track, slate and clean labeling are also pluses. The more professional it looks, the better!"

A frame from Network One's Travel Show opener

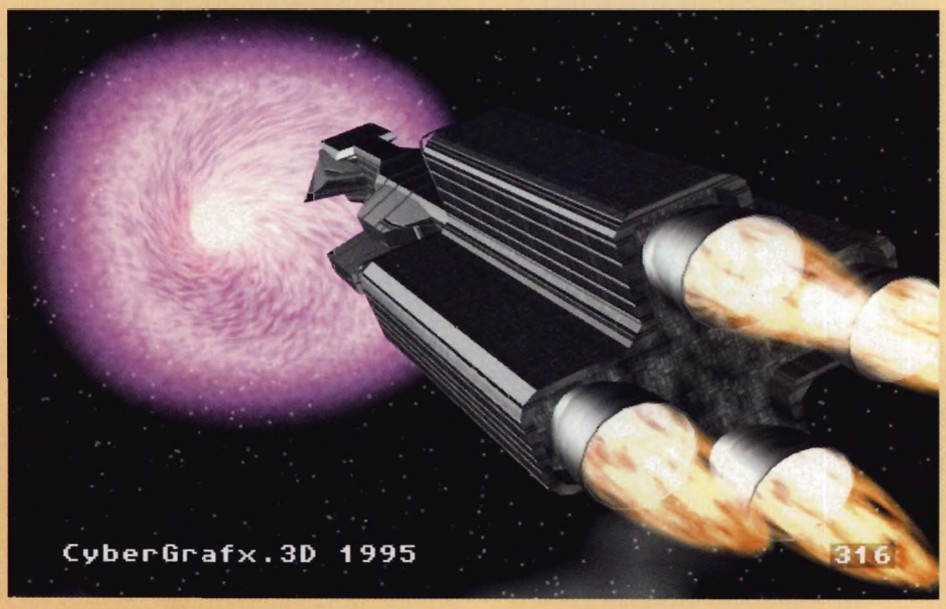
Feature Films

David Hopkins was blazing 3D trails back when most of us were still cycling colors and calling it animation. He worked with Aegis Development during the pioneering days of VideoScape and Modeler 3D, the forerunner to LightWave 3D. His career as an animator began in 1986 with a large production company, producing animations for clients such as Holiday Inn, Beatrice Foods and Pep Boys. Animation temporarily took a backseat in the late 1980s, but with the debut of the Toaster, Hopkins returned to animation with a vengeance. Since then, he's been busy animating for a variety of high-profile projects, including *The Making of Billy Idol's Video "Shock to the System."* These days, his company, Mach Universe, is focusing on feature film work. He produced 10 solid, riveting minutes for Green Communications' *Digital Man* and is currently working on a new film, *Space Marines.* As an animator who started off with a production company as "the graphics guy," Hopkins recommends new animators try to snare similar jobs. To get your foot in the door, he suggests sending the prospective client an animation you've created with their logo. "It's bound to get their attention and will clearly show them the valuable skills you have to offer!"

Special Effects

Like some other animation professionals, Gary Lavarack started off as a photographer. He moved into photographic post effects and from there added sets and animatronics to his repertoire. His diverse career includes stints as a producer for a local cable show, art director for a series of computer books and fine arts painter. In 1992 Lavarack was asked to art direct *Astro Cops,* an animated children's feature. To convince the producer that computer animation could provide a look not achievable through

traditional cel animation, Lavarack created 14 digital characters using Imagine, struggling against the software the whole time. Ultimately, the *Astro Cops* project died, but it led to a mutually beneficial relationship with Fantasy II Digital Film Effects, the digital offspring of Fantasy Film Effects, whose pyrotechnics and



The power of LightWave has allowed users worldwide to create their mind's eye visions quickly and easily.

Lavarack worked on this animation frame from the recent HBO movie *The Tuskegee Airmen.*

other effects have enhanced movies from *Terminator* to the recent remake of *Attack of the 50-Foot Woman.* Lavarack temporarily moved in, bringing his new 3D skills and his own equipment. In turn, he was able to glean experience, resources and work from the well-established professionals at Fantasy.

We asked Lavarack, who's worked with various packages such as Electric Image on the Mac and Prizm on the SGI, if his LightWave skills were easily transferable to other 3D platforms. His answer: an emphatic "Absolutely!"

"As software becomes easier and more intuitive, basic skills become universal," says Lavarack. "At Fantasy, the game is to dive into new software and see who opens the manual first."

Aerospace 3D

Our story is almost a composite of all the above. In our company, Joe's Desktop Bar & Grill, Joe is the "technical guy," with a background working Hollywood sound stages at ABC, NBC and CBS, and as a technical director specializing in lighting and sound. Susan has a fine arts background and has spent over 10 years drawing and painting daily as a freelance editorial illustrator for magazines and books. We dabbled with the Amiga 1000, got involved in live shows with our first Toaster and began focusing on 3D animation with the release of LightWave 2.0. A referral from a friend at a local user group (see a trend emerging?) led us to an aerospace company looking for a few animations. Like Brad Hayes at Network One, we succeeded, and never left. Nearly a year later, we're using LightWave to create everything from hardware mockups to animated 3D user interfaces to booth designs for trade shows.

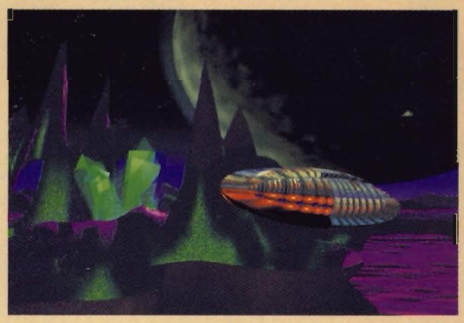
Our advice is simple: network, network, network! User groups, clubs, professional organizations and on-line Special Interest Groups (SIGs) allow you to share information, trade job referrals and get a feel for what's going on in your industry. We also find strength in having a complementary partner. Let's face it: there is an extraordinary amount of information, effort, skills, talent and learning involved in this field. Having two people sharing info and resources can be amazingly beneficial. Although this probably can't be planned, as it turns out, it can be very nice to have your spouse be your partner. Like many LightWave animators, we suffer from what David Hopkins refers to as a "hopeless devotion" to our work. It's nice not having to explain to your spouse why you've been awake for the last 36 hours tweaking a 3D model that will only be seen for a few seconds or why you truly "need" that bigger, better, faster computer. Of course, once you get the new computer, you'll have to arm wrestle to use it. Luckily, we have his-and-hers A4000s.

Online Advice

We asked on-line LightWavers what advice they'd give to new animators. Mike McBride of CyberGrafx.3D in Ridgefield, Conn., produces everything from forensic and personal injury videos for attorneys to architectural work, flying logos and the occasional flying spaceship. His advice is, "Be friends rather than enemies with your competition and they'll send extra work your way." He also advises aspiring artists not to start out by investing heavily in gear they may not need yet. "Unused equipment can be an albatross around the neck of a small business person. Especially computer equipment, which is basically obsolete as soon as it hits the store shelves. Better to use the money to market your business." Trent Johnson of ReAnimators in

Edmonton, Alberta, Canada, replied, "I firmly believe in R&D. By that I mean keeping up with trends by reading a lot of material, both hard copy and online." Christopher McDonell, who produces biomedical animations, says, "Practice and animate as much as you can."

Richard L'Hommedieu of Long Island Media Group finds it beneficial to give steep discounts to ad agencies and production companies. "Give them a margin to make money off you," he said. "I protect them by not giving a discount to end user clients. By allowing them the ability to make money off me, they become my sales reps and I can spend more time working on animations." VideoGraphics Technologia em Multimidia's David Roth, an international animator, advises, "Make sure you're a very calm and patient person." Roth finds patience a virtue both while rendering and while dealing with difficult customers.



Industrial jobs may pay the bills, but it's the creative expression 3D animation affords that is truly fulfilling.

Andy Tanguay's advice is: "Spend as much time as humanly possible trying out new things. Don't try and re-create *Jurassic Park* as your first project. Make small tests demonstrating a new skill, like effectively using fog." Justin Barrett echoes the sentiment, adding: "Experiment! That's the best way I've found to learn anything. Dream up an idea and try it until it works." Learning through doing is the key to really becoming proficient, say a number of animators.

Reading the Trends

Most of the animators we talked to got their first job via the magic of networking. The majority of them found one good client who provided enough work to allow them to expand into animating full-time. In most cases, the animators found ways to turn that first job into a series of projects. Showing a client that you do good work, are reliable, fast and flexible, and have diverse skills can help you get repeat work. A competitive price also helps.

The more animators we interviewed, the more we realized how diverse the animation field really is. In the world of LightWave, we tend to spend a lot of time talking about the animations (and animators) on *Babylon 5*, *seaQuest DSV* and *Star Trek: Voyager* because they are, after all, incredibly cool and highly visible. There is, however an amazing wealth of animation work that is somewhat less accessible, but possibly just as rewarding. Here are a few areas we haven't discussed yet.

Entertainment software development is currently one of the hottest businesses around. From interactive music videos on CD-ROM to the new generation of real-time 3D game machines, 3D graphics are clearly in demand. One of the newest and most intriguing ways to use 3D is Quicktime VR, a Macintosh format that allows you to "stitch" together sequences of 3D scenes or photographs to create seamless, 360-degree environments. A viewer can wander through and interact with your virtual world via "hot" areas that trigger animations and sound. Although Quicktime VR currently runs only on the Mac, 3D graphics can be produced with LightWave regardless of the platform. A good example of Quicktime VR is the Star Trek Interactive Technical Manual on CD-ROM, which allows you to explore the Starship *Enterprise*, snoop through Captain Picard's personal belongings and even "beam" yourself off the ship.

Even newer and in a similar vein to Quicktime VR is VRML, a new way to create 3D Internet and World Wide Web pages. Currently, a typical web page involves some still graphics and a lot of text. VRML will allow you to build web pages more along the lines of the Starship *Enterprise* CD-ROM.

Just as companies are scrambling to put up web pages now, soon they'll be scrambling to build 3D environments for those pages. From realistic shops and factories to surreal amusement parks on distant planets, soon everything can and will become a web site. Everybody wants one and you could be making them. What's the best way to advertise your ability to make great web pages? Build a truly outstanding one for yourself! When you produce pages for other people, include a credit and a "hot link" to your page. The business opportunities for today's animator are limited only by imagination.

Will Work for RAM

You've honed your skills. You've culled your demo reel. You've studied the market. Now you're ready to go out and get a job. What are employers and prospective clients looking for? We asked the LightWave pros what they like. Doherty says, "I would look beyond just making a model, to texturing, lighting...making things look realistic." Hopkins looks for the previously mentioned "hopeless devotion" and a good demo reel with a compatible animation style. With the short deadlines and demanding pace at Network One, Hayes would look for someone who can handle the pressure. He'd also like to see some strong artistic skills. As far as getting into the big leagues? "It's assumed that you already have the basics and more mastered, and can be counted upon 25 hours a day," Hayes said. "The ability to take a client's vague idea or concept and turn it into a workable and believable animation is the mark of a lasting professional." Lavarack wants a reel that shows imagination, individual style and good LightWave skills. At Joe's we look for people who can, above all, be counted on to deliver what they say they'll deliver, when they say they'll deliver. Like most people under tough deadlines, we need to work with people we can rely on, which is why we so often work with people we meet through networking.

Joe Clasen and Susan Ishida at work in their studio at Joe's Desktop Bar and Grill.

Winning the Game

Ultimately, success as an animator is simply being able to *work* as an animator. None of us chose this business as a get-rich-quick scheme. While there *is* fortune and even fame in this industry, don't let that be your motivation for becoming an animator. Do it for the "hopeless devotion." Do it for the joy of getting paid to do what you love to do. Animate for the reason we all animate: because sometimes it's just pure magic!

VTU

Joe Clasen and Susan Ishida can be reached at (714) 891-1800.

REACH BEYOND THE STARS

THIS FALL, AREA 51 GIVES SPACE A POWERFUL NEW LOOK

by Corey Cohen

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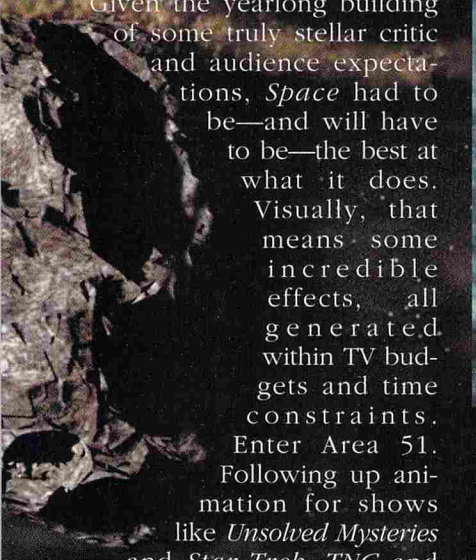
Amazingly enough, the TV battle that's got everyone's attention this season isn't between the networks. It's the one up there—in *Space*.

And what a spectacle! Call it something for everyone—the recent debut of FOX's *Space: Above and Beyond* is a victory for the everyfan. Created and executive-produced by James Wong and Glen Morgan, writers of some of *X-Files*' most acclaimed episodes, the show seems destined to offer some of sci-fi's most intelligent, provocative tales. Its wartime slant—in 2063, an intergalactic struggle between Earth and a mysterious alien race has just erupted—should appeal to action/adventure buffs. There's even the ongoing subplot dealing with faith, love and devotion. Still, that's not all.



Given the yearlong building of some truly stellar critic and audience expectations, *Space* had to be—and will have to be—the best at what it does. Visually, that means some incredible effects, all generated within TV budgets and time constraints. Enter Area 51. Following up animation for shows like *Unsolved Mysteries* and *Star Trek: TNG* and the recent film *Lord of Illusions*, this growing digital effects house has invested time, talent and passion in the new series. Using all the power that LightWave 4.0 and nine DEC Alphas can muster, they're giving a distinctively dangerous look to the realm above and beyond.

Animation Explosion

Space's pilot, which aired Sept. 24, started things off with a big-budget bang—with the effects nabbing a little over $1 million of a $6.5 million budget. That $1 million was a smart investment: The staff at Pasadena, Calif.-based Area 51 spent approximately six months churning out an astounding 140-plus effects shots for the two-hour premiere.

Judging from the illusions Area 51 has produced for the pilot and early episodes of *Space*, the animators are out to shatter the boundaries of CGI. Within the show's dark, threatening universe, the heroes' hammerhead fighters soar proudly through space: breaking formation, evading alien fire, attacking the enemy, colliding with asteroids. The *Saratoga*, one of Earth's "battleships in space" (anyone remember *Star Blazers*?), is beautifully modeled and textured—a deceptively elegant fortress of destruction. Alien hive ships—giant crystal sails—hover menacingly against a backdrop of stars and nebulas.

All the crucial elements of quality CGI have been expertly handled.

Swooooooosshhhhh! A group of hammerheads hurtles toward the inevitable. (Image credits: hammerheads modeled by Ken Stranahan and textured by Karl Denham; alien fighters modeled and textured by Scott Wheeler; asteroids modeled and textured by Karl Denham and Matte Merkovich; ISSCV modeled and animated by Scott Wheeler, textured by Karl Denham.)

From the distinctive hammered metal finish of each of Earth's ships to the meticulously crafted models these surfaces are applied to, the signs of dedicated artists are everywhere. It's all part of making *Space* look and feel different than what viewers are used to, say the animators.

"We realize we're going to be compared to some other shows, particularly *Babylon 5*," said animator Karl Denham. "That show's always been an inspiration—the design sense is great and it's very consistent—but we're definitely striving for something different. Since we're cutting with live action that's not very colorful or cartoony, we can't just [splice] in these bright, beautiful, plastic-looking spaceships with a dark, murky scene of a bunch of marines."

Much of the CGI is composited with live action, something Area 51 has done successfully for series like *Viper*, *VR.5* and *Weird Science*.

"We've got a very nice strafing attack on an alien camp in broad daylight in Episode 1 that we're very proud of," said Glenn Campbell, Area 51's visual effects supervisor. "Ships are wheeling around and catching the sunlight and live-action explosions are going off as a moving camera catches the hammerheads 'carpet bombing.'"

An interesting fact: Unlike shows such as *Hercules* and *Voyager*, where physical models have preceded CGI recreations, *Space*'s hammerheads went straight from artists' sketch to LightWave model. In fact, FOX's art department used Ken Stranahan's rendition of the heroes' ship to construct a real-life, 35-foot-long hammerhead for live-action shots. Kenner Toys has already contacted Area 51 for blueprints of several of the show's ships. "We're trying to get them to make the CGI animator figure, with expandable guts, where you can watch him slowly go blind," joked Tim McHugh, visual effects producer and owner of Area 51.

Flight Gear

Though the animators often go to excruciating lengths to produce stunning, photorealistic effects, the tools they use are surprisingly accessible. Nine Barnstormer DEC Alphas run LightWave 4.0, which is used for "about 99 percent" of the modeling. DEC Alpha versions of IMPACT! and Elastic Reality (a beta copy) are used for collision detection and morphing, respectively. Photoshop, Fractal Painter, Picture Publisher, Win Images and IMPACT! run on four Pentiums. Two Power Macs with After Effects, used for bluescreen mattes, round out the package. "With the exception of our beta software, we're really not using anything the average person

A hammerhead and an alien fighter view the destruction of an enemy ship. To achieve a realistic effect, Area 51 composited a stock explosion with a CGI ship.

can't go out and buy," said animator Scott Wheeler.

Yet, despite the budget and time savings inherent in such CGI, when FOX first met with McHugh, the studio hadn't settled on what kind of effects the series would contain. "They asked me what I thought about it, because my background is very much traditional film effects," he described. "They were actually quite concerned. They had seen some CGI work on TV and felt it wasn't the look they were going for. My attitude was, 'Let's look at the possibilities.'"

Morgan and Wong were impressed by Area 51's expertise, and felt a kind of kinship with the up-and-coming effects house. "Tim showed us his reel, which included shots from *Blade Runner* and *seaQuest*, and we liked him," Wong said. "[But even more importantly], we felt that Tim was a guy who was in a position similar to ours. It's the first show we've created, and Area 51 is a relatively new company, and we both felt we had something to prove. I liked that."

Over time, the camaraderie between the producers and the effects staff has grown, and given Area 51 some healthy creative freedom. Though meetings between various departments (art, direction, production, effects) generally produce storyboards Area 51 uses for effects shots, growing confidence in the animators' abilities has resulted in occasional opportunities for them to direct specific shots. And when the effects team suggested an expanded effects sequence at the end of the pilot, Morgan and Wong listened. The original ending's CGI consisted of some quick shots of the *Saratoga* and other ships coming to the rescue of several outgunned hammerheads. In the revised finale, the audience is treated to an extended skirmish between human and alien fleets, where hammerheads and the

Alien fighters and hive ships poise for an attack. Depicting "black" fighters that would catch light was a victory for Area 5

Saratoga force the enemy craft to retreat. Area 51 spent more time on this final dogfight than any other sequence in the pilot.

From Words to Wonders

With an average effects deadline of just over three weeks per episode, efficiency is key, and long hours the norm. At press time, Area 51 was working on effects for episodes one through four, while still giving the pilot some last-minute tweaking! The average number of CGI shots for each of the first four shows has been about 40, a figure that will likely taper down a bit, but not much. So even though the animators are able—and usually encouraged—to work on a variety of CGI tasks, time constraints often promote specialization.

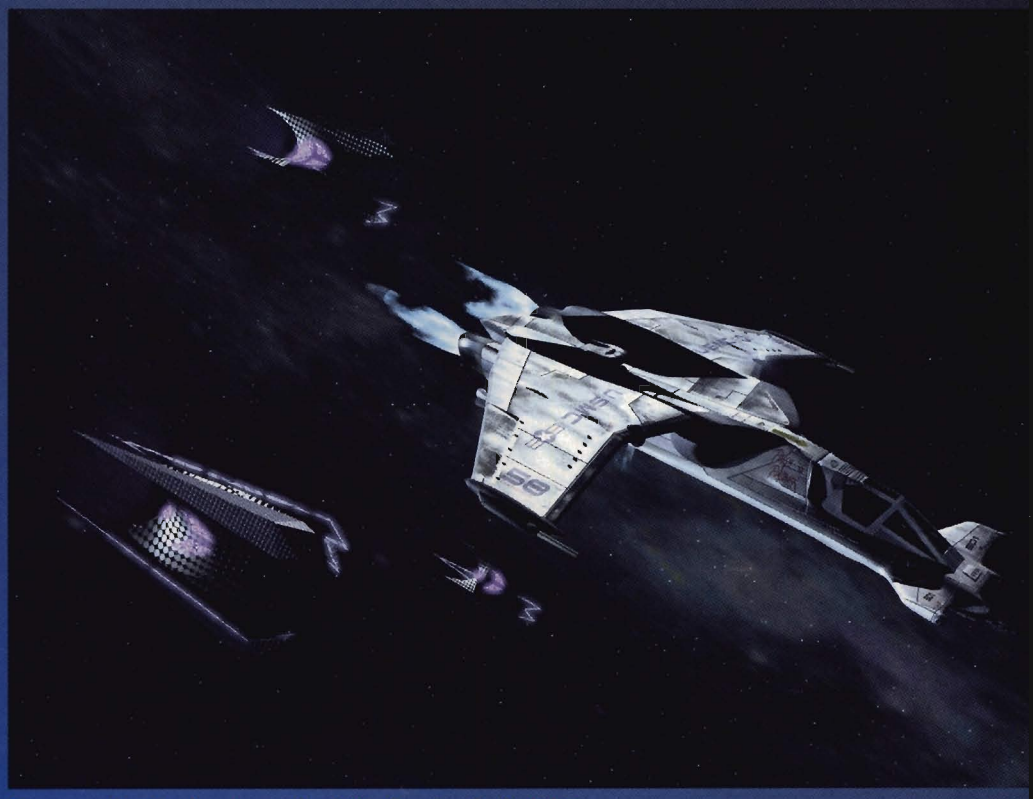
"It's been an incredibly intense experience for all of us, watching the show grow by leaps and bounds in front of us, but everyone's really come through," McHugh explained. "Karl's become the texture god. When you see the riveted surfaces and brushed metal surfaces that bring objects to life, that's Karl spending too many hours here. Ken [Stranahan] has been doing the specialty shots: LightWave matte painting, compositing techniques—making things you've never seen before happen. Matte [Merkovich] has become Mr. Destruction, blowing things up. Lee [Stranahan] and David Jones have been doing sequence animation. Besides modeling, Scott's done a great job of compositing CGI with live action. Most of my LightWave work has been lighting the shots, giving them a consistent mood."

With the ships all modeled for the pilot, and some generic textures filed away for emergency backup, the time crunch has lessened, if only a fraction. Luckily, time is one of the few obstacles this talented crew foresees. "We can technically do just about anything," said Ken Stranahan, Area 51's digital effects supervisor. "Occasionally, the producers will think of something that's far too complex, but editing often helps. Sometimes we'll suggest that, sometimes we'll suggest an alternate shot or shots."

As seriously as the employees of Area 51 take their job, few see *Space* as just an "effects show." "TV is pretty character-driven," McHugh explained. "The greatest effects in the world won't keep a show on the air, so everyone realizes we've got to be telling some good stories." Lee Stranahan, an animator, also keeps effects in perspective: "My goal is to do the shots, not to have the aliens spell out 'Lee.'" Speak for yourself, Lee. According to his co-workers, Wheeler can't resist placing his wife's name, Lana, on many of the ships he textures, at a size most viewers can't read.

Stop wasting your time just doing spaceships and giant robots, and spend more time trying to animate objects and figures that mirror the real world. There're only X amount of shows that need spaceships and giant robots, but [Hollywood] will always need people that can emulate reality."

"Send me a demo reel; send everybody a demo reel," encouraged McHugh. "The great thing about LightWave is its accessibility for most people. It will pretty much allow you



Enemy vessels stalk a lone hammerhead. Who'll survive the dogfight?

How Do I Enlist?

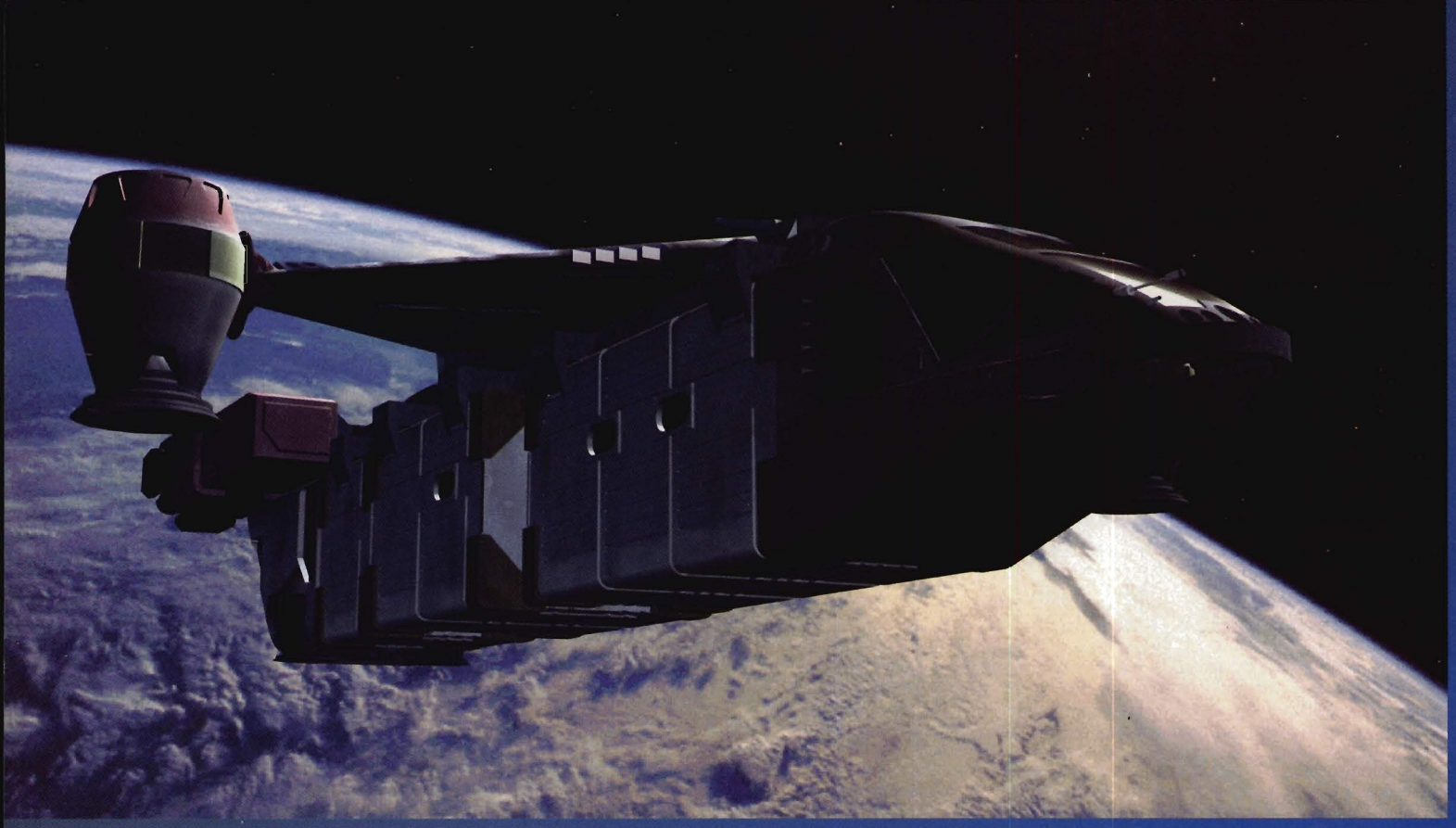
Building effects for a promising show on a growing network—it's an opportunity many animators would kill for. Here's some advice from those on the front lines:

Campbell, who teaches a visual effects course at UCLA (often with McHugh), emphasized the importance of classic skills. "An aspiring animator or effects artist should be looking at good films and looking at the real world," he explained. "I'm looking out the window right now, watching trees wave in the sun in front of a building with sky in the background. I'm noticing foreground, background and long distance; sunlight; where my key light is; and what color the fills are....Like any artist, you have to look at real life, because that's what you're emulating. to do anything animationwise. So far, we haven't had a shot where we were stumped....So if you want to animate, there's no excuse not to. The key to doing it is doing it."

Merkovich would have to agree. After seeing a magazine spread of Ron Thornton's work in 1992, Merkovich set his sights on working with the *B5* effects team. Two years later, he was animating for that show and involved with the development of *Hypernauts*. With practice, motivation and hard work, fantasies become fact.

Staying on Top

After the mind-blowing entrance of an effects- and budget-laden pilot, what's next? Amid concern over the high expectations viewers would be left with after *Space*'s debut adventure,



An ISSCV transports Earth's heroes to war.

plans were made to keep the first few episodes fairly effects-heavy.

"We want to be able to deliver at the same whiz-bang level of the pilot each week, so people won't feel cheated: 'The first week's *Star Wars*, the second's a three-camera sitdown where the guys don't leave one set!'" said McHugh. "So we've been spending a lot of hours making things happen in the first few episodes."

While they're blasting away at a slew of episodes, however, the effects team devotes a fair amount of energy to staying fresh. Reference materials—art and design books, photos of war machines and more—help; so do things like touring military graveyards. Perhaps in the end, the process of raising their work to the next level is a matter of attitude. "We're all little kids in grown-up bodies," McHugh revealed. "That keeps us inventive."

It's clear that Area 51 has a lot to be proud of. In less than two years, the company's gone from McHugh, Ken Stranahan and four LightWave-bearing Amigas running in a small kitchen to a respected effects house working on a promising network series. Two months ago, in early August, Area 51 was invited to speak at a Director's Guild of America meeting. The subject was CGI; the fellow guests of honor included John Dykstra (*Batman Forever*), Robert Legato (*Apollo 13*, *ST: TNG*), Brad Silberling (*Casper*) and several other prominent directors and visual effects artists. There, among high-end Hollywood giants, stood Campbell, "representing a studio of PCs."

Think about it. And while you're doing that, check out the following mini-tutorials by two of Area 51's top animators.

VTU

SPACESHIP EXHAUST FLAMES

by Matte Merkovich

OK, I know we've all heard this before, but I felt that it was worth repeating. You know the old trick of using the grid procedural texture and having it fall off to produce transparent light beams? Well, here's how you can use that same old trick to produce exhaust flames for your very own spaceships.

First, open LightWave's Modeler and create an object that looks something like the one in Figure 1. It should be roughly cylindrical and the end closest to its point of origin (X-0, Y-0, Z-0) should be somewhat rounded. Its length should be 2.2 meters. Click the Surface button in the Polygon menu or use the keyboard shortcut (Shift + Q) to give all

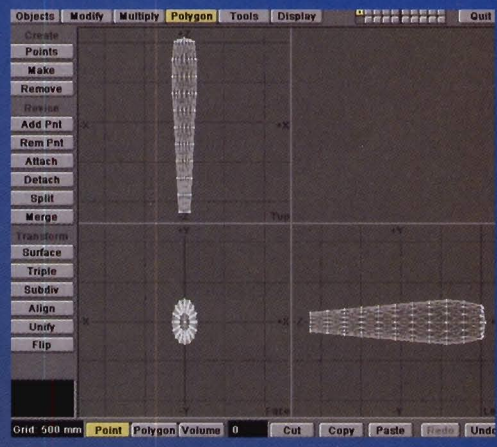


Figure 1

of its polygons the name "engine thrust." Our last step in Modeler is to save the object. I like using "common sense" file names, so my thruster is saved under the name "EngineThruster." I recommend you do the same. (My condolences to those relegated to the PC world of eight characters.)

At this point, run LightWave and load the thruster object. Give it the following surface values:

RGB color values: 234, 246, 255
fractal noise, texture size .1, .1, .4
texture color: 108,188,255
no falloff
texture center: 0,0,0
texture velocity: 5

frequencies: 3
contrast: 0

Luminosity should be 0% and the additive button should be activated.

grid
texture value: 100%
line thickness: 5
texture size: 1,1,1
texture falloff: 0,0,60
texture center: 0,0,0
texture velocity: 0,0,0

Diffuse level 0%

Transparency 0%

fractal noise
texture size: .1,.1,.2
texture falloff: 0,0,55
texture center: 0,0,-1.7
texture velocity: 0,0,-8
texture value: 400%
frequencies: 6
contrast: 1

Set Edge transparency to transparent with an edge threshold of 1. Smoothing on, Double-Sided on.

By the way, anything not mentioned above should stay at its default value. Save the object again in LightWave to retain its new surface for the next time you load it.

After doing these steps you should be the proud owner of a blue, wispy, gaseous engine flame. For originality's sake, I urge you to experiment with different color values, the velocities in the transparency and color channels, different levels of luminosity, etc.

As a final touch, place a small brush lens flare near the base of the flame. This lens flare should not be very intense; the one I am using is approximately 70% dissolved. When rendering this object, it will look best with at least low antialiasing motion blur.

If you have any questions or comments, please contact me via e-mail at matte@earthlink.net. Have fun, and don't stay up too late!

VTU

INSIDE THE ACTION

by Scott Wheeler

One of the effects I am most proud of from the pilot of *Space: Above and Beyond* is the point-of-view shots from the hammerhead cockpit. The goal was to create a view so realistic that the audience would actually believe they were looking through the windshield of a futuristic fighter.

The original plan for these shots involved lighting the set piece of the cockpit in various ways against a bluescreen and then cheating the lighting in our CG scenes to match the light moving across the real cockpit (Figure 1).

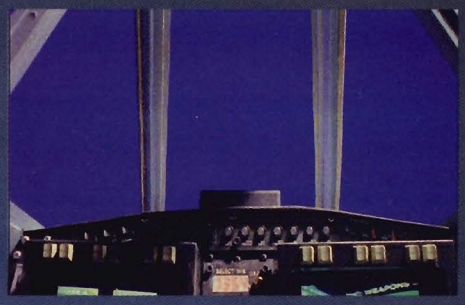


Figure 1

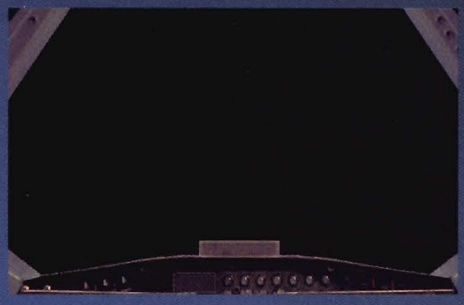


Figure 2

Figure 3

Figure 4

This seemed like the perfect solution until we received the footage from Australia and found two major problems: there was not enough actual lighting change in the real cockpit to produce the effects called for, and the central window pillars obscured too much of the view.

The pillar problem was easily resolved by painting them out in Photoshop, but not having the lighting effects we needed proved more difficult. Because the sets had already been broken down, there was no way to get more footage. We decided that the only way to get the desired effect was to re-create the cockpit shots entirely in the computer.

The first step in this process was to take a frame from the actual cockpit footage and paint out the pillars. I also removed all the shadows in the cockpit so that it appeared to be front-lit (Figure 2). I now had an image that could be front-projected.

The most time-consuming step was building a cockpit in Modeler that matched the physical cockpit in every detail. Placing the image in the background allowed me to build most of the elements in roughly the correct location, but to find out how they cast shadows on themselves, I had to render them in Layout. From that point on it became a tedious process of rendering, moving elements, rendering again, moving more elements, and so on, until all of the pieces lined up.

An important part of this process was knowing the exact lens length the original footage was acquired at. I assigned this value to the camera in Layout to match any lens distortion. This was crucial to making buttons at the corners of the screen seem correct. With the buttons lined up, I then created a roughed-out version of the exterior cockpit so that those elements would cast shadows on the cockpit as well. Figure 3 shows a view of the finalized model. Note the roughness of the exterior elements: because all they needed to do was cast a shadow, I devoted little time to making them look nice.

Finally, I placed the camera the correct distance from the dashboard, parenting it and the dashboard to a null object. All I had to do then was move the null, add some action out the cockpit, and we were flying through space (Figure 4)!

Questions or comments? I can be reached at uberscott@aol.com.

VTU

The Perception Video Recorder

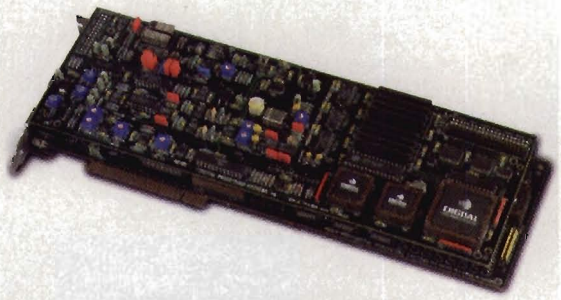
PCI Digital Disk Recorder

by Tim Doherty

Two years ago, Digital Processing Systems forever changed the animation industry by introducing the Personal Animation Recorder, or PAR. Released first for the Amiga and later for PCs, the PAR provides real-time, full-screen digital playback of rendered 24-bit animations, with component and composite outputs. This year, DPS unveiled its next generation of digital video boards: the Perception Video Recorder (PVR). Taking advantage of new computer technology, the PVR is a PCI card for IBM-compatible computers. A quantum leap beyond the PAR, the Perception Video Recorder is a random-access device, and was designed as the heart of a non-linear video system.

Plug and Play

Amiga users who have already migrated to the IBM world probably know the frustrations of adding a new component to their PC system: Which IRQ should it be assigned? What memory address does it require? Is there a conflict with other hardware? Fortunately, these are non-issues with the PVR. It is a true plug-and-play PCI card. Installation takes only a few minutes. Potential buyers should take note that the PVR is a full-length board. Many PC motherboards are designed with the CPU directly across from the PCI slots, blocking several or possibly all of the slots. The PVR requires one full-length slot, which is unobstructed. If the optional AD-2500 daughterboard is also installed, two full-length slot widths are needed (though only one bus connection is actually used).



The DPS Perception board offers users high-quality digital video and easy installation.

Like the PAR, the Perception Video Recorder has a dedicated hard drive controller built in. This eliminates bottlenecks that occur from moving information across the bus. The result is increased bandwidth. The PVR's controller is SCSI II. By contrast, the PAR controller's hard drive interface is IDE. SCSI drives tend to be more expensive than comparable IDEs, but SCSI affords faster data transfer and greater storage capacity, since up to seven drives can be chained together. The Perception's hardware is capable of providing uninterrupted playback across all of its drives. Storage devices connected to the PVR are dedicated, however, and can't be used as standard DOS drives. Nor can they be accessed if the PVR is not activated. Drives hold an average of four minutes per gigabyte at Betacam SP quality. Digital Processing Systems currently recommends either Micropolis AV or Seagate Barracuda series drives. I used a Micropolis AV 2GB Model #4221 drive during this evaluation.

The PVR Toolbar

The Perception Video Recorder includes software for Windows 3.1 and Windows NT 3.51. Both versions install painlessly and have nearly identical interfaces, though the NT file system offers more features. It is also fully compatible with the new Windows 95 operating system. Clicking on the Perception icon brings up a small toolbar, with gadgets to open the PVR's various control windows. The toolbar floats atop other windows for easy access. As long as the toolbar is open, the PVR is loaded and available to your system.

Recording, editing and playing video animations is done using the Perception VCR window, as shown in Figure 1. VCR buttons allow the user to move back and forth through each digital clip. A video playlist, known as a Template, can be created for seamlessly playing back different clips. Basic non-linear tools are provided for setting inpoints and outpoints of each clip, and for adding, inserting or deleting clips from the playlist.

The Perception File Manager window can be opened from another of the toolbar gadgets. This window allows you to perform disk maintenance on each drive connected to the PVR. Digital clips can be deleted, duplicated, undeleted and moved to standard DOS drives for backup.

One of the most innovative and useful Toolbar gadgets is the CODEC. The CODEC is a Video for Windows driver that converts the PVR's proprietary ANI files into AVI files. This allows you to use third-party AVI editing software, such as Adobe Premier or Razor Pro, to edit your PVR clips.

Any Windows-compatible sound card can be used for audio. Digitized audio is stored on the computer's hard drive rather than on one of the PVR's dedicated drives. Synchronization of audio and video is handled by the PVR software. DPS has also announced the Perception AUV Multitrack Digital Audio Recorder card, slated for release sometime in the fourth quarter of 1995.

Another optional card, the AD-2500, attaches directly to the PVR, and is used for real-time digitizing of video. The AD-2500 features component, S-VHS and composite inputs. Full 5.5MHz bandwidth is maintained for captured video in component mode.

Editors will be pleased to know that the PVR will directly control

any VCR that emulates the Sony BVU serial transport protocol. The PVR can also read SMPTE time code embedded in the RS-422 serial data stream of the source deck.

Performance Plus

The PVR's controls are a joy to use. Setting up a simple playlist is quickly accomplished with a few mouse clicks. Although the non-linear controls are basic, and not intended to replace time-based editing software packages, I found them to be perfectly adequate for easily editing my various animation pieces into one long, fluid animation. Access to digital clips is instantaneous. Using the slider bar to manually scroll through clips at varying rates is glitch-free. Playback rates can be adjusted from 30fps down.

PAR animators will find that the PVR functions in the same way. You can render directly to it by simply activating the PVR software, then selecting the PVR drive from your 3D software's file requestor. You can also render to a hard drive, then copy the entire sequence to the PVR.

A new feature of Perception's NT software is a unique virtual file system. This system allows other software packages such as LightWave 3D to look at a PVR ANI file and see a video sequence in any number of image formats, including Targa, BMP, TIF, IFF and others. Thus, sequence clips can be transparently loaded into other packages in various formats.

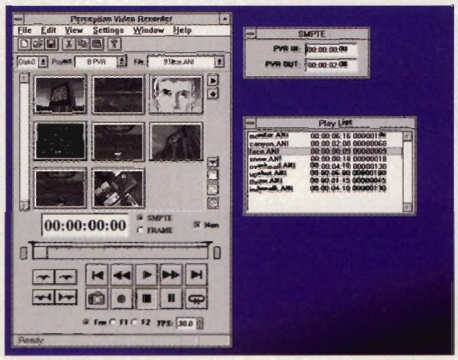


Figure 1: The Perception interface is intuitive and offers powerful features.

At SIGGRAPH '95, DPS also previewed a number of accelerated video transitions and effects which will be woven into the PVR software by the end of the year. These effects include dissolves and wipes, and are rendered transitions that can be included in your playlist.

Seeing Is Believing

The PVR's specs are impressive: 10-bit, 2X oversampled video encoding; better than D1 scaling; 68 dB signal-to-noise ratio; seamless video looping. So is it truly broadcast-quality? Though the term "broadcast quality" is very subjective, the PVR goes well beyond the requirements of a broadcast signal. In a nutshell, the PVR's quality is the best that I have seen from a digital video device. Though the PAR was very good, it produced slight but noticeable compression artifacts. With twice the throughput of the PAR, the Perception Video Recorder is breathtakingly clean. Colors are dazzling. Listing for $1,995—the same price as a PAR—the PVR is a worthy successor to the PAR, and to high-end non-linear systems costing many times more.

FOR INFORMATION CIRCLE 17

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FOR INFORMATION CIRCLE 124

QUICK VIEW

T-Net 2.0

by R. Shamms Mortier

What is the real name of the LightWave rendering game? Answer: Time. Second question: If one LightWave platform renders frames of your animation twice as slow as you need (and you've used every trick and accelerator in the book to speed up the rendering), what might you need to get rendering speed up to snuff? Possible answer: another one or more LightWave-equipped systems. Last question: What software allows a series of LightWave-equipped (Toaster or standalone) Amigas to communicate with each other so that all of your systems can cooperate as one "render farm" in the pursuit of faster animation renders. Probable answer: T-Net software from Interworks.

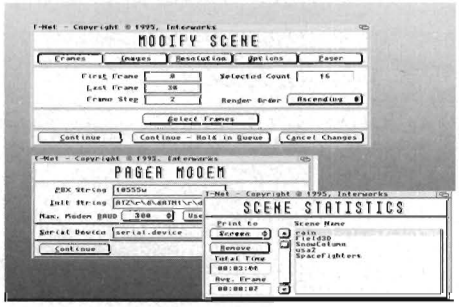
Actually, there's a little more to it than that. Each system has to be connected with network hardware and software. As for the hardware, there are several equally excellent choices. I use the ASDG (now Elastic Reality) Rover Net hardware. Others might choose the Hydra boards (which Interworks is also the main distributor for in the U.S.). As for the connect software, T-Net requires the use of another of its products, the ENLAN-DFS package. The full name for T-Net is actually "The professional, frame-based distributive render farm software for LightWave 3D and ENLAN-DFS." Now that the plot is complete, let's examine the details.

T-Net Networking Software

Price: $349 (5 nodes)
Product type: T-Net 2.0
Minimum system: N/A
Recommended system: N/A
Company: Interworks
43191 Cammino Casillas
Temecula, CA 92592
PH: (909) 699-8120
FX: (909) 699-8279
FOR INFORMATION CIRCLE 18

T-Net's Theory of Operation

T-Net connects LightWaved Amigas through a master/client-related web. The Master node (of which there may be only one, and it may be any Amiga on the web) decides and is responsible for four concerns: Choosing which of the other connected nodes will be used for rendering, delegating the distribution of scenes to be rendered from the scene queue, keeping track of the scene rendering statistics (an important feature of the software), and monitoring the progress and status of each render node. Other options that the Master node



might take advantage of include adding, removing or modifying scenes in the rendering queue, changing rendering priorities, tracking and forwarding data for the on-board Pager Server (more about that later) and the general monitoring of the entire render farm. The client machines have their own tasks. These are knowing which system is the Master Node, determining if there's enough memory to render the required scene file, running the LightWave 3D software, and accepting the scenes for rendering that are sent by the Master Node. The Client Nodes may also be called upon to add, remove or modify scenes in the Master's scene queue, change rendering priority in the local scene queue, and present statistical data related to added scenes. By the way, the Master Node is usually called to be a Client Node, so rendering needs to take advantage of every working node on the system.

The Pager Server

If your massive rendering production has somehow misfired, T-Net can let you know! A special Pager Node includes options that allow T-Net render farms to connect to alpha-numeric pagers and off-site user modems. Multiple users can be sent pager messages, so that redundant protection against mishaps is built into the system. Messages vary from "queue empty (finished)" to "CPU dead"; lets the user(s) know if a major crash has occurred in one of the connected systems. These messages can be sent every "n" minutes, just to ease deadline paranoia. Four pop-up menus allow you to craft the exact alpha-numeric messages that are sent. If a Pager Modem is selected as the recipient of the data, the message can be configured to the modem's PBX string, INIT string, maximum Baud rate, hardware handshaking, and serial device and unit. A separate Pager Destinations window allows you to input the paging company's access number, maximum characters per message, modem baud rate and parity settings.

Rendering and Modifying Scenes

Frames in any scene accessed through T-Net can be rendered according to your specific needs. You could, for instance, render only the keyframes, thus producing the perfect images for an exact storyboard of the animation. You could also render the same scene at different resolutions and with alternate settings, allowing you to preview what might be best for a targeted project. Any range of frames in a scene could also be targeted for rendering.

Just as a host of options are available with T-Net as far as targeting separate frames in specific scenes, each scene can also be modified according to other parameters. In addition to selecting from any of five resolutions (super low, low, medium, high and print), T-Net also allows the user to save the frames as RGBs, Alphas, or Framestores. And you can set degrees of antialiasing, soft filtering and field rendering. Tracing shadows, reflections and refractions can be toggled, though a flag reminds you that this will increase rendering time.

Not My Words Alone

I run T-Net on a four-Amiga system (one 4000, one 3000, and two 2000s), but there are as many different system configurations as there are LightWave animators. For this reason, and to give you a wider grasp of T-Net's user base, I decided to query one of the hundreds of T-Net users to get some comments.

My call was to Ken Wilder and Mark Stross of Marmalade Productions in Los

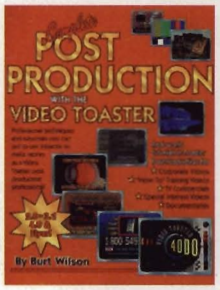
Angeles, a studio famous for servicing accounts ranging from Universal Pictures to Disney to AT&T. They operate a seven-Amiga network (two 4000s, three 2000s, and two 3000s) and a DEC Alpha. When I spoke with them, they had just finished the animation for an EPCOT Center interactive ride. They told me that T-Net changes the way any graphics company can work, and are sure that they couldn't get along without it.

Conclusions

It's a rare breed of professional LightWave user that still depends on just one edition of LightWave. Increasingly, studios and freelance LightWave animators are accumulating multiple systems and multiple Toasters or standalone LightWave modules. Animation deadlines are always unreasonable at best, and most times they verge on the impossible. With T-Net, even the impossible assignment becomes more than doable. Interworks provides two important features to all of its products: excellent service and support and a steady upgrade development policy. I can't imagine any serious LightWave render farm even attempting to get along without this software.

Complete Post Production with the Video Toaster

by Tom Patrick



Most "how to" books miss the mark—they're either too vague or too complex. In the case of Burt Wilson's new book "Complete Post Production with the Video Toaster," neither is true. Specific, easy-to-understand information, unavailable elsewhere, is packed into its relatively short 96 pages. In fact, that would be the only negative one could have about the book—it was over too soon. I confess I've always been a fan of this type of writing: simple, solid and to-the-point. Wilson's vast experience is a treasure chest of ideas, advice and production tricks. As *VTU* readers know, Wilson is of our regular columnists. His 30 years of experience in the video business have been culled down to the gems throughout this book. The award-winning "video person" (he hates the term videographer) also cooks up a mean tuna fish sandwich, and includes a recipe for it. You'll find little fat in either the food or the book!

"Complete Post Production with the Video Toaster" should perhaps be the first purchase of every new Toaster owner, and yet has a few insights and reminders for the seasoned pro. Its chapters include Easy Toaster Animations, Letterboxed Video, Pro Techniques and more. Wilson has mastered the difficult art of taking a technical subject like video and making it understandable to the basic user without boring the professional.

Although geared toward those Toaster users who want to be in business, the tutorials will also help and be understood by the new hobbyist or artist. Using simple step-by-step instructions that lead to almost instantaneous visual gratification, Wilson covers everything a new user needs to know to start a small business producing basic videos with the Toaster. As the author so aptly points out, the tutorial on LightWave flying logos alone is worth the price of the book. In addition, the tutorials are written to include specific steps for whatever Toaster system you happen to be using: Toaster 2.0, Toaster 4000, 3.1, 4.0 or the Flyer. Another top-notch tutorial goes into a technique for creating fake A/B-roll dissolves with the Toaster and a cuts-only edit system. Not an easy feat! Short "Toaster Post Tips" with ideas and advice are also included throughout. Wilson even goes into motor oil for the Toaster-correct automobile.

A refreshing 8-1/2 x 11-inch size, the book is designed to lay flat and features large, easy-to-read 12-point type. Very easy on the eyes. And although the images are black & white and few in number, they are helpful. Color renditions of some of the images are on the book's cover. A great job by Wilson, a first-time self-publisher who is also the winner of four Telly awards for television production excellence.

Aside from Video Toaster operations and technical-type info, Wilson gives the reader a large dose of business street smarts. Here he shines once again with a no-nonsense, take-it-or- leave-it attitude. Those that hear it—hear it. His "three rules of business" should be etched into the brain of every would-be Toaster entrepreneur.

The video biz war stories will bring a smile to the face of anyone who's been there, and even to those who haven't yet taken the leap. Those who push forth in the video business can get started with the included basic sample contract. Anyone who's ever considered quitting their day-gig or doing video part-time to pay for the toys will find Wilson's advice invaluable. A full glossary of video terms is also included.

You can tell I liked "Complete Post Production with the Video Toaster" and I can't wait for volume two. This book is well-written and laid out, fun to read, although somewhat short. Though the $24.95 price tag may seem a tad pricey, its value in easing the Toaster learning curve cannot be overstated. If you're serious about getting the maximum out of your Video Toaster system, into saving money and want to make the Toaster work in a "real-world" environment, Wilson and his book can help.

VTU

Complete Post Production with the Video Toaster

Price: $24.95
Product type: Instructional Book
Minimum system: VT 2.0
Recommended system: N/A
Company: The Burt Wilson Co.
690-A Los Angeles Ave. #303
Simi Valley, CA 93065
PH: (805) 520-1128
FOR INFORMATION CIRCLE 19

Exploring the Darkside

ToasterPaint Soft Shadows

by Chris Fenwick

I spend a great deal of time creating presentation graphics, and one thing that I've always taken pride in is the fine detail that can set an image above the rest. As strange as it may seem, I have often had people say, "Wow, I like that shadow." Well there, I said it. I'm weird. I dig making shadows.

Last month we took a look at how to hand create a real nice underline to separate a title from the body of a graphic. Now we'll set that underline off from the background and make a nice soft cast shadow for it.

The Shadow

First we need to return to where we were last month when we finished. If you remember, we had a RGB file named *BGKD Underline* that was set up to align with the text we had typed in from our CG of choice. We will now need to load that image into ToasterPaint to get started.

Using the right mouse button, pull down the page menu and go to the "Swap" submenu. Select "Copy this Picture" and release. You've just created a digital clone of the page that is in your foreground screen and placed the clone in your swap or background screen. This will become very important in a minute.

If you repeatedly hit your (j) key to look at the swap screen, you won't see any difference, because you have the same thing in both paint buffers. Now draw a filled rectangle in the Darken Mode (by hitting the period, "R" and "3" keys), beginning at the Upper Left corner of the underline and extending to about an inch or so below and to the right of the total underline. You will notice that this will also darken the underline itself. Don't worry! Change to the Rub Thru Mode (hit "5") and draw another rectangle that is exactly the same size as the original rectangle underline. This performs a Rub Thru to reveal the cloned image that we put in the Swap Screen, preserving the overall look we had achieved for the underline earlier.

Feathering the Shadow

The next step to make this ugly mess really stand out is to feather the edges. To do so you really need to have a good understanding of the transparency controls and what you can do with the Rub Thru Mode. For starters, set the controls in the transparency screen like Figure 1.

This tells us that we have the "Hot Spot" set at 0% transparent and the "Edge Level" at 100% transparent. We have also selected a horizontal Hot Spot and put it at the bottom of our Painted Area. Now, for yucks, press the period, (R) and (5) keys and draw a rectangle around the entire darkened area below our "Underline." Look at what has happened! You've performed a Rub Thru (5) with the Hot Spot of transparency at the bottom. In other words, this process performs more Rub Thru at the bottom than at the top, which gives us that feathered look. Using this same principle, we will trim the left side of the shadow to place an imaginary light to the left and above the underline. Now select the Vertical Hot Spot from the Transparency menu and place its indicator at the left side of the graphic.

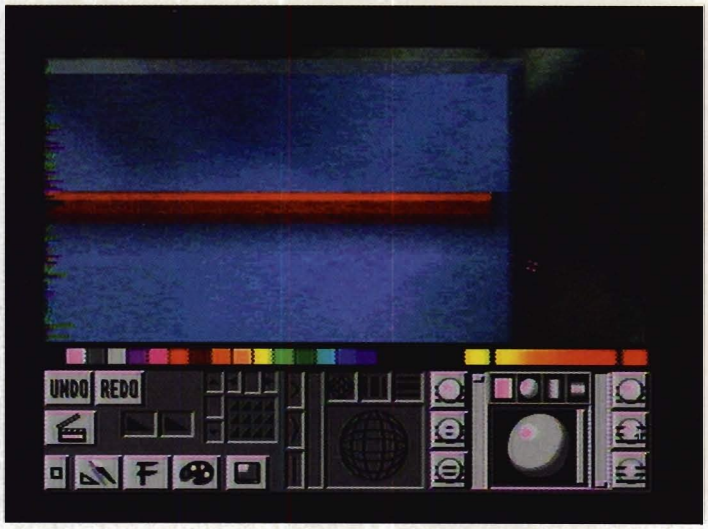
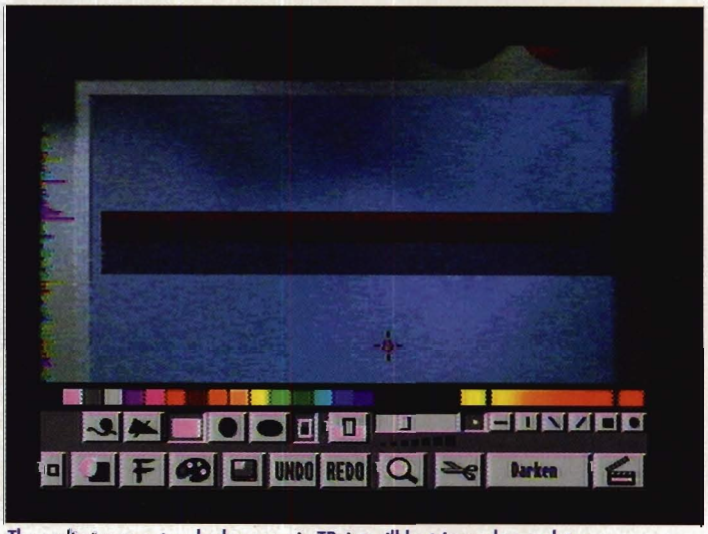
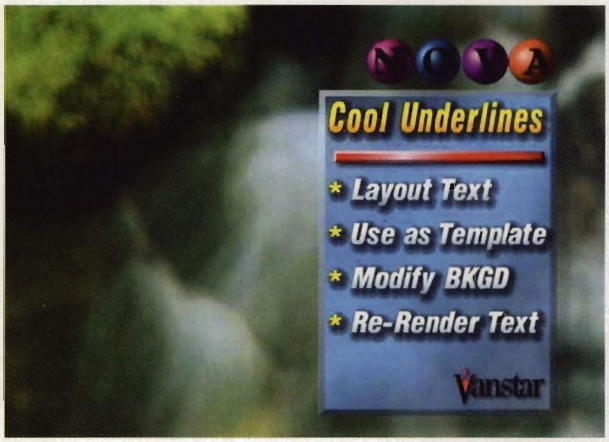


Figure 1: TPaint's transparency settings offer a wide range of options.



The preliminary extra shadow area in TPaint will be trimmed away later.



The finished frame is a thing of beauty.

With these settings we can select the Polygon/Line (V) tool and confirm that we are still in the Rub Thru Mode (hit "5"). Next draw a triangle from the lower-left corner of the underline down and to the right at a 45-degree angle, then back to the left straight below the starting point. This will trim the hard edge off the left side and really add to the 3Dish illusion of the light casting a shadow to the right.

The last step is to feather the upper-right side of the shadow that extends from the right side of our underline casting to the right. Adjusting the transparency controls to place the Horizontal Hot Spot at the top of the control window, we now draw a triangle starting at the upper-right corner of the underline, descending down and to the right at a 45-degree angle, and then going straight up. This will give the illusion that the underline is protruding up out of the background and casting a shadow from a light in the upper-left corner of the screen.

This type of shadowing technique does take time. The end result, however, will definitely set your work a notch or two above your competition. Good luck!

VTU

EDITORIAL EVALUATION

Circle number on Reader Service Card
I found this article:

Very Useful	Useful	Not Useful
Circle 045	Circle 048	Circle 047

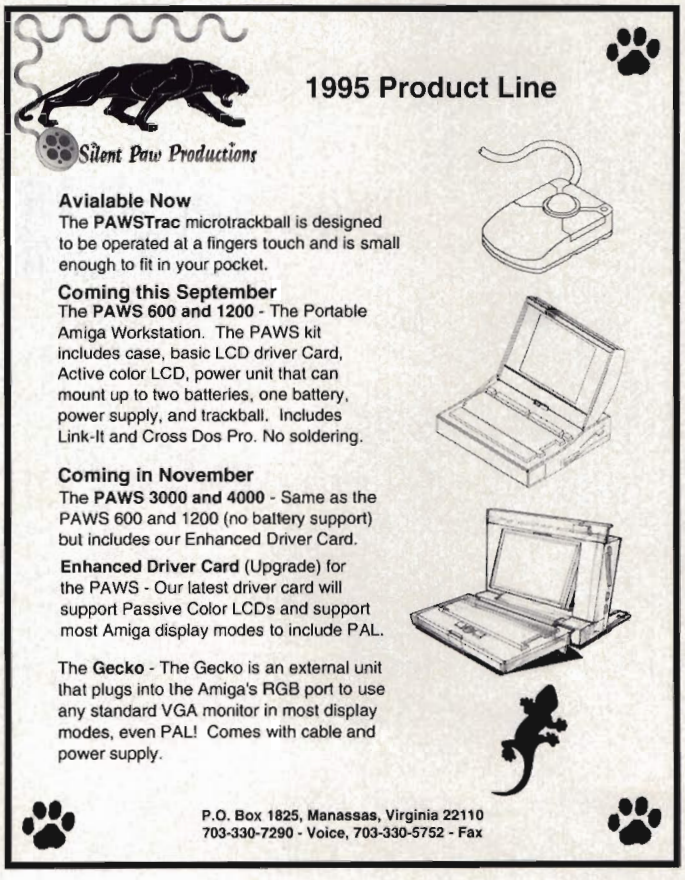
How to Do It in Alpha Paint

Now that we've seen in the last two issues what these techniques can do with ToasterPaint, let's leap into another popular paint program, Alpha Paint, which has gotten rave reviews. Here's the method that I've been using in Alpha Paint to get some great results. For a shadowless graphic separator, try these settings.

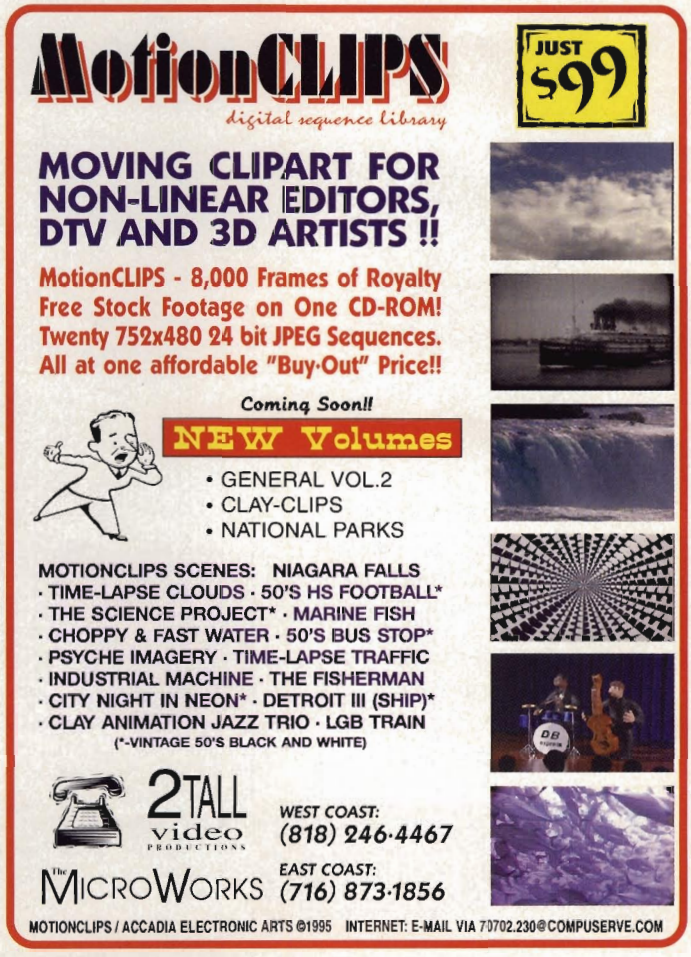
On the second bank of colors boxes, pick the red with the horizontal highlight. Press the Palette button and, in the Spread Section, drag the direction indicator down to 315 degrees and press OK.

Press the Brush button, and then, in the lower-left corner, hit the Face Button. On the first slider select 4 as the bevel size. Click OK twice.

You're now ready to draw the cool underline, but first we need to line it up. Here's another cool Alpha Paint trick. Load the rendered



FOR INFORMATION CIRCLE 137



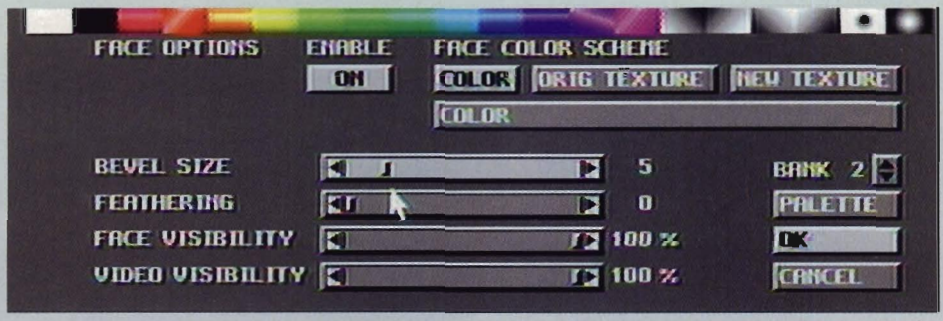
FOR INFORMATION CIRCLE 102

or "buffered" CG page that you want this underline to work with. Now, instead of pressing (j) to Swap screens, press (J) (the capital letter). This is a nearly undocumented feature of Alpha Paint that clones what is in the work screen to the swap screen. You can now load your BKGD image into the work screen. The reason for the capital "J" rather than a lower-case (j) is that Cloning is instantaneous and a swap command requires writing data out of the Toaster framebuffer, which takes more time. (My friends at InnoVision said that the hardest part about writing Alpha Paint was dealing with the speed—or lack of it—of the Toaster framebuffers.)

Now press the "o" (as in l,m,n,o) to turn on the Onion Skin mode. This allows you to see a ghosted version of the swap screen but doesn't let you paint on it. It is ideal for aligning elements with other screens.

Now you can draw a long, narrow rectangle between the ghosted header and body of your swap screen text. Now turn off the Onion Skin mode by hitting "o" and save the Image as "BKGD Underline." You won't need to save the Alpha Image, so you can turn that option off and save some disk space.

Zoinks!!! That was easy. In the future we'll take a look at the Cast/Glow menu, though I bet you can figure it out on your own. VTU



Chris Fenwick owns Broadcast Business Graphics in Redwood City, Calif., and specializes in corporate presentation graphics and video production. He can be reached at fenbbg@aol.com.

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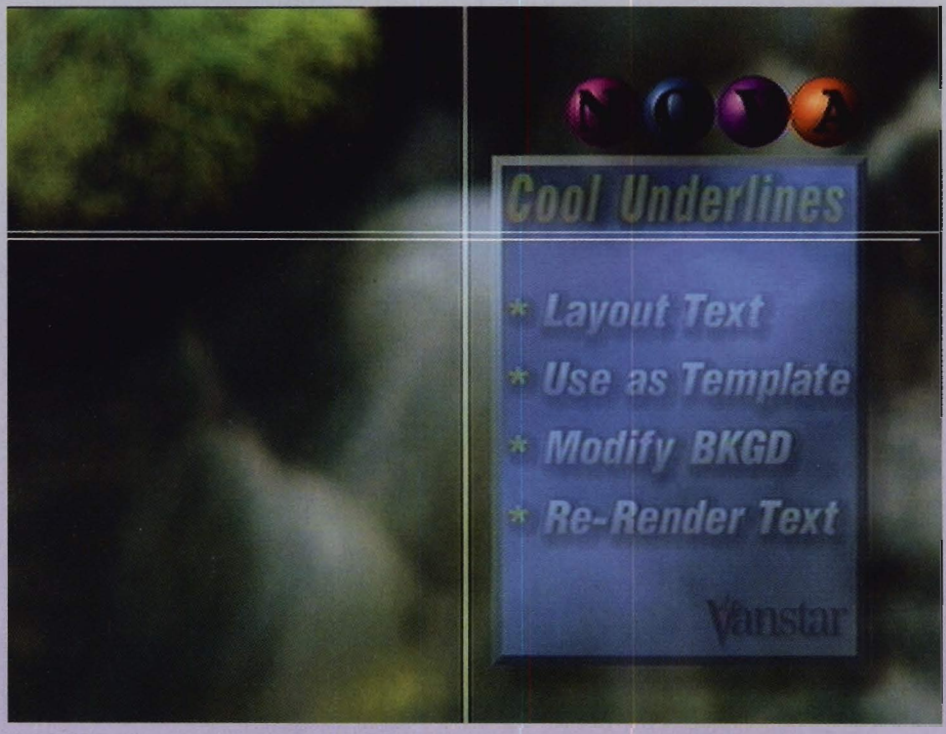

Top: Alpha Paint allows you to completely control the shadow and bevel with slider controls.
Middle: AP's palette allows you to control not only colors, but spreads and their direction.
Bottom: Alpha Paint's Onion Skin mode allows you to reference your swap screen while painting on the work buffer.

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- Records RC Time Code while shooting and can also "stripe" RC Time Code to tapes already recorded on other equipment. With RC Time Code the L2 can connect to an edit controller with RC Time
- Provides stunning AFM stereo with the choice of auto or manual level control. To match the audio with video the L2 has a high performance stereo/zoom microphone.
- Provides two different grips with independent start/stop and zoom controls. Also has built-in sports finder.
- Built-in character generator lets you superimpose two lines of up to 16 characters on your recordings. There is also a choice of three date and time displays.
- Variable high-speed shutter from 1/60 to 1/8,000 of a sec.
- Includes a wireless controller which to make it a highly sophisticated edit deck.
- Automatic exposure plus manual control lets you lock the aperture at any setting.

- The L2 has a variety of special effects:
  Close-up – instantly doubles the magnification of the lens
  Overlap – (dissolve) Slowly dissolve from the last frame of the preceding scene to the action being recorded.
  Freeze – freezes the picture while sound recording continues uninterrupted.
  Art Freeze – records your scenes as colorful paint-like images.
  Strobe and Art playback modes – six-speed strobe playback can be combined with three levels of solarization effects.

Optional VL-Mounts:

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The CL 5-15mm lens is a compact 3:1 extra wide angle lens. It provides wide angle coverage starting at the equivalent of a 27mm lens on a 35mm camera. Focuses as close as 3/8" in the wide macro range.

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A lightweight 8:1 zoom (8.7-69.6mm) is much more compact and weighs half as much as the 15:1 zoom, making the L2 much easier to handle.

250mm Super Telephoto

The CL 250mm Reflex Lens achieves the same magnification as a 1,350 mm lens mounted on a 35mm SLR. A built-in neutral density filter system provides easy four-stage brightness adjustment equivalent to f/32, 16, 8 and 4 — a remarkably bright maximum aperture for a lens of this power.

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The Image-Stabilizing Zoom Lens CL 10-100mm can deal with everything from the slow movements that show up during hand-held telephoto recording to the fast vibrations encountered when shooting from a moving car, making it effective in every situation. It is equally effective in low-light conditions and during zooming.

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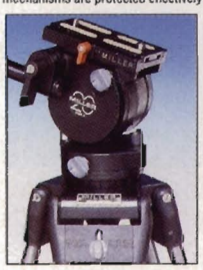

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SONY

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- Equipped with three high density 1/2" IT Hyper HAD image sensors. Has an excellent sensitivity of F8.0 at 2,000 lux, high S/N of 60 dB, and delivers over 700 lines of horizontal resolution.
- PCM digital stereo and single channel AFM Hi-Fi recording. XLR balanced audio connectors.
- Quick start 1.5" viewfinder with 550 lines of resolution plus Zebra pattern video level indicator and color bar generator. Also, quick-start recording – takes only 0.5 seconds to go from REC PAUSE to REC MODE for immediate recording in the field
- Built-in 8mm Time Code generator records absolute addresses. (Either non-drop frame or drop frame mode may be selected.) Furthermore the EVW-300 incorporates a variety of time code features such as Time Code PRESET/RESET, REC RUN/FREE RUN and User Bits.
- A variety of automatic adjustment functions for different lighting conditions are incorporated into the EVW-300:
  - ATW (Auto Trace White Balance) – when ATW is turned on optimum white balance is always ensured during recording, even for changes in color temperature. Conventional white balance adjustment is still provided with the Auto White Balance.
  - AGC (Automatic Gain Control) – in addition to manual Gain Up AGC provides linear gain up in the range of 0 dB to 18 dB.
  - Intelligent Auto Iris – for situations where the lighting between subject and background is different (subject is underexposed) the Intelligent Auto Iris automatically examines the scene and adjusts the lens iris for proper exposure.
- Selectable Gain-up from 1 dB to 18 dB in 1 dB steps for Mid and High positions.
- Clear Scan function – provides a variety of selection of shutter speeds ranging from 60-200 Hz allowing recording of almost any computer display without flicker.
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- Digital Signal Processing circuitry provides four valuable benefits
  1) Consistently reliable up-to-spec performance.
  2) Fine adjustment of a wide range of parameters.
  3) Memory storage and instant recall of specific settings.
  4) More flexible and higher quality image processing, as well as easier maintenance.
- Some of the DSP circuits and their functions:
  - CHROMA DETAIL - This function compensates for poor resolution in the high chroma areas of the picture.
  - DARK DETAIL - Determines optimum degree of contour enhancement in dark areas to deliver crisp, natural-looking images
  - HIGHLIGHT COMPRESSION - Expands the dynamic range of the highlighted areas and prevents halation. The highlight compression circuit allows a wide dynamic range producing detailed images even against bright backlight or daylight.
  - FLARE CORRECTION CIRCUIT - Compensates for unsteady black caused by light or by a subject's movements.
- Six Scene File modes. There are two user modes for custom digital parameter settings including Horizontal Detail, Vertical Detail, Chroma and Dark Detail, and Color Correction. The four preset modes are normal, fluorescent, special and sparkling.
- In addition to regular AGC (Automatic Gain Control), Supercam has a Super High Gain mode. At F1.4 this enables shooting under illumination as low as 2 lux while retaining detail and color balance.
- Synchro Scan function allows flicker-free shooting of computer monitors. Electronic shutter increments can be set variably from 1/61 seconds to 1/253 of a second.
- Built-in internal time code generator lets you record with SMPTE LTC/VITC (Longitudinal/Vertical Interval) time code
- Two hi-fi stereo audio channels with a dynamic range of 80 dB, as well as two linear audio channels with Dolby NR. Normal/Hi-fi recording is selectable. Uses XLR connectors to further ensure high-quality sound.
- Phantom power can be supplied to an optional microphone. Power can be switched off to prevent battery drain when not in use.

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SONY

CVD-1000 Vdeck Hi-8 Computer VCR

Computer-controlled Hi-8 player/recorder. You connect the Vdeck to the serial port of your computer and then, using software that incorporates Sony's VISCA Protocol you will enter a new age of machine control. With the Vdeck and VISCA software you can seamlessly integrate audio, video, text, and graphics to create polished in-house video for training, product demonstrations, and corporate communications.

- Records Sony RC Time Code to any 8mm or Hi-8 tape plus it can dub RC Time Code to any existing tape. Also reads Sony Professional 8mm Time Code.
- With RC Time Code you can search for specific frames of video. The Vdeck reads RC Time Code even in fast forward or reverse so you don't have to switch to playback mode to read the Time Code.
- Has AFM Hi-Fi stereo plus a PCM digital audio track. You can use the PCM track to dub digital audio background music or high fidelity narration.
- Has 3 video inputs (S-Video, 2-composite) and 2 stereo audio inputs. The Vdeck features a built-in switcher for transparent integration of multiple audio and video sources.
- Built-in microphone minijack allows connection of a mic to the Vdeck letting you add narration to your presentations.
- Microphone/Audio Mixer - the Vdeck lets you mix your audio and microphone sources onto the AFM and/or PCM tracks while recording.
- Built-in fader lets you fade audio, video or colors during playback to give your presentations a more professional look. You can also fade live video. Create special effects by fading color to black & white (or vice versa). Fades can be preserved by recording onto a second VCR.
- The Vdeck can read and write data code, allowing date and time information to be stored on the tape as data. Lets you search for a specific date and time on your tape.

EVO-9720 Hi8 Dual Desktop Editing Machine

BUILT-IN EDITING CAPABILITIES

- The EVO-9720 provides two ways for assemble editing when using the supplied RM-E 9720:
  - Quick-Edit - By simply pressing the EDIT button at the desired point on the source tape, pressing END at the outpoint and repeating the process, a program is easily assembled, segment-by-segment on the master tape.
  - Program Edit - assemble video segments that are not adjacent to one another on the original source tape. Memorizes up to 99 program events and realizes automatic sequential editing of pre-assigned scenes. To change a certain event in the program, simply recall the event and modify as desired.
- Insert Editing - Provides separate editing of video and audio signals. Using the video insertion function, video and AFM audio segments can be edited into an existing PCM digital sound track. A simulated edit can be monitored by pressing the PREVIEW button before the edit is actually done.
- The EVO-9720 allows audio dubbing on the PCM tracks. Background music or commentary can be added or inserted. During editing, audio from an external microphone can be mixed with the original audio from a player or from LINE IN and recorded on both the PCM and AFM audio tracks.
- Incorporates a digital field memory, allowing noiseless 1/5 normal speed slow motion pictures and a clear freeze picture to be played back during editing. This makes it possible to create a program with special effects.
- Built-in 8mm time code generator and reader. When using a tape without time code, you can stripe time code. (Post striping of 8mm time code will not affect any of the video and audio signals) Also reads RC time code.

SUPERIOR PICTURE QUALITY

- The player portion employs a digital noise reducer for luminance and chrominance signals, providing superior picture quality. Noise reduction levels are selectable in accordance with picture conditions. CNR (Chrominance Noise Reduction) offers High, Middle, Low, and Off positions. YNR (Luminance Noise Reduction) offers High, Middle Low, Very Low and Off positions. Jitter and skew are eliminated at the same time to give clear, stable pictures.

A/B ROLL EXPANSION CAPABILITY

- When you've outgrown the cuts-only functionality of the machine, the EVO-9720 lends itself to A/B roll expansion capability. Both the player and recorder have RS-232 serial ports that allow for external control. They can be directly connected as Source A and B to an external computer and/or the Sony FXE-100 Video Editing System.
- To further allow configuration into an A/B roll system there are external sync input terminals for both the player and recorder. When the external sync mode is set to Auto, the EVO-9720 synchronizes itself with the incoming reference signal.

ADDITIONAL FEATURES

- To provide for smoother transitions from scene to scene, the EVO-9720 has a video fader. Black or white fading can be selected as well as a duration time of 0.5 or 2 seconds.
- There is a GPI (General Purpose Interface) output with timing adjustment for controlling external devices. External devices like the Video Toaster or Character Generators can be controlled. GPI timing of between 00 and 60 frames is selectable.

EVO-9800A Hi-8 Player/Recorder/ Edit Feeder

- The EVO-9800A incorporates a built-in Digital Chrominance Noise Reducer (Digital CNR) to provide higher quality pictures. When the CNR mode is set to ON, chrominance S/N ratio is improved. At the same time, the field store used in the noise reduction process removes jitter to give clear, stable pictures.
- The EVO-9800A provides two channels of high quality PCM digital audio and a single channel of AFM. The EVO-9800A also provides balanced audio inputs and outputs via XLR connectors.
- Jog/Shuttle for picture search - The SHUTTLE mode provides high speed picture search of -17 to 19 times normal speed.
- Equipped with a built-in 8mm time code generator to record an absolute address on the video tape and to perform time code based editing. The 8mm time code is recorded between the video and the PCM audio tracks to identify each frame. The time code data is converted and transmitted via 9-pin (RS-422 serial) interface. If the tape was recorded with no time code, you can subsequently insert 8mm time code on the tape. Alternatively, existing time code can be overwritten with new time code.
- Dial Menu Operation for maximum ease of operation. Use the search dial to easily set various VTR operational modes; time code preset, time code superimposition, self-diagnostics display, digital hour meter information, etc.
- The EVO-9800A is 3-unit high and can be installed into a 19-inch rack by using the optional RMM-980 Rack Mount Kit.

EVO-9850 Hi8 Editing Recorder

- For enhanced picture quality, there is a built-in digital noise reducer for both the chrominance and luminance signals. In the CNR (Chrominance Noise Reducer) mode you can select low or high level of noise reduction according to picture conditions.
- Equipped with four channels of audio. Two AFM Hi-Fi stereo tracks plus two PCM digital stereo tracks. Each channel has balanced XLR inputs and outputs, plus there is individual level volumes for each track.
- Assemble and insert editing modes. In the insert mode there is independent editing of video, PCM-1, PCM-2 and time code.
- Built-in TBC (Time Base Corrector). With TBC the EVO-9850 outputs highly stable video signals. A digital drop-out compensator is also built-in. TBC adjustments can also be remotely controlled with the optional BVR-55 TBC Remote Control Unit.
- Absolute frame accuracy for video editing and single frame recording. Accuracy of ±0 frames is achieved with advanced servo system, quick response mechanism and built-in 8mm time code reader/generator.
- The EVO-9850 is equipped with a built-in 8mm time code generator. Since the 8mm time code is recorded between the video and the PCM audio tracks in a separate and dedicated location, 8mm time code insertion or overwrite is possible without losing a generation. An RS-422 9-pin connector is utilized for communicating edit command and time code data. The 8mm time code is output as SMPTE time code through the RS-422 connection to the edit controller.
- With the optional EVBK-100 the EVO-9850 inputs and outputs SMPTE time code data via BNC connectors. Accordingly the EVO-9850 can feed time code to another VCR or can lock to an external time code.
- The Jog/Shuttle mode provides high speed picture search from -17 to 17 times normal speed.
- With the optional RMM-980, the EVO-9850 can be installed into a 19-inch EIA standard rack.
- External sync input to lock onto external reference video signals. This allows for synchronization with other video equipment.
- For customized operation there is a Dial Menu. You can set VCR operation modes like time code preset, time code superimpose, self-diagnostics display, with the search dial.

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SONY

SVO-2000 S-VHS Hi-Fi Editing VCR

The new SVO-2000 is a powerful, yet easy-to-use S-VHS Hi-Fi editing recorder. Two SVO-2000 recorders combined with the optional RM-250 Edit Controller forms a cost-efficient cuts-only editing system – with full assemble, video insert, audio dub and program editing capability.

Superb Video and Audio Performance

- S-VHS format delivers 400 lines of horizontal resolution and consistent, clear image reproduction for superior results.
- Adaptive Picture Control (APC) System for optimum picture performance. In record mode, APC automatically tests an inserted tape and checks the condition of the heads. It then adjusts the VCR recording circuitry to capture images that are as clear and crisp as they can be. In Playback mode, APC automatically sets ideal balance of picture sharpness and clarity.
- Hi-Fi stereo recording system has a wide frequency response of 20Hz to 20kHz and a superb 90dB dynamic range, and individual recording level controls for the left and right channels.

Editing Features:

- The SVO-2000 has a Control-Edit Spin remote terminal that allows it to be controlled externally. Connects directly to RM-250 for easy setup.
- With Control-S input and output terminals, two SVO-2000s can be connected for synchro editing, without the RM-250.
- Also offers program editing capability, which allows automatic sequential editing of up to 20 pre-assigned scenes.

Convenient Functions

- Both the SVO-2000 and the supplied remote control have a dual mode shuttle dial for slow motion playback, frame advance and picture search in either forward or reverse.
- Automatic repeat enables it to repeatedly playback a program. At the end of the program or the tape, the VCR automatically rewinds and restarts the program from the beginning.
- Auto head cleaner prevents head clogging which could lead to deterioration of picture quality.
- Has an on-screen set-up menu for easy set-up of tuner, clock and timer programming as well as VCR and cable box control.

SVP-5600 and SVO-5800 S-VHS Player/ S-VHS Editing Recorder

SVP-5600 and SVO-5800 features:

- By combining the high resolution (400 horizontal lines) of S-VHS with high quality signal processing techniques like DNR, Digital Field DOC and Chroma Process improvement, they deliver the consistent picture quality so essential to editing. They also incorporate a wide video head gap and track width (58mm) for stable and faithful picture reproduction.
- Each has a built-in TBC plus an advanced Digital Noise Reducer (DNR) for both the chrominance and luminance signals to eliminate noise during playback. At the same time, a field memory incorporated in the noise reducer removes jitter to provide sharp, stable pictures.
- They also incorporate Chroma Process Improvement circuitry for excellent color picture quality in the playback mode. This advanced circuitry greatly improves the chroma bandwidth, thus enabling sharper and clearer color picture reproduction.

ADVANCED EDITING FUNCTIONS

- For frame accurate editing, both machines employ a sophisticated servo system, an improved quick response mechanism and built-in LTC/VITC time code capability.
- They are equipped with industry standard RS-422 9-pin serial interface. The 9-pin connector carries edit commands and time code data between the VCR and the edit controller.
- When connected to an RS-422 equipped edit controller, the SVO-5800 functions as an editing recorder. It performs assemble and insert functions and also provided audio split editing of normal audio tracks 1 and 2. In the insert mode, video, audio and time code can be inserted independently.

FOUR CHANNEL AUDIO SYSTEM

- They each incorporate four-channels of high quality video. There are two channels with Hi-Fi (AFM) tracks and two with longitudinal (normal) tracks. The Hi-Fi tracks provide a wide frequency response from 20hz to 20khz and a superb dynamic range of 90db. The normal tracks incorporate Dolby B noise reduction for high quality sound.

MULTIPLE INPUTS AND OUTPUTS

- Both machines employ composite and S-Video connectors. With optional SVBK-170 Component Output Board, they provide component signal output through BNC connectors. With the board, the VCRs can be integrated into Betacam SP editing systems.

USER FRIENDLY OPERATION

- They have a built-in character generator which superimposes characters on the "video monitor output" signal. This allows time code data, control track, menu setup and VCR function status to be shown on a monitor.
- For more efficient operation they have an on-screen setup menu which allows a variety of customized VCR mode operations. Programmed in the form of a layer structure, you simply go through the menu and initialize VCR operation.
- All parameters of the TBC, such as luminance level, chroma level, setup, hue, Y/C delay, sync phase and SC phase are easily controlled from the front panel, and can be remotely controlled from the optional UVR-60 TBC Remote Control.
- Quick and smooth picture search can be performed by either using an RS-422 equipped edit controller or the optional SVRM-100 Remote Control Unit. Recognizable color pictures are provided at up to10x normal speed in forward or reverse.

COLOR MONITORS

PVM-1350 13˝ Presentation Monitor

- Employs a P-22 phosphor fine pitch CRT to deliver stunning horizontal resolution of 450 horizontal lines.
- Equipped with beam current feedback circuit which eliminates white balance drift for long term stability of color balance.
- Has analog RGB, S-video and two composite video (BNC) inputs as well as 4 audio inputs.
- Automatic Chroma/Phase setup mode facilitates the complex, delicate procedure of monitor adjustment. Using broadcast standard color bars as a reference, this function automatically calibrates chroma and phase.
- Chroma/Phase adjustments can also be easily performed with the monochrome Blue Only display. In Blue Only mode video noise can be precisely evaluated.
- Factory set to broadcast standard 6500K color temperature
- Provides an on-screen menu to facilitate adjustment/operation on the monitor. The on-screen menu display can be selected in English, French, German, Spanish or Italian.
- On power up, automatic degaussing is performed. Also has a manual degauss switch to demagnetize the screen.
- Sub control mode allows fine adjustments to be made on the knob control for contrast, brightness, chroma and phase. The desired level can be set to the click position at the center allowing for multiple monitors to all be controlled at the same reference level.

PVM-1351Q 13˝ Production Monitor

Has all the features of the PVM-1350 *PLUS* -

- Is also a multisystem monitor. It accepts NTSC, PAL and NTSC video signals. NTSC 4.43 can also be reproduced.
- Equipped with a SMPTE 259M Serial Digital Interface. By inserting the optional serial digital interface kit BKM-101C for video and the BKM-102 for audio the PVM-1351Q can accept SMPTE 259M component serial digital signals.
- Equipped with RS-422 serial interface. With optional BKM-103 serial remote control kit all of the monitor's functions can be remotely controlled with greater confidence and precision.
- Equipped with input terminals such as component (Y/R-Y/B-Y), analog RGB, S-video, 2 composite video (BNC) and 4 audio terminals for complete flexibility.
- Aspect ratio is switchable between 4:3 and 16:9 simply by pressing a button.
- Underscan and H/V delay capability. With underscan, entire active picture area is displayed. Allows you to view entire image and check the picture edges. H/V delay allows viewing of the blanking area and sync/burst timing by displaying the horizontal and vertical intervals in the center of the screen.
- Color temperature switchable between 6500K/9300K/User preset. 6500K is factory preset. 9300K is for a more pleasing picture. User preset is 3200K to 10,000K.

PVM-1354Q/PVM-1954Q 13˝ and 19˝ Production Monitors

All the features of the PVM-1351Q *PLUS*:

- SMPTE C standard phosphor CRT is incorporated in the PVM-1354Q/1954Q. SMPTE C phosphors permit the most critical evaluation of any color subject. Provides over 600 lines of horizontal resolution.
- The PVM-1354Q mounts into a 19-inch EIA standard rack with the optional MB-502B rack mount bracket and SLR-102 slide rail kit same as PVM-1351Q. The PVM-1954Q mounts into a 19-inch EIA rack with the optional SLR-103 slide rail kit.

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GVR-S950 S-VHS Single Frame Recording VCR

- Built-in single-Frame Animation Controller eliminates the need for separate or computer plug-in animation controllers. Industry-standard protocols, make it compatible with most popular graphic and animation software packages.
- SMPTE Time Code Generator and Reader with Built-in Drop and Non-Drop Frame Read/Write is fully programmable from an external computer and resettable from the front panel.
- Video and Audio Switcher with Two independent Video and Audio Channels. Each video channel contains both composite and S-Video inputs. Each audio channel contains two linear and two Hi-Fi inputs Switching can be performed either manually, or under RS232 or RS422 control. Video and audio channels are switched independently letting you perform break-away edits.
- Auto-Sensing Single RS422/RS232 Input eliminates the need for optional external interfaces. Interface requirements are automatically sensed and adjusted within the recorder.
- Input and Playback Video Processing allows adjustments to the video level of the incoming signal. Signal levels and hue can be adjusted during playback.

GVR-S955 S-VHS Single Frame Recording VCR

All features of the GVR-S950 PLUS — The GVR-S955 contains an on board two input audio/video switcher. Unlike the GVR-S950, the GVR-S955 can be programmed via the RS-422 bus for complete audio/video breakaway editing. As a result of this "audio/video breakaway" feature, time code can be added to tapes with exisiting video.

JVC

S-VHS EDIT-DESK SYSTEM

BR-S500U Player • BR-S800U Edit Recorder

RM-G800U Edit Controller

Fast, accurate and professional style videotape editing is now more affordable than ever. This new "S" editing system, costing thousands less than ever before, consists of the BR-S500U Player/Feeder, the RM-G800U Edit Controller and the BR-S800U Editing Recorder. Linked via JVC's proprietary control bus, these three units offer all of the editing features professionals have come to expect. The VCRs feature a fast, heavy-duty tape drive similar to that used in JVC's renowned "22 Series", and the built-in CTL (Control Track) time code provides unparalleled accuracy and flexibility. Best of all the VCRs feature an open architecture for easy system upgradeability.

OPEN ARCHITECTURE

Two plug-in extension slots on the rear panels (for both VCRs) accept a variety of optional expansion boards. To build a PC-based editing system, add the SA-K27UA RS-232C interface board. To use with more sophisticated editing controllers, plug in the SA-K26U RS-422 board. Other boards include the SA-K28UA 45-pin board for connection to older JVC editing systems, the SA-N50U DNR board with time base stabilizer, and the SA-R50U VITC/LTC time code generator/reader.

CONTROL TRACK TIME CODE SYSTEM

Built-in time code reader (BR-S500U) and time code reader/generator (BR- S800U) utilize JVC's CTL (Control Track) Time Code System. This system records absolute tape address information (hours: minutes: seconds: frames) on the control track, and provides fast and accurate access to any frame on the video tape. This is far superior to control track counters that lose reference when the tape is removed. CTL Time Code can be added to the tape during the recording process or "post striped". For professional SMPTE time code operation there is the optional SA-R50U VITC/LTC Time Code Reader/Generator card.

SUPERB VIDEO PERFORMANCE

Has latest picture improvement technologies for razor sharp images, with over 400 lines of horizontal resolution. Digital Y/C separation, chroma noise reducer, chroma aperture correction and a 3-line cross-talk cancellation all combine to offer outstanding image quality, even when dubbing down multiple generations.

32X VARIABLE-SPEED SEARCH

Front-panel search dials featured on both the BR-S800U and BR-S500U provide fast, accurate picture search at up to 32x normal speed. This is possible due to the incorporation of a heavy-duty direct-drive mechanism similar to that used in JVC's "22 Series."

FOUR-TRACK AUDIO

Each features two Hi-Fi stereo channels with a wide frequency response and a dynamic range of over 80 dB and two linear tracks. The linear tracks of the BR-S800U can be dubbed independent of each other and of the video. This is ideal for adding background music or sound effects to an existing audio track. There are two audio level meters, switchable between the Hi-Fi and linear channels. Separate input and output terminals are provided.

RM-G800U EDIT CONTROLLER

- Has two GPIs allowing automatic triggering of special effects generators, switchers or audio mixers.
- Features automatic assemble and insert editing, audio insert editing, as well as preview/review for checking edits before and after editing, and goto for direct access to any edit point. A capstan bump function is provided to assure greater edit consistency.
- 8-digit LED counter indicates all edit data in either the TC or CTL mode. Switchable between player and recorder.
- The RM-G800U's Jog control is precise and responsive, making it easy to locate any frame on the tape. You can enter the Jog mode directly and switch between the player or recorder at the touch of a button. The Jog dial can also be used to enter and trim edit points and pulse timing from the GPI ports.

TAO EDITIZER 3.0

A/B Roll Edit Controller for PC or Macintosh

Hardware Features:

- 3 VCR control ports for true A/B roll. Each VCR port can support a different protocol.
- Dynamic Tracking (Slow Motion) Control provides a "fit and fill" type interface
- Built-in SMPTE Longitudinal (Audio) Time Code generator with external & internal video sync.
- Three multi-speed SMPTE Longitudinal time code readers.
- Auxiliary serial port for full control of Newtek Video Toaster, GVG 100, and Panasonic WJ-MX50 switchers. Also Hotronic AS-11, Pinnacle Alladin and Videonics MX-1
- Audio Control: Mackie CR-1604, TAO FollowMix, Alesis ADAT
- MPC Audio & MIDI support for embedding sounds and MIDI sequences in your EDL.
- DPS TBC II & III support – you can control two personal TBC cards and the Personal V-Scope from a serial port.

Software Features:

- VCR Control – up to three VCR controllers on-screen simultaneously. Jog and shuttle control. You can use either your mouse or keyboard.
- Tape Logging – Mulit-event search, copy directly into edit list, multiple log windows may be opened simultaneously, log files or selected events may be printed to a window.
- Includes non-linear editing support
- Time code generator in Drop/Non-Drop frame.
- Multi-event controller/can handle up to 16,000 events.Interactive graphical "Time Line" window. Two audio-video splits per event, cut/copy/paste events.
- Preview, Perform, Review. Automatic and manual EDL ripple.
- Optional support for AutoDesk 3D Studio, Lightwave 3D.

NEW! EDITIZER-DTC

First editing controller to directly control JVC's BR-S500U and BR-S800U (Edit Desk) VCRs. The Editizer-DTC plugs directly into their 12-pin serial bus connectors and consistently achieves accurate edits through control of the BR-S500/800 capstan bump feature.

- TAO's 12-pin interface provides a direct line to JVC's precision-built VCRs and eliminates the need for hundreds of dollars worth of extra control boards needed in an A/B roll set-up.
- Direct connection also means that the two slots in each VCR remain free for other enhancement boards such as TBC cards.
- Editizer's time code generator window provides remote control of JVC's CTL Time Code Generator so there is no need to buy additional time code boards. Plus, this leaves both linear channels free for higher quality production work.

Panasonic

AG-1290 VHS Video Cassette Recorder

- Four head system provides jitter-free play in Double Super Fine Slow mode. Also offers noise-free Double Speed Playback and Frame Advance.
- Quasi S-VHS playback – playback S-VHS tapes at standard VHS resolution.
- Digital Tracking enhances quality of on-screen picture by automatically adjusting tracking during playback.
- The Quick-Play mechanism keeps the tape fully loaded around the head cylinder and maintains the rotation speed of the head cylinder while in Stop mode. As a result, it only takes about 2 seconds for the picture to appear when going from Stop to Play/Rec mode.
- Built-in head cleaner automatically cleans the video heads as soon as a tape is inserted or ejected.
- On-Screen Display of useful information, such as operating mode, date calendar, instructions for setting the 1-month, 4 program calendar/timer, the initial channel setting, and Standby QTR programming.
- Also features: 181-channel tuner, full digital quartz timing, real-time counter, Auto repeat/Auto playback, Standby QTR.

AG-5700 S-VHS Hi-Fi RS-232 Editing VCR

The AG-5700 is an easy to use S-VHS Hi-Fi Editing VCR flexible enough to be used in a wide range of applications from video production to educational, medical and business. It delivers exceptional recording and playback images, plus high quality audio sound. With its platform independent RS-232 interface you can choose from a myriad of software package to suit your applications.

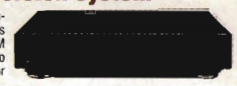
- Uses amorphous video heads which are clearly superior to conventional ferrite heads. They are better because their magnetizing strength is much greater, yielding a higher signal-to-noise ratio.
- Incredibly accurate with optional AG-A570 Edit Controller, an accuracy of ± 3 frames can be achieved.
- Built-in RS-232 provides machine control of playback, recording and editing functions from a computer. You can use the power of your computer (with optional software) to assemble hundreds of scenes, create edit decision lists and do complex editing jobs. Currently supported by Amilink, FutureVideo, VideoMedia, TAO, and Matrox.
- Auto Repeat function continuously replays a tape which can be cued for tape's end or when recorded material ends. Allows the AG-5700 to be used in showrooms, lobbies, or any in-store video display.
- Separate Hi-Fi (Ch.1/Ch.2) audio recording level controls with display. There is also a headphone output with volume control.
- For unattended recording there is a Sensor Recording function. When a video signal is detected the power is automatically switched on and the AG-5700 begins recording.
- Portable - weighs less than 13 lbs, is extremely compact and has a built-in carrying handle.
- User friendly design features record, play, and stop switches that are well illuminated during operation.

AG-1970 S-VHS Hi-Fi Editing VCR

- Uses Amorphous video heads which are superior to conventional ferrite heads and deliver rich, vibrant color reproduction and a high S/N ratio.
- Built-in Digital Time Base Corrector effectively eliminates jitter and distortion. Playback is high quality, stable and with natural colors.
- Two Hi-Fi stereo tracks with a frequency response from 20Hz to 20,000 Hz and a 90 dB dynamic range. (Has one linear audio track.) Also has stereo recording level control, headphone monitor terminal and mic input terminal.
- Does assemble edit, video insert and audio dub. Flying erase head for smooth, clean, seamless edits.
- 5-pin edit terminal makes it easy to set up an editing system.
- Jog/shuttle Dial for varied playback from slow motion to high-speed search (shuttle) and frame-by-frame picture control in forward and reverse (Jog).
- Outputs the audio track during search operations for cuing and quick confirmation of audio recording.
- Advanced dual-loading mechanism features a quick response time, exceptional tape protection & remarkable tape control accuracy.
- Automatic head cleaner removes dust and other particles from the heads to help maintain optimum performance.

AG-W1

VHS Hi-Fi Video Cassette Recorder w/World TV Broadcast Signal Conversion System



The Panasonic AG-WI breaks down the barriers posed by different TV broadcast systems. Its advanced digital standards conversion circuitry lets you play back VHS tapes recorded in any of the world's major TV broadcast systems – including PAL, SECAM and NTSC – on any ordinary monitor. Using a second VCR for playback, you can also convert your NTSC videotapes and send them for viewing in countries using PAL or SECAM systems.

- Just slip in a pre-recorded VHS or S-VHS tape and the AG-W1 will automatically detect the TV broadcast system that it was recorded on, it then proceeds to set the tape and cylinder speed to match it, and begin playback. Before playback though, you select the TV broadcast system to be output - NTSC, M-PAL, N-PAL, SECAM, MESECAM - using the control panel system selector or the world map geographic display on the front panel. You can watch the tape on any monitor, anywhere in the world.
- The AG-W1 also does standards conversion. You can convert pre-recorded NTSC tapes into PAL or SECAM, PAL into NTSC or SECAM, whichever you require.
- The AG-W1 is VHS but has S-VHS Quasi playback function for playing back S-VHS tapes recorded in NTSC and PAL system. It accepts regular VHS tapes recorded in any TV system.
- Automatic functions includes: Auto Power-On, Auto Play, Auto Rewind, Power-Off , Rewind Auto Shut-Off.
- Has two rotary Hi-Fi heads for NTSC and two rotary Hi-Fi heads for PAL/SECAM. They each have a dynamic range of 90dB and frequency response from 20Hz to 20,000 Hz. There is also a stereo headphone jack with volume control.
- Playback functions include Still, Frame Advance, Variable Slow (⅟₃₀ to ½ normal speed), and Speed Search (5x SP normal speed). These functions apply to any broadcast system.
- The AG-W1 also features: Digital Tracking, Edit Switch, Memory/Search Lock, and a Linear Time Counter.
- Has one set of audio/video inputs in the rear plus one set in the front. Has two sets of audio/video outputs in the rear of machine.
- Worldwide 110-127/220-240VAC, 50-60Hz power sources.

AG-DS840/AG-DS850

S-VHS DIGITAL Slow-Motion Editing System

- They provide clear, noise-free, high quality slow playback. Playback speed, including Digital Still is selectable in 10 steps (-½, -⅓, -¼, -⅕, -⅙, +⅓, +½, +⅔, +¾, +1).
- 3-dimensional digital TBC with a correction range of one field. With the VCRs continuously retaining one field in memory, the data is used for 3-D type processing thereby providing excellent dropout compensation.
- Digital Signal Processing for improved picture quality, and for maintaining uniform picture quality during editing. A Chrome Aperture Compensation (CAC) circuit eliminates color blurring and expands chroma bandwidth. Other digital processing circuits include:
  - Dig. Noise Reduct. (DNR): Processes Y & C signals separately to boost S/N Ratio by minimizing noise during playback.
  - Digital Comb Filter: Advanced 3-dimensional system for total Y/C separation providing reduced color and luminance blurring.
  - Switching Noise Mask Circuit: Eliminates noise caused by head switching during slo-mo playback.
- Employs amorphous video heads that have a higher magnetic coercivity than conventional ferrite heads. Expanded frequency response from the amorphous heads enhances picture quality by minimizing color blurring.
- Built-in LTC/VITC (Longitudinal/Vertical Interval) time code reader/generators for absolute frame accurate editing.
- Equipped with component outputs allowing easy connection to other component video equipment. This allows high quality transfer of S-VHS source material to Betacam or MII.
- IQ (Intelligent Quest) mechanism delivers precise, high-speed operation. The dual-loading system achieves high-speed response while protecting tapes and heads. The tape transport mechanism uses five direct drive motors, including two reel drive motors.
- Capstan Control System with large capstan spindle allows high-speed search at 32x normal speed (with color picture).
- 4 channel audio – 2 hi-fi stereo channels with dynamic range of 90dB as well as 2 linear channels with Dolby NR. Each audio channel has its own input (AG-DS850 only) and output with individual channel-level setting capability and uses XLR connectors.
- Provide 16:9 wide aspect compatibility, so they are fully equipped for the next generation of televisions.
- 3 rack units high, they are unbelievably compact for easy space saving installation. 19" rack-mountable with optional AG-M730.

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AV SERIES DISK DRIVES

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- They provide minimum sustained data rate of 3.0 MBs and a maximum uninterrupted data rate of 2.9 MBs, ensuring smooth and continuous data flow for A/V reproduction.
- Worst case data access of 30 ms makes sure there are no more frozen frames or audio drop outs.
- *Multi-segmented, Read-Ahead Caching (internal memory)* improves read performance by eliminating extra seeks.
- They provide the super capacity required for serious audio/video applications:

Model 4221AV 3.5 in. 2.0 GB Drive
Model 1936AV 5.25 in 3.0 GB Drive
Model 3243AV 5.25 in 4.2 GB Drive
Model 1991AV 5.25 in 9.1 GB Drive

HOTRONIC AP41

STAND ALONE TBC/ FRAME SYNCHRONIZER

- Compatible with S-VHS, Hi-8 and U-Matic SP equipment
- Frame synchronization with full frame memory synchronizes outside satellite, microwave and feeds with studio signals
- 4 times sub-carrier sampling, 8-bit resolution
- Adjustable horizontal and vertical blanking
- Proc-amp controls are presettable. Each control has a maximum useful dynamic range. Front panel buttons select different operational modes.
- Optional pixel by pixel DOC (Drop-out compensator)

AP41-SF

- Same as above plus S-Video output, freeze frame/field, Y/C adjustment and 16-speed strobe

AP41-SP

- Same as above plus wide-band comb filter (full bandwidth in all modes)

HORITA

BSG-50
Blackburst/Sync/Tone Generator

The BSG-50 provides an economical means for generating the most common RS-170A video timing signals used to operate various video switchers, effects generators, TBCs, VCRs, cameras and video edit controllers.

- 6 BNC video/pulse outputs
- Now available: 6 blackburst, 4 sync, 2 subcarrier
- Each sync output individually settable for composite sync, composite blanking, H-drive, or V-drive.
- Separate buffer for each output–maximum signal isolation
- 1KHz, 0dB sinewave audio tone output, locked to video
- Outputs can easily be configured to meet specific user and equipment needs $269

CSG-50
Color Bar/Sync/ Tone Generator

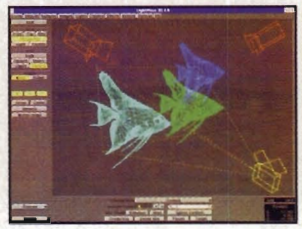
- Generates full SMPTE color bars, blackburst and composite sync signals.
- Built-in timer can automatically switch video output from color bars to color black after 30 or 60 seconds. Easy and convenient for producing tape leaders and striping tapes with color bars and black.
- Front panel selection of full-field or SMPTE color bar patterns or color/black (black burst) video output.
- Includes crystal-controlled, 1KHz, 0dB audio tone output.
- Outputs: video, sync, ref frame, 1 KHz, 0dB
- Audio tone switches to silence and color bars change to black when using 30/60 second timer
- Fully RS-170A SC/H phased and always correct. No adjustment required $349

WE STOCK THE FULL LINE OF HORITA PRODUCTS INCLUDING:

WG-50 -	Window Dub Inserter
TG-50 -	Generator/Inserter
TRG-50 -	Generator/Inserter/Search Speed Reader
TRG-50PC -	Has all of the above plus RS-232 control.
VG-50 -	VITC Generator, LTC-VITC Translator
VLT-50 -	VITC-To-LTC Translator
VLT-50PC -	VITC-To-LTC Translator / RS-232 Control
RLT-50 -	Hi8 (EVO-9800/9850)TC to LTC Translator
TSG-50 -	NTSC Test Signal Generator
SCT-50 -	Serial Control/Titler "Industrial" CG, Time-Date Stamp, Time Code Captioning
SAG-50 -	Safe Area, Convergence Pattern and Oscilloscope Line Trigger and Generator

NEWTEK LIGHTWAVE 3D

The Ultimate 3D Rendering and Animation System for Broadcast Graphics



LightWave 3D is an all-in-one photo-realistic animation system. As part of the Emmy-award winning Video Toaster, LightWave 3D has been used in television shows such as seaQuest DSV, Babylon 5, Hercules and Star Trek: The Next Generation and Voyager. LightWave is also used by tens of thousands of people to create graphics for corporate videos, commercials, video games, print graphics and much more. LightWave 3D provides a comfortable, intuitive working environment that draws a real-world metaphor between an actual soundstage and your personal computer. Within LightWave Layout, create dramatic lighting effects, photo-realistic surface materials and intricate camera movements. Render still images or entire animations in 24-bit color. Create new props with the powerful tools in LightWave Modeler. From technical geometric forms to free-flowing organic shapes this model shop does it all. LightWave 3D's new plug-in architecture is supported by a growing number of independent developers. This allows you to customize LightWave with additional features such as gravity, particle systems, image processors, and more surfaces.

FEATURES:

- Inverse Kinematics allows creation of complex character animation more quickly. It makes animating more like puppeteering.
- *Incredibly powerful modeler with new Metaform function* that will transform rough geometry into organic looking objects.
- Reads (and writes) JPEG, IFF, SGI, TIFF, BMP, FLIC, CINEON, and many more image formats through Elastic Reality's Host Independent Image Protocol.
- Robust plug-in architecture gives other developers control over LightWave 3D to add additional features, such as gravity, image processing, or new modeling tools.
- Full Ray Tracing renderer including shadows, reflection, and refractions for ultra realistic imagery.
- *Nearly all attributes of your scene can be animated through* an easy-to-use key frame interface, or with envelope controls. You can animate lights, lens flares, textures, objects, even camera attributes such as zoom or depth of field.
- LightWave 3D includes a CD-ROM packed with license free objects, images, textures, and scene files created by the pros from seaQuest DSV, Babylon 5, and many other television shows.

DIGITAL PROCESSING SYSTEMS INC.

VT-2600 Personal TBC IV

- Component digital transcoding provides S-video input and output. Digital 4:2:2 processing ensures the cleanest possible picture. Composite video signal is also enhanced by a newly developed chrominance comb filter.
- It interfaces virtually any camcorder, VCR or laser disk player to production switchers or computer video systems like the Video Toaster.
- Features Rock Solid Freeze (field and frame), GPI Freeze, Variable Strobe, Forced Monochrome and Advanced Sync.
- Film Effect Strobe Mode - Simulates the 3-2 pull down conversion technique from a 24 frame per second film standard, to a 30 frame per second video standard.
- Can be installed in any Amiga or PC-compatible computers. Includes Amiga and MS-DOS software.
- Has a 50-pin CVE (Component Video Exchange) port. When connected to the DPS Personal Animation Recorder you can capture and record real-time video on the animator's dedicated hard drive. This combination is ideal for rotoscoping and other video capture processes.
- Fully compatible with TBC II, III and Personal V-Scope. The TBC IV is operated via software, or by using an optional DPS RC-2000 multi-channel desktop controller.

DR-2150 Personal Animation Recorder

The DPS DR-2150 Personal Animation Recorder is designed to record computer animation sequences directly to a hard drive and then play them back in real time. The DR-2150 is a card that plugs directly into an Amiga expansion slot and replaces both the single frame record VCR and the single frame controller. Bad edits, missed frames, tape dropouts and other mechanical glitches common to traditional VCRs are a thing of the past.

- Combines custom ICs and a proprietary implementation of the LSI chip set enabling component 4:2:2 digital recording to a dedicated hard drive.
- The hardware adaptively samples each new video image to determine optimum quality. Although standard compression ratios don't apply you can expect four to five minutes of high quality playback from a dedicated 540 MB hard drive.
- Has composite, S-Video and component (Betacam/MII) outputs. Also has a genlock input enabling it to be easily integrated with virtually any video production system.
- Offers multiple outputs; Can output animation as composite, S-Video and component (Betacam or MII). Also includes a genlock input which enables it to be easily integrated with virtually any video production system.
- Variable speed playback lets you play back 24-bit (16.7 million colors) animation in real-time 30 frames per second, or you can choose a lower frame rate to play back animations in slow motion.
- Supports direct rendering of all common image formats including 24-bit IFF and Video Toaster frame store files and is fully compatible with all popular animation packages including Morph Plus, LightWave 3-D, Fractle Pro, Imagine, Vista Pro, and Cinemorph.
- Real-time video capture for roto-scoping and other video capture applications is possible when used in combination with a DPS TBC IV card.

DPS PVR-2500 Perception Video Recorder

A successor to the immensely popular PAR (Personal Animation Recorder) the PVR-2500 adds powerful features for awesome animation, morphing and rotoscoping capabilities. With features like PCI bus interface, 720x480 resolution, 10-bit 2x oversampled video encoding, better than D1 scaling, component and S-Video outputs, multi-processor support and FAST SCSI-2 hard drive controller, Perception empowers your computer to rival the finest professional production studios.

- The PVR-2500 is a full-length PCI card with a SCSI-II interface which connects to one or up to seven dedicated hard drives. Because the SCSI controller is integrated with the PVR-2500, video data never has to move over the PCI bus during playback. This avoids the bottlenecks found in systems which use the computer's hard drive for video storage.
- Perception is designed to run under Windows NT 3.5 on computers employing 486 (DX2-66 or higher) Pentium, DEC ALPHA or MIPS processors. Perception's software utilizes Windows NT's native support for multitasking and multiple processors, allowing use with the most powerful computers available today.
- Perception gets animations out of your computer quicker and easier. Its exclusive multi-format virtual file system ensures complete integration with your existing Windows NT applications. Any acquired video or computer generated Perception video clips appear simultaneously in many different file formats including TARGA, SGI, BMP and IFF. Perception is compatible with all the new NT versions of Lightwave 3D, Autodesk 3D Studio, Crystal Graphics TOPAS 5.1 Professional, Microsoft Softimage, Elastic Reality and others.
- Video output section utilizes 10-bit 2x oversampled encoding and provides broadcast quality CCIR-601 (720x480) resolution. Perception's dynamic range is in excess of D1 scaling so the images are brighter, have more color and greater spatial resolution than ever before. Component, composite and S-Video outputs are provided via the included breakout cables.
- Coupled with the optional AD-2500 video capture daughtercard, Perception becomes a digital video recorder. It has component, composite and S-Video inputs for real-time recording. It delivers unsurpassed picture quality and storage capacity is limited only by the size and number of attached SCSI hard drives. Captured video and audio is exported as sequential RGB files for roto-scoping and other compositing applications.
- The AD-2500 incorporates a sophisticated automatic entropy prediction circuit that analyzes the content of incoming video and dynamically calculates the optimum amount of compression on a field-by-field basis—even during real-time recording. You also have complete manual control over compression level/quality settings.
- Perception can also control BVU protocol VCRs for video acquisition. VCR-like controls on the Perception's GUI simplifies the task of batch digitizing and recording. In this mode, the PVR-2500 can read SMPTE time code from the source deck.
- Can be used with any Windows NT compatible sound card. Synchronization of audio and video is maintained by the PVR software. Some sound cards, such as those made by Turtle Beach, provide accurate system timing and consistently maintain synchronization during long video clips. Captured audio is stored on the computer's system hard drive, not on the dedicated drives. This approach provides maximum flexibility for manipulating audio and video during editing.
- Perception can perform real-time interpolation of 30 fps video to 24 fps (film rate) or convert vice versa. This means that it is also at home on the Hollywood movie set as well!
- Software for Windows 3.1 is supplied as well. Third party editing software such as Adobe Premiere or In Sync RAZOR can be used. In fact, a system equipped with the PVR-2500 and the AD-2500 capture card) a sound card, editing software and one or more SCSI hard drives becomes a non-linear editor of unparalleled performance at an unbeatable price.

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ST-120			8.99

M221 Hi 8 Double Coated

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P660HMP	6.99	E660HME	11.89
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P6-60 HG BQ	5.09	P6-120 HG BQ	6.69

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P6-60 HM BQ	6.09	P6-120 HM BQ	7.99

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T-30 Plus	1.69	T-60 Plus	1.99
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HGX-PLUS Expitaxial VHS (Box)

HGXT-60 Plus	2.69	HGXT-120 Plus	2.99

BQ Broadcast Quality Expitaxial VHS (Box)

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ST-31 BQ	7.19	ST-62 BQ	8.09
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SONY

Hi-8 Professional Metal Video Cassettes

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P6-60 HMPX	6.59	P6-60 HMEX	11.49
P6-120HMPX	8.89	P6-120HMEX	15.49

NEW! Hi8 Metal Evaporated Editor (HMEA0)

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BA Series Premier Hi-Grade Broadcast VHS (In Box)

T-30BA	3.59	T-60BA	3.99	T-120BA	4.79

MQ Master Quality S-VHS (In Box)

MQST-60	7.99	MQST-120	8.39

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B&H SPECIAL! KCA-60 BRS..... 11.99

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KCA-10 XBR	9.29	KCA-20 XBR	10.69
KCA-30 XBR	11.99	KCA-60 XBR	15.69

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KSP-S10 (mini)	9.59	KSP-S20 (mini)	11.09
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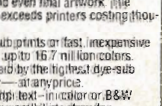

Incorporating all the features of the original Primera, the PrimeraPro delivers incredible 600 x 300 dpi, photo-quality output. The PrimeraPro also offers laser-quality text, LocalTalk or parallel interfaces and optional Adobe Postscript Level 2. The PrimeraPro is ideal for producing professional quality comps, photos, illustrations, scientific and architectural renderings, video captures, fabric transfers and even final artwork. The PrimeraPro's output is so good it exceeds printers costing thousands of dollars more.

- Spectacular, photo-quality dye-sub prints or fast, inexpensive wax thermal transfer prints with up to 16.7 million colors.
- Bright, vibrant colors are enhanced by the highest dye-sub printer resolution available today — at any price.
- Delivers laser-quality 600 x 300 dpi text — in color or B&W.
- LocalTalk port on Centronics-type parallel interface for Windows and Amiga. Ethernet is available for Macintosh. Apple's ColorSync color matching software is also supported.
- Available for PC, Macintosh and Amiga platforms. Third party drivers are also available for Auto Desk, ADI, Unix and others.
- Optional Adobe Postscript Level 2 for compatibility with nearly all page design, illustration and desktop publishing programs.
- Accepts letter (8.5 x 11"), letter-long (8.5 x 13"), A4 (210 x 297mm) and A4 long (210 x 348mm) paper.

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SAMSON®

MR-1 Wireless System

- The MR-1 micro receiver is a professional VHF wireless receiver measuring less than 4" long and 2" wide.
- FCC licensed in 14 channels from 174 MHz to 213 MHz.
- Truly switchable balanced mic level (600 ohms) to unbalanced (-10 dBm) output.
- dbx noise reduction to simultaneously increase dynamic range and eliminate noise.
- Receiver squelch, level & headphone level output controls.
- Can be powered by a 9V battery for 10 hours.
- SH-2 hand-held transmitter can be used with mic elements like Shure SM 58 dynamic mic or Audio Technica Pro 4.
- ST-2 (L) body pack transmitter can be used with leading lavalier mics like Sony ECM-144 or Audio Technica 831.

Lavalier (clip mic) Systems

- ST-2(L)ECM-144 Transmitter with Sony mic & MR-1 Receiver **367.95**
- ST-2(L) ECM-44 Transmitter with Sony mic & MR-1 Receiver **419.95**
- ST-2(L) AT 831 Transmitter with Audio Technica unidirectional mic & MR-1 Receiver **419.95**

Hand-Held Systems

- SH-2/PR4 Audio Technica Dynamic mic element & MR-1 Receiver **369.95**
- SH-2/58 Shure SM58 Dynamic mic element & MR-1 Receiver **434.95**
- SH-2/85 Shure SM-85 condenser mic element & MR-1 Receiver **592.95**

SUPER TD SERIES TRANSMITTERS

For the serious professional who wants true step-up quality features. Lavalier (clip mic) systems each includes:

MR-1 Micro Receiver, TX-3 Body-Pack Transmitter, Lavalier Mic with Multi Pin Plug

Sony ECM-144 ..... **507.95** Sony ECM-44 ..... **544.95**
Sony ECM-55 ..... **653.95** Sony ECM-77 ..... **724.95**
Senheiser MKE-2 ..... **747.95**

SENNHEISER

MKE-300 Short Shotgun

- Lightweight electret condenser mic to support the excellent video capabilities of most camcorders with the superior audio they deserve.
- Ideal for mounting on camcorders with an integrated shoe assembly and an extremely lightweight compact design.
- Tight, supercardioid polar pattern has the ability to pick up only those sounds that correspond to the scene being filmed and rejects any disturbing ambient noise.
- Integrated wind screen eliminates handling and wind noise.
- Operating time of over 200 hrs. using its own built-in battery so will not put added strain on your camcorders already limited power supply **179.95**

K6 MODULAR ELECTRET MULTIMIKE SYSTEM

This rugged system has separate capsules and a powering module that can be combined to produce a wide variety of microphones. It converts quickly from one type of microphone to another by simply threading together various system components. All capsules use back-electret technology for uncompromised quality. Output of the powering modules is balanced, low impedance (200W) and terminates in a standard 3-pin XLR connector.The K6 series was designed to bring studio quality sound to the broadcast and field recording market. The K6 power supply can accept microphone capsules ranging in polar pattern from omnidirectional to highly directional shotgun, as well as special application lavalier microphones.

K6

Microphone handgrip and power supply capable of battery/phantom powering all microphone capsules in this series. One "AA" battery supplies power for approximately 150 hours or phantom power (12-48 volts). The K6 power supply has an integrated bass roll off switch and on/off switch with LED indicator for battery condition **219.95**

ME 66

Short shotgun capsule. All sound coming from the rear and sides of the ME66 is greatly attenuated, thus allowing this microphone to pick out specific sounds in noisy environments. Great for interviews in crowded situations, as a camera microphone for electronic news gathering (ENG), for unobtrusive theater sound reinforcement and as a podium mic. Frequency response: 50-20KHz ± 2.5 dB **209.95**
ME66 with K6 Powering Module **429.95**

ME64

Cardioid capsule. Feedback resistant due to its well defined directional polar pattern. This feature, as well as its extended frequency response, make this microphone capsule ideal for use in sound reinforcement or recording in noisy environments. Frequency response: 50-20KHz ± 2.5 dB **159.95**
ME64 with K6 Powering Module **369.95**

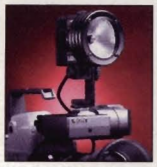
ME62

Omnidirectional capsule. Very broad and smooth frequency response, without proximity effect. Its low handling noise and integrated pop screen make it ideal for interviews and live recording. Frequency response: 20-20KHz ± 2.5 dB **139.95**
ME62 with K6 Powering Module **349.95**

lowel®

VIP Video Lighting System

Designed for video, they are capable of 55 to 500 watts of power, can be powered AC or DC, camera or stand mountable. They are all convection cooled and some have adjustable light beam.



i-light

The tiny i-light provides fill light, eye-light, high-lights, and contrast control in news and documentary shooting

- Multi-use halogen source
- 55 or 100 watt, DC powered light (12 or 14 volts)
- Includes cigarette lighter connector or optional 4-pin XLR
- Optional controls include expandable barndoors, scrims, diffuser, dichroic filter, snoot, umbrella, gel-frame, flags.

V-light

Efficient enough to light a small room yet small enough to fit in a large pocket, the V-light can be used as a broad, key light, back light or fill light (with umbrella or gel.)

- Extreme wide-angle multi-use halogen source
- 500 watt. AC powered light
- Mounts on stand, clamps, boom, wall, window, door-top.

Pro-light

Can be used as a low-level key or accent light, fill light (w/diffusion), backlight or background light.

- Multi-use halogen focusing source
- 125 and 250 watt AC powered light or 100 watt at 12 volts
- Optional controls – expandable barndoors, scrims, diffuser, dichroic filter, snoot & umbrella, gel-frame & flags.
- Optional cigarette, 4-pin and 5-pin XLR connectors.

MACKIE

Micro Series 1202

12-Channel Ultra-Compact Mic/Line Mixer

Usually the performance and durability of smaller mixers drops in direct proportion to their price. Fortunately, Mackie's fanatical approach to pro sound engineering has resulted in the Micro Series 1202, an affordable small mixer with studio specifications and rugged construction. The 1202 is a no-compromise, professional quality ultra-compact mixer designed for professional duty in broadcast studios, permanent PA applications and editing suites where nothing must ever go wrong.

CR-1604

16-Channel Mic-LineMixer

The hands-down choice for major touring groups and studio session players, as well as for broadcast, sound contracting and recording studio users, the Mackie CR-1604 is the industry standard for compact 16-channel mixers. The CR-1604 offers features, specs, and day-in-day-out reliability that rival far larger boards. It features 24 usable line inputs with special headroom/ ultra-low noise Unityplus circuitry, seven AUX sends, 3-band equalization, constant power pan controls, 10-segment LED output metering, discrete front end phantom-powered mic inputs and much more.

SONY

TCD-D7

DAT Walkman Player/Recorder

- High-quality Standard Play (SP) mode provides up to two hours recording of 16-bit digital audio on a DT-120 DAT cassette. The SP mode is ideal for recording live music.
- Long Play (LP) mode allows up to 4 hours of record/playback of 12-bit audio on a single DAT cassette. The LP mode is ideal for meetings, conferences or other voice recordings.
- Equipped with digital coaxial and optical input connector. Maintains the highest signal purity for recording and playback of digital sources with all information retained in the digital domain.
- Also has analog Mic and Line inputs for recording from analog sources without external adapters.
- High-speed Automatic Music Sensor (AMS) search function finds and plays tracks, skips forward or back up to 99 tracks, all at 100x normal speed.
- Has a Digital Volume Limiter System (DVLS) that increases listening comfort and sound quality by automatically adjusting for sudden level changes of the recording. It also helps prevent sound leaks through headphones.
- Two-speed cue-review lets you hear sound while player is in fast-wind modes, up to 3x or 25x normal speed.
- Compact and portable, it has an anti-shock mechanism that permits accurate recording and playback even while in motion.
- LCD display with backlit windows clearly shows recording level, track number, operating status and 4-segment battery indicator, even in low ambient light conditions.
- Optional RM-D3K System Adapter Kit for complete digital interface. The kit is equipped with the input/output connectors for both the optical cable and the coaxial cable. Therefore you can use it as a relay between the TCD-D7 and other digital equipment. Also includes a wireless remote control.

AZDEN® PRO SERIES VHF WIRELESS MICS

The **AZDEN PRO SERIES** brings you high performance VHF wireless at a price you can afford. Built around a two-channel design they allow selection of a frequency for the cleanest signal - delivering clean, reliable RF performance for up to 250 feet. The Pro Series includes handheld and lavalier mic systems as well as the WMS-PRO which includes a lavalier and handheld mic.

They All Feature:

- All have two switchable frequencies - 169.445 and 170.245 MHz and a range of 250 ft.
- High performance VHF transmitters and receivers incorporating SMD (small mounted device) technology
- Compact receivers which connect to the camera's external mic jack and attach to the camera with supplied shoe mount or velcro
- LED indicators for battery condition, transmit and receive operation

COMPLETE SYSTEMS

WMS-PRO

- Professional VHF wireless system with 250 ft. range
- Two switchable frequencies (169.445 and 170.245 MHz)
- Includes handheld and lavalier mic for extra flexibility
- Compact transmitter attaches to belt or fits in a pocket
- Includes earphone monitor and leatherette carrying pouch
- Battery-powered receiver comes with belt-clip, velcro and shoe mount for added versatility **169.95**

WLX-PRO

- Sensitive lavalier mic with attached tie clip
- Lightweight belt-pack transmitter with two frequencies
- Includes wind screen, earphone monitor, shoe mount and velcro **159.95**

WHX-PRO

- Handheld microphone with built-in transmitter
- Operates on one AA battery for up to 8 hours
- Has a combination on/off-mute switch for quiet switching
- Includes shoe mount, velcro, earphone monitor **189.95**

PRO SERIES COMPONENTS

WL/T-PRO

- Lavalier mic with belt-pack transmitter
- Same as WLX-PRO except without receiver
- Owners of the WHX-PRO can combine the WL/T-PRO and have a complete system of handheld and lavalier mic w/receiver... **109.95**

WM/T-PRO

- Combine it with the receiver from the WMS-PRO or WLX-PRO and you now have the ultimate quality microphone for interviews or pass around
- 3-position switch for on, off and "standby" for quiet switching
- Choose from 2 switchable frequencies **129.95**

WR2-PRO

- New receiver allows use of any 2 Pro Series mics simultaneously.
- Each transmitter can be 10 to 250 ft. from the receiver or more.
- Size of a cigarette pack the WR2-PRO mounts on a camera with supplied shoe mount or velcro
- Operates on a 9 volt battery and with optional adapters on 12 volt DC or 120 volt AC **199.95**

WE BUY, SELL AND TRADE USED VIDEO EQUIPMENT

NRG

POWER BELT SERIES

NRG power belts are the ultimate power solution. They provide the power to run lights, camcorders and decks without the fear of shutdown. Advanced high-density nicad power cells provide the lightest weight and longest service life of any power products made. Innovative features such as dual power outputs, power indicator, removable packs, plus accessories like high-speed chargers, solar panels and high-current cables combine to form the complete power solutions for any kind of users.

880 Power-Pro +

- High capacity quick-charge capable 12-volt 10-amp sintered nicad power pack (removable).
- Power chassis with dual 3-pin XLR inputs allows for pack interchange without shutdown.
- 2500-cycle cell life provides lowest cost per cycle.
- Microprocessor-controlled 5-step multi-color power indicator display.
- Belt with cellpack weighs only 4.9 lbs for all day comfort.
- Dual outputs allows simultaneous powering of two devices (eg. camera and light). Output configurations include cigarette lighter and 4-pin XLR in any combination.
- Charge in under 2 hours with the optional 650-III charger.
- Includes Power-Pro+ belt and power chassis, 12-volt 10-amp cell pack, model 600 overnight charger and comprehensive owner's manual. Fits waist size 30"- 40". (Available in large size 40"-52" if needed).

970 Power-MAX

Same features as 880 Power-Pro + Belt ***Plus–***

- Highest capacity quick-charge capable 12 Volt 14-AMP sintered nicad power pack (removable).
- Rugged high-grade, black leather belt case; chassis assembly with dual 3-pin XLR inputs for pack interchange without shutdown.
- Belt with cellpack weighs a comfortable 7.5 lbs.
- Includes Power-MAX belt and power chassis, 14-amp cell pack in 12V or 13.2 volt configuration, model 600 overnight charger, comprehensive owner's manual. Fits waist size 29"-44".
- Also available in 13.2-Volt 14-amp version. The 13.2-Volt version offers 15-20% longer runtimes because industrial VCRs shut off at higher voltage levels.By not shutting off the Power-MAX is allowed to fully discharge, thus the longer running time.

VARA-LITE PRO

Professional DC On-Camera Light

The revolutionary new NRG Vara-Lite Pro combines the ruggedness, light efficiency and versatility of NRG's best selling Versalight Pro (DC only) with a sophisticated electronic light management system. Thanks to on-board control IC's using NRG's Light-Gate technology, light intensity can be infinitely adjusted by the user within a range of 10% to 100% of the lamp's rated power. Now instantly adjust light output to exactly meet changing light requirements. Best of all, the Vara-Light Pro virtually eliminates color shift and dramatically conserves precious battery power by using only the power required for the selected light level.

- Accomodates bulbs from 20W to 100W DC.
- Prismatic dispersion grid provides smooth even light ouput and reduced glare without changing light intensity.
- Sturdy all-metal click tilt mounting bracket with ratchet action. Eliminates shake under action shooting conditions.
- Optional barn doors enhance light control capabilities.
- Front retainer assembly pops off for instant bulb access without the bother of screws.
- Rugged milled aluminum light head disperses heat and provides years of service under adverse conditions.

POWER STATION-2 SERIES

Just plug the PowerStation-2 into any AC outlet in the world and out comes perfectly regulated 12-volt DC power through four 4-pin XLR connectors and one cigarette lighter connector. It uses an advanced pulse-width-modulated power supply which allows for ultra-light weight and small size. It operates with little heat even at full output. The PowerStation-2 is the ultimate multiple-output professional power source for cameras, decks, lights, monitors, and a host of other video accessories.

- 85-264 volts worldwide auto-adjusting input (just plug in).
- Supply is fully protected from overcurrent.
- Ultra-light weight - under 3 lb.
- Outstanding 300,000 hour mean time between failure is far in excess of any other manufacturer.
- Ultra-efficient PWM regulation generates far less heat than linear type supplies.
- Provides the ultimate in performance and reliability in a universally compatible and compact package.

ALL ITEMS ARE COMPLETE WITH ALL ACCESSORIES AS SUPPLIED BY MANUFACTURER

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MACRO SYSTEMS MAKES IT POSSIBLE WITH THE WARP ENGINE!
YES! WE DO HAVE COMMODORE AMIGA 4000 SYSTEMS! LIMITED SUPPLIES!* *NO SALES TAX IN DELAWARE

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CD Solutions 1401 14" Multiscan RGB Monitor	549
CEI 1962 14" Multiscan RGB Monitor	449
Play Kitchen Sync Dual TBC	1249
Newtek Video Toaster 4.0	1995
Newtek Video Toaster Upgrade 4.0	599
Newtek Lightwave 3D 4.0 Standalone	775
Newtek Lightwave 3D 3.5 Standalone	599
Newtek Lightwave 3D 3.5 Upgrade	99
Newtek Video Flyer	3995
Noahji's Vlab Motion Card	1595
Noahji's Vlab Motion System (Toccata)	1995
Noahji's Vlab Motion Complete (T&RZ3)	2749
Noahji's Retina Z3 w/4MB	795
Noahji's Retina Z2 w/4MB	519
Noahji's Toccata Sound Card	425
Noahji's Vlab Y/C Internal / External	389
Nucleus Personal editor v1.1	589
Nucleus Personal SFC Plus v3.1	359
Sunrise Industries AD516 Digitizer (16bit)	1199
Villagetronic Picasso II w/2MB	599
Villagetronic Pablo Video Encoder	175
YC Plus - Y/CPlus SVHS Hi8	749
Cybervision 64 Z3 2MB	469
Cybervision 64 Z3 4MB	599
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SOFTWARE

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ASDG - TRex Professional v2.15 (Toaster)	119
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Cine Graphics - Powermacros for Lightwave	99
Crestline - Humanoid for Imagine	169
Crestline - Humanoid for Lightwave	169
Dimension Technologies - Composite Studio Pro	169
Dimension Technologies - Fly Effects	169
Dynanic Reality - Impact!	199
Electronic Arts - Deluxe Paint V	119
Focus - GraphicRECALL v1.5	51
Hester - Plug Ins & Go	69
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Innovision Technology-Broadcast Titler II S.HiRes	189
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Metrografix - Motion Master Volume 1	99
Metrografix - Motion Master Volume 2	99
Metrografix - Sparks v2.173	119
Nova Design - Image FX v2.0	249
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Prime - Multilayer v1.7 for Image FX	79
Questar - World Construction Set	169
Radiosity - Wavemaker v2.0	185
Realsoft - Real 3D v2.4	389
Scala Multimedia MM300	199
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Syndesis - 3DROM Vol 1	84
Syndesis - 3DROM Vol 2	84
Synergy - Hollywood FX	224
Synergy - Hollywood FX Lite	49
Swipes	89
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500 Computer System w/ECS	299
600 Computer System w/o HD	399
520 Video Adapter (works w/ all systems)	49
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3640 68040 @ 25mhz for the 4000/3000	399
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501c 512K ramboard w/clock	34.95
601c 1mb ramboard w/clock	69.95

CPU & FPU UPGRADES & REPLACEMENTS

68040-40 w/MMU&FPU	399.00
68040-33 w/MMU&FPU	299.00
68040-25 w/MMU&FPU	199.00
68040-EC25	149.00
68030-RC-50 w/MMU	139.00
68030-RC-40 w/MMU	119.00
68030-EC40 (NO MMU)	99.00
68030-RC-33 w/MMU	99.00
68030-RC-25 w/MMU	75.00
68030-EC-25 (NO MMU)	50.00
68882-RC-PGA-50 FPU	99.00
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68882-RC-PGA-33 FPU	49.00
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Intel 486 DX2 - 66	175.00
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1 x 4	120 - 60ns Page ZIP	19+
1 x 4	120 - 60ns Page DIP	39+
1 x 1	120 - 60ns DIP	5+
256 x 4	120 - 60ns DIP	5+
256 x 4	120 - 60ns ZIP	5+
256 x 32	100 - 60ns (1MB Simm)	39+
256 x 36	100 - 60ns (1MB Simm)	45+
512 x 32	100 - 60ns (2MB Simm)	85+
512 x 36	100 - 60ns (2MB Simm)	99+
1 x 32	100 - 60ns Simm (4MB)	149+
1 x 36	100 - 60ns Simm (4MB)	159+
2 x 32	100 - 60ns Simm (8MB)	299+
2 x 36	100 - 60ns Simm (8MB)	319+
4 x 32	100 - 60ns Simm (16MB)	599+
4 x 36	100 - 60ns Simm (16MB)	639+
8 x 32	100 - 60ns Simm (32MB)	999+
8 x 36	100 - 60ns Simm (32MB)	1199+
16x32	100 - 60ns Simm (64MB)	2299+
PCMCIA Ram Card 2M		119+
PCMCIA Ram Card 4M		229+
GVP SIMM32 60NS 4MB		199+
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3.1 Upgrade kit (roms, soft, mans)	199.00
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2.1 OS Upgrade Kit (complete)	99.95
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2.04 Kickstart Rom	27.95
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Amber (A3000 & 2320)	44.95
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2620/2630 upgrade kit (7.0)	35.95
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w/Conner 540MB	+249
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w/Micropolis 2217A 1.7G	+999
Personal TBC IV 4:2:2 & SVideo In & Out	799
Personal VScope	735
Personal Componet Adapter	229

Macro Systems WARP ENGINE

- Includes SCSI I & II Fastest hard drive controller available for the Amiga 4000/3000
- Up to TEN megabytes per second with a Seagate Barracuda 2.1 gigabyte hard drive
- Expandable to 64MB (3000) or 128MB (4000) using 72 pin industry standard simms

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68040 @ 33Mhz w/CPU	(4033)	999	68040 @ 33Mhz w/CPU	(3033)	999
68040 @ 40Mhz w/CPU	(4040)	1199	68040 @ 40Mhz w/CPU	(3040)	1199

Low profile, power & heat simms for maximum performance -
04 MB 60NS $149
08 MB 60NS $299
16 MB 60NS $499
32 MB 60NS $999

Upgrade rebates for A4000-040 owners with original CPU card & four mb simms & A3000 owners with zip style dram

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5.25" 88MB Cartriges	51
3.5" 105MB Cartriges & 270MB Cartridges	59
5.25 200MB Cartriges	79
External Versions w/Cabling Add	99

SCSI CD-ROM DRIVES & DRIVERS

Model	Buffer	Size	Access	Rate	Amount
Hitatchi	External	64k	320MS	150k/sec	89
Sanyo	Int / Ext	256k	380MS	300k/sec	149/249
NEC 3Xi	Internal	256k	190MS	450k/sec	225
NEC 3XE	External	256k	150MS	450k/sec	299
Sanyo 4x	Int/Ext	256k	120MS	600k/sec	239/309
Toshiba 4.4x	Int/Ext	256k	140MS	660k/sec	329/429
Plextor 4x	Int/Ext	1024k	150MS	600k/sec	415/515
Plextor 6x	Int/Ext	256k	145MS	900k/sec	449/549

ASIM CDFS 3.1 w/Fish CD (AMIGA) 64

CSA DERRINGER+ ACCELERATOR
68030@25Mhz CPU w/MMU
68881@25Mhz FPU & /1MB Ram
Only 299.00
w/4MB 399.00 w/8MB 599.00

CSA DERRINGER+ ACCELERATOR

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68882 @ 33MHZ (Math Co Processor) **399**
1Megabyte of 32bit ram (remap kickstart)
Install up to 32MB of 72 pin industry standard ram
Ours is the only one to come standard with the modification to work with the DKB Megachip
(a $25.00 value if purchased seperately)
4MB - 499 8MB - 699 16MB - 999 32MB - 1499

68030 @ 50MHZ with MMU
68882 @ 50MHZ (Math Co Pro add 99.00) **499**
1Megabyte 60NS 32bit ram (remap kickstart)
Install up to 32MB of 72 pin industry standard ram
Ours is the only one to come standard with the modification to work with the DKB Megachip
(a $25.00 value if purchased seperately)
4MB - 599 8MB - 699 16MB - 1099 32MB - 1599

WORKS IN AMIGA 2000 & 500

CONNER 1060 SCSI I & II
***** BLOWOUT SPECIAL *****
9 MS - 1060MB - 5 Year Warranty
up to 10 MB/Sec Synchronous
up to 5 MB/Sec Asynchronous
Works great with all controller cards! **$349.00**

3.5" HARD DRIVES

Quantum

340 ELS SCSI I & II or IDE	11MS	2 Yrs	125
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730 LPS SCSI I & II or IDE	11MS	2 Yrs	199
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*2.1G Atlas 7200RPM 1MB	8MS	5 Yrs	999
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ST3145A 120MB IDE LP	16MS	1 Yrs	99
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ST31220A 1080MB IDE LP	9MS	3 Yrs	249
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ST31230N 1050MB SCSI LP	9MS	5 Yrs	519
ST32550N 2.1G Barracuda	8MS	5 Yrs	975
*ST15150N 4G Barracuda	8MS	5 Yrs	1549
*ST410800N 9G Elite	11MS	5 Yrs	2299

Quantum 4.3GB SCSI I & II
512k Buffer - 3.5" - Grandprix
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2217 A/V 1.7G SCSI I&II	10MS	5 Yrs	899
2217A 1.7G IDE	10MS	5 Yrs	899
*3221S 2.1G SCSI I&II	8.9MS	5 Yrs	999
*3221 A/V 2.1G SCSI I&II	8.9MS	5 Yrs	999
*3243S 4.3G SCSI I&II	8.9MS	5 Yrs	1499
*3243 A/V 4.3G SCSI I&II	8.9MS	5 Yrs	1599
*1991 9.0G SCSI I&II	12MS	5 Yrs	2199
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Conner

CFA 1275A IDE (w/PAR)	12MS	3 Yrs	399
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CFP 540A IDE	12MS	3 Yrs	199
CFA 540A IDE (w/PAR)		3 Yrs	225

* Video Flyer Certified Drives

Hard Drive Controllers

Commodore A2091 w/0MB Ram 199
(For the A2000) w/2MB Ram 279
- Includes 7.0 Roms & WD rev 8 SCSI chip
two megs of additional rams can be added
Trifecta 500 LX w/0MB expandable - 8mb 225
- Controls seven scsi & two ide drives at the same time. Fastest transfers for A500

A1200/600/SX1 2.5" IDE HARD DRIVES

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ST9190A 170MB Seagate	125
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ST9385A 340MB Seagate	289
ST9550A 455MB Seagate	369
ST9655A 520MB Seagate	429

Install kits available $25.00

AMIGA NETWORKING

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CBM A2065 Ethernet board	299
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Three network interfaces for 2000,3000,4000
- 10 BASE T, Thick AUI, Cheapernet (10BASE2)
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EXPANSION SYSTEMS

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Standard	395
With Power Supply	495
Fan Kit	45
Cable Kit	85

Dataflyer SCSI Card 4000SX 90
- SCSI Controller card supports up to seven devices internally, can add external port later

Dataflyer SCSI Card 4000SX-25 100
- Includes the DB 25 external connector for external devices

Dataflyer SCSI + A4000 119
- Converts IDE Header into SCSI support for SCSI devices w/ pass thru to work with original IDE drives you already own!

Dataflyer SCSI + A1200 99
- Same thing for the A1200 series systems

Dataflyer XDS 1200 / 600 69
- External case supports 3.5" IDE hard drives & allows use of original 2.5" hard drive. Connector also uses power from inside the machine.

Ramboard w/2MB Ram exp to 8MB 199

Dataflyer 2000 SCSI 95
- Supports up to seven scsi devices , internally mount a 3.5" hard disk drive onto controller card

Dataflyer 2000 IDE 95
- Support two IDE devices, one can be mounted onto controller card.

Dataflyer 2000 SCSI & IDE 125
- Two controllers in one card! Support seven SCSI and two IDE devices!

Dataflyer 500 SCSI 149
- Supports Seven SCSI devices , one can be mounted internally and powered!

Dataflyer 500 IDE 149
- Supports two IDE devices , one can be mounted internally and powered.

Dataflyer 500 SCSI & IDE 179
- Supports two IDE devices , one can be mounted internally & seven scsi devices can be connected!

VILLAGETRONIC

MainActor Professional 79
- Full featured animation program that works with all Amigas with support for Picasso II owners.

Ariadne 299
- Zorro II Ethernet card offering 10base-2 (cheapernet) & 10base-T (twisted pair) Features; 2 parallel ports 32k buffer; boot eprom option; SANA-2 Compatible drivers & Envoy network software; DOS 2.04 or higher required.

Liana Network 89
- Connects any two Amigas togeather via the parallel port

Pablo 179
- A video module for your Picasso II card permitting output to your TV or VCR - Quality comparable to high performance video broadcast encoders; includes RCA - S-VHS - SCART cables & 24 bit animation program

Micro R&D

2000 Bigfoot Power Supply	159
1200/600/500 Bigfoot	89
Slingshot A500 (1A2000Slot)	39
Slingshot Pro A500	69
X-Calibur A4000 Ram Unit	649

ICD

AdIDE 130MB HD System w/2.5" Drive (500/2000)	225
AdIDE 170MB HD System w/2.5" Drive (500/2000)	249
Flicker Free Video II	249
ADRAM540 w/4MB (A500)	275

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Conner External 400k/sec	999
Sony Internal 500k/sec	899
Sony External 500k/sec	999

A2000 68060 @ 50MHZ !!!

DKB's WILDFIRE 060 w/FAST SCSI II & 64bit ramboard $1499

Low profile, power, heat simms for maximum performance -

Upgrade rebates available for owners of other accelerator boards & ram through De Vine.

04 MB	149
08 MB	299
16 MB	599
32 MB	1099

- True 68060 50Mhz Design - NOT A MODIFIED 68040 BOARD !!!
- Lightning High Speed Local 68060 Memory
- Supports Interleaved Memory
- Supports Posted Writes to Motherboard
- 32 Bit FAST SCSI II Host bus DMA Interface
- Supports 10MB/second SCSI Transfers
- Over 90% of the CPU available at full Speed SCSI DMA
- Totally Autoconfigurable
- 64 BIT Ram expandable to 128MB
- Uses Industry Standard 72 Pin Simms
- Ethernet - Twisted Pair & Thin Coax
- PCI Bus For Future Expansion supporting up to 100MB/Second
- Compatible with the Newtek Video Toaster & DKB Megachip
- Includes Manufactures TWO year full warranty

From A Company that listens to what the public wants! This is the FASTEST accelerator available for the Amiga 2000!

Commited to the Amiga marketplace since 1980 & going strong!

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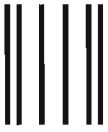

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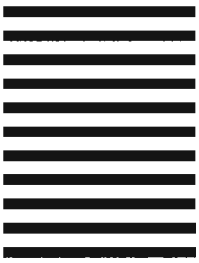

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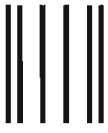

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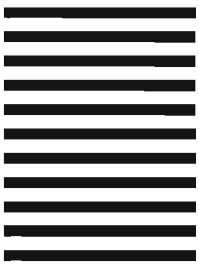

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add a file requester to any script: Bengt Giger's AskEnv. For example, if you wanted to run a CLI program titled Play Sound in your Work: directory and have it play a sound file that you choose from a file requester, you would create the following script:

```
Askenv >env:File FREQ
Work:PlaySound $File
```

When you run this script, which can be launched from a Workbench project icon, it brings up a file requester, where you select the file you want to use. It then loads the program along with the file you selected. To reuse this script for another program, just change the name and path name of the Work:PlaySound and rename the script. Too easy, and now, no more CLI. You can even have two file requesters, for programs that require an input and an output file. AskEnv also has other capabilities, such as being able to make buttons that can branch to different parts of your script.

A better way to make a button control interface, though, is Oliver Roberts' ButtonMenu. It provides an easy-to-use interface that makes creating buttons that can launch programs and scripts a snap. A file requester lets you choose the file or script you want run when a specific button is clicked on, and you can choose to have the program run in the background. You can even select a keyboard shortcut to activate the button. You can have a menu with up to 100 buttons, and you can assign a secondary function that works when the shift key is pressed. For example, clicking on the button would run the program, pressing the shift key and clicking on the button would bring up a text file for that program. You can also set the height, width, font and screen position of the button menu. When you save the menu, ButtonMenu can also save a Workbench icon to launch it from. Using these two programs in conjunction can make it easy to automate many programs and eliminate a lot of the fuss and muss of dealing with the CLI.

I've written in the past about several CLI-based programs, which you may have already hunted down and seriously wished were easier to use. Fortunately, I have come across some graphic-oriented interfaces that have been written by others to make these programs easier to use.

Take control of the CLI-based SOX sound converter with this powerful third-party interface.

AmiPeg and MP are both CLI-based MPEG players. A programmer going by the name of Sauron (which I suspect is a pseudonym) came up with MPG Intuition (mpegnttn.lha), a little graphic interface for these utilities. When you load an MPEG animation, the interface displays the height and width, the number of frames, the frame rate, and the size in bytes of each frame. It has a load button that brings up a requester, a play button, a save button (which saves the frames as IFF 24 images), and a gadget to set the number of times the animation loops. MPG Intuition certainly makes using these two fine programs much easier.

AmiSOX is a great sound utility that can convert most major sound formats, but it suffers from being rather tedious to use. Stephan Klein's SOXGUI is absolutely indispensable if you have AmiSOX. It turns a difficult but powerful program into a breeze to use, and adds the ability to play the sound files using an external player such as DSound (which I covered in Sept. 1994's *VTU*). And it lets you use file requesters to choose your input file name and output file name. You also have simple control over the many range of features available in AmiSOX that required endless command line typing: Average, Reverse, Echo, Vibro, Band, HighPass, LowPass and Volume. When you activate these gadgets, a series of sliding gadgets become active, depending upon the adjustments available for each. These include Delay, Speed, Depth, Width, Center and Volume. This simple interface gives you easy access to the tremendous power of AmiSOX, and with a separate play button for the input and output files, you can easily makes changes and play them to hear what they sound like. A big tip of the hat to Klein for a much-needed addition to a great program.

InfraRexx lets you control your Amiga with any remote control or use the Amiga to control a VCR or other device.

Here's something to spark your imagination with many interesting possibilities. Leon Woestenberg and Jeroen Steenblik have come up with a cute little piece of hardware that plugs into the Amiga's joystick port and can both send and receive infrared signals. Their archive (infrrx16.lha) contains the complete instructions for making one of these hardware units yourself, and offers you the option of buying one yourself for around $32. Woestenberg and Steenblik have included schematics and board layouts in IFF format.

They've also enclosed all the software you need to integrate the infrared unit into your system. You can use ARexx from a multimedia program to control any device that works with an infrared remote. You can also use an infrared remote to control your Amiga, sending codes to ARexx-controllable software. This could be used for some very creative applications.

As usual, if you do not have a modem or do not want to take the time to hunt these down, I have put them all on a disk you can have by sending $5 to Geoffrey Williams, Variety Disk Offer, P.O. Box 10095, Glendale, CA 91209. You can reach me at gwilliam@netcom.com.

VTU

Geoffrey Williams is an independent multimedia developer and video producer based in Glendale, Calif.

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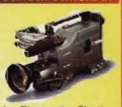

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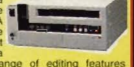

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Fax (818) 552-5025
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(602) 864-9183
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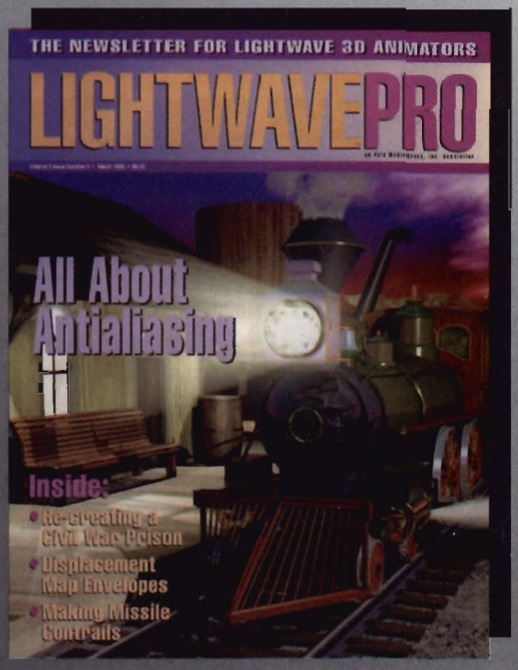

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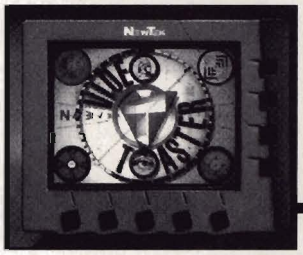

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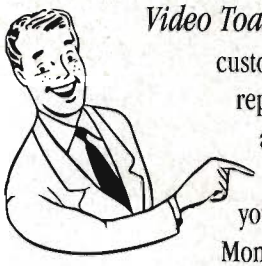

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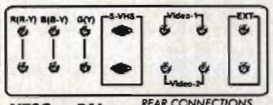

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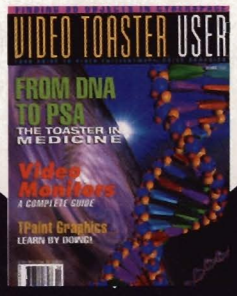

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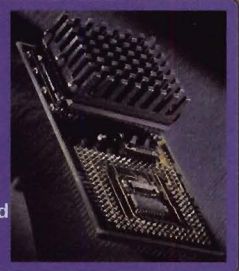

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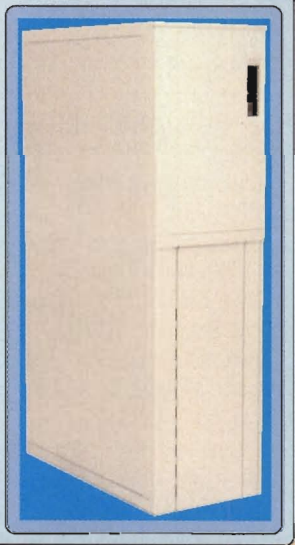

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RENDERSAUR-BC200M™ $6995
200MHz Alpha AXP 21064A CPU / 2MB of Cache & 32MB Ram
AS LOW AS $145 A MONTH

RENDERSAUR-BC233A™ $7995
233MHz Alpha AXP 21064A CPU / 2MB of Cache & 32MB Ram
AS LOW AS $195 A MONTH

RENDERSAUR-BC275A™ $8495
275MHz Alpha AXP 21064A CPU / 2MB of Cache & 32MB Ram
AS LOW AS $245 A MONTH

Each of these RENDERSAURUS systems comes complete with 500MB HD, 2X CDROM Drive, Ethernet, 14" SVGA Monitor, keyboard, & mouse.

RENDERSAURUS RAX™

The RENDERSAURUS RAX is a Monster Rendering machine which holds Upto 10 rack mounted RENDERSAURUS RAX-**550A** racks each rack mount has 2 Alpha-275MHz CPUs. With 20 Alpha-275MHz processors the RENDERSAURUS RAX will give you **5.5 Giga-Hertz** of processing Power!

The RENDERSAURUS RAX System gives you the capability of adding Rendering Power as needed and the RENDERSAURUS RAX System will allow you to Upgrade to Faster and Faster Processors as they become available.

Call For a custom RENDERSAURUS RAX System: $Call

RENDERSAURUS RAX-550A: $15,995

TWO CPUs: 275MHz ALPHA AXP 21064A CPUs

each with: 128-bit external data path,
64-bit internal data bus,
34-bit physical,
64-bit virtual address bus.

CACHE(ON-CHIP):16K Instuction
2MB(17ns) Data
128-Bit Wide Write-Back Cache
Rax RAM MEMORY CAPACITY:
2 Banks per CPU, which can be populated with 16MB to 1GB of 72-pin SIMMS 60-80ns RAM
128-bit RAM Architecture
Rax SCSI-2 DRIVE:500MB HardDisk

RENDERSAURUS UPGRADES

RENDERSAURUS RAX-550A: $15,995
2 Alpha-275MHz CPUs,
2 Rax Ram 0MB Bank (0MB total)
2 SCSI-2 500MB (1GB total)

RENDERSAURUS RAX-550A32R: $18,995
2 Alpha-275MHz CPUs,
2 Rax Ram 32MB Bank (64MB total)
2 SCSI-2 500MB (1GB total)

DRIVE RAX: $Call for Configuration

ALPHA SOFTWARE SUPER BUNDLE $1785
LightWave3D ver4.0
Impact Alpha
WinImages Morph

NOTE:
Each RENDERSAURUS RAX-**550A** needs 2 Banks (1 for each CPU) to be filled with High Speed RAX RAM:

RAX RAM	32MB	BANK $Call
RAX RAM	64MB	BANK $Call
RAX RAM	128MB	BANK $Call
RAX RAM	256MB	BANK $Call
RAX RAM	512MB	BANK $Call

IDPS PERCEPTION (PCI-Bus)	$1893
IDPS Capture Card	$ 845
4MB UpGrade Stealth 64	$ 93
MONITOR UPGRADE:	
14" to 17" High Resolution	$ 595
17" to 21" High Resolution	$1795

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Hurry! Get Escom's New Amiga4000T/25MHz-040/6MB/500HD for $3495 !
*Reserve Yours Today And Receive Free Labor & a Software bundle worth Over $500 Free!**
Call today they will Definetly be in short supply!

HELP WANTED -Looking for Bright resourceful indaviduals in Sales, Tech Support, & Other Areas! Please send resumes!

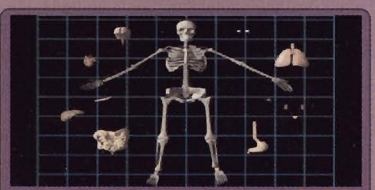
DEDICATED DIGITAL IMAGERY

SUPER BUNDLE ALL 5 SETS $455

Create a 3D Virtual City with CITYBUILDER contains over 75 detailed 3D objects featuring high and low Resolution versions of recognizable buildings from major U.S. cities.

Citybuilder $120

Household Items (50 objects) $75



Medical/Anatomy (25 objects) $35

Space Essentials (50 objects) $95

Autos/Vehicles (65 objects) $95

Objects are available in Lightwave3D, Imagine, DXF, and Wavefront formats.

FLYer Factory!

In Celebration of Escom's purchase of the Amiga Technology

NEW LOW SYSTEM PRICES

FLYer DRIVES

Minimum 2 Video Drives	
2GB	$Call
4GB	$Call
9GB	$Call
4X CD-Rom	$295
CABLES:	
Octopus Cable	$165
Warp A4000 External SCSI-2 Kit	$120
High-D Term.	$ 25
T-OvenGT Cables	
Flyer	$195
Warp	$ 45
Terminator	$ 15
TAPEBackUp Drives:	
5-10GB 2.5GB/Hr	$1295
7-14GB 1.6GB/Hr	$2095
10-20GB 5.4GB/Hr	$3495
20-40GB 5.4GB/Hr	$6795

FLYer SYSTEMS

High FLYer System $14,995 — As low as $365 a month

A4000/25MHzLC040/18MB Ram/800MB IDE HD/ HighFlyer w/ PS, Cablekit, FanKit
FLYer/Toaster/TBC IV/
Two 2GB Flyer HD's and 2X CDRom

TO-060 GT Tower System1 $18,495 — As low as $450 a month

ToasterOvenGT-4000 Tower System/
50MHz-060/18MB Ram/1GB SCSI-2 HD/
FLYer/Toaster/TBC IV/
Two 4GB Flyer HD's and 2X CDRom/ASIM

TO-060 GT Tower System2 $23,495 — As low as $570 a month

ToasterOvenGT-4000 Tower System/
50MHz-060/32MB Ram/
2GB 7200 RPM SCSI-2 HD/
FLYer/Toaster/TBC IV/
Two 9GB Flyer HD's and a 1GB AudioHD/
4X CDRom/ASIM

*Balboa Lease Box is average credit lease for 60 months

ANTI GRAVITY HANGER™

Anti Gravity Hangers are external expansion cases for the FLYer! They Feature High Wattage Power Supplies, Cooling Fans, Individual SCSI-ID selects, FLYer SCSI-2 Ports, plus...

Hanger Model	# BAYS	# Watts	# Fans	# IDs	FLYer Ports	Pass Through	Total Price
AGH-4	4	200	3	4	2	No	$275
AGH-7	7	250	3	7	3	Yes	$395
AGH-9	9	300	3	9	3	Yes	$475

MacroForm™ $215

Powerful modeling macros for LightWave 3D™

RailToolz Environment:
- ☐ RailRout
- ☐ RailMold
- ☐ RailForm
- ☐☐☐...More!

SNAP MAPS: Fields & Foliage

Fields & Foliage $129.95
Building Materials & Fabrics $129.95
Super Bundle: F&F plus BM&F $240.95

Pro Wipes are not animation, they are real Video Toaster format transitions that work just like original toaster wipes.
75 Toaster Transitions & Effects
33 Live (Actor) Action Wipes,
42 assorted 3D Style Wipes,
Matte Wipes, Soft Edge Wipes,
16 level Alpha Effects,
& 24bit Effects

Pro Wipes $70

Visual Inspirations

SURFACE PRO Now Available for PC $85

ROAD SIGNS $45

BATCH FACTORY $45

Visual FX & Decision Maker $435

SUPER BUNDLES
Surface Pro, Road Signs, & Batch Factory 2.0 $125

New Flyer & V-Lab Motion EDL generator and VTR controller

Decision Maker takes the drudgery out of moving selected chunks of video tothe harddisk. You control your video deck directly from your Amiga! And when you find useable footage simply add it to the EDL. When you need to switch tapes, just name the new tape and continue. When you are done, click ***DIGITIZE*** and the disired footage will move to the harddisk. Then when the Edit is done you can take the EDL to an ***ON-LINE SUITE*** or ***REDIGITIZE*** at a higher resolution!

Features:
- Import, Create, Export EDL's (CMX & GrassValley)
- Online Editing
- Control over your deck from your computer
- Keeps track of multiple source tapes
- Digitize and Redigitize
- User-Configurable Screen Backgrounds
- Ease of Operation
- Time Lapse Record
- Requires NewTek Flyer or VLab Motion
- Compatible with V-LAN, AmiLink, & BCD single-frames, & the EVO-9650 and Sanyo GVRS-950, Single Frame VCRs.

VISUAL FX $125

You don't have to go all the way to Hollywood anymore to get first rate fx.

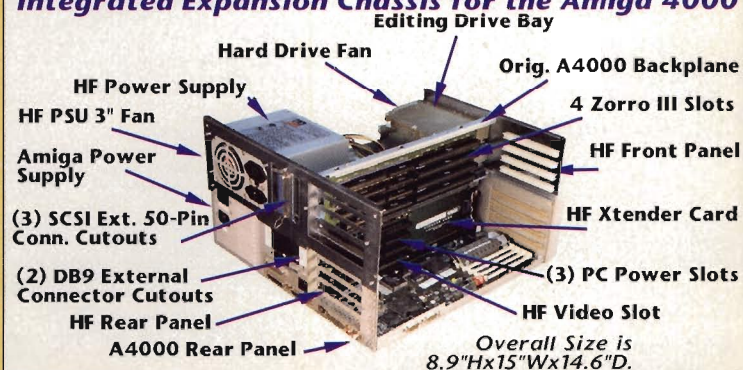
Volume one by Leo Martin and volume two by Mark Thompson are State-Of-The-Art Fx. The impressive front end of ***Visual FX*** gets you into production now, no previous Lightwave experience needed. The transition volumes are perfect for use with the NewTek Video Flyer or the DPS Personal Animation Recorder, just select what images or video sequences you want to use and ***Visual FX*** will do the rest. The Logo volumes are just as easy. Simply select what object you wish to replace our default and you are off on your way to creating professional quality animations that you never thought possible. ***Visual FX*** requesters actually open up on the LightWave screen and walk you through each step. ***Visual Fx*** is perfect for batch processing. Each volume comes with 20 effects, each of which has a full 30 frame preview animation attached to it so you will know exactly what the effect will look like. ***Visual FX*** works with both the Video Toaster and stand alone LightWave.

HIGHFLYER EXPANSION SYSTEMS

The **HIGHFLYER** was designed for the Toaster 4000 user that would like to make use of all four Zorro III and two powered PC slots with the Toaster installed. The HIGHFLYER is also especially useful when used with the Flyer Editing System from Newtek. In addition to the extra slots it also provides an extra venting fan, room for the Video A and B 3.5 X 1.7 inch editing drives, three 50 Pin Cent.-two DB9 cutouts and an additional 250W power supply. Optional cable kit allows connection of external 9 Gig Drives without removing the cover. The HIGHFLYER installs in just minutes using just a screwdriver and maintains the same footprint. All metal double high cover is painted same color as the original.

Features:
- ☐ Four Zorro III Slots with Toaster
- ☐ Three PC Power Slots
- ☐ More 3.5" Drive Bays
- ☐ Additional 250 Watts of Power
- ☐ 3 External 50 Pin SCSI Ports
- ☐ 2 External DB9 Ports
- ☐ All Metal Double High Cover
- ☐ Increased cooling capacity

Integrated Expansion Chassis for the Amiga 4000



Overall Size is 8.9"Hx15"Wx14.6"D.

HighFlyer	$ 395
HighFlyer PS *with Power Supply*	$ 495
Cable Kit	$ 85
Fan Kit	$ 45

DataFlyer 4000SX	$ 90
DataFlyer 4000SX-25	$ 95
DataFlyer SCSI+ 4000 Does not use Zorro Slot	$ 95
270MB IDE SyQuest A4000	$Call

WaveMaker 2.0 $185

is a flying-logo animation scene builder for LightWave.

You don't have to be a Lightwave expert to create eye-catching, professional-quality flying logo animations.

New Features:
Image Factory, PAR Convert, 72 New Elements,...More!

MAC

Another Barrier Smashed by Consultron, who brought to your Amiga CrossDos. Now brings you **CrossMac** to allow you to Read & Write Mac floppies and HardDisks directly from your Amiga!

CrossMac $85

HUMANOID
human animation designer

$170

Formats: (PC & Amiga)

LightWave
Imagine
3D Studio

Replica Technology

Homes: $95

Four complete, scaled homes for Lightwave. Exteriors, Interior rooms. Doors and windows ani- mated. Over 120 surfaces per home.

Interior Design 1: $45

Over 50 Real-World Scaled Furniture Objects:
beds, tables, chairs, cabinets, and more.
Doors and drawers can be animated!

Interior Design 2: $45

Over 50 Kitchen and Bathroom Objects:
Lighting Objects, appliances, cabinetry, sinks, vanities, bathtubs, toilets and toiletry, and more. Doors and drawers can be animated!

Interior Design 3: $45

Over 50 Real-World Scaled Office Objects:
chairs, desks, book cases, file cabinets, shelves, PC workcenters and more.

Interior Construction: $95

Create rooms and interiors with over 100 Objects: doors, windows, stairs, fixtures, mold ings, walls, floors, ceilings and rooms.

-Super Bundle-

All 5 sets
ONLY
$295

Interworks

Networking Solutions Optimize Your Production Environment!

Manage your rendering accross a Network with T-Net And Eliminate sneaker-net! and share drives, directories, data files, & access printers, tape drives and CD-ROMs through the network.

INTERWORKS NETWORK SOLUTION

ENLAN-DFS Ver 2.0	*Software License Up to 5 Nodes*	$ 265
I-Net225	*TCP/IP for Amiga Network Amiga's, Mac's, PC's, & SGI's*	$ 325
Toaster-Net	*LightWave Network Rendering*	$ 325
Ethernet Board		$ 295
I-Card Ethernet for the A1200		$ 345

Cables, T-Connecters, and Terminators are available call for details & prices.

TOASTER-NET $295

The First and Only professional distributive rendering software available for use with LightWave 3D!

NOW SHIPPING

Toaster-Net brings the power of the pros to all LightWave users with an impressive list of high-end features that will drastically improve animation productivity.

- Render multiple LightWAve scenes with the Toaster-Net Scene Que.
- Render select key-frames (perfect for professional story-boards!)
- Modify LightWave rendering settings such as resolution, anti-aliasing, save paths, etc. directly from Toaster-Net.
- Transfer LightWave scenes effortlessly (complete with all objects, images, etc.) from one system to another with Toaster-Net's scene mover utility (great for archiving work tool).

And combined with an ENLAN-DFS network:

- Utilize frame-based Distributive Rendering power!
- Monitor your rendering progress with a graphical representation of your LightWave-Farm (network rendering at a glance!)

Only Toaster-Net allows you the ability and confidence to prepare several LightWave scene files for your system, and know that when the long weekend away from the office is over, all scenes will be rendered and ready when you return.

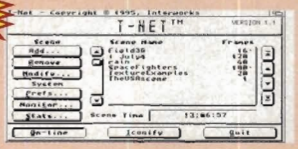
Stretch your Toaster Productivity!

Toaster-Net Features and Functions:

- Render a list of multiple LightWave scenes.
- Select specific frames to rend (i.e. only render frames #2, 18, & 62)
- Modify rendering settings directly from Toaster-Net such as, resolution, anti-aliasing level, raytracing options, & save paths.
- Use Toaster-Net's Scene Mover utility to simply and easily move a scene, complete with all objects & images, from one Toaster system to another. Great for archiving your work or setting up multiple Video Toasters to render the same scene.

Advanced features can be utilized when Toaster-Net is used in conjunction with an ENLAN-DFS network.

- Frame-based distributive rendering across a network of unlimited Toasters.
- Monitor your Toaster-Farm with a graphical representation which allows each node on the network and its current rendering status including the scene name, frame number, and time of the current frame in progress.



ENLAN-DFS $265

ENLAN-DFS is the Ethernet-based, Peer-to-Peer networking solution for the Amiga. ENLAN-DFS provides diskdrive, file and peripheral sharing. ENLAN-DFS is the ideal network software for turning your Amigas into powerful, integrated workgroups! NO DEDICATED SERVER is required; any system can share resources with any other system.

media4 productions

Super Bundle Both PhotoPro & MaxDos ★ $115

PHOTOPRO TOOLKIT $65

PhotoPro Toolkit enables Art Department Professional and ImageFX to load and save Adobe Photoshop-format image files.

It does what it does very quickly, quietly, conveniently and reliably. If you save your Photoshop artwork as Photoshop-format image files, you'll greatly appreciate your Amiga's newfound ability to directly read and write Photoshop images. It saves time, which saves dollars. And it doesn't take very many of those dollars to get PhotoPro Toolkit in the first place. If you use Art Department Professional or ImageFX and find yourself loading your artwork into Photoshop so that it can be resaved as a TIFF or PICT before you move it to the Amiga, PhotoPro Toolkit may well change the way you do what you do. Or, at least, the speed with which you do what you do.

Features:

- ❒ Works with Photoshop for Macintosh or Windows
- ❒ Read and write Adobe Photoshop format image files from ADPro or Image FX
- ❒ Eliminates the need to Re-Save Photoshop images as PICTs or TIFFs before using them
- ❒ Supports files with attached channels of alpha data
- ❒ Great with MaxDOS

MaxDOS is the ultimate solution for moving data between the Amiga (or Video Toaster) and Apple Macintosh.

MAXDOS v2.5

AMIGA to MAC File Transfer File System

$65

It is a true, full-featured Macintosh HFS-compatible filesystem, plus much more. Simply plug any Macintosh format SCSI drive into an Amiga SCSI port, and MaxDOS will list all available partitions. Choose the partitions to be mounted, and they appear on Workbench and in all applications' file requesters. That's all it takes--go ahead and use the drive without even thinking about the fact that it's Mac formatted. MaxDOS will do the same for Emplant and A-Max partitions, as well. Plus, if you have a high-density floppy drive, you can do the same thing with high-density Mac floppies, too. MaxDOS is straightforward, flexible, powerful, quick, slick, magic and, most important, remarkably inconspicuous. Don't let file transfer concerns impede productivity or creativity.

Features:

- ❒ Transparent compatibility with all Amiga software
- ❒ Straightforward use of nearly any Macintosh format SCSI drive or cartridge
- ❒ Displays Macintosh icons on Workbench
- ❒ Provides access to both data and resource forks of Mac files
- ❒ Configurable double click reaction based on type and creator properties
- ❒ Access to Mac disks even over Amiga networks

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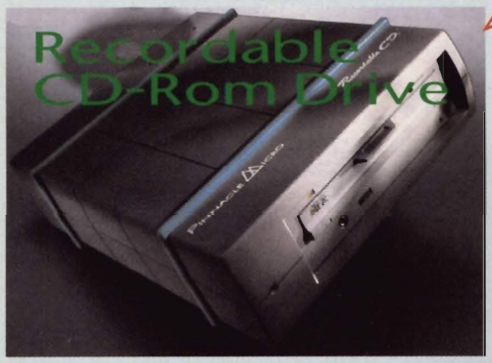
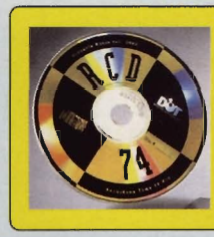
PINNACLE MICRO

Recordable CD-Rom Drive



New Low Price $1495

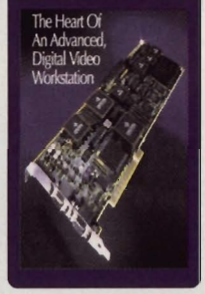
ASIM Mastering Software $Call



DIGITAL PROCESSING SYSTEMS INC.

PERCEPTION VIDEO RECORDER

The Heart Of An Advanced, Digital Video Workstation



PERSONAL ANIMATION RECORDER (PAR):

Amiga	NTSC	$ 1595
	PAL	$ 2995
PC (ISA bus)	NTSC	$ 1595
	PAL	$ 2995

Our standard PVR Windows NT™ application software includes basic video editing tools.

PERCEPTION
PVR-2500 $1885
CAPTURE CARD
AD-2500 $ 935

VIDEO DRIVES
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2GB $1095
4GB $1395
9GB $2995
MICROPOLIS
2GB $1050
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CYBERSTORM 060

NEW - 060 Now Anti Gravity has them!

The world's first fully implemented 68060 accelerator from the developers of the Fastlane Z3 and the Blizzard accelerators.

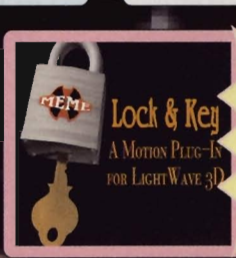
FEATURES:
- ❑ FULLY MODULAR
- ❑ UPGRADABLE TO 128 MG
- ❑ ASYNCHRONOUS INTERFACE
- ❑ DMA 32 BIT FIFO BUFFE
- ❑ EXPANDABLE
- ❑ FULL ON 68060 PROCESSOR

CYBERSTORM 68060 50 Mhz	$Call
SCSI II MODULE	$245
IO MODULE	$545

CYBERVISION 64

Pioneering a new generation in graphics performance. It has a combination of extremely fast 32 bit Zorro 3 interface and a 64 bit wide graphics controller.

CYBERVISION 64: -2MB $465 -4MB $595



~~$145~~ Limited Offer ONLY $95 NOW SHIPPING

Lock & Key is a powerful motion plug-in for LightWave 3D release 4.0 that allows you to:

- Eliminate "foot slide" during walk animations
- Simulate parenting on a frame-by-frame basis
- Lock an object to a bone!

Currently available for Intel and Alpha platforms.

CD-ROMs

3D-ROM VOL 1	85
VOL 2	85
AMINET 5	40
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AMIWARE SET	40
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TRAP FAX AMG	70

✔ 3D SOFTWARE

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✕ ✱ ● 3D SOFTWARE

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Crystal Flying Fonts 3.0	170
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IMAGINE PC	395
IMPACT WINDOWS	425
WINDOWS NT ALPHA	545
WINDOWS NT MIPS	545
LIGHTWAVE 4.0 INTEL WINDOWS	875
WINDOWS NT ALPHA	995
WINDOWS NT MIPS	995
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Ray Dream Designer 3	240
REAL 3D WINDOWS	975
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Strata 3D	$Call
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Visual Reality 1.5	190

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✔ GRAPHICS SOFTWARE

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MAC	295
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TREXX PRO	185
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IMAGEMASTER	70
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Main Actor Broadcast	285
MULTILAYER AdPro	80
ImageFX	80
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Subscription FX	85
TAKE II	95
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WINDOWS NT ALPHA	445
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✔ HARDWARE

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✔ VIDEO & AUDIO HARDWARE

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Tropez Turtle Beach		220

✕ ✱ ● VIDEO HARDWARE

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✔ SOFTWARE

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✕ DOS ✔ AMIGA
✱ WINDOWS ✱ MAC OS
● WINDOWS NT ● SGI

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by Mojo

Yes, Virginia, there is an information superhighway.

I was talking to my friend Chris Hufnagel yesterday. We used to hang out at Amagination, an old, now-defunct Amiga store in New York City. That's the place where I learned how to use a Toaster and where Chuff (that's Chris) taught me a lot of neat Workbench and Shell tricks. He was always a real computer whiz and does a lot of UNIX programming when he's not tearing up the streets of Portland on his rollerblades. I hadn't spoken to him in a while and it was a lot of fun to hear him talk about some cool new technologies coming our way.

Oh, did I mention *how* I was talking to him? Over the *Internet*. No, no, not a real-time chat using the keyboard, but an honest-to-god phone conversation via our computers. We used Internet Phone, a new software package from VocalTec (on the World Wide Web at VocalTec.com). All you need is a 14.4 modem (or a 28.8 if you can afford one) and a PC with a soundcard and microphone. Using Internet Phone, you connect (via SLIP or PPP) to one of many phone servers, where you get a list of who else is using Internet Phone. By simply clicking on their name, you can begin a voice conversation.

Think about that! I can talk to anyone, anywhere in the world, as long as they're on the Net and using this software. Pretty cool, huh? And consider this: I had a 90-minute conversation with a friend in Portland for the price of a local call. Now, I'm not sure what all the commercial ramifications are of a system like this, but I can tell you one thing—it's *not* going to be brought to you by AT&T! Imagine that, readers. The Internet, a system that works over phone lines, may be what spells the end of tyrannical long-distance phone companies! Talk about irony.

Chuff and I also discussed some of the cool new products at SIGGRAPH this year. Since I live in Los Angeles, it was easy for me to attend. But Chuff? He was kept abreast with constant live video updates. Not on CNN, mind you, but—you guessed it—over the Internet! An experimental video network called MBONE (em-bone) is transmitting over the Net, providing real-time video and audio feeds to whoever has the equipment to receive it. Right now, the setup is a little more grandiose than what you need to simply talk. It currently runs only on high-end workstations such as SGIs or SUNs. In addition, since the feed contains so much information, a high-speed, T1 Net connection is needed (the kind of connection that schools, the government and Internet service providers use). Currently, regular modems just aren't fast enough.

What makes MBONE possible is a software patch allowing computers to receive "multicasting" packets—spurts of compressed information that are decoded and assembled into video and audio signals. Typically, when users communicate with an Internet host, they do so via a point-to-point connection. This is a "private" interaction, as everyone who logs into that site gets his or her own connection. So the host must use a lot of its processing power just to maintain the dozens (or hundreds) of simultaneous connections with users who are often looking for the same information. However, when a site is multicasting, it is sending out a single, large stream of data that anyone using the multicasting protocol can hook into—whether it's one person or a thousand. In this way, multicasting is very much like a standard television broadcast, in that sessions take place at a specified date and time.

In the past, presidential addresses, space shuttle missions and a Rolling Stones concert have been sent out over the MBONE network. The 320x200-resolution images aren't even VHS-quality, but as is true of all high technology, you can bet that it's going to get faster and cheaper. Soon, MBONE will be within reach of everyone. (In fact, PC owners running UNIX and a supported video card can get it now.) Compression will get better, modems will become faster and, before long, anyone with Windows, a video camera and the Internet will be able to broadcast their own TV shows.

To me, all this is truly the first pouring of the pavement for the Information Superhighway. For quite a while now, everyone has been talking about the merger of the computer, telephone and television. Few have had any idea how it will actually work; almost no one has seen it in action. But after my conversation with Chuff yesterday, the pieces started to come together. The idea is no longer an intangible grey area of "coming soon" and "one day." The superhighway is no longer just a super hype-way; the technology is there and beginning to work. Yesterday I actually saw the haze lift, and can now see clearly where this road is going.

Fasten your seatbelts, everyone. It ain't 55.

VTU

Mojo works as an animator/technical director for Foundation Imaging.

EDITORIAL EVALUATION

Circle number on Reader Service Card

I found this article:

Very Useful	Useful	Not Useful
Circle 048	Circle 049	Circle 050

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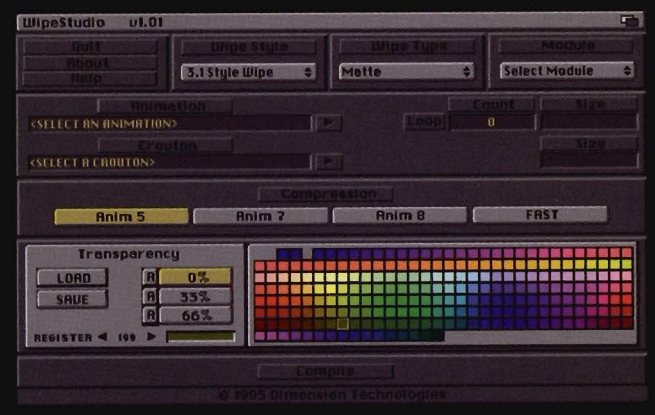

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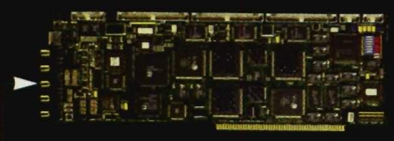
"The technology of the Flyer will fundamentally change our lives. Now, making changes in your videos is interactive. The results you get are something so much better than anything you could have imagined." Brad Carvey. Free Range Digital Imaging, Inc., Albuquerque, NM.



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