

EXCITING OPPORTUNITIES IN GOVERNMENT VIDEO, PAGE 50

# VIDEO TOASTER USER<sup>TM</sup>

an Avid Media Group, Inc. magazine

YOUR GUIDE TO VIDEO FX/3D ANIMATION/TV GRAPHICS

MARCH 1985 • \$3.95 US/ \$5.00 CAN

## Bridging The Gap

Exploring Mac/Amiga  
Emulators and  
File Transfer

### Reviews:

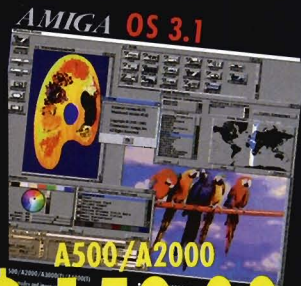
- Shaping Landscape With  
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Enhance Your 3D Objects
- Get Moving With  
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## Ariadne

Don't get overwhelmed with the complexity of setting up a network, use our Ariadne Ethernet card that is compatible with all Amigas that have an available Zorro Slot. This card is not only easy to network - it also equipped with 2 additional parallel ports offering multiple network solutions.

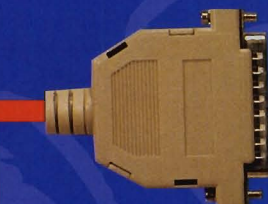
- 10Base-2 (Thin Ethernet, coax-cable) and 10Base-T (Twisted pair, western jacket)
- Socket for Boot-ROM
- SANA-II compatible driver for ethernet and parallel port
- Hook up to two additional Amigas to the parallel ports with Liana
- 32KByte cache to support CPU
- Includes Commodore's Envoy networking software
- English manual

**\$ 349.00**

## Liana

Are you in need of a fast and easy connection between two Amiga's? Liana, the low-cost network solution, is exactly what you want! Just plug it in, install the software, and it runs! Nothing could be easier than that. Liana is the network solution for those with a small budget and big needs. You can even share your hard drives and printers.

- For every (!) Amiga from WB 2.0 on with a free parallel port
- Includes cable
- Includes Commodore's Envoy networking software
- English manual
- automatically reconnection after (re-)booting without new startup
- Every machine usable as server and client



**\$ 99.00**

## Pablo

The video module, Pablo, expands your Picasso II with two new video outputs. Using the Pablo, you can view your Picasso output on any TV or VCR. All with quality that you would only expect to see from broadcast video encoders. That is why the Picasso II video encoder module,

Pablo, won in the (German) magazine 'Amiga Magazin' (issue 5/94) test for video encoders.

- Three cables included: RCA, S-VHS and SCART
- 5 floppy disks with drivers, animation demos and more
- 24Bit Animation program included
- 15kHz overload protection
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- Easy installation of video modes

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Picasso II RTG, the graphics board all others are measured against:

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- Allows connection of any VGA or Multiscan monitor
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- Black borders gone forever, takes full advantage of monitor's capabilities
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- Monitor-File compliant with System 2.x or higher, resolution selectable using screenmode requester
- View regular Amiga and special PicassoII-RTG screens on same Monitor without changing cables.
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- Open your mind and dreams to the world of great animations, what Picasso users have been doing for a long time with the demo and full versions, you can do, too. MainActor Professional offers a high degree of functionality including multi-platform support (i.e. AVI and FLI animation file formats).
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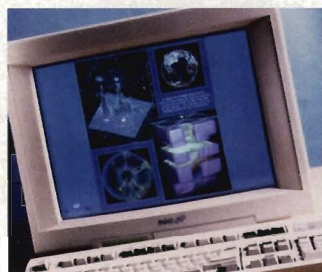
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# VIDEO TOASTER USER

THE PERSONAL VIDEO PRODUCTION MAGAZINE

## FEATURES



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### THE ULTIMATE TOASTER PERIPHERAL

by Mojo

Toaster users have a lot to gain these days from casting aside their PC phobia. Discover how the capabilities of this machine of the masses make it the perfect supplement to your Amiga/Toaster setup.

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### AREA 51

by Douglas J. Nakakihara

—Where Toasters Play Second Fiddle to the Coffee Machine—Founded on energy and experience, a young Area 51 is already gaining increasing prominence in the TV and film industries. In this Q & A with the company's staff, learn how this LightWave-based effects house is producing visual marvels.



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### GOOD ENOUGH FOR GOVERNMENT WORK

by Stephen Jacobs

Despite negative stereotypes and low budgets, government video is a rapidly expanding field. In this entry in our continuing series investigating video business opportunities, find out how a hard-working pool of Toaster users is helping to educate the public and maintain high standards for our civil servants.



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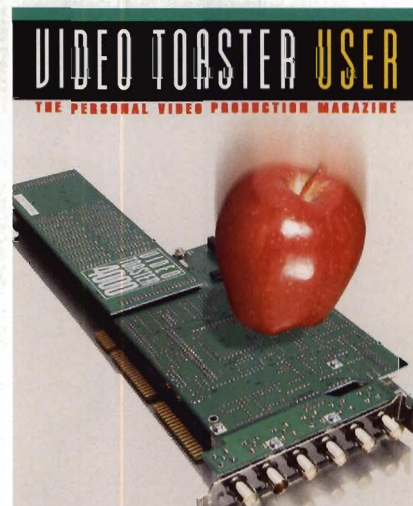
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by Erik Flom

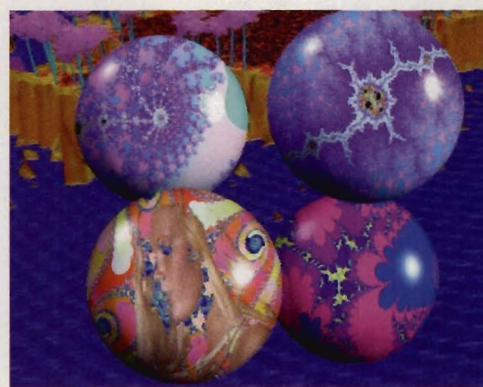
A review of products that bridge the gap between the Amiga and Macintosh computers. Transferring data between two platforms is now made easy.



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by R. Shamms Mortier

Explore the diverse imagery of three high-powered texture libraries.



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Whether you want to scale treacherous heights or walk on water, this fractal landscape generation software lets you sculpt new worlds.



## 62 MOTION MASTER

by Tim Doherty

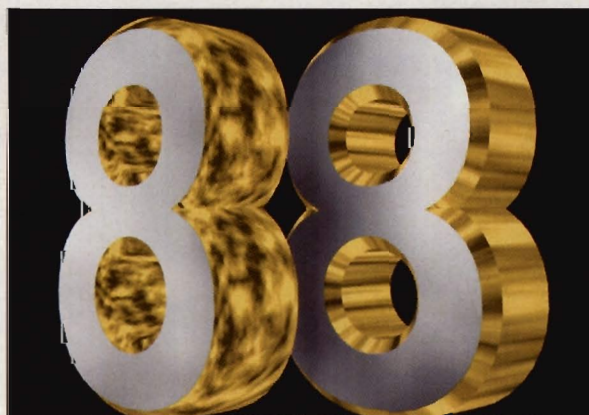
This two-volume collection of advanced applications for LightWave users will help jump-start your creativity.

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**Associate Editor:** Corey Cohen  
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**Art/Production Coordinator:** Kristin Fladager  
**Contributing Editors:** Mike Danger, John Gross,  
James Hebert, David Hopkins, Brent Malnack, Mojo,  
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**Contributing Writers:** Tim Doherty, Erik Flom,  
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Avid Media Group, Inc.  
CEO: Jim Plant  
President: Michael D. Komet  
273 N. Mathilda Ave.  
Sunnyvale, CA 94086-4830  
Tel: (408) 774-6770 Fax: (408) 774-6783

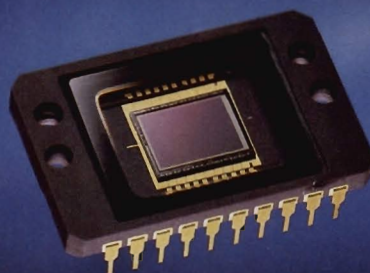
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# TOASTER TALK

## NewTek Management Restructuring

The Impact of Commodore's Demise

by Jim Plant



**L**ooking back on a year that started with Paul Montgomery and other important NewTek employees leaving the company, followed by Commodore's announcement of liquidation a few months later, it's easy to see why NewTek President Tim Jenison began his talk at the recent Video Toaster dealer meeting by saying, "1994...it just sucked." Now, with Video Toaster Flyer version 3.9 finally hitting the streets in substantial numbers, and the multi-platform version of LightWave 3D not far behind, NewTek is finally beginning to dig itself out from the wreckage of 1994.

While last year was painful for the company, and for its partners in the reseller channel and the third-party development community as well (including Avid Media Group, Inc.), the process of dealing with these problems has forced NewTek to restructure itself in a way that will ultimately benefit us all. In the wake of the departure of Paul Montgomery, Jenison has been forced to create an entirely new management structure that now consists of more traditional sales, marketing, financial, operations, legal and engineering departments that report directly to him on a daily basis. For some departments, such as sales and marketing, Jenison has promoted from within. When necessary, he has also gone out and hired top-drawer personnel to round out his management team. This transition has taken place over many months—the process never really ends—but I believe that Jenison has created a structure that will allow him to lead NewTek to even greater accomplishments.

One of the most significant members of NewTek's new management group is familiar to most VTU readers: Lee Stranahan. As many of you know, Lee started the original *Bread Box* newsletter that became *Video Toaster User* after Avid Publications purchased it from him in 1992. Over the past few years, Stranahan has criss-crossed the country teaching thousands of people how to create great graphics and effects with their Video Toaster. In partnership with Desktop Images, Stranahan has also produced and starred in the most popular (by a long shot) series of Video Toaster and LightWave training videos available. He not only knows the Toaster inside and out, but he's one of the few people who really groks the Toaster market. While Lee and I have not always seen eye to eye on all issues, I know him to be an insightful thinker and intellectually honest. Having his input available on a full-time basis will be a great asset for Tim Jenison. (Now, if they can just figure out what Lee's title is.)

The demise of Commodore has also been a slippery peel in NewTek's path. It's very ironic that NewTek would develop one of the sweetest, least-expensive non-linear

editing systems ever created and find that it only works on a computer that isn't being made anymore. While we're hoping that the Amiga goes back into production soon, NewTek has been forced to explore development on other PC platforms sooner than it probably would have if the Amiga had not crashed and burned. Of course, multi-platform LightWave has been in development for quite some time and the Flyer wouldn't be too hard to port to other platforms. But the Toaster is a different story altogether. Because the Toaster relies so heavily on the Amiga's custom-chip architecture, it would be very difficult to get it up and running on the PC, the Mac or any other platform. I suspect that NewTek will look for a Flyer-based non-linear editing solution (without the Toaster) for other platforms in the near future. That means there still won't be anything quite as cool—or as inexpensive—as my Amiga/Toaster/Flyer system for quite some time.

While LightWave is not yet shipping on other platforms, we've heard pretty glowing reports about the Pentium/Windows NT version from some of NewTek's Hollywood-based beta testers. Apparently, the speed improvements on these systems are so dramatic that several beta testers have completely abandoned their Amiga systems.

Having been involved with the Amiga since its birth in late-1985, it's very difficult for me to ignore my emotional attachment to this incredible machine. But having LightWave and the Video Toaster Flyer (in some form) available on as many platforms as possible would be a great thing for all NewTek partners, including end users, dealers and third-party developers. Commodore's untimely demise has only made that happen faster.

### Video Toaster User Pavilion at NAB

A couple of years ago we leased a pretty big space in the NAB Multimedia World, divided it into smaller booths and subleased them to more than 20 third-party Toaster product and service providers. The response from exhibitors and attendees was so great that we've decided to do it again. This time, we've reserved an even larger space for the dozens of companies that make peripheral products for the Toaster, Flyer and LightWave marketplace. The Video Toaster User Pavilion at NAB is open April 10-13. This year's NAB held in Las Vegas is also sponsoring a number of Toaster and LightWave seminars on the same dates. For more information, call 1-800-342-2460. Or call their "Fax-on-Demand" number (from the handset of your fax machine) at 301-216-1847. I'll see you at the Video Toaster User Pavilion!

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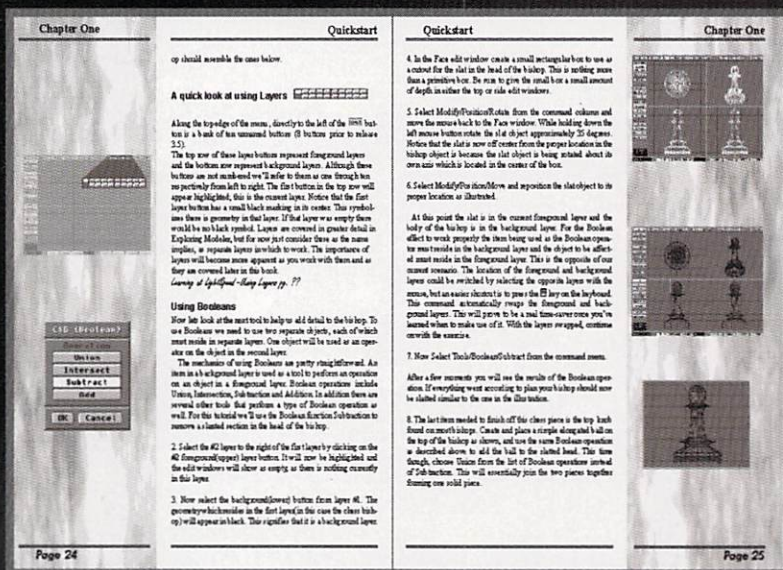
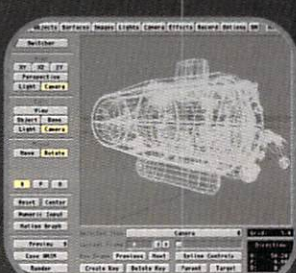
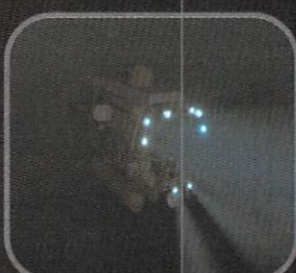
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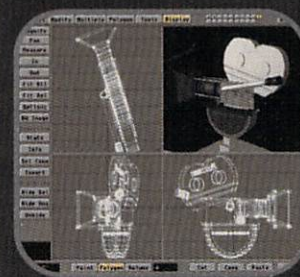
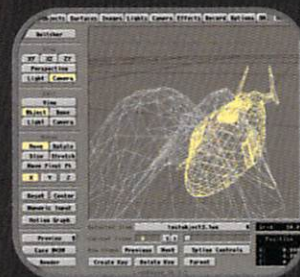
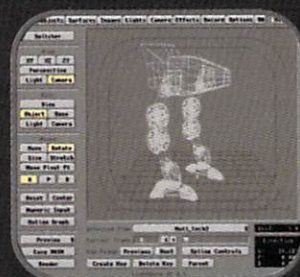
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# TOASTER TIMES

## Cybernetica Under Investigation

Corey Cohen

In a scenario as complex and multifaceted as the software it involves, the business practices of a young Central California computer company are under investigation by the Santa Barbara Police Department.

Back in June 1994, Cybernetica, a Santa Barbara, Calif.-based organization, began advertising a product titled Newton's Law. Advertisements for the program, which claimed to implement real-world physics to LightWave scene or object files, gave a price of \$149, though they didn't include a shipping date. Of those customers who ordered it, some paid at the time of order, while others requested that payment be contingent upon delivery.

However, some problems arose in the product's development. Though the exact details of the breakup are unclear, the agreement between Cybernetica and two individuals from Images in Motion to co-develop Newton's Law fell apart in August 1994. Left with the work they had been doing for the program since fall 1993, Images in Motion programmers Andy Frerking and David Vrba decided to market what they called Impact! under the company name Dynamic Realities. A beta version of this software began shipping at last year's Video Toaster Expo, said Frerking.

At press time, Newton's Law is due to ship "around the

end of February," said Cybernetica owner Mel Landin. According to Landin, the company last summer took the money at the time of purchase of approximately 40 customers who ordered Newton's Law.

At press time, many of those people have not yet been paid back, nor have they received the currently unfinished product—thus the investigation.

The investigation of Cybernetica was set in motion sometime around November 1994, when Bob Smith, a criminal investigator with the Santa Barbara district attorney's office, began receiving complaints from several people who had not "got what they wanted" out of transactions with the company.

Some of these complaints entailed losses of hundreds, even thousands, of dollars, said Smith. As the investigator running the city's Consumer Protection Unit at the time, he began a personal investigation of Cybernetica. Soon after, however, he deferred to the Santa Barbara Police Department's examination of the matter.

At press time, Norma Hansen, an investigator

with the Santa Barbara Police Department, could only make the following official statement: "Cybernetica is still under investigation, and the Police Department is not at the

work with purchasers of his program. "I'm committed to paying back everyone who's paid a dime to [Cybernetica] for Newton's Law," said Landin. "They'll get their money back, plus the product and updates." Landin later stated that "a significant amount have already gotten their money back."

Though paying customers any money that they are owed is probably a wise thing for Landin to do at this point, said Smith, this action in itself does not necessarily eliminate the filing of criminal charges if the company has committed illegal activities.

When asked about his reaction to the ongoing investigation, Landin simply stated, "I'm not worried about that one bit because there's absolutely no fraud."

Whatever the outcome of the investigation, Brent Malnack is unhappy with Cybernetica's controversial product. Malnack is the co-owner of Positron Publishing, a company whose Dynamic Motion Module software contains many features similar to those listed in advertisements for Newton's Law. According to Malnack, "The advertising for Newton's Law greatly affected sales of Dynamic Motion Module. Their im-

pressive feature list caused a lot of people to wait and see. They're still waiting...."

Malnack has further reservations about a recent Dynamic Realities advertisement claiming that Impact! contains collision detection, a feature Cybernetica ads last year attributed to Newton's Law as well. This function is

continued on page 14

**Newton's Law**  
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CYBERNETICA

Complaints arising from Cybernetica's sales of the currently unreleased Newton's Law have led to an investigation of the company.

stage where we can file a criminal complaint."

If it is proven that Cybernetica indeed intended to accept money for goods without sending those products out, said Smith, the company likely faces some type of theft charge, such as grand theft, embezzlement or fraud. Cybernetica's owner was outspoken about his desire to



# The Way I See It

## Tales From the Gyp

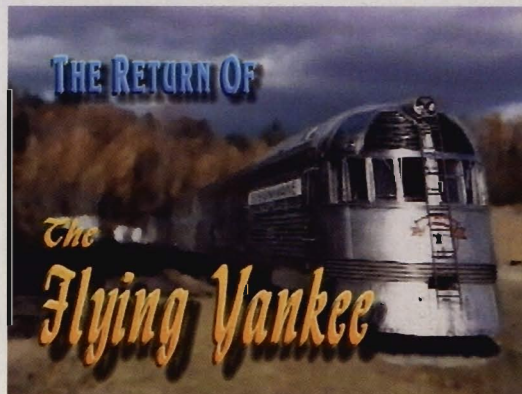


Mike Danger

I believe that frogs and pigs do date in the television world. I also believe that raisins dance, sing and have their own TV special. And yet, I believe that a duck flies an airplane around my bathroom blasting stains to smithereens. Furthermore, I believe that a single silicon chip can make my computer graphics explode to life and my videos will look just like those movies you watch. If you believe as I do, let me show you a column I have for sale. It's time to make a pit stop on the information superhighway of life, boot up that screen saver and consume the following.

At the time of this writing both Creative Equipment International (CEI) and Commodore-UK are circling the carcass of Commodore International Limited, seeing who will reign supreme over the remains. Although both have made claim to near ownership, the bottom line is that it's been nearly a year since the Amiga machines have been manufactured and distributed anywhere. The majority of Toaster and Amiga users have been faithful enough to wait for a decision on whether the company and technology will continue to thrive or if they will have to change platforms. Though warrantyless, overpriced machines are still trickling in at a floundering pace, these overseas pieced-together units are not the cure-all for the problem. Thank goodness that third-party developers and Amiga-infected addicts realize the importance of the craftsmanship and multi-mediability that make these machines the desirable units they are. Addressing this problem are the guys at Intangible Assets Manufacturing. Their primitive short history of the demise

of Commodore in Westchester, Penn., takes you through the empty Commodore facility while posing the question, "Can CEI or Commodore-UK really do it any better?" This non-*National Geographic* documentary, called *The Deathbed Vigil...and Other Tales of Digital Angst*, even has the crew at their local watering hole discussing the good and the bad times at Commodore. This film is a must for anybody wondering what caused the company to die, with commentary



CW Productions' Framestore of the Month.

straight from the mouths of the people who were there. It is definitely worth the \$35 and two hours of your life it takes to watch, and it goes great with your Commodore Death virtual T-shirt. Call (610) 853-4406 for more information.

With the Flyer landing in the hands of excited users, my phone has been ringing with inquiries as to what will work as far as accessory towers and cases. For your inquiring minds, I contacted Toasterian Oliver Prodish at Ambitious Technologies and he assured me that his Toaster oven worked hand in hand with the Flyer card. The Eagle brand tower will also accommodate the dynamic duo. Better yet, from our rumor mill, it

continued on page 14

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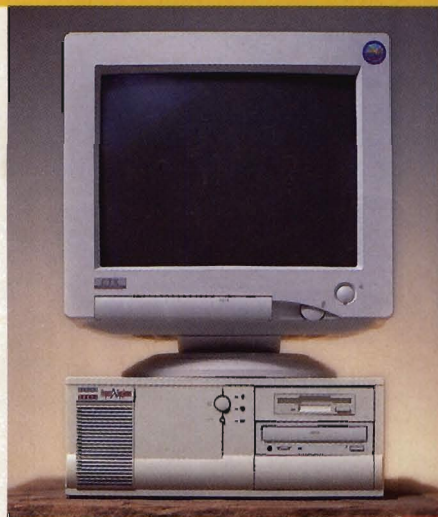
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FOR INFORMATION CIRCLE 122



# Caught in the Galactic LightWave

Corey Cohen

**T**rekkers are well-known for being some of the most loyal pop culture fans in existence, but it seems they're also among the most scrutinizing. How many other science-fiction universes—or fictional worlds of any kind—have spawned works like the *Nitpicker's Guide to Classic Trek*, a book lovingly dedicated to finding flaws, bloopers and technical inadequacies in this futuristic fantasy? Or products like the recent CD-ROM allowing cybervoyeurs a complete tour of the Starship *Enterprise*? To diehard Trek aficionados, every detail in this ever-expanding realm deserves careful observation.

This throng of expectant fans will no doubt appreciate the ongoing efforts of the special effects crew currently working on the newborn *Star Trek: Voyager*, whose pilot aired the week of Jan. 16. The television series depicts a Federation starship marooned in a distant, uncharted region of space, with an improvised crew including the complement of an also-stranded Maquis vessel. In addition to the impressive motion-control miniatures traditionally used on the *Trek* shows, the new series will feature a number of LightWave/Toaster effects created by Universal City-based Amblin Imaging.

*Voyager* Visual Effects Producer Dan Curry and Visual Effects Supervisor David Stipes have been providing special effects for science-fiction lovers since the late '70s, when they met while working together on *Buck Rogers* and *Battlestar Galactica*. In addition to the effects work each has done for feature films, both men served on *Star Trek: The Next Generation* in their current *Voyager* roles, and Curry currently serves the same function on *Star Trek: Deep Space Nine*.

Still, the new show, says Curry, will continue to have an atmosphere distinctive from those of its predecessors. "*Voyager* will be darker than *ST:TNG*

but not as dark as *DS9* in terms of mood and feel. We'll be doing heavier contrast ratios, more majestic angles."

"We're doing more back lighting and bolder kinds of moves," said Stipes. "My own personal challenge is to get more creative in the way I lay out and design shots."

One of the tools the effects supervisor is using to help achieve this goal is the Toaster. According to Stipes, he person-

for the *Enterprise's* jump-to-warp shots during filming of a 1993 *ST:TNG* episode eventually led to Stipes's inquiring about what is perhaps *Voyager's* most notable LightWave creation: a CG *Voyager*.

Built and textured in approximately two months by a team from Amblin, the Modeler-created *Voyager* is a two-level metaform composed of a whopping 300,000 polygons. This highly detailed CG starship will be utilized for several

types of filming that are either very difficult or impossible to do with motion-control models: 360-degree roll shots, jump-to-warp shots, and shots where the viewer flies into the ship or pulls back out and sees the beings inside.

"I think people will be excited and very surprised to see how real this looks," said Stipes. "The LightWave/Toaster *Voyager* will be indistinguishable from the model."

Despite the probable success of the CG *Voyager*, Curry, Stipes and Amblin's John Gross each emphasized the exclusive roles occupied by motion-control

models and LightWave imagery.

"We're not here to replace motion control, but to augment it," said Gross.

For all his enthusiasm about the direction of *Voyager's* visual effects, Curry maintains a broad understanding of the role of special effects among the multiple aspects of film and television production. "Effects exist to serve the story, clarify it, give it scope and environment. They don't exist to serve the egos of the people creating them....Of course we like to make spectacular shots and use dramatic angles, but film is a collaborative medium....If we can create visual illusions that enable an audience to accept that, given the rules of the universe, this is reality, than we've done our job and provided satisfactory entertainment."

VTU



A close-up of the LightWave *Voyager* used in the new series. This 100,000-polygon image will stand in for the motion-control model during the jump to warp and other difficult-to-film shots.

ally uses the Toaster and LightWave to plan and design shots, perfect timing, and for talking with producers and editors. A low-detail CG *Voyager* created for him by Amblin allows Stipes to construct a "visual storyboard."

Those who have seen the show's pilot witnessed a number of Amblin's LightWave/Toaster effects, including the ominous Badlands and the starship-stranding phenomenon Stipes calls a "galactic wave." Multiple versions of the *Voyager* encountered when the ship flies into a mirrorlike cave in the second episode were generated in part with ray-tracing reflections. More subtle images, like planets and alien transporter elements in the pilot, were also constructed with LightWave.

A reliance on expensively produced Industrial Light and Magic stock footage



## Cybernetica

continued from page 10

"among the most complicated tasks to program in computer graphics today," said Malnack, who believes that "[Dynamic Motion Module] is still the only complex collision detection/response product available for the Video Toaster." Given that the current version (at press time) of Impact! lacks collision detection, Malnack expressed annoyance at recent advertisements claiming to include the feature.

According to Dynamic Realities' Frerking, version 1.0 of Impact!—not the beta version available at press time—will indeed include collision detection, and this is the edition of the software that early ads for the product were meant to represent. In comparing Impact! ads to those for Newton's Law, Frerking described the features listed for Impact! as "modest": "We took out the features we knew we couldn't do."

In Frerking's eyes, the problems in the companies' combined effort to release a product were due in part to "mismanagement of [Cybernetica] and a lack of communication." His remarks suggest a view of Landin as misguided manager rather than evil entrepreneur.

"I don't think that Mel Landin ever set out to take people's money...he did it without really thinking about it," he said. "[Cybernetica] basically didn't understand how long the product would take."

Frerking is also skeptical of the date by which Landin claims his product will be available.

Landin, however, is not. Investigation aside, he is determined to revitalize his company.

"We went from having one of the best service reputations in the industry to having one of the worst," said Landin. "I'm recommitting to re-establishing the level of customer service we had before."

*The companies mentioned in this article can be reached at the following numbers: Cybernetica—(800) 697-8667; Dynamic Realities/Images in Motion—(800) 944-5520; Positron Publishing—(402) 493-6280.*

VTU

## The Way I See It

continued from page 11

seems that Micronics, a German firm, is introducing a line of cases that allows your Amiga 500 and CD32 units to become Toaster-friendly by adding a video slot to your tower internals line-up. And if that's not enough (and when is it ever?), the above-mentioned Ollie P. is rumored to be secretly working on a more affordable rendering unit. This is to be a rack-mounted device, and if my sources are correct, it could possibly be deemed the Speedy Gonzalez of rendering units.

From our LightWave department, the test people at the Alcatraz camp have informed me that the unbundled version of LightWave for the PC platform seems to shake, rattle and roll with the Intel Pentium 90 Processor chip. Could this relationship result in a big blue version of the Toaster from those Topekan video funsters?

From my worst nightmare files comes this Tale from the Gyp. It was the weekend and smack middle of the festive holiday season. For some reason my Amiga machine went snap, crackle, pop and decided to give me an electrical fireworks display that would've received applause at any Fourth of July picnic. Now imagine the nightmare of building a computer system using the Braille hands-on method. To make a long story short, I was just finishing three days, six Domino's pizzas, a missed turkey feast and a growth of beard that would rival the Marlboro Man later. The gist of this story is the fact that when all technical support services were closed for the season, James Prentiss of Noguya, China, talked me through the procedure. He even fronted the bill for the phone calls. Imagine getting this kind of deal from your Friends and Family phone plan. I must say thanks to Jim for renewing my faith in mankind and helping my Amiga escape its near-trash can death.

Earlier in this column, I threw around the question of who would inherit the throne to rule the Amiga kingdom. A last-minute fax informs me that certain UKish individuals and members of the board of trustees

from Commodore were in the Bahamas meeting behind closed doors doing either the limbo or inventory on the remaining surplus stock. Furthermore, Commodore-UK is now Amiga International and has released a batch of CD32 machines for your consumption.

As we come to the audience participation part of this column, the quotation of the month has to go to Bob Offman at NewTek customer service. While we were discussing the fact that the one-time star of the *Dick Van Dyke Show* uses a Toaster, I asked Bob what Toaster equipment he uses, and he replied, "I work here, why do I need to buy anything?" We know, Bob, rub it in.

Well, it's time again for the Toaster personality and Framgrab of the Month. This month's Framgrab (and may I have the envelope please) goes to CW Productions out of Gloucester, Mass. The only information I could find with this recent postal delivery is the company name and the framed selection called "The Yankee Flyer." Alright, I thought it was the first digitized disk done by the flyer. However, the trained eyes of my assistants informed me that this was a train called the Yankee Flyer. Cool in the use of real objects combined with the paint program. This once again shows that you don't need a million bucks of equipment to make your production projects look like a million. Good job, guys.

Well, once again we've touched on more subjects than the last time I went to the public library and got lost. A special thanks to this magazine and to you, the readers, on this, my sixth-month anniversary, for allowing me to leave my thoughts in this magazine.

If you want to submit a framgrab or comments that may be stepped on and chosen for this column, contact me at:

Mike Danger  
6706 N. 9th Ave., Ste. B-5  
Pensacola, FL 32504  
office (904) 479-9305  
24-hour hotline (904) 477-0853  
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*Item #1001.....\$14.95*

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*A variation on the Toaster logo, this version is printed in full color on a hefty 100% cotton black t-shirt. Available in Small, Medium, Large and Extra Large sizes.*

*Item #1002.....\$14.95*

## **1959 Philco Predicta Television**

*This beautiful collectors item still works. It features a 21" swivel picture tube mounted on an elegant mahogany base. It has the optional UHF tuner and a remote speaker connector for those who find it disconcerting to have the video and audio coming from different areas of the room. It is however, not for sale because it belongs in NewTek's television museum. We just thought you'd enjoy seeing it.*

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FOR INFORMATION CIRCLE 161



# NEW PRODUCTS



## Picasso II

### The Art of Expansion

Product: Picasso II

Description: Retargetable graphics board

Price: \$599

VillageTronic

Wellweg 95

D-31157 Sarstedt

Germany

+49/(0)5066/7013-0

Fax -49/(0)5066/7013-0

VillageTronic has announced the release of Picasso II, a retargetable graphics board for the Amiga. The Picasso II sup-

ports up to 256 colors with WB3.1 and features resolutions definable up to 1600x1280. HiColor (16-bit) and TrueColor (24-bit) graphics offer 16 million colors. The board allows connection with any VGA or Multiscan monitor, is compatible with A1085 and A1081 via a special cable, and contains drivers for most graphic programs, including ADPro, ImageFX, ImageMaster and Real3D. It also features system-compliant implementation of monitorfile, a resolution selection table using screenmode-requester, and a screen promoter to make older programs work on Picasso. The Picasso is a one-monitor solution, ensuring no more plugging/unplugging of cables to see Bootmenu, Guru or to play games. It is available with 1MB or 2MB, and upgradable from 1MB to 2MB at any time.

**FOR INFORMATION CIRCLE 1**

## Render or Not T-Render

Product: T-Net

Description: Distributive rendering software

Price: \$349 (per five-node license)

Interworks

43191 Camino Casillas

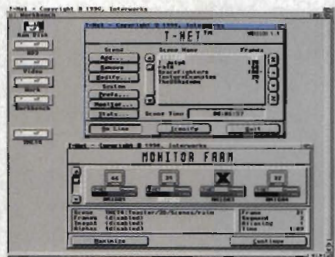
Temecula, CA 92592

(909) 699-8120

Fax (909) 699-8279

Interworks has announced the release of *T-Net*, professional distributive rendering software for use with LightWave 3D. *T-Net* increases animation productivity with several high-end features. The software is capable of loading and rendering multiple LightWave 3D scenes using the scene queue. Users can select specific frames to render and modify scene settings such as antialiasing

level, raytracing and save paths. *T-Net* also features scene statistics that are stored so they can be viewed, printed or loaded into a database. An entire render farm can be monitored at a glance via



graphical representations showing each render node and any problems that may exist.

**FOR INFORMATION CIRCLE 2**

## Building Sound

Product: Arpeggio

Description: Self-editing

music system

Price: \$999

Airworks Media

1400 Woodward Ave., Suite 165

Bloomfield Hills, MI 48304

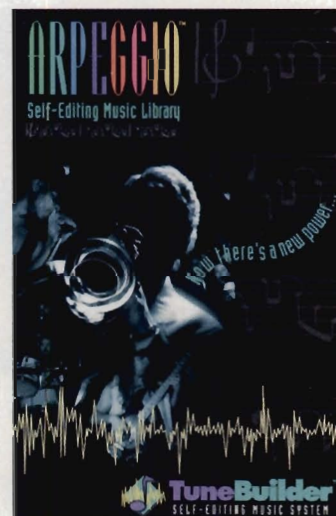
(810) 645-5730

Fax (810) 645-5796

Music can now automatically edit itself with Airworks Media's *Arpeggio*. The self-editing music system features TuneBuilder, software that allows users to create infinite professional edits of any length in seconds. *Arpeggio* also features 348 royalty-free selections on 12 CD-ROMs. Tunebuilder uses a quick music control process that makes editing easy, direct play CD-ROM functions and automatic soundfile transfer and export. No prior musical knowledge is required

**Compiled by Joan Burke and Corey Cohen**

when operating the Tune-builder. It edits itself in less than 1 percent of the time required by conventional methods. Tunebuilder allows users to select the length of the new edited version and simply click to audition the musical selections. All processing of



music is done in high-quality Redbook Audio. Tune-builder is compatible with Amiga, Mac, DOS and Windows platforms.

**FOR INFORMATION CIRCLE 3**

## Plug It In

Product: Plug-Ins and Go

Description: Modeling macros

Price: \$99.95

Hester and associates

13032 Copenhill Rd.

Dallas, TX 75240

(214) 991-7584

Hester and associates has released *Plug-Ins and Go*, modeling macros for LightWave. The package features more than 50 macros to aid in 3D modeling and rendering. Some of these include "Create," a macro used for making bar charts; "Calculate," macros used to convert one unit to another; and "Loops," a macro for rendering multiple scenes. Other macros allow users to align one object with another, create objects



such as stars and spheres, and estimate total render time. With Plug-Ins and Go, users can even create their own macros. The macros require LightWave 3.0 or greater.

**FOR INFORMATION CIRCLE 4**

## Join the Elite

Product: Broadcaster Elite  
Description: Non-linear editing system

Price: \$5,995

Applied Magic, Inc.  
1240 Activity Dr., Ste. D  
Vista, CA 92083  
(619) 599-2626  
Fax (619) 598-3805

The *Broadcaster Elite* is a desktop video editing system delivering broadcast-quality output. By transferring hard drive data at bet-



ter than 6MB/second, the Elite achieves smaller compression ratios and thus fewer losses; as a result, at the device's best ratios—they are user-selectable—video can be as good as the original. To edit in the component domain, the Broadcaster Elite utilizes three on-board digitizers for Betacam SP, one for each component of Y, Cr and Cb. The system conforms to CCIR601 broadcast standards and has component, composite and S-Video inputs and outputs. Two additional products will soon be released. A daughterboard will allow for D1 input and output. The Elite's Character Generation card allows for real-time overlay of text and graphics and real-time creation of transitions and layering; transitions and layering are dramatically accelerated by using hardware rather than software to cre-

ate wipes, fades, dissolves and 2D effects. Additional features include rotoscoping, image processing, digital video effects, transitional effects and four channels of 16-bit, CD-quality stereo sound.

**FOR INFORMATION CIRCLE 5**

## Send It Off

Product: Video mailers  
Description: Video mailers and inserts

Price: Starting at \$47.60 (for 300 mailers)

Mack Chicago Corporation  
2445 South Rockwell St.  
Chicago, IL 60608  
(800) 992-6225

The Mack Chicago Corporation has introduced a new line of *video mailers and inserts*. The mailers allow videographers, manufacturers and distributors to ship VHS, Beta and eight-millimeter videos in a lightweight protective package. The video mailer can be turned inside out and reused after it has been used or mailed. All video mailers and inserts are 100 percent recyclable. Two types of inserts are avail-



able, the VMI-1 and VMI-2. The inserts convert letter-size mailers into video and literature mailers. The video mailers are sold in bundles of 10 or 50 and inserts are sold in bundles of 50.

**FOR INFORMATION CIRCLE 6**

## A Little Protection

Product: DiskSalv 3  
Description: Amiga disk utility  
Price: \$40

Intangible Assets Manufacturing  
828 Ormond Ave.  
Drexel Hill, PA 19026  
(610) 853-4406  
Fax (610) 853-3733



Intangible Assets Manufacturing (IAM) has announced the release of *DiskSalv 3*, an Amiga disk utility that regularly checks disks for trouble without actually making repairs. With DiskSalv 3, deleted directories, files and data can be permanently erased for added security. DiskSalv 3 also features a fully redesigned filter mechanism that supports pattern matching on full pathnames, file notes, dates and/or protection bits. DiskSalv 3 can locate valid partitions on a disk with an unknown layout or damaged rigid disk block. It supports Amiga-DOS file systems through 3.1.

**FOR INFORMATION CIRCLE 6**

## An Amiga Alternative

Product: DraCo  
Description: Video and graphics workstation  
Price: Not available

NoahJi's  
3591 Nyland Way  
Lafayette, CO 80026  
(303) 499-1975  
Fax (303) 499-1979  
Germany's MacroSystem GmbH has announced the spring release of *DraCo*, a professional graphics and video workstation available through NoahJi's. The computer's concept is based on the absence of Amiga custom chips, which have been replaced by powerful soft-

ware and hardware combinations. Any software program compatible with the Amiga will work here—LightWave, ADPro and ImageFX included—as will all hardware products that are custom-chipset independent. Graphic output is delivered using the Retina BLT over a direct bus with data rates of over 20-MB/second. The first release of DraCo will be a full-size tower with a minimum of 4MB expandable to 128MB of on-board 72-pin SIM modules. DraCo will be available in numerous memory and hard drive configurations, and will include a parallel port and triple-speed CD-ROM drive.

**FOR INFORMATION CIRCLE 7**

## Check Your Work

Product: RG-400  
Description: Test signal generator  
Price: \$1,495  
Magni Systems, Inc.  
9500 S.W. Gemini Dr.  
Beaverton, OR 97005  
(800) 237-5964

The *RG-400* is a precision reference generator with a complement of 12 test signals optimized for desktop video production systems. The video monitoring device's Reference Overlay mode allows quick checking of luminance levels and chroma fidelity, is particularly beneficial for checking color fidelity of computer-generated graphics, and can be used in lieu of a waveform monitor and vectorscope in many applications. For applications requiring extreme video monitoring, the RG-400 can

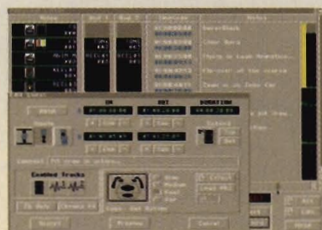




# NEW UPDATES

## Record More Than One

**Product:** Personal SFC Plus 3.1  
**Description:** An upgrade to Personal SFC  
**Price:** \$445  
 Nucleus Electronics, Inc.  
 P.O. Box 1025  
 Nobleton, Ontario  
 Canada  
 L0G 1N0  
 (905) 859-5218  
 Fax (905) 859-5206



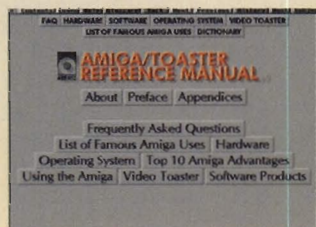
Nucleus Electronics, Inc. has upgraded the Personal SFC (single-frame con-

troller). The new *Personal SFC Plus (3.1)* features several enhancements, including auto-blackening of an unused DV buffer during recording that prevents cross buffer image bleed. One of the most important new features is the ability to record four frames of animation in a single pass using a Toaster. Animations can now be transferred quickly and still preserve the original creation as it was rendered. The average recording time has been reduced from approximately 15 seconds per frame to only four seconds. On the EDL assembly screen the user can select the events on a per-track basis. Colors on the EDL screen have also been updated.

**FOR INFORMATION CIRCLE 11**

## Help at Hand

**Product:** Amiga/Toaster Reference Manual version 3.010  
**Description:** Software-based hypertext help system  
**Price:** \$50  
 Area52  
 6 Lodge Lane  
 East Setauket, NY 11733  
 (516) 476-1615 Voice/Fax  
 Area52 has announced the release of version 3.010 of the *Amiga/Toaster Reference Manual*. The 1,000-page manual help system installs



on your hard drive, allowing instant access to information about LightWave, Alpha Paint, ADPro, AmigaDOS, Workbench and more. It includes 700 frequently asked questions, a 1,000-word dictionary, 300 pictures and animated sequences, refraction indexes, RGB color registers for hundreds of colors, Hayes command set, all AmigaDos 3.1 commands and Workbench tools, hardware specs on all Amiga models, and more. The *Amiga/Toaster Reference Manual* is compatible with Workbench 2.04 and 3.0 machines (previous versions work with Workbench 1.3). Three megabytes of hard drive space and 1MB of RAM are recommended.

**FOR INFORMATION CIRCLE 12**

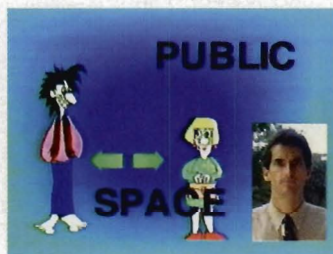
be used in conjunction with Magni's MM-400 Waveform and Vector Monitor. The RG-400 can be genlocked to an external video source or serve as the master reference for an entire video suite. It has video outputs in both NTSC and Y/C formats and includes a stereo audio test tone output for complete system setup and monitoring.

**FOR INFORMATION CIRCLE 8**

## Be Aware

**Products:** The Personal Safety Spectrum, Citizen Patrol and What Should I Do?  
**Description:** Public awareness videos  
**Price:** \$20 each  
 Awareness Potential Development Video  
 P.O. Box 34364  
 San Diego, CA 92163  
 (619) 972-1757  
 Police officer and co-owner of APD Video John Graham has announced the release

of *The Personal Safety Spectrum*, *Citizen Patrol* and *What Should I Do?* These public awareness videos have been created entirely with the Video Toaster. The videos have been designed for use with neighborhood watch programs, civic groups, school presentations and corporate training. *The Personal Safety Spectrum* presents basic safety tips to prevent being



a victim of crime. *Citizen Patrol* features video and animated characters and is used to show how citizens can volunteer to observe and report crimes in progress. *What Should I Do?*

is a video designed for interactive presentations. It features seven typical crime scenarios with pauses for discussion.

**FOR INFORMATION CIRCLE 9**

## Strength in Numbers

**Product:** Plantation 1.0  
**Description:** LightWave distributed rendering system  
**Price:** Starting from \$100  
 InterVISUAL Software  
 1080 Horseshoe Rd.  
 Augusta, GA 30906  
 (706) 793-4007

InterVISUAL Software has released *Plantation*, a professional distributed rendering system for LightWave 3D version 3.0 or later. *Plantation* orchestrates the rendering of LightWave scenes by multiple LightWave-equipped machines on a network. *Plantation* is flexible in the number of machines it will support: any number up to the limit imposed by your license or your network. Unattended

rendering of multiple scenes on a single machine is also supported. *Plantation* works on any network that provides a shared directory, and directly supports the DPS PAR with no additional setup. Other features include an easy-to-use intuition interface, a Commodore installer script, and a scene manager allowing users to shuttle scenes around their networks, or off-line, with ease.

**FOR INFORMATION CIRCLE 10**

## Product Announcements

Send your company's new product announcements and information to:

Video Toaster User  
 Attn.: New Products  
 273 N. Mathilda Ave.  
 Sunnyvale, CA 94086  
 (408) 774-6770  
 Fax (408) 774-6783



# WARP ENGINE



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### **What the Press has to say about the WarpEngine4000:**

#### **Video Toaster User**

*"LightWave modelers and animators should make the WarpEngine an immediate addition to their system. Even Raptor owners will benefit from the faster response of both the modeler and layout screens. MSD boasts that the WarpEngine's SCSI-2 is the Fastest available...and I found their claim to be justified...Bursts of 9MB/s with my Barracuda drive and sustained rates of 6MB/s."*

Tim Dougherty - VTU, Oct. 1994.

#### **AmigaWorld**

*"I cannot give the G-Force 040 an enthusiastic recommendation" "It offers no SCSI-2 controller, and limited memory-upgrade options when compared to the WarpEngine."*

Sheldon Leemon - AmigaWorld, Sept. 1994.

#### **Amiga Shopper Best Buy.**

*"If you want to push your A4000 forward and add SCSI peripherals at the same time, This is the card I would recommend."*

Richard Baguley - Amiga Shopper, Oct. 1994.

#### **AmigaFormat Gold Award**

*"The Hottest piece of silicon he's ever stuck in an A4000... The efficient DMA design means the CPU doesn't have to constantly deal with the data transfers, so it's ideal for situations which need both processing power and fast data throughput, such as animation."*

John Kennedy - AmigaFormat, Sept. 1994.

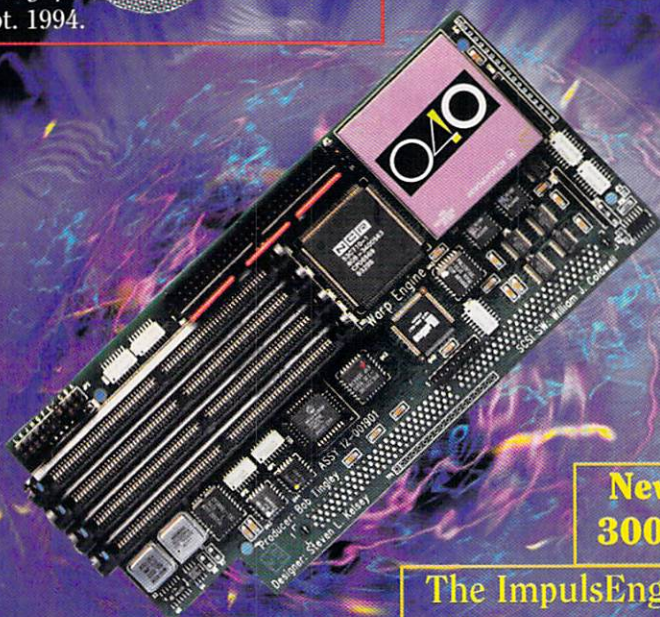
#### **Amiga Computing Blue Chip Award.**

*"Although there are a number of acceleration systems for the A4000 and A3000 this is far and away the best yet. The WarpEngine provides jaw dropping performance. The fastest all round acceleration and data transfer system on the Amiga."*

Paul Austin - Amiga Computing, Nov. 1994.



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FOR INFORMATION CIRCLE 128

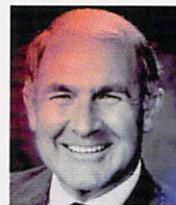


# TOASTER POST

## The Roving Eye

The Key to Producing Effective TV Commercials

by Burt Wilson



I can always tell when a cable TV post-production department has just obtained a Toaster. Production people who are usually normal seem to suddenly go berserk. Every commercial they produce for the next few months uses every Toaster effect there is—one after the other—indiscriminately and with no sense of continuity. You'd swear NewTek had packed a case of champagne in with every board, and every upgrade.



Using the Explode effect is a good way to depart from the usual cut or fade and still focus attention on the next visual. You can experiment with similar effects, too.



If you're short on time at the end of a three-second commercial and have only a second left for a must-scene, you can fly in the logo and gain an extra half-second of peripheral viewing of that scene.

While such a dizzying display of derring-do may well evoke an occasional Wow! from unsophisticated retail clients, it is most likely working in reverse on the air, actually preventing viewers from receiving the important information being delivered in their brief, 30-second commercial. Very uncool.

Let's face it: writing and posting effective TV commercials is a craft! It is something that continually demands improvement based not only upon the emergence of new technology, but also upon the knowledge and experience of the use of the medium. This is a results-oriented business, and in order to get results there are a few rules that need to be observed. First and foremost is this: The eye follows movement on the screen.

Use this maxim to your advantage and you will soon have your Video Flyer paid off. Employ movement without paying attention to this maxim and you will soon be advertising your Toaster in the classifieds section of your local paper.

The basic thing we all need to remember when we look at the vast array of effects on the Toaster's Switcher screens is that every effect that carries a frame off-screen will result in the viewer watching it glide off. Not until the effect is finished will the viewer pay attention to what's next on the screen. The reverse is also true. When you bring something on-screen with an effect, the viewer's eye breaks its attention from what it's looking at to pick it up and follow it in.

Of course, if this is what you want, fine, but it is not always the best way to push a fast-moving commercial along. To this day, the best way to tell a story—and every commercial is (or should be) a small story—is with cuts and dissolves.

Cut—boom!—the eye jumps immediately to the next scene. Dissolve—whiz!—the eye lingers slightly on the last scene while picking up the next. Whiz-boom, boom-whiz! It works.

Also, a new technique that is fast gaining favor with art directors is the so-called "soft cut." This is actually nothing more than a fast dissolve. It's supposed to take away the stark harshness of a cut and give it a little class. Maybe. Maybe not. But if you want to try it, the Toaster makes it easy. All you have to do is use the F (for Fast) speed mode when you do a dissolve. The Toaster Fast Dissolve is a nice seven-frame (1/4-second) transition that is perfect for the soft-cut technique. I also use this setting to fade in from black and out to black at the beginning and end of every commercial I do.



If the pre-set speed is not fast enough for you and you have 3.1, go to the Setup Screen and click on the Variable Speed Control button and you'll be able to make it faster—or slower, if that's your taste. The 004 setting works really well.

As I said, using the cut and dissolve—and now the soft cut—is the quickest way to tell a story. However if you are bent on using a Toaster effect or two, make sure that the use is motivated: i.e., that there is a visual reason for using the effect. Also make sure that the nature of the transition will shift the viewer's eye to where you want it. For example, if you are showing a series of plates of food in a commercial and the way you shot them doesn't make for a set of matched dissolves (which would be a good technique, incidentally), only use effects that focus the eye on the succeeding visual. This means using effects that begin in the middle of the screen and expand outward, such as the Explode effect. You can also use the Border Circ Wipe Out, the Soft Circ Wipe Out and a few others.

Other effects that make for good, quick transitions that allow the eye to move quickly to the next visual are all the Bord Wipe effects, the Split Out and the Soft Split Wipe Out. To get the name of an effect, tap the "(" key at the top of your numeric keypad and the names will be posted at the bottom right of your Switcher Screen.

### Flying Effects

When is a fly-on effect legit? I had a problem once where I had to show a client's computer operation before the logo came on at the end of a commercial, but by the time I reached the next-to-last edit—where the scene was supposed to go—I was out of time. I couldn't flash it on the screen



From top to bottom:

Figure 1—To magically fade in your narrator in real time, first grab a freeze of the static scene without the narrator. Figure 2—Then, without moving the camera, shoot your narrator in the scene delivering his narration (or, in a commercial, the pitch). Figure 3—In post, begin with the static scene and, in real time, fade in the talking narrator over that scene. If you did not move your camera, the two scenes will match and your narrator will appear as if by magic.

for a second and then dissolve to the logo: that would look clumsy. So I cut to the computer segment and then a second later looped in the logo on a fly-in. Thus, the viewer's mind was able to register the computer operation and keep on registering it peripherally while the logo flew in. That extra half-second made all the difference in the world.

Try to keep this eye-movement rule in mind when you post. In the final analysis, you have to be the sole judge of what's cool and what's uncool for your clients. Of course, rules are made to be broken, but it's good to know the rule cold first. Then you'll be able to break it more effectively.

If you're posting special-interest videos—especially if you're doing documentaries—the same rules apply, but you can take more liberties when a transition calls for a mood change. For example, try this little test: put a framestore of a nice daytime outdoor scene in your Main Bus and a framestore of a nice twilight scene in the Preview Bus. (Actually, any two outside shots will do.) Next, go to the Setup screen and click on the Variable Speed Control Button. Returning to the Switcher Screen, click on the Luma Key Fade effect and then set the transition speed indicator to 350. Hit the space bar and then kick back and watch what happens. You will see the two images move languidly together, interspersing colors in a rich, incongruous pattern of light and dark areas. The effect is surreal, almost psychedelic. Do it in reverse and it's completely different. Such a transition itself becomes a kind of mini-event within the main story, creating a mood of its own while connecting two disparate segments. Try it out with the Wavy Fade, the Pattern Fade, the Smooth Fade and Border Diamonds. Each gives a different look according

continued on page 71



# DEAR JOHN

## RGBs, Rail Extrude and Z-Buffers

Readers Have Answers, Too

by John Gross



**T**o start things off, here's some welcome reader feedback:

I just read your tip on converting RGB images to framestores (Dec/Jan 1995 *VTU*). Unfortunately, it is kind of outdated. The 3.0 Toaster software came with neat utilities: Comp2rgb and RGB2comp, which convert directories full of RGBs into framestores, and vice versa. The Switcher must be running for these to work. I always suggested using LightWave to batch convert frames if they were sequential, because the TPaint ARexx is kind of buggy.

Arnie Cachelin  
NewTek, Inc.  
via the Internet

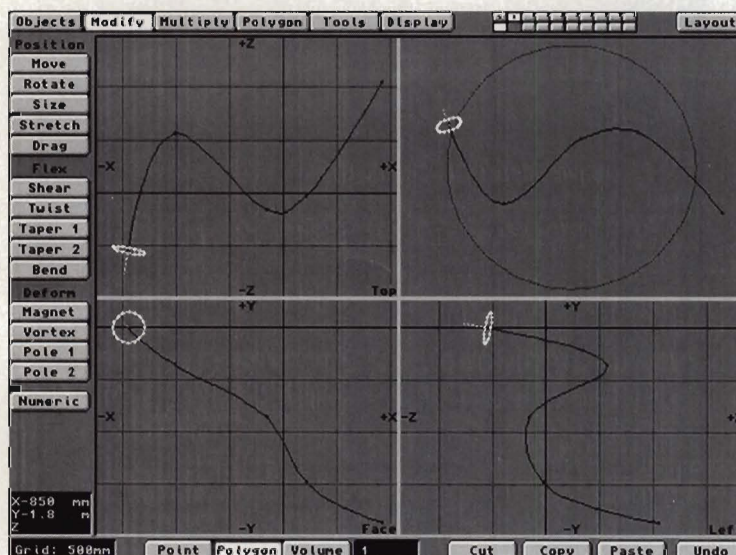


Figure 1: A flat polygon placed correctly at the beginning of the curve will yield a proper rail extrusion.

**John says:** Oops. I guess that goes to show the last time I had to convert images. Arnie, of course, is correct when he mentions these two handy programs. For them to work properly, you need to open a shell and cd to the Toaster/Utilities drawer. Then type Comp2RGB (or RGB2Comp), followed by the source directory path and then the destination directory path. All of the images in the directory will be converted from framestore to RGB or vice versa. Also note that, as mentioned above, the Switcher must be running in order for these to work.

The other handy tip he mentioned is using LightWave to convert sequentially numbered images

from one format to another. To do this, simply go to the Images panel and select Load Sequence. Select one of the images in the sequence and make sure to remove the last three digits (from an RGB file) or the "###.FS." (from a framestore file). Then select the sequence as the Background Image (Effects panel). Set up your save path and name from the Record panel and let LightWave do the conversion for you.

I also have some more feedback on freezing specific frames of video:

I think I have some help for Betty Willis of Ft. Worth, Texas. In the September '94 "Dear John" column, she asked how to freeze a timecode-specific video frame using the controller GPI.

I do it using a Paltex Abner control unit and an Amiga 2000.

To start, don't do anything on the computer while making cable changes. In my case, I use a "scratch" tape in the edit recorder to fool the system. I use a 9-pin Radio Shack A/B switch plugged into the Amiga mouseport. The mouse is plugged into one of the A/B switch sockets and the GPI cable from the edit controller is plugged into the other.

The capturing frames operation goes like this:

1. Set up edit control so the GPI triggers at the desired frame.
2. Set the A/B switch to access the mouse.
3. Make sure the Toaster Freeze button is "out".
4. Move the cursor arrow over the freeze button.
5. Switch the A/B switch to access the GPI cable. At this point, the arrow will not move away from the freeze button.
6. Perform your "edit" and the GPI impulse will push the Freeze button at the proper time.

And now to our regularly scheduled column:

**Q:** I'm having problems using rail extrude in Modeler. I create a curve and place it in the background layer. I then create an object in the foreground layer, usually a sphere, disc or cube.

Whenever I try to perform a rail extrude, I get the message "Source contour contained no edges. Only points were generated." And like the message says, it creates a bunch of points—too many points to manually connect in the correct order. I've tried extruding the curve to give it an edge, but then it doesn't see the object as a curve and won't extrude. What am I doing wrong?

Greg Vanacyk  
via the Internet



**A:** The problem that you are experiencing is caused by the fact that you are trying to extrude a solid object. Modeler is trying to tell you that you need an object that is just composed of edges. Something like a flat disc, a square polygon or even another curve would work great.

In order to properly use rail extrude, place your rail (curve) in a background layer and place your flat object at the beginning of the rail in the foreground layer (Figure 1). You can tell the beginning of the rail by the little "diamond" that is visible when you select the curve. Usually, the polygon to be extruded should also be aligned with the rail in order to get the best extrusions. (It helps to visualize the polygon's surface normal as an extension of the rail to get the polygon lined up correctly—see Figure 1.) Make sure that the polygon's normal is pointing away from the curve in order to extrude polygons that are facing outward. Remember that you can rail extrude a curve as well as a flat polygon to get unique shapes (see Figures 2 and 3).

**Q:** I need to know what a Z-buffer is and why my Video Toaster 4000 seems to think that I don't have enough memory for one. I have an animation that I am trying to get done and I have to admit that it is probably one of the biggest scene files I have created to date. However, LightWave is telling me that I have 6.21MB of free memory left after loading the scene file in. The polygon count is 68,111, with 57 objects so far, and that object and polygon count is probably going to have to double to make this animation fly. Do I need to expand my memory further to handle this file? Is 6MB not enough to render this in medium (video) res? Note that I can render the current scene in low res just fine.

Norman Maples  
via the Internet

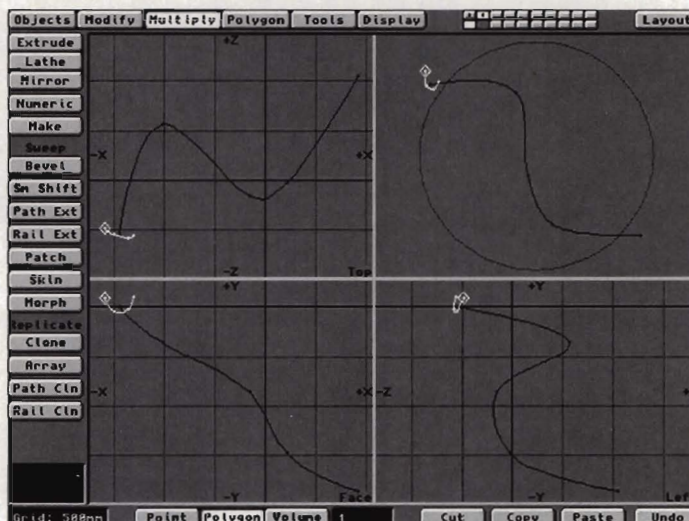


Figure 2: A curve can also be used as the source of a rail extrude operation.

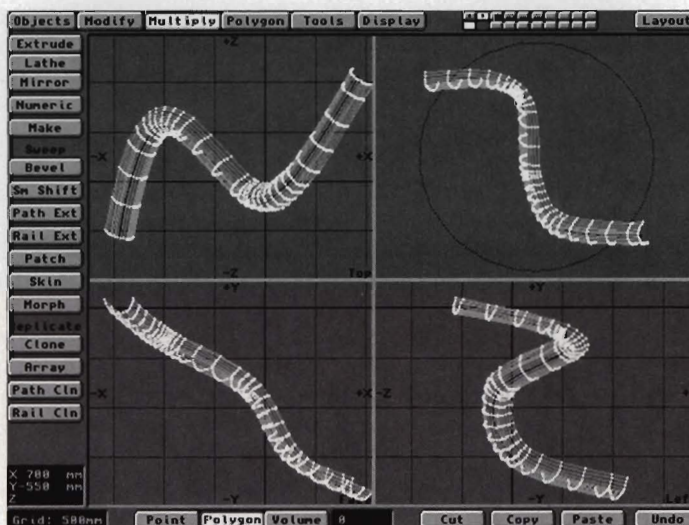


Figure 3: A curvy slide is the result of extruding the curve from Figure 2.

**A:** Put simply, LightWave uses a Z-buffer to figure out which objects are in front of other objects. The fact that you can render your scene in low res but not medium tells me that you are right on the verge of not having enough RAM. Chances are you need to buy more RAM (especially if you are going to be doing more scenes of this type).

Here are some of the things you can do to help save RAM when rendering in LightWave:

1. Make sure you are running no other programs. This includes directory utilities, Workbench programs and Modeler.

2. Make sure there are no open windows on the Workbench screen.

3. If you are running LightWave from the Video Toaster, make sure that you do not have ToasterPaint or the CG running.

4. Also, if running from the Switcher, use the GetSmall project in order to free up some extra RAM.

5. In LightWave itself, you can conserve memory by making your objects as polygon-cheap as possible and removing any unseen parts of objects.

6. In LightWave, you can lower your Segment memory (Camera panel) so less memory is used. You can go as low as 200K (the default is 2.2MB). This will render a medium-res image in 44 segments (ouch!).

7. If you are using shadow mapping, you can try lowering your shadow map size to conserve memory as well.

8. Finally, if any image maps are being used, you could decrease the size or the number of bitplanes of an image to conserve more memory.

By far the best solution is to get more RAM. You can never have enough RAM or a fast enough computer to satisfy you. I've found that the sizes of scene files automatically expand to fill the amount of available RAM.

VTU

*John Gross is a supervising animator for Amblin Imaging and the editor of the LIGHTWAVEPRO newsletter. He is currently working on effects for Star Trek: Voyager and writing the LightWave 4.0 manual. Questions can be sent care of VTU or electronically to jgross@netcom.com.*

#### EDITORIAL EVALUATION

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I found this article:

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Circle 021

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Circle 023



# SOUND REASONING

## Recording Music on Location

Basic Techniques for Quality Sound

by Cliff Roth



**R**ecording music on location is not the same as making a music video. In fact, the best way to get the audio tracks for a music video is by using a professionally mixed and mastered demo tape from a recording studio session. (And then getting members of the band to do lip-sync performances for the camera.)

Because of the complexities and potential for horror, it's almost always recommended that you record music separately, and professionally. In Hollywood films, whenever you see a band playing in the background while actors speak in the foreground, the scene was probably shot with the musicians playing silently, so that "clean" dialogue tracks could be recorded.

But there are times when recording music on location is inevitable, such as when you're asked to videotape a band playing at a club. Once you get into video, it's quite common to have an up-and-coming

band ask you to make a live concert recording. Many event videography assignments—company parties, civic events, art openings, political rallies, awards ceremonies—have a musical component. Certainly the most common event video category of all—weddings—requires recording a song or two of the band playing.

### Acoustics 101

Any enclosed space has acoustic characteristics, meaning that sound waves don't just travel further and further away from their source. Rather, they bounce

off walls, ceilings and floors, and combine with other reflections and new sounds coming directly from the source. This complex mix of reflections, and the random possibilities it creates, explains the acoustical difference between listening to live music in a nightclub and listening to professionally mixed recordings with headphones in a quiet room.

The human ear-brain system is incredibly complex and intelligent. The ear is not just a biological microphone—it's much more. Among other things, the ear-brain system is able to distinguish which direction sounds are coming from. Just as your eyes can focus on particular points of interest, your ear-brain system knows how to pay attention to what's happening on stage and ignore the echoes from the surrounding walls.

This explains why many beginning videographers get so frustrated with live audio music tracks. They'll set up the

camcorder in the rear of a nightclub in a location that they think "sounds great," use the built-in microphone to record the sound, shoot what seems like a great-sounding performance, and then get home to discover that the recorded sound is completely muddy.

### Recording 101

The most basic rule for capturing a solid audio recording is that you want to isolate each audio element. That's why studio recording revolves around 16-, 24- and 48-track multi-track recording: the more tracks, the more isolated elements you have. When it comes to making live recordings on location, try to isolate the original sound from its reflections (reverberations). The easiest way to accomplish this is by getting the microphone as close to the sound source as possible, so the ratio of original to reflected sound levels is high.

"Wait a minute," you might say, "I want my recordings to include the ambience, the warm acoustic properties that make it sound like a nightclub—not some sterile, isolated-audio, studio-style recording!"

Nice theory, but in practice it doesn't work. First of all, no matter how close your microphones are, you will still be capturing room reflections—they're pervasive. Secondly, because the ear-brain system hears things differently than a microphone, it's almost impossible to evaluate the quality of audio you're getting at various locations—unless you can go to the trouble of making a test recording, and then play it back in a quiet room (listening with headphones or on a good stereo system) to see how it sounds.

Directional microphones are popular with recording engineers because they reduce pick-up of sounds from the sides and rear of the microphone. But when using directional microphones, you must be careful to point them in the right direction.

### Miking Techniques

If you want to study guerrilla concert miking techniques, go to a Grateful Dead show. Located dead center at various distances from the stage, you'll see a bunch of poles holding up microphones for bootleg recording "artists." Most use pairs of microphones (for stereo) mounted about one foot from each other and pointed straight ahead.

These techniques may be acceptable for bootleg recordings (where quality standards are not very high), but whenever you buy a legal, professionally produced album of a live recording, it probably was recorded using a multi-track close-miking technique. This is essentially the same as recording studio techniques: each instrument is isolated with its own microphone (or electronic feed, such as

continued on page 26

**"The most basic rule  
for capturing a solid  
audio recording is that  
you want to isolate  
each audio element."**



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**se'crets** (see'krets; -krits), noun pl. **1.** Cool stuff you don't know that will really make you smarter and more productive, as in the new "*Video Toaster Secrets*". **2.** Any of the many powerful techniques and creative tools revealed to you *now* through the entire collection of **Desktop Images** videos.

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## SOUND REASONING

from a guitar pickup or synthesizer output), which gets recorded on its own track.

Separate microphone and tracks are dedicated specifically to the job of picking acoustic reflections off the back walls, as well as audience reactions (applause, hoots, requests for songs, adoration, etc.). This isolation of audio elements gives the mixing engineers the control they need to blend the sounds for ideal balance between lead vocals, back vocals, rhythm section, melody, etc.

Artifice in "live" recordings also includes stereo mixing. The left-right stereo location for "live" in-concert recordings is generally fabricated in the mixing studio, using standard pan-pot techniques. Thus, a guitar player who you remember as standing on the right side of the stage during the actual concert may very well end up on the left side of the stereo sound field in the mix—if the engineers don't take care to re-create the authentic instrument locations.

Close-miking is most important when some or all of the music is amplified. A vocalist can hardly compete with an electric bass cranked up to 11 (à la Spinal Tap) without electronic enhancement. When recording fully acoustic music, however—such as choirs, folk music and classical ensembles—you'll have much better results using stereo miking techniques. If you can locate yourself the appropriate distance in front of the stage (usually about 10 feet), you can also try experimenting with X-Y microphone placement. The two microphones are placed at a 90-degree angle to each other, with one pointing 45 degrees to the left of center, the other 45 degrees to the right.

When setting up microphones in areas where people will be standing, take care to protect them from being accidentally bumped into (ideally by roping off a small area and having someone stand next to the microphone). Shock mounting will be needed for the microphone stand if people will be dancing or walking nearby—otherwise, there will be thumping sounds in the recording. Also take care to tape down microphone cables along the edges of floors, where people are less likely to trip over them.

Wireless microphones offer the convenience of not having to worry about microphone cables. Have an assistant stand with a wireless microphone in the ideal location for sound recording and you can roam around with the camcorder, shooting from different angles and locations. The only problem is that as you move about, you may experience moments of interference, where the wireless microphone's signal gets distorted and/or staticky. This is where better-performing professional wireless systems can really make a difference compared to consumer models. The best receivers are called "diversity" models, and use more than one antenna to ensure a better chance of good signal reception.

### Direct Feeds

Unless you're recording an all-acoustic band playing in a small club or outdoors with no amplification, you'll probably have the opportunity to get some or all of the desired audio signal through direct feeds.

Almost any nightclub performance will have a house mixing facility. But beware: Although the mixing console may look big, complex and comprehensive, it is probably missing many key audio elements. Drums in particular tend not to get miked in small clubs—after all, they're loud enough to be heard in the back of the room without any amplification. Ditto for electric guitars and bass that come with their own amplifiers. Sometimes, the only sounds that need amplification are the vocals, so taking a feed from the mixing console will provide a clean vocal track but nothing else (except for the leakage from other instruments that the vocal microphones pick up, which can be considerable).

The extent to which you can utilize direct feeds in your field recordings depends primarily on how many audio tracks you can record. Low-budget formats such as Hi8 and Super-VHS will usually let you record only two audio tracks simultaneously. (Even Hi8 camcorders with PCM audio tracks generally can't record different things on AFM and PCM simultaneously.) Fancier formats, such as Betacam, offer four simultaneous audio tracks, making it easier to record both from your own microphones and from a direct feed.

But an alternative frequently overlooked by low-budget producers is to record audio (from the mixing console) on a separate camcorder or VCR. Note that you do not necessarily need time code to synchronize the two recordings—you can simply use the old filmmaker's clapboard system to provide sync. Note also that you should not use a regular audio cassette recorder; the speed of cassettes is not very stable, and sync will be lost. But if you use a camcorder, VCR or digital audio tape (DAT) deck, and have access to frame-accurate editing facilities, you'll be able to get them in sync with an accuracy of about one frame (1/30th of a second).

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If you're using a non-linear editing system, such as the new Toaster Flyer, you'll be able to sync them up with absolute perfection simply by shifting one pair of audio tracks ahead of or behind the others. With traditional videotape editing, this dual recording system by itself will let you choose between one set of tracks or the other. To mix them together properly, you'll probably need to use a digital delay line to provide the final tweaking of synchronization. (Adjustable digital delay lines are built into just about all modern digital reverb/effects processors, which are commonly available at music and professional audio stores for about \$200 and up.) Determine which audio signal is ahead of the other, and then delay it by just enough time to bring the two sets of tracks into perfect sync.

If you shoot the concert with two or more camcorders, and each records its own soundtrack (as will occur if you don't use any external microphones and just have a couple of camcorders roaming a concert), choose just one of the soundtracks when you edit and use it throughout the song. If you try editing from one soundtrack to the other, there will be a noticeable, distracting change in the sound quality at each edit point.

If you're limited to more basic stereo recording with a single camcorder, you may still be better off taking two different feeds. Instead of recording a single stereo signal, you can record two mono signals. Put the lead vocalist on one track, for example (using your own microphone or a feed from the board), and use the other track to record everything else. Use a standard stereo-to-mono splitter cable (available at Radio Shack for 1/8-inch mini camcorder jacks) for this feat.

#### Not-So-Final Mix

If you want to go full blast with your own mixing setup, be forewarned that it is a complex and time-consuming process—and expensive, too. To record a basic four-person rock band you'll need at least six to 10 quality microphones and a mixer to accommodate them. The drums alone can require six microphones to separately pick up the kick, snare, high hat, tomtoms, crash cymbals and ride cymbals. It's possible to mix all these elements together during a live concert perfor-

mance—that's essentially what the guys in the booth do—but it's not desirable.

A basic rule of audio, video and film production is that any decision that can be put off until post-production should be. Precise mixing involves listening to things over and over, experimenting with different options, and having a quiet, calm environment to work in (such as a recording studio control room).

None of these conditions exist during recording. That's why synchronized

multi-track recording is de rigueur for professional live concert video and film productions. Make no mistake about it: When working with a low budget, the need to record stereo music on location adds another, frantic layer to what is already chaos.

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# TIPS & TECHNIQUES

## Running an Animation Business

How to Gauge the Value of Your Services

by Brent Malnack



**A**lthough many people have mastered LightWave 3D, most haven't gotten a handle on what to charge for their knowledge and experience. Sometimes communication failures between animators and clients can result in the animator redoing sections of, or in some cases, the complete project. As in any other profession, time is money and lost time costs money. For the few of you fortunate enough to have a sales professional on staff, be lucky that you can concentrate on your craft. For the rest of us, I will provide you information that will help you gauge what your services are worth and how to avoid getting taken advantage of.

### How Much?

The most commonly asked question of me in regard to animation services is how much to charge. While many folks toss around a per-second rate for finished animations, I have always recommended a flat rate based on time, not on the length of the animation. Here are some general rules of thumb for billing and bidding:

1. Never, ever perform any animation service for less than \$500.

Let's face it—you have a big investment in equipment and time spent learning how to use it. It's called overhead, and all businesses figure their operating costs and overhead into the prices they charge for goods and services.

I always suggest charging a minimum of \$500 for any animation-related service, regardless of how long it takes.

2. Charge by the day (or hour).

Some people charge different rates for different activities, such as rendering time versus creative time. Why complicate matters? I recommend charging a flat per-day or hourly rate. I never do work on a job unless I receive a minimum of \$500 per day. Though I



This simple logo explosion animation was six seconds long and took two hours to make.



This frame is from a six-second animation that took three days to build. If I had charged by the finished second for each animation, the prices might be unfair.

always bid higher, I never do work for lower.

This means that the client receives all inclusive services at one rate. Modeling, animation, rendering and recording to tape are all part of the price. Describing this in a bid or invoice is accomplished by "all inclusive animation services at \$500 per day."

Why does this make more sense? Because charging in a per-finished-second manner is completely unfair to both you and your client. If someone says they charge \$1,000 per finished second, then they make an enormous amount of profit on a flying logo animation, and would take it in the shorts for a *Babylon 5*-caliber animation. If I was a Hollywood executive, I'd gladly pay \$1,000 per finished second for *Babylon 5* animations. If I was the owner of a hardware store that wanted a 10-second logo fly-in, I'd feel ripped off paying \$10,000 for it.

3. Prepare the bid

How are you to provide an accurate estimate for services using this flat-rate method? Good question. It becomes easier with time. The basic formula is to predict how much time

it will take you to create all of the models, design the surfaces and motion, and have your machine(s) render the animation. The first time you do this will be the most difficult.

Let's say the client wants their logo to fly in and park at the end of a commercial. The first thing I want to find out is if a camera-ready or an electronic version of the logo is available in a readable format. If I'm to scan a logo in from a business card (don't laugh—I've done it before), I know I will spend a lot more time cleaning up the logo.

Next, I guesstimate how long it will take to make the logo, create the surfaces and tweak the motion path.

Knowing my system's rendering prowess, I predict

continued on page 30



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## TIPS & TECHNIQUES

the length of time it will take to render the piece. Before I do so, we agree on the desired length of the animation.

With this basic information, I prepare a bid. In it is a detailed description of the animation, a quote for the cost of the finished project (including materials such as videotape), and the projected completion date.

Depending on a host of factors (how much work I've done for this

client before, how busy I currently am), I bid the project at a maximum of \$1,000 per day. Sometimes the client will counter my proposal with a lower rate. If this happens, and I need the cash, I'll accept. If I'm not as needy, I'll pass it up. Keep in mind that the relationship you develop with a client over time is built on consistency—consistency in pricing and consistency in the quality of the product that you have provided.

## Never Do Work on Spec

Frequently, you will be approached to do a project on spec. This means you will put effort into a project in the hope that it will pay off later. Never do it! It took me a little time to realize spec work never pays off. There are two fundamental problems with it:

1. You have set the client's expectation that you are prepared to work for free.
2. Even if you get work out of it, the client will be terribly surprised when the price for the next project goes from free to a huge expense. The client's position will be, "If you did all of the work in the spec project for free, how can you expect me to pay you thousands of dollars for similar projects?"

## Get Money Up Front

One thing you will certainly learn in this business is that people pay slowly. You are at the end of the food chain. The post house hired you to provide an animation for its advertising agency client, who will need to bill its client, the vendors. So the ad agency bills its client and the post house bills the ad agency, and you bill the post house. If the vendor takes 45 days to pay the ad agency, the ad agency takes 45 days to pay the post house, and the post house takes 45 days to pay you. It could be three or four months before you see any money. Even though it's the responsibility of the post house to pay you in a timely manner, the reality is that it doesn't always work that way. The bigger fish have eaten and "passed" their food before you've even had a chance to eat.

This can all be prevented. Ask for one-third of the projected cost up front. If the post house isn't willing to pay this amount, then how seriously do they need your services? Ask for the second third at the time of completion. You've provided all of the work, you deserve to be paid. If they fail to pay you (it happens in this industry—get used to it), you have at least received two-thirds of what they owe you. If you hand over that master tape without requesting any type of payment, what incentive do they have to pay you on time?

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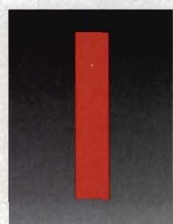


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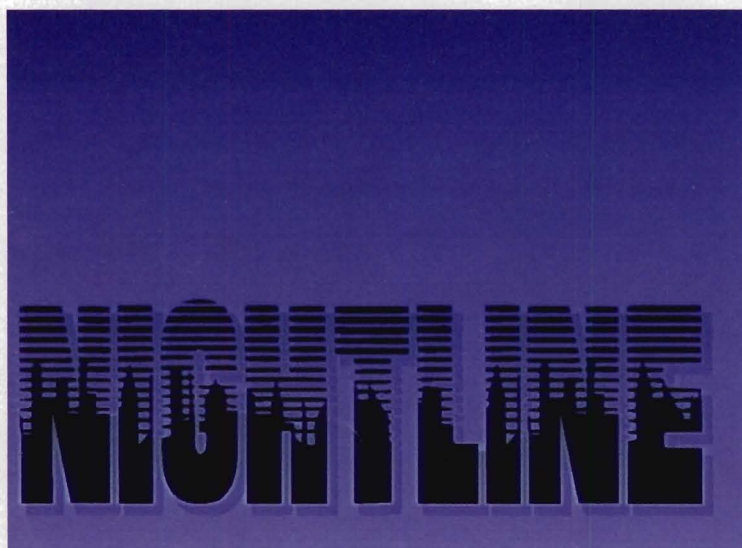
### In Search of the Ultimate Font

by James Hebert



I love character generation. I really do. It's twisted, it's sick, and it's something I look forward to doing as often as I can. I can't help it. Letters turn me on.

*If you share this tortured view of television graphics, remember that your contribution can provide the "Slices" columnist's font addiction with new fonts several times a month....In addition, you'll receive a framestore image that utilizes this font as your personal memento....*



A quick demo of what a decorative font can do for you.

As a CG nut, I find myself studying brochures, fliers and catalogs in search of the ultimate collection of fonts. (Actually, I'm holding out in the hope that my one true belief will be realized—that there is one Ultimate Font out there somewhere that will work for every situation, every job, every graphic. If you find it, call me.)

While it's true that a basic body of typefaces suffices for the vast majority of steady day-in and day-out character generation jobs, I remain steadfast in my desire to acquire additional fonts. It always seems that the next piece of work that comes my way requires a unique look that I just cannot achieve with my current library. Let's face it, for some graphics situations, a decorative typeface makes for the perfect graphic to lend impact to your work.

This desire fuels a constant low-level reminder to me that there are always more fonts out there. You can obtain public domain fonts from bulletin boards or on-

line services such as America Online and CompuServe. Of these, some will be freely usable (you are not required to send in any fee), while others will request a small fee if you find the font beneficial.

There are two flavors of PostScript fonts such as those used by ToasterCG, ToasterPaint (4.0) and LightWave Modeler: those from the Macintosh domain and those from the PC-clone domain. The Amiga (and therefore the Toaster) utilizes those in PC format. If you pick up a collection of PS fonts from a Macintosh distributor, you'll need to convert them into something that the Toaster can use (details on this rather hairy process below).

However, if you're interested in ready-made commercial fonts, here's a sampling of what you'll find when you need to expand your font library. Ask for floppies (or CD-ROMs, if you have a CD-ROM reader—they're more convenient). Remember, if at all possible, to ask for these in PC-format PostScript. Otherwise, you'll need some additional tools (and time) to convert them into something usable by the Toaster.

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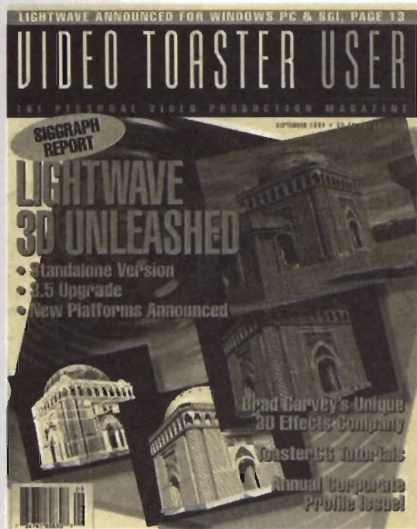
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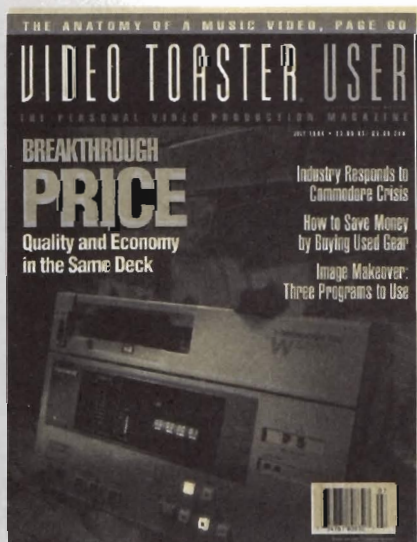
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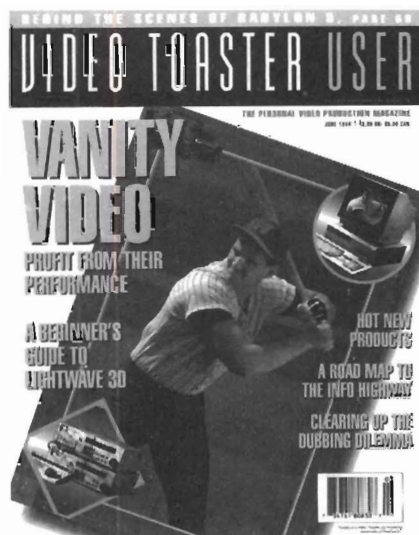
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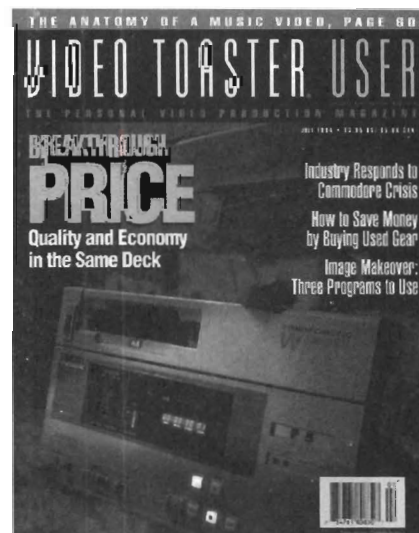
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You may have access to fonts in the TrueType format as well as those in the PostScript format. (TrueType is another form of outline font that may be resized at will without loss of quality.) If so, and if you wish to use them within ToasterCG, I highly recommend a commercial Amiga program known as TypeSmith (Soft-Logik, 314-894-8608, 800-829-8608). The latest release, version 2.5, will accept Window and Macintosh TrueType fonts, as well as PostScript Type 1.



A sampling of fonts obtained from CompuServe and America Online. Remember that some fonts require that you pay for them if you choose to use them in your work.



More fonts from online services.



A sampling of decorative fonts from Adobe Systems' "Wild Type" package.

Using TypeSmith, you will be able to convert the font format so that it is accessible by the Toaster's programs. Furthermore, if you have any specialty decorative fonts, you'll be able to assign characters to specific keys on the keyboard, which is handy.

How do you get fonts such as these into the Amiga? Here's the easy way.

The tools required are the commercial programs CrossMac (Consultron, 313-459-7271) and TypeSmith. CrossMac allows your Amiga to read and write Macintosh floppy disks in the same way that your Amiga can read and write PC-formatted floppy disks. This is just too cool if you, like me, spend your days swiveling from one computer to the other. File transfers are a breeze, and CrossMac works wonderfully.

Simply copy the font from the Mac to a Mac-formatted diskette, then insert that diskette into the Amiga. Use TypeSmith to load the fonts, then save them in the PS Type 1 format. Voilà! Enter ToasterCG and use them right away.

Here's the hard way.

The tools required are already on your computers, plus the Amiga public domain program FC (font converter 1.2). Since the Mac, the PC and the Amiga can format, read and write PC-formatted floppy disks, these will be the method of travel.

As far as the PC is concerned, simply copy the files to a PC-formatted floppy.

With the Mac, use Apple File Exchange (with the Mac to MacBinary option) to translate the font files first. You only need to translate the actual outline files, not every file related to the font. Then copy them onto a PC-formatted floppy. Insert the floppy into the Amiga. Run the FC program and, one at a

continued on page 36



## SLICES

time, select the font files from the floppy, select their destination, and convert them.

Note that for both of these methods, you are creating what's known as a ".pfb" file, which stands for printer font binary and contains the actual character outlines. ToasterCG requires an ".afm" (Adobe font metric) file as well, and it will create this file if it cannot find it when you load the font. The file will be stored in the same location as the outline file. For this rea-

son, the first time you load a font without its .afm file present, ToasterCG will take a few extra seconds to create it. Subsequent uses of this font will take no time, since the file will now exist.

### A Final Note:

In converting some fonts over to the Toaster from the Mac, I found an odd bugaboo that might be a bug in either ToasterCG's or TypeSmith's handling of .afm files. The .afm files generated by



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## ToasterCG Font Trick

You can get a lot more mileage out of your fonts with ToasterCG 4.0 (the Flyer release), because ToasterCG 4.0 can load any text as a resizable brush. If you've ever spent long minutes searching the font book for just the right font to fit into a certain amount of graphic space, you'll love this new feature. Now you can make a word or phrase fit the screen exactly as you want.

One of my chief complaints about television titling is that you can never find enough condensed fonts (fonts that are thin, allowing you to place more characters on a line). It seems that I'm always running out of space because the characters in my fonts are too wide, leaving me with a title like CHILDREN'S HO instead of CHILDREN'S HOTLINE across the top of the screen.

Well, this is no longer the case. Now, simply select Load Text Brush, enter a word or phrase into the line, enter any rotation or shear values, select your font and click OK. ToasterCG generates a brush using that text—a brush that contains a resizing box in the lower righthand corner! This allows you to take the text and s-t-r-e-t-c-h it across the screen, or make it tall and skinny against one side.

If you study network or cable television graphics, you'll find that using numerous variations on the same font is a popular trick. Now, ToasterCG 4.0 lets you do the same.

VTU

TypeSmith and ToasterCG are, for some reason, incompatible.

I saved a font outline file using the option Export PFB PostScript Type 1 Outline. I then used Export AFM Adobe PostScript Type 1 Metrics option to save the .afm file. This was a mistake. ToasterCG had difficulty with the characters when I did this—I could enter them, but I could not select them afterward. However, if I skipped the creation of the .afm file (thus forcing CG to create it when I loaded the font into ToasterCG), it worked fine. Neither the Soft-Logik nor NewTek programmers could be reached before this article went to press, so this error may be fixed by the time you read this. If not, you know what to do.

Now go out there and get more fonts.

VTU

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# CYBERSPACE

## Rumination on Columns Past

New Software Revamps Old Programs

by Geoffrey Williams



**O**ver the last couple of years I have written on a number of topics. Sometimes it takes a lot of digging to find enough programs on a specific subject to fill up a column. I prefer to focus on one topic because I feel it gives you a greater understanding of the category in general and how the different utilities fit in. This month, I'm taking it a little easier by covering some programs that would be nice additions to those covered in columns past.

patible unit for approximately \$200. Speaking of PhotoCD, I finally found a loader for Art Department Professional (ADPro). It requires that you have Asimware's AsimCDFS CD-ROM driver. It was written by Erik Simonson and is basically an ARExx script that uses AsimPhoto, which comes with AsimCDFS. It seems to do the job, and makes using ADPro with PhotoCD a little more reasonable.

### LightWave Utilities

The Orderly Scene Mover by Scott Wheeler, which I wrote about in the column on LightWave utilities, received some important attention. A new version spruced up with a LightWave interface will ship with the new LightWave 4.0. Congratulations, Scott.

I recently found a useful macro by Steve Koren called Gears. It lets you create gears of a user-defined size in Modeler. Sergio Rosas spent some quality time taking tips and information from both the LightWave mailing list and the LightWave FAQ (more on these later) and compiling them into an AmigaGuide file. It's simply called LWguide and provides quite a bit of information for LightWave users in an easy-to-access format.

I also wrote about a renaming utility that was handy for renaming a long list of file names, such as the long lists of LightWave-rendered images for an animation. Daniel S. Milling Jr. was kind enough to bring to my attention his new renaming utility, MultiRename. It has the ability to rename up to one million files sharing a common name and numbering strategy. I actually have not made any million-frame animations, but if you do, this utility can rename them all for you.

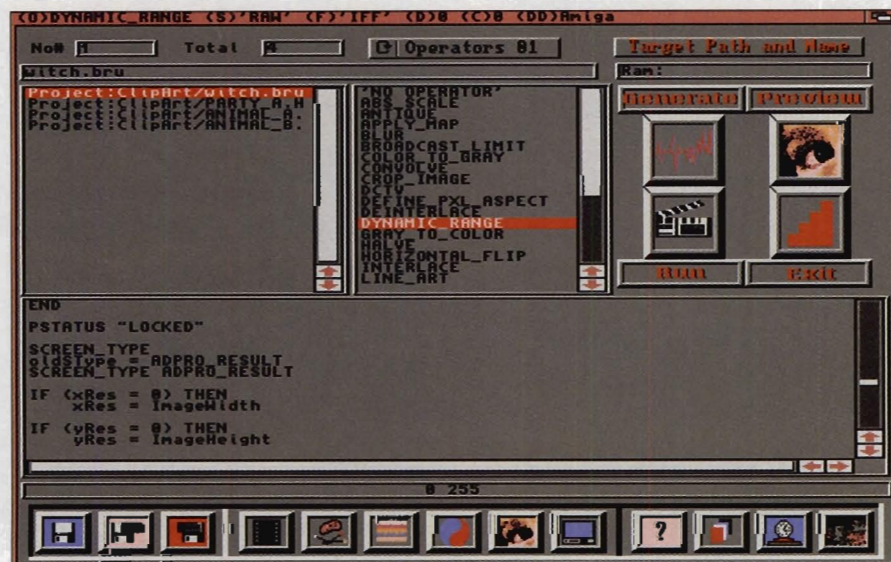
You can also change the way the files are numbered, renumber a range of files, or change the numbering conventions the files use. For example, you could swap the basename with the numbered extension so that the number comes first in the filename, or add an additional zero to files so

that they are ordered properly when filenames go from file.001 to file.1000.

Best of all, unlike previous renaming utilities requiring the use of a CLI, this program has an attractive and easy-to-use interface. There have been numerous occa-



Rename up to a million sequential LightWave files with this powerful and flexible file renaming utility.



GeneRexxT Pro's colorful interface gives you complete control over ADPro for batch processing and more.

### CD-ROM

I hope you have purchased a CD-ROM by now. One of the less expensive approaches for obtaining one is to purchase an internal drive and a SCSI external case. I saved about \$50 going this way with a PhotoCD-com-



sions when I needed an easy way to renumber files, and this is the best utility I have seen for doing the job. I would not want to be without it.

### Image Processing Utilities

Batch processing is not all that easy with ADPro. Writing ARexx code is not very difficult, but it can be a bit trying for the uninitiated when the simplest of typos can keep a script from working. One of the great advantages of a script generator is that you don't have to spend a lot of time trying to track down those nearly impossible-to-spot typos. Ahmed Balfakih has done quite a job with GeneRexxT Pro, an ARexx code generator for ADPro. It was written using CanDo, and sports an attractive user interface with lots of colorful buttons. You can turn on-line help on, click on any button, and get a brief description of what that button does. You can also open a list of help topics to get more expanded on-line help. Not only does it write scripts for you that make batch processing easier, but it also provides such a well-thought-out front end that in many cases it is easier to use the GeneRexxT interface than ADPro. For example, to apply one of the operators to a picture, you simply click on the operator, then double-click on the picture name. The operator is used and the picture displayed. Very easy. It will even display the image on the display of your choice, including the Video Toaster.

If you send in your shareware fee, you get many additional features, including support for MorphPlus and DPS's Personal Animation Recorder (PAR). With PAR, you can do such things as generate a new animation from two animations where one fades into the other. If you use ADPro, this is a program you should definitely look for, as it makes using ADPro much easier.

Miloslaw Smike wrote an MTV loader for ImageFX that will allow you to load MTV images and manipulate them in ImageFX in whatever fashion you please. This format is used by Rayshade, a freely distributable 3D program available on multiple platforms. It produces images in its own format, and you can recognize pictures in this format with the

extension .mtv. By the way, the latest version of ImageFX is pretty darned impressive. I have not really had much time to play with it, but I suspect it will easily be my image processor of choice.

### Clip Art

In a recent column, I wrote about a commercial cataloging utility that I thought was quite useful. It has been upgraded to graphicRecall Pro VTR

and now supports PhotoCD and video cataloging. It has direct machine control of Sony protocol compatible decks, automatic timecode insertion, automatic scene retrieval, and automated frame grabbing with the Toaster. I was quite impressed with it, and it is one of those utilities that can save you countless hours by getting you better organized. Call Focus GbR at (212) 826-1240 for more information.

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## JPEG

There have been a number of new utilities since I last wrote about JPEG compression. The fastest and best JPEG viewer is FastJPEG by Christoph Feck. It can display dithered versions of JPEG images on both ECS and AGA machines. Not only does it do about the fastest JPEG conversion I have seen, but the display quality, even in standard HAM mode, is amazingly good. There is very little fringing and artifacting compared to the other JPEG display programs I have seen. If the image size is cut in half to fit the screen, the program does automatic smoothing to keep the image looking good.

If you prefer to view your JPEG images with DCTV, Nicolas Dades' JPEGonDCTV can do the job. Compared to the original JPEG2DCTV utility that I wrote about, this is significantly faster and seems to work a lot better in scripts with wildcards or for running from a directory utility such as the commercial program Directory Opus. Another nice feature is that it automatically corrects for aspect ratio. The main shortcoming between this and JPEG2DCTV is that JPEGonDCTV is only a display and not a converter.

## Translate

The original file-splitting utility that I wrote about worked fine, but lately I have been using a slightly faster program called Splitter by Martin Schlodder. It's main advantage for me is that it works better from a script or Directory Opus than the original program did. I like the fact that it has its own join capabilities instead of having to use the rather arcane method on the PC. I also think it is a bit easier to use overall, although still a CLI-based utility. It includes a version that runs on the Amiga, a version that runs on a PC and a version that runs on a Sun. The one thing that it is missing that the other program had is a prompt to tell you when to put in the next disk, but this doesn't really bother me.

Giuseppe Sacco's TGA2IFF is a fast and simple converter that can take a TGA file and convert it into either 12- or 24-bit IFF. Targa files are used by the Truevision line of video display cards on the PC, and have been a popular format with some public domain image generation programs, such as the public domain ray tracing

program POV. It can also display a preview version of the image to be converted in 16-color grayscale.

## Digital Highway

It will be old news to many of you, but the Internet voting is over and there is now an official LightWave Usenet news group. It is called `comp.graphics.packages.lightwave`. Before this, most of the discussions about LightWave have taken place through the LightWave mail list. While the mail list still exists, I much prefer to have a news group that I can access whenever I want to rather than a huge stack of incoming mail constantly filling my mailbox. Another

**"The fastest and best  
JPEG viewer is FastJPEG  
by Christopher Feck. It can  
display dithered versions  
of JPEG images on both  
ECS and AGA machines."**

Internet resource that you might not be familiar with is the FAQ (Frequently Asked Questions), which is a standard way of compiling a file containing a wealth of basic information about a particular topic. These files can be quite large, but are very useful to read through and to keep as a reference. Many Usenet news groups regularly post updated FAQs. Your local Internet provider may also have a directory filled with FAQs on a variety of subjects. It's worthwhile to hunt them down. Some of the FAQs I have found recently include LightWave, which goes into issues such as current features, future features, ftp sites, and lots of other information. The Enhanced Graphics

System FAQ explains what the EGS is and how it has been implemented by some display board manufacturers. The JPEG FAQ tells you more than you ever wanted to know about JPEG, including a lot of Amiga-specific information. The same is true for the MPEG FAQ, which provides lots of specific information on this format for all platforms, including the Amiga. The Audio FAQ goes into detail about the many audio formats available across the many different platforms, including the Amiga. I am sure there are many others that might be of interest to you.

Finally, I should bring up the mysterious UUEncode. You may be reading a news group consisting of very normal messages, when suddenly you come across a message that is just a bunch of garbage characters in a continuous stream. You might think that the computer garbled the file, but what you are really looking at is a uuencoded file. I wrote about using ftp to transfer files in the column on the Internet, but there is another way, and that is to turn a binary (program) file into an ordinary ASCII (text) file. This process is called UUEncoding. To convert the text file back into a program file, it has to be run through a program that can UUDecode the file. In this way it is possible to put a program into an ordinary message that has readable text at the top followed by the encoded program information. With this method, you can even send a program in an e-mail message. A good UUDecoder can separate the program from the message and restore the program file. The program I use is a combination of UUIn and UUOut written by Nicolas Dade. It's blindingly fast, extremely smart and very small.

As usual, if you don't want to spend the time hunting these programs down, I've put them all on a disk for you, including the LightWave guide and the mentioned FAQ files. You can get the disk by sending \$5 to Geoffrey Williams, UpDate Disk Offer, 1833 Verdugo Vista Drive, Glendale, CA 91208.

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# TAMING THE WAVE

## LightWave's Best-Kept Secrets

Tricks for Rendering and Saving Images

by David Hopkins



**A**fter taking a close-up look at some of Modeler's lesser-known features in last month's column, it's time to do the same with LightWave.

We all know how to load objects into LightWave, right? Just click on Load Object, pick one, and accept it. But what if you need to load a number of objects? LightWave's file requester doesn't support selection of multiple files. Try this: If you need to load four objects (for example), click Load Object four times, successively. The requester will appear as usual, but after you choose an object it will come right back—four times. This trick can save you a lot of mousing around.

In the same vein, let's say you have a large number of surfaces that all need to be changed. From the main Surfaces panel, use the up-and-down arrow keys on your keyboard to travel through the list of surfaces. You'll find

that quickly reaching another surface becomes a fast and simple process using these keys.

You'll also find that the arrow keys can be used in places such as the Lights panel, the Lens Flare panel, and others. Keyboard equivalents (what these things are actually called) are plentiful in both LightWave and Modeler, and will vastly improve the speed with which you get your work done. Anytime you want to take a look at the complete list of available keyboard equivalents, just press the HELP key.

In many situations, you'll find that it would be nice to get an idea of the flow of an animation without rendering it completely.

In the advertising field there is a process called "animatics." An animatic is essentially a series of still images that portray a storyboard. It's easy to create the same thing with LightWave using the **Frame Step** option found on the Scene panel. If you set Frame Step to 5, for example, and then render, LightWave will render every fifth frame of the animation. If you have a Personal Animation Recorder you can adjust the playback timing to get an idea of what the finished product will look like, with minimal rendering. Time is money, and anything you can do to save time is a good thing.

Here's a useful tip for ScreamerNet users. When you are setting up a scene, you'll most likely want to render a few frames to make sure you're getting what you think you are. After you've used Send All Files (or the separate Send Scene, Send Objects, Send Images) and loaded the scene into the CPUs, looking at different frames is as easy as setting a new First Frame in the local LightWave. You don't

need to resend anything unless you've made some sort of change. This isn't explained in any ScreamerNet documentation that I've seen, so there you go.

While we're discussing ScreamerNet, you should be aware of a truly annoying problem that I've encountered. It seems that if you have the ScreamerNet CPUs rendering away on something with no save path defined (when you are testing frames, for example), the output images will pile up in your RAM disk until there isn't any more space. This results in a crash. The secret here is to make sure that you always have a place defined for saving images that are coming back from the remote CPU(s).

Still one more annoying ScreamerNet problem is the use of ESCape. If you are rendering and decide that something isn't right, you can just hit ESCape and fix it, right? Well, to a point. The problem arises with the frame(s) that are being rendered at the time that you hit ESCape. You see, the remote CPUs never get the message that they should stop rendering until the frame they are currently working on is completed. Those images, however, are still going to be transferred back over to your local machine. But guess what? LightWave doesn't bother to move them out of RAM since it thinks the render process has stopped. This means that your images just hang out there until one of two things happen: you go into the RAM disk and delete them yourself, or the memory runs out and the system crashes. Obviously, the first is the better choice of the two, so make sure to check your RAM disk for files named "Out1," "Out2," etc., and get rid of them. (Make sure not to delete anything else!) You may have to wait for the frames to finish first, so be patient.

Changing gears a bit, some interesting things can be accomplished using LightWave's Foreground Image option. This is located in the Effects panel, if you didn't know that already. One really nice use for this option is to create a fade up from black. Of course, you could create a fade up from black by turning all of the lights in your scene off and slowly ramping them up using envelopes, but that can be a fairly daunting task in some situations. Instead, render a single frame of black in advance (using the same resolution that your final animation will need). Load your scene and then the single frame of black using Load Image from the Images panel. Place that image in the Foreground Image window and then define an envelope taking the percentage of Foreground Dissolve from 0 percent to 100 percent over the appropriate time period. If you want a two-second dissolve, just use 60 frames. You'll probably want to scoot any action in your scene further back, which can be accomplished using the Shift All Keys function on the Scene panel.

So what else can you do with Foreground Images? Trails. Just for laughs, try setting the Foreground Image as a

**"Make sure that  
you always have a  
place defined for  
saving images that  
are coming back  
from remote CPUs."**



sequence using the same images you are saving. You'll probably need to pre-render the first frame so that you can use it as the file name when you choose Load Sequence. Set the Image Offset in the Image panel to -1 and you'll have frame 1 appear as a Foreground over frame 2, frame 2 over frame 3, and so on. Set the Foreground dissolve to something low for more of the Foreground, high for less. In fact, an envelope here could allow you to control when the trailing stops and starts. I wandered across this one completely by accident, but it seems that it could be pretty useful with further experimentation. Write and let me know what you try.

This last example brings up a perfect time to lay out the old party line: The secret to becoming a better animator is spending large amounts of time on experiments. That's what this column is really all about. Don't let up! You may just be the next person to discover—and then share with the rest of us—the ultimate LightWave trick.

## Superb Support

I want to take a moment to commend DeskStation Technology on its superb support of Raptor owners. Shortly after arriving here in Maui (the site of my current animation job), a tropical rainstorm brought down the power in our area. Everything was fine, except only one of my Raptor processors was responding. A brief call to DeskStation's technical support showed that I had fried an EtherNet card in my Raptor. They overnighted a new card to me at their expense and put me right back on the road with an absolute minimum of downtime. Companies like this deserve recognition, and I am certainly happy to give it to them. See you all next month.

VTU

*David Hopkins is a professional LightWave animator and founder of Mach Universe, a computer graphics firm. His clients include EMI Records Group, Caesar's World Resorts and Merrill Lynch.*

Correction: The images in VTU's Dec./Jan. 1995 "Taming the Wave" were mistakenly missing credits. They were provided by SciFi Productions/Green Communications/Mach Universe.

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## TIPS & TECHNIQUES continued from page 30

### C.O.D. for First-Time Clients

The first time you do work for someone, it's not a bad idea to request full payment upon completion of the project. If the client is apprehensive about this, maybe you shouldn't be doing work for them. After all, if you get stiffed by your first five clients, how likely is it that you'll survive?

### Keep a Journal

Now that you've obtained your first job, take detailed notes about the amount of time it took in each phase. Compare the number of hours that you projected it would take against the actual rendering time. Compare the amount of time it took to model the objects with the projected time. It is likely that you underestimated the length of time it would take. Raise the bid accordingly for the next project.

If you have underestimated the time, detail it in the invoice. Mark it down as complimentary overtime hours. This way, the client will know that you put in extra work and feel like they received a discount, which they did.

### Ch-Ch-Changes

To stay ahead of the game, communication between you and the client is essential. I like to set up buy-off stages.

The client hires me for a project. I accept my one-third down payment, and provide them with a sample rendered frame from the animation and a wireframe preview of the move. I make them either accept it as is, or notify me of any changes right then. Changes after this buy-off stage cost them more.

If any changes were requested, I again provide them with a sample frame and a wireframe preview. If they accept, I proceed to make the final models and moves. Depending on the complexity, I will often make them buy-off one last time before pushing the big button.

Any changes made to the animation after I've pushed the big button will cost them the daily rate until it's completed. Again, good communication and setting the client's expectations are crucial to the success of this process.

### Nothing is Easy

If a client requests a change, don't make it sound too easy to fix. If so,

they will not want to pay for changes, and will request more of them. If the client asks, "Could you make the logo blue instead of red?" the best reply is to frown a bit, scratch your head, and say, "Boy, that's a tough process, but I can make it happen." Once they understand that changing things has complications, you'll be much better off.

To that end, never let a client watch you work. If they see you working and you make it look easy, they'll feel like they're being taken. "Heck, if it's that easy, we'll just buy our own system and we'll do it." If they must watch you, show some discomfort. Roll up your sleeves, sweat a bit, and project the face of a NASA scientist contemplating a launch problem with the space shuttle. The client will feel that you're some type of genius and will be impressed with your skills.

### Offer the Best Product

To stay in business, you'll need to charge enough to survive and produce quality work. A bad reputation is hard to overcome. The market is small and well-connected, so word travels fast.

### Charge for One-Time Rights

In most cases, the animations that you'll sell will be used for a single project. Sometimes, however, a client will want to use your animation again in a separate project. The rule on this is simple: If you are creating a logo animation, the client should be able to use it for whatever they want. If it is a specific animation, such as a snowman and Santa for a Christmas campaign, then if the client wants to use it again next year, they will need to pay. I recommend charging one-fourth of the original invoice for each subsequent use. If you have no problem letting the client buy the right to use your animation however they want, then let them buy it outright.

With a little practice and good note-taking, you will soon be able to make the necessary adjustments to run a successful business.

VTU

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# The Ultimate Toaster Peripheral

## Like It or Not, Buying a PC Makes Sense

by Mojo

**B**y the time you read this, LightWave has been, or soon will be, released for the PC market. I know a lot of people never thought they would see a NewTek product stray from the Amiga, but, like it or not, it's something we all have to deal with. You can scream "Amiga forever!" and bury your head in the sand or you can put aside years of platform bias and listen to the lowdown on a machine that's finally worth taking a look at.

For the dedicated Toaster user, nothing in the video PC world can match what your current setup can do, so don't start worrying yet about the demise of Commodore (see this month's "Last Word" for solace). But for those of you who do a lot of LightWave work, an IBM-PC or clone is something you might want to consider buying as a fast, cheap render engine (for details, see December's *LIGHTWAVEPRO*). And the fast-growing PC market has such a diverse and healthy range of good software and cheap hardware that buying one as a second machine makes a lot of sense.

### The Lowdown

At the risk of sounding hypocritical, let me start by saying that I used to *bate* the PC. But guess what I found out? Those thought-to-be-clunky "dinosaurs" are now four times faster than the most souped-up Amiga out there, and only cost half as much. You know what else? That old war-horse runs Photoshop, the best paint package/image processor in the world. Owning a PC is a simple way to open the door to a world of applications and software not available for the Amiga, and to a million places to buy it all.

For you animation buffs, LightWave will almost certainly be the 3D program of choice on the PC, and there are basically three types of machines that will run it. First and foremost (and for the non-3D heads) are Intel-based machines, which revolve around Intel's 486 and Pentium processors. (The Pentium chip is actually a 586, but Intel discovered they could not copyright a number, hence the chip name.) The Intel processors are more or less the equivalent of Motorola's 68000 series, the heart of our Amiga. Intel-based machines make up the vast majority of PCs on the market and are the same ones you see advertised on TV and in magazines.

Next are MIPS and DEC computers. These two companies produce their own machines based around a

custom processor. MIPS manufactures the R4000 series, the same type used by the Screamer and now the Raptor. DEC (Digital Equipment Corporation) is the maker of the new Alpha chip, a super-fast processor at the core of the machine commonly referred to as (surprise) the DEC Alpha. Both utilize the relatively new 32-bit Microsoft operating system, WindowsNT. No bones about it, these two RISC-based workstations are LightWave dream machines. Unfortunately, they cost a bundle and probably should only be considered by people who plan to make a living with LightWave. Everyone else will most likely be more than satisfied with an Intel machine.



### Inside the Computer Inside

What can you expect from a PC or compatible? Believe it or not, while we've been sitting smugly behind our Amigas, enjoying our technical superiority, *they* have been making a lot of progress.

The PC has, at the moment, basically two proven operating systems to choose from. Running on just about every machine out there is Microsoft Windows, their version of Workbench. Although most PCs now contain full 32-bit architecture, Windows was written during the heyday of the 16-bit computer, forcing new, 32-bit software to run in a 16-bit mode. The new Windows 95 operating system (previously known as "Chicago" and due out soon) will also feature full 32-bit operation, as well as improved overall performance.

Gaining much notoriety is the relatively new Windows NT, the fast-growing choice among many serious PC users. The specs would make even the most die-hard Amiganaut green with envy. A far cry from DOS, it offers pre-emptive (true) multitasking and protected mode memory, which means that if a program under NT crashes, it will not affect any others running. In fact, you can kill the crashed task and recover the memory it was using! NT also allows for 32-character filenames, and has built-in networking capabilities and a virtual memory system, allowing you to work beyond the limits of your RAM. It also supports Symmetrical Multi-Processing (SMP), which provides support for more than one main processor in a single machine (imagine an Amiga with *two* '040s!). Of

I Used to Hate the PC



# The Ultimate Toaster Peripheral

course, NT is full 32-bit and runs software designed for it more efficiently than regular Windows.

Windows 95 is slated to contain many of these same features, although an assessment of the OS is impossible since it is not currently available. While it is a sure bet that many regular Windows users will make the upgrade to 95 as a matter of course, NT is here now and quickly gaining support.

Which will prevail? No one can say yet. Although there is far more software written for Windows, most applications will run under NT using a patch called Win32-S. Since some programs will only work with one or the other, a safe bet would be to install them both on a machine. Since operating systems for the PC are 100 percent software-based (unlike the Amiga's hardwired Kickstart), you can boot into whichever OS suits your particular needs at the moment. This would allow you to run NT-specific applications in full 32-bit glory while maintaining full compatibility with the monstrously diverse general PC market (spreadsheets, paint programs, organizers, games, etc.).

## Cheap Hardware

OK, let's pop the hood and see how this baby compares with the old checkered ball. At the "low" end of the spectrum, the older yet tried-and-true Intel 486 (66 MHz) is roughly twice the speed of the 40MHz 040 Warp Engine, the fastest Amiga available. Given the relative affordability of a system based around this chip (you can get them up to 100MHz), I would recommend this as the minimum (especially for LightWave). For about a third more money, you can get the latest 90MHz Pentium, which runs at least twice as fast as a 486/66. This is probably somewhere in the vicinity of eight times faster than a stock Amiga 4000, yet the base machine is close to half the price. Really.

Since NT alone requires approximately 12MB of RAM, a base PC system for running LightWave should have no less than 16MB, preferably 32 (although most machines are upgradeable to at least 64, usually more). Microchips aside, the heart of any graphics machine is its display. This is where the Amiga always soared, peaking with a motherboard that could display and animate screens with up to 256,000 colors in a resolution of 768x480. This was, and still is, very impressive. However, true 24-bit image manipulation became the standard and the native Amiga never caught up, relying on third-party graphics boards to pick up the slack. Although there were (and still are?) maybe half a dozen 24-bit display boards, with the exception of the Video Toaster, none of them ever found much support. The programs that made use of them were few and far between and the relatively small Amiga market meant a small user base and therefore a slow, sometimes non-existent upgrade path. In the end, we all paid a lot more for a graphically advanced motherboard that had few uses in a 24-bit world.

The PC was always a graphics misfit. In fact, the machine itself was never really capable of displaying true

graphics of any kind—this was always left up to third-party developers. The result? A cheaper machine and—at last count—no less than 100 inexpensive graphics boards, ranging in price from \$200 to more than \$2,000, all with 24-bit color. This highly competitive market has produced many low-cost, high-quality boards with capabilities that far outreach the Amiga, and their high user bases have ensured regular upgrades and professional support.

Most of these boards fall under the latest standard of SVGA, offering resolutions of 640x480, 800x600 and 1024x768, with some as high as 1600x1200. Each of these resolutions is capable of displaying up to 16 million colors (known as 24-bit or "true color" in the PC world). The number of colors that can be displayed in any given resolution depends on how much graphics RAM you have installed on your board. (Several Amiga boards also have installed RAM, resulting in much faster display updates and graphics manipulation. The same principle applies here.)

Most boards come with 2MB of Dynamic RAM (DRAM), sufficient for 24-bit color in resolutions up to 800x600; higher resolutions get bumped down to 65,000 or fewer colors unless the DRAM is upgraded to 4MB. For faster graphics and better performance in higher resolutions, the quicker (and more expensive) Video RAM (VRAM) is recommended, although for LightWave work and basic paint operations, 2MB of DRAM is more than sufficient. If constant 24-bit image manipulation is your goal, go with VRAM. A good card like this will set you back all of \$400; half that for a DRAM card.

One can't help but wonder how any piece of software on the PC can keep up with so many display boards. I know one of the problems on the Amiga was picking a board that had the best program support. Fortunately, the PC has solved this problem by driving display hardware from Windows itself, not from within individual programs. All you have to do is install the Windows driver included with your display board, and presto! Any piece of software can utilize it. Pretty neat, huh? Keep an eye out for manufacturers such as Diamond and Number Nine.

## Time Warp

Although the PC may have overtaken the Amiga in the speed and graphics departments, it still can't hold a candle to it in terms of animation and video manipulation. Reading the latest developments in the PC video arena feels oddly like flipping through a three-year-old copy of *AmigaWorld*. While the Amiga's custom co-processors always made this a snap from the beginning, PC video engineers are currently trying to make the old dog do new tricks. As a result, most of the high-end video products available on the PC are either no match for the Toaster, very expensive, or both. In fact, many product

continued on page 80

"All it will take to make the PC video-friendly is time and money, and the PC universe has plenty of both."

Pretty Neat, Huh?



# Area 51: Fiddle to the Coffee

by Douglas J. Nakakihara

## Where Toasters Play Second Machine

A

fter a hectic Thanksgiving weekend, the folks at Area 51, a new LightWave-based special effects company, were finally able to squeeze me in for an interview.

Although only in official existence for barely a year, this young company is hardly an infant in terms of experience. Owners Tim McHugh and Ken Stranahan represent an incredibly broad amount of experience, including stints at Amblin Imaging (*seaQuest DSV*).

Animators Richard Payne and Matt Merkovich bring their own impressive credits and talents to the Area 51 table, including work for Foundation Imaging (*Babylon 5*).



Area 51 is a LightWave-based special effects company consisting of (clockwise from left) Tim McHugh, Matt Merkovich, Ken Stranahan, Richard Payne and (not pictured) Glenn Campbell.

Historically, all of Area 51's work has been done on Amigas, with some help from a few PCs and Merkovich's personal Raptor. They are now in the process of installing a network and integrating Flight Technologies' Barnstormer, based on the 275MHz DEC Alpha chip, into their system.

**VTU:** [To Ken] How did you get involved with the Amiga?

**Ken:** Well, I got into it because of Lee [Stranahan, Ken's brother]. He was starting up a user's group and this magazine [VTU]. He sent me a little "Breadbox" magazine [the forerunner to VTU] and a tape. I saw some of the stuff he was doing and I was just astounded. He was always doing video and stuff, but he was never an incredible [traditional] artist. However, he was doing some tremendously cool stuff on video because he really knew video, and he already had the Amiga before he ever got the Toaster. I looked at it and I was painting and designing furniture. After banging stuff out of steel, cutting metal up and welding it and making furniture and all sorts of neat designs, I realized, "I can do this in an hour on this computer and it will look just as good." So my brother basically sold the Amiga to me, and I was hooked.

I had it for about a year when I was living out in Massachusetts. I was doing wonderful Rend24 animations—fun stuff. Me and my friend would stay up all



night—basically have no life—and play on the computer. [Eventually] my brother said, “You should think about moving out here and getting jobs.”

At the time I was working in a museum doing traditional art stuff....I realized I was not going to make any money whatsoever as a traditional artist.

Looking at my existence in Springfield, it was like, I had to jump into the stream, so to speak, someday. So OK, I'll start doing it and see how it goes. I moved out here and lived for a couple of months doing some different projects—infomercials and things like that.

Then John Gross stayed at our house, because he got a job out here working for *seaQuest*. I was working on some cool things using splines and all sorts of spline models. He said, “Why don't you bring in your stuff and show everyone, because you're doing cool stuff.” So I brought it in, I was hired, and I worked there for a while. Then I left and got here somehow, and that's how it all started.

**VTU:** What's your background, Tim?

**Tim:** I've been doing traditional effects for about 16 years now: bluescreen compositing, matte painting, motion control. I started out just as motion control was kind of taking off. It was right after *Star Wars*.

When I was 21, I had my own stage at Universal for shooting motion control. We had a 32-foot track and a giant blue screen and we just cranked out shots. A guy named Bob Bailey [the former effects supervisor on *Viper*] and I had a stage together—there were various partners, but he and I did the most work together.

So we basically shot anything you can think of with motion control, anything that flew for a number of years.

On a Panasonic commercial, we flew Reggie Jackson out of a room. On *Blade Runner*, we shot almost all but one of the flying car shots and the flying blimp shots. Bob did some great matte painting photography. I was part of the motion-control team on that show with some other great people that have since converted to CGI work.

I also did motion control and matte painting work at Disney. We shot a lot of EPCOT projects and ultimately the Captain EO 3D movie. [I worked on] *Dick Tracy* at Disney using a lot of blue screen photography and sodium screen. We did matte painting and miniature shots. That was interesting in creating a whole new world for Dick Tracy. I also worked on *Lost Boys* and *Earth Girls Are Easy*...

**VTU:** Motion control is like a camera...

**Tim:** It's a camera hooked up to a computer. Basically the pan, tilt, track...

**Matt:** Virtual LightWave.

**Tim:** Yeah, LightWave with a real camera instead of a

little one that's in a box. With definite limitations on how far you can go on each axis. And you can't just fly through a model, you actually will just crash into it and destroy things, which did happen from time to time.

**VTU:** “Oops, I broke your model. We need version two.”

**Tim:** “Oh, we just killed the *Galactica*...”

**VTU:** Did you work on *Battlestar Galactica*?

**Tim:** [pause] Yeah. It's funny because when we met on *Space* [a new project for FOX-TV], the two titles that always come up—and I don't know why—in these meetings with art directors, directors and producers...they always say they want it to look really cool like *Blade Runner*. And on the low end of the scale, not that *Galactica* stuff. I worked on both of them, so I feel, OK, I'll just split the difference and make your show. I was lucky enough to be at Apogee three or four years ago, when we started to do *Unsolved Mysteries*.

They just didn't have the money to do the models and go off and shoot on stages. Joe Conti was there and he had some Toasters, and he said, “Well, let's just give this a try.”



This image from the TV show *Hercules* was animated, rendered and composited entirely with LightWave 3D.

The deal I had from Apogee was I would try the Toaster, see what it could do. But if it didn't work, I didn't want to take the job and not deliver. They had to essentially give me the stages to shoot traditional, at whatever the price was. In other words, we guaranteed the show would get done. We'd give it a couple weeks on CGI on Toaster, and if that worked, great. If not, we finish on a stage and everybody is still happy, since we're kind of using this as a guinea-pig test case. They agreed to that, and luckily the Toaster worked out terrific.

We were very happy with it.

I look at it now and it is very primitive compared to what we can accomplish today. It definitely showed right away where the future was going. It was very great to work on it. We had some terrific artists we worked with throughout the years. Literally, by making a couple UFOs fly around for *Unsolved Mysteries*, we could kind of project forward and see how you could do a show like *seaQuest*, just by increasing the number of Toasters. We went from four Toasters to 40 and then 60. Anyway, it's worked out real well.

[Apogee] is no longer with us. They chose to go out of business a few years ago. Well, you know the people that have giant motion-control systems and optical printers and everything else are looking for things to do. More and more people are combining it. I just came back this evening from a major effects facility



that has large stages and they do models and motion control, but I did see a couple Toasters on the desks, too. And they are doing new kinds of hybrid work. What I find the most fascinating is live action, motion control and CGI all blended together.

The fascinating thing about it now is, you know in the *Galactica* days, when you spent your \$100,000 building your *Galactica*, you had exactly one of them. It could work on one stage at one time with one crew, getting one shot.

Now, when we build the *seaQuest*, you can have a number of them.

**VTU:** Your company has come a long way in a short period of time.

**Tim:** Our first year, which we're coming up on the anniversary right now, was a lot of sacrifice. Ken put in more hours than he'd imagined. We were fighting to get jobs done. The money would run out, but we still wanted to finish them and do a good job.

**Ken:** We've always kept a focus on what our intentions were. I've always kept a good eye on the equipment we need and what kind of talent we're looking for, so we've never run into any problems. Never any major problems.

**Tim:** Nothing we couldn't overcome.

**Ken:** We've always been going forward, at a good pace. So I've been very positive about what we're doing.

**Tim:** It's an exciting time for us. We just moved in here three weeks ago and we're already talking about doubling our space by taking over upstairs. *Space* will require at least that much room. We'll probably have a group of 10 or 12 people working on *Space*...on two continents. We're now talking to [people in] Australia about getting some work done there and interfacing with what we do here. So it will be an interesting project, but we've taken all our growth one step at a time and—knock on wood—with great talent and great customers, it's worked out nicely.

**Ken:** One of our major focuses is that we wanted this company to be based on talent. That's the primary

concern. Plus, with Tim being in the business, we've had enough gigs come in that we've turned down ones that we don't like and we've picked up ones that we like. Because it's our company, we have a lot of control over what we're working on. We only want to work with people who are nice to work with. We only want to work with good producers.

A lot of people are really big on the equipment and the fact that the equipment just sits there if you don't have somebody running it. A lot of different facilities do have button pushers and not artists; that's [not] really what we're trying to focus on. Because we know in a year, the piece of equipment you bought is just going to be last year's piece of equipment. The talent that you have is always going to be good. It's always going to be able to produce excellent stuff, no matter what [equipment] the person's running.

**VTU:** What other things is Area 51 working on?

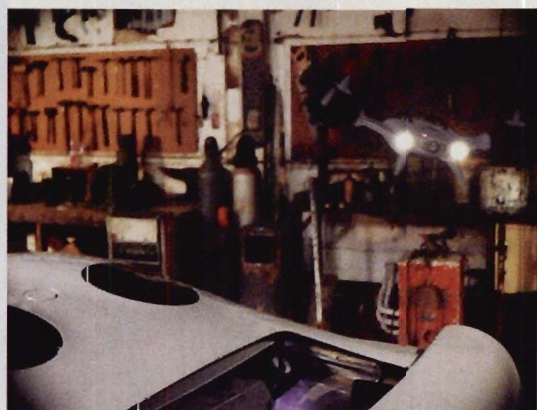
**Ken:** Lately we've been picking up a lot of different gigs. Most recently we've been working on Clive Barker's *Lord of Illusions*. Film-res. It's a real challenge because it's a shot that is photorealistic. It's just a shot that I didn't think we'd get the chance to work on normally.

**VTU:** You're talking about the one where the flesh comes off the head?

**Ken:** Exactly. It's not a typical CGI shot. It's not a piece of hardware. It's not in space. The effects supervisor on *Lord of Illusions* is very excited about it, too. This shot would be traditionally done using practical effects—hands down. Melting a wax head.

Blowing apart something like that. This is something that hasn't been done before. I'm almost positive after the tests we've been doing, it's

going to turn out incredible. I'm really happy about it. We get a lot more control in CGI than we'd get blowing apart a wax model or something. If we want to add more blood... If the sensors don't like it, we can take away blood. It gives us a tremendous amount of opportunity to show what LightWave's capable of.



A LightWave-generated probe was composited with live action for the television show *Viper*.



**VTU:** I think the readers will be interested in how people can get into this business.

**Richard:** Send demo reels. We are always open for demo reels. We'll get back to them and we'll tell them our opinions, or at the very least, we'll say, "This is good, but you need to work in this area. You know, you might try this, and once you do, send us another one. We're always open."

**Matt:** I can look at a demo reel from the same guy as his work progresses. Nobody's going to burn a bridge by sending something that might be premature and say, "Oh, I'll never look at another thing he does."

**Ken:** You can look at a reel and figure out a lot of things. There are so many people out there making a living doing flying logos, so you're going to see flying logo stuff on there. If we just looked at it and went, "Well, they're not doing good spaceships" or "They don't model well," maybe they just haven't had the chance to show what they're really capable of.

**Matt:** A demo reel that's solid, that's not necessarily exactly what the other person wants, where they can't see their product already done, will get you a second chance.

Foundation Imaging looked at my demo reel and said, "Wow, this is really great stuff, but we're not going to just hire a guy who does really good flying logos and some of the other stuff that you've done. Throw together some spaceships. Send us some stills." Over a week, I put together like 23 seconds of spaceship animations flying around. And when I sent that to them—and the whole intention was to do spaceships that already looked exactly like the ones in *Babylon 5* as best I could in a week—the second I sent that tape out there, it was like, "Great [claps], come on in."

**Ken:** People are not hired specifically on demo reels. I wasn't hired on my demo reel because I never had a demo reel in my life. I don't have editing equipment so I couldn't edit one really nicely and I couldn't put together professional audio and all that kind of stuff.

When I got hired, I didn't have a PAR. I was doing Rend24 animations and I don't think I even showed anybody any of my animations. What you have fun at what you're good at—that is what you show people. You make it explicit. You say, "I really enjoy this. Here are some of my models."

If people say, "I want to get hired at this place, so I need to have network stuff on my demo reel, [I would ask], "How are you supposed to work on network shows if you don't already have network stuff on there?" The big falsehood in the industry is that you have to already have done really cool work to get hired. Actually, you just have to have the ability to show you're capable.

**Richard:** And the ability to show you can think.

**Ken:** The reason that LightWave is so unique is that 90 percent of the people I know using LightWave got a system at home, started working on it, and got hired. And that's how they got into the business.

**Matt:** That was their college investment.

**Ken:** If you went to college for CGI and stuff, By the time you got out, your software would be out of date.

**Richard:** What you specialized in, people wouldn't be using anymore.

**VTU:** What makes Area 51 so different and successful?

**Ken:** One of the ways I like to look at it is that each animator is like a point-man on a shot. We've got all of the abilities of all the different animators here.

Somebody adds focus and that particular person takes a shot and puts a focus on it. They are allowed to hone it and say, "Richard is really good at this. Richard is awesome at this. Let's see what you can do."

Because there is nobody sitting there saying, "Don't work on that. This isn't your project." I'm allowed to say to somebody else, who's heading up a shot, "I've got an idea. Try this out." But because he's point-man, he always focused on how the shot's going to be done. So he can say, "We don't have time for that right now, we need to work on this." But because all of the animators are working together, you're really a lot freer to be able to talk about it and get ideas out there.

We have talented artists that can go into a shot and give it more than what is expected. We'll do stuff that

wasn't written into the storyboard. We'll push it a step further. That's why we're doing shots that haven't been tried before and stuff that looks really incredible. The animators have the ability and they are allowed to take the shots a step further. That's one of the unique things that came out

"One of our major focuses is that we wanted this company to be based on talent. That's the primary concern."

of the fact that people can have these systems at home.

When LightWave goes to the PC, one of the things you're going to see is everyone out there [using LightWave]. Animators for the big companies are going to buy LightWave for home use. What's going to happen is everyone is going to be trained on LightWave.

**Matt:** The guys who are working on big systems at work and have LightWave at home will start doing little side jobs every once in a while. There is going to be such a huge number of individual little tiny coffee shop animation houses that are all capable of film-res, super-high-quality animation. These guys already have the fundamentals of 3D because they're working on Wavefront or Alias, and they'll take that into LightWave.

**VTU:** Area 51 seems to be really taking off.

**Tim:** So far, everyone's excited, and if the cappuccino holds out, I think we'll get the shows done. If one or two Toasters go down, we work around it. If the coffee machine goes down, we close up shop—it's all over.

**Ken:** It's not the equipment, it's the caffeine.

VTU

#### EDITORIAL EVALUATION

##### Circle number on Reader Service Card

I found this article:

Very Useful  
Circle 039

Useful  
Circle 040

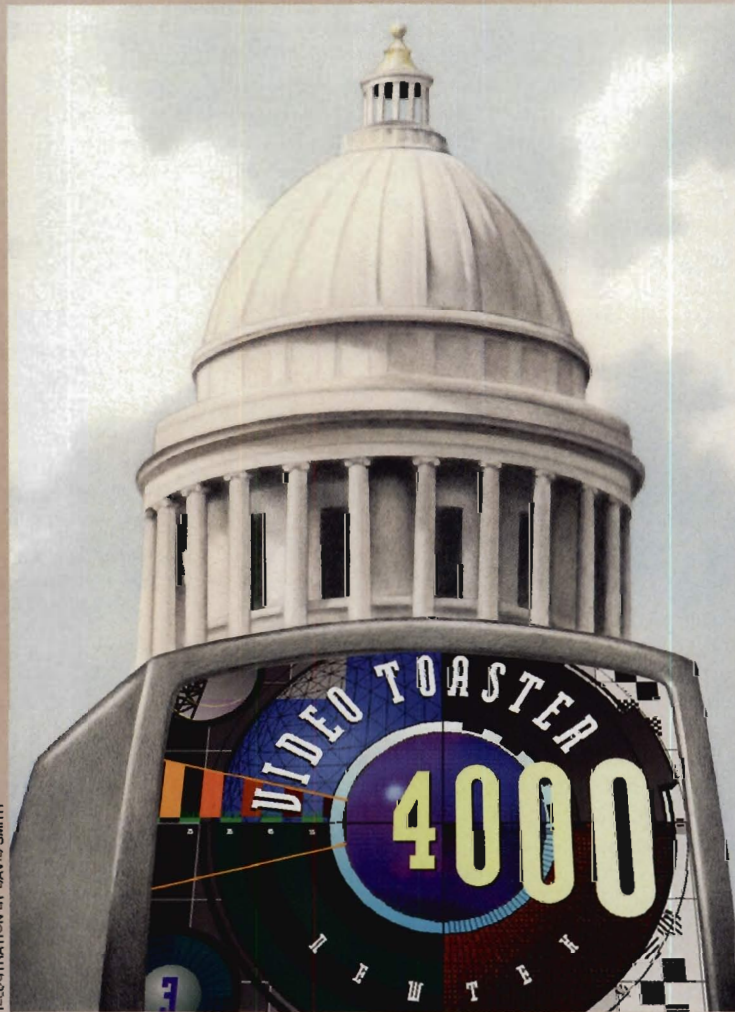
Not Useful  
Circle 041



# Good Enough for Government Work

## The Toaster at Work in City Hall

by Stephen Jacobs



**T**he saying "Good enough for government work" used to mean that work done at less than 100 percent was OK, that it "would do." When it comes to the Toaster, that phrase takes on a whole different meaning. You'd be surprised to find out just how much local government offices are making use of video these days. And, as we all know, where video goes, so goes the Toaster. In the following pages you'll meet people in Rochester, New York's City Hall, and in the offices of the New York City Fire and Transit Police departments who

use the Toaster as part of their production studios. Their departments and roles are different, as is the video they produce, but they all have two things in common: their goal is to provide better living through video, and the Toaster helps them do it.

Whether they're producing public affairs cable shows, training materials, public service announcements or public relations tapes, there are some similarities between the three government offices we'll look at here. Each of them has Toaster 2.0 and Amiga 2000 systems



that were purchased several years ago. In all the departments the Toaster is one small, but heavily utilized, part of a full-blown studio setup. In all three cases, the Toaster lives in the smaller, second cuts-only or A/B-roll edit system used by the department. The Toaster's signal is sent throughout the studio and is used for switching, keying, still-store and character generation.

The lack of real-time animation playback, and the lack of time in heavy production schedules to learn LightWave, keep 3D pretty much out of the picture for these producers. All of them wish they could get the funds allocated from their annual budgets to upgrade to a 4.0 system, preferably with a 4000 board and a 4000 box to run it in.

Similarities aside, let's see what video's doing in government today and how the Toaster lends a helping hand.

### **Government Video Blossoms in the Flower City**

Rochester, N.Y., is a visual kind of place. As the hometown of Kodak, Xerox and Bausch & Lomb, Rochester has taken to promoting itself as "The World's Image Center." The city has a modest two-man video production team promoting its image, and sends programs to its residents. James Barry and Dwight Vesty forge the magazine show *Your City Today* out of their City Hall offices. Barry's been producing the show, formerly known as *Your City in Action*, since 1988. Vesty, who had previously done a cable show for the Rochester Libraries, joined Barry a few months later. Both have won their share of national awards for their work as independents, as well as for their video shows for Rochester.

Barry's a citizen of Great Britain but now resides in Rochester, near his wife's family. The former audio engineer started in the audio end of the local Rochester video production industry in 1980 and worked his way into producing video for local ABC and PBS affiliates before taking a job with the city. Vesty's a hometown boy, born and raised in Rochester, with a high school stint at the prestigious Eastman School of Music and college degrees focusing on music composition as well as film and video. Both men credit their musical backgrounds as aids in pacing and editing their work.

*Your City Today* airs four times a week in different time slots on the government channel provided to Rochester by Greater Rochester Cablevision, a Time-Warner affiliate. A new show plays every two weeks. "The rest of the programming for the channel is arranged with WXXI [the local PBS affiliate]," says Barry. "All government programming used to air on the public access channel, but that doesn't give you a consistent viewership. Public access has primarily a surfer viewership. We wanted people to watch us regularly, and wanted quality educational programming on the same channel to reinforce that."

*Your City Today* and the public service announcements that air along with it, and on other stations around Rochester, are Barry and Vesty's main focus. The show covers topics of interest to Rochester residents, including city programs that allow citizens to get grants to improve their property by planting gardens or maintaining their homes. It also features things like safety tips, leaf collection schedules and other information.

With just the two of them to write, shoot and edit a 30-minute program every two weeks, footage has to do double or triple duty. "We try to shoot footage that will serve us in several different ways," says Barry. "If we're doing a shoot for a five-minute segment on a city program, we'll try to reuse it as documentation footage for the granting agency that helped fund it, or use it in another outreach tape we might send to neighborhood associations."

Barry and Vesty have a mix of Hi8 and 3/4-inch equipment they use to get the job done. The main system is an A/B/C-roll on-line system. The Toaster controls a secondary Hi8 to 3/4-inch A/B system. Their main switcher is a Grass Valley industrial unit, but they also use the Toaster for switching, digital effects and keying. Barry and Vesty used the Amiga for video before they had a Toaster. They use a lot of DPaint anims, along with Toaster effects and framestores, in their public service announcements and in the beginning of the show. "The show opening uses an animation of a photo album," says Vesty, "and different pictures fly in and fill the pages of the album. The album is a DPaint animation, and the pictures that fly in are different framestores of the segments from that week's show and photos of the Rochester area. Rochester was one of the first cities in the country to have a city photographer, and we've got an incredible photo archive of the city from the early 1900s on. The Toaster's framestore and effects allow us to take good advantage of that resource in the programming that we do."

Public service announcements created by the pair cover the full range of city programs, from announcements of free concerts in Rochester's summer festival tent to recycling tips to drug and crime prevention. Two standout examples are their H.E.A.T. and "Stop The Violence Poster Contest" PSAs.

H.E.A.T. was a city program to "bring the heat" onto local crack houses and featured "monochromized" video of people closing down a vacant house. The Toaster was used to bring in a single brilliant match flame keyed into transparent text of the program's name. For the poster contest PSA, the winners were taped at the awards ceremony. Their images were run through an old Live board from A-Squared, allowing Barry and Vesty to create a low-res animated "wallpaper" of different students. They then used the Toaster to fly framestores of the winning posters over the animated wallpaper, title the images and identify the winning artists.



# Good Enough for Government Work

Barry and Vesty's only complaint about using the Toaster is their lack of time to learn more techniques. "I look forward to times like Christmas vacation," says Barry, "so I can take a day just to come in and play around with the Toaster to learn some new tricks."

## Burning Down The House?

New York City's a big town. A big town has to have a big service force. There are thousands of firemen in hundreds of precincts all

across the Big Apple. Fireman, like policeman, have a set of skills that need to be kept razor sharp, both while in training and after decades on the job. Keeping the skills of a force that size up to date is no easy task. Video is one of many weapons in the arsenal the Fireman's Academy uses to keep the force in fire-fighting trim.

Captain Jim Salami (pronounced SAL-a-may) started the video unit at the academy eight years ago. He'd been a firefighter for

some time and was attending Hunter College through the department, working on a film-making degree, when the agency advertised that it was starting the unit. "We started with old 3/4-inch equipment," says Salami. "We always had trouble generating graphics and titles for the first few years. We had some old ICM stuff that cost many more dollars than it was worth."

Salami's department started with just two people, and they were doing training tapes exclusively. Four years ago, the division branched out and began producing PSAs. The Toaster arrived just in time to help the PSA effort.

"When the Toaster came out, it was a big plus," says Salami. "There was real quality there. The number of fonts alone, compared to the ICM stuff, gave us 10 times more than what we were used to."

Two years ago, the NYC municipal cable network gave the fire department the ability to access 250 fire department locations for two hours/day, five days a week, and the system is scheduled to go up to four hours a day soon. The network enables the fire department to create *FDTV*, a magazine current events and talk show exclusively for fire department personnel. The 11 guys in the video unit (seven to eight involved in the production end, three others that help out with stills and other AV support) produce three different shows for the first three weeks of the month, and then a fourth summary show that covers the highlights of the first three. Again, though the Toaster lives in a secondary, 3/4-inch U-matic, cuts-only editing system, its signal travels the length and breadth of the studio, providing character generation for IDs in live spots, backgrounds and stills. It even switches the live shoots.

Most of the guys in the unit have a specialty. Salami's editing and Toaster specialist these days is Fireman First Michael Racioppo. Racioppo's been with the Department since 1979. He didn't have any video experience before joining the unit, but he'd had related experience. "I'm a photographer," says Racioppo, "and my wife's a writer for bridal magazines, so over the years we've kind of learned desktop publishing and graphics programs together, like Free Hand and others. So I felt comfortable behind the Toaster. It's just like a Mac. I learned CG and Paint pretty quick. I've tried some 3D, but I never really became comfortable with it. Since we've only got an Amiga 2000 and Toaster 2.0, we can't really use it without a still-frame deck anyway."

Salami's unit hasn't given up making training tapes for *FDTV*. Racioppo says he works on a lot of 20- to 30-minute training films. "They can be sent around the world and look high-quality because we use the Toaster," says Racioppo. "We do 12 to 15 training tapes a year and some projects that are less formal—things like training tips, safety tips, new techniques, kind of refresher programming. We do some PSAs, stuff like Christmas tree fire safety, installing smoke alarms and conserving water. That's more on the public information side."

Racioppo's enjoying his stint in the video unit. "You never stop learning. The equipment may be the same, but you're always learning new techniques, new methods." As for Capt. Salami, he's resubmitted that requisition to upgrade the Toaster. It got turned down last year, but maybe he'll have better luck in 1995.

## Underground Video

Manhattan, Queens, Brooklyn, The Bronx, Staten Island...and the Subway? People who've lived in New York City know that the subway system is almost a city unto itself, with its own stores, restaurants, economy, performance sites



The H.E.A.T. PSA uses layers of Toaster CGs and moving video of flames that have been keyed through.



This *Your City Today* teaser for a graffiti removal segment uses TPaint combined with DPaint IV animation.



and more. It also has its own police force, almost 4,500 officers who must meet all the requirements of the New York City force and more. The New York Transit Police's Video Unit produces tapes for training the force and doing community outreach.

Police Officer Duane Dickerson went to Farleigh Dickenson University, where he majored in film and video. He spent some time working in a United Artists/Columbia-affiliated cable station doing production, but eventually found himself wanting a change. He'd taken the aptitude test for the police force when he was in high school, and since he'd done well, he decided to leave the production world for the force in January 1986. He worked in downtown Brooklyn until 1989, when he became an instructor at the academy and then transferred to the Video Training Unit, which has now changed its focus to become an overall video unit. "We're now more of a public relations unit," says Dickerson. "Lately we give out training material, but [it's] shorter material shown when the chief is speaking to the troops. It's like corporate video."

The Transit team has a little more breathing room than the other units in this piece. They produce about one 15-minute tape a month, which has either informational or training value. Unlike the Fire Department, there are no assigned specialties within the group. "We all pretty much take turns in everything, [such as] lighting, camera work and editing," says Dickerson. While they don't put stuff on cable for the public on a regular basis, they do work with the transit authority's monthly program from time to time. "We'll do things with them to make the public aware of what's up and coming, like things you can and can't do on the subway. They're gonna air our crime prevention tapes."

As with the Fire Department, the Toaster's arrival made a big stir. "When we first got it, we couldn't get enough of it. It was fantastic that all that stuff could be fit into one station and do all that work. Unfortunately, we haven't been able to upgrade it. Even so, it's been more solid than our other machines. It's all been pretty consistent—the Toaster, the Amiga, the S-Video board and the Vscope."

The transit police's Toaster performs the same type of tasks that the other government machines do: graphics, switcher, character generator and controller for a cuts-only edit station, the b-station for the Unit.

The extra time the transit police's video unit has shows in the depth of their work. *For Our Own Sake* is a training/refreshers tape that reminds the officers of the importance of proper procedure and "tactics" in a situation in which firearms may be involved. The transit force uses a large undercover contingent on a daily basis. This puts perpetrators in the uncomfortable situation of

never really being sure if a potential victim is an average citizen or a cop. Unfortunately, when a uniformed officer comes upon what appears to be either an altercation or arrest, he may also be confronting an undercover officer without knowing it. The tape illustrates this point with an almost "Rashomon"-like approach, showing an altercation from the point of view of an eyewitness, a uniformed officer, the alleged perpetrator and two undercover officers. The video unit used the Toaster to reduce the footage of the altercation to monochrome, and used the "bullet hole" transition to communicate the negative results of bad tactics. This stylized footage is mixed with interviews with undercover officers who've found themselves staring into the muzzle of a peer's 9mm.

Like all of us, Duane Dickerson would like to upgrade the unit's Toaster system. Like his peers in government service, he will probably have to wait out the trend in shrinking city budgets.

### A Bad Rap?

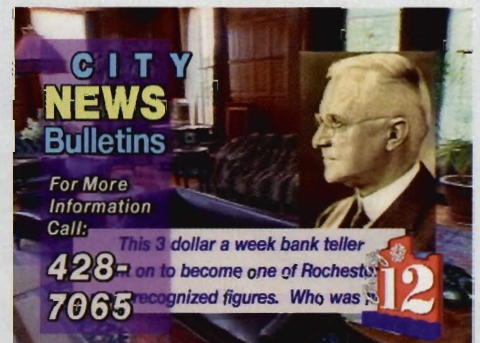
Government employees have been getting a lot of negative publicity in the last couple of years. They've been stereotyped as people who don't have an interest in working hard, staying within limitations, or serving the people in their communities.

It sure looks different here. These hard-working government video producers, empowered by the Toaster, are working around limitations and low budgets to provide us with better services and better-trained personnel to protect and serve. In public service, there's room for video and room for the Toaster.

You've seen what's happening in New York; take a look around your state and local government. They may be using video there. And they may have room for you.



This *City News Bulletins* promotion includes a logo and CG imagery added with ToasterPaint and ToasterCG.



A segment about famous Rochesterian Hiram Sibley utilizing freeze-frame, TPaint and CG functions.



# Exploring Amiga/Mac Emulation

## No Amiga is an Island

by Erik Flom

While it is possible for one person to script, shoot and edit all of his or her own projects, this rarely occurs in the world of video production. Clients usually bring existing ideas and artwork to be used by the production team to visualize the project. Storyboards and pre-production art must then be relayed back to the client for final approval. And, during the course of production, various elements might have to be processed by several different artists and/or software packages. Audio, video and graphics must all seamlessly integrate to send a unified message. To that end, it's vital that the Amiga/Toaster be able to share images, sound and data with other computers, such as the Macintosh.

mation about CrossDOS in your WorkBench manual.) Not only did this open up a new link to the land of the PC, but by using Apple File Exchange on the Mac, Amiga users could transfer files to the Mac using a PC-formatted floppy. Like a little lifeboat, CrossDOS and a PC floppy made it possible to easily transfer small packets of data between all three platforms without the need for special hardware.

The primary limitation of floppies, though, is the capacity of the disk—low-density disks can only hold about 720K (one framestore), and high-density disks are limited to 1.44MB (or about 2-3 RGB images). So, just like a rowboat, you have to load up as much as will fit in one trip, travel over to the other side, and then off-load all the data once it's there. The file size limitation can be a major inconvenience for artists working with graphics or other large files. Transferring more than a few megabytes of data can get tedious, though, as with use of a modem connection, the cost to implement it is low.

The traditional method of moving information between two computers has been to use two modems (or a null modem cable) and some communications software on each side. While this works, it is usually slow, tedious and fraught with peril. Like those crossing the rickety footbridge in *Indiana Jones and the Temple of Doom*, you never know when you might find your path cut off—casting your precious data packets into the raging torrent below.

Beyond the problems of just being able to get the two computers to connect properly and determining such arcane details as "port speed," "handshaking" and "file transfer protocols," there's an inherent difference in the way the Macintosh stores and identifies files.

Where the Amiga stores only the data for a file, and uses an optional ".info" file to store the icon data separately, the Macintosh stores both data and icon all in one file. Since there are two separate branches (or parts) to any Mac file, they are referred to as "forks." The data is stored (appropriately) in the "data fork," and this is the part you'll almost always be interested in. The icon data (and other information used by the Mac OS) is stored in the "resource fork," and is generally in a form not usable by any Amiga software.

When Macs share files, the communication software automatically creates a "MacBinary" file, which joins



Until recently, transferring data between these two platforms has been like crossing a turbulent river—troublesome, slow, and sometimes hazardous. Now, a number of software and hardware products promise to bridge the gap, linking these once disparate platforms. This article will provide an overview of the products currently available, explaining how to get your data from here to there, and back, without getting your feet wet.

Several years ago, a company called Consultron released CrossDOS for the Amiga. This program enabled the Amiga to read, write and format IBM-PC floppy disks. It proved such a valuable addition to the Amiga that it was later licensed by Commodore and came free with every system sold. (If you're running WorkBench version 2.1 or higher, you can find infor-



the two forks together and adds a small 128-byte header to the start of the file, where Mac-specific information about the file is located. Unfortunately, when a Mac tries to send a MacBinary file to an Amiga, it usually renders the file unreadable by Amiga software. Some Mac programs allow you to disable MacBinary file transfer, sending just the data fork, which can usually be recognized on the Amiga. Conversely, sending files to the Mac without a MacBinary header will result in a file that can't be opened by clicking on it, since the necessary file information is missing.

Once the two computers are connected, file transfer can be painfully slow. At 14,400 Baud (a typical modem speed), it can take anywhere from five to 10 minutes just to transfer a single framestore. While modem speeds will continue to improve, the top speed will still be rated in mere kilobytes per second. If the two computers are close to each other, they can be directly connected with a null modem cable, and you can increase the speed by a factor of 4 to 8, but it'll still take a long time if you have several hundred RGB images you need to transfer.

All problems aside, serial port connections are still probably the cheapest way to connect two computers (assuming you already have the modem and communications software, and ignoring any long-distance charges). For people on a shoestring budget, this can be a workable solution for transferring those big files that won't fit on a single floppy disk.

However, transferring several hundred images can easily turn into an overnight ordeal—and that's if there are no problems with the file transfer or the modem connection! Fortunately, a number of better solutions are now available.

A faster, albeit more expensive, option is offered by the two Mac emulators available for the Amiga. (For a detailed description of exactly what a Mac emulator is, refer to the accompanying sidebar.) Both the Amax and EMPLANT products offer file transfer utilities that allow you to move files back and forth between AmigaDOS and Mac-formatted hard disks and floppy drives. In both cases, you have to run the Mac emulator, perform a two-step process of selecting the file on the Amiga side, and then choose a destination on the Mac side. Both pro-

grams also offer certain limited filtering features, allowing you to convert text files and strip resource forks automatically. It's also possible to select an entire directory for transfer, allowing you to move hundreds of files in a single pass. Trust me, this is more convenient than trying to manually copy 900 frames of an animation.

Compared to using floppies or serial ports, direct disk-to-disk transfer is amazingly fast. Since the speed is basically limited by your computer and disk controller, you can expect transfer speeds of 300 kilobytes/sec or more. It's almost like being able to cruise your data in a convoy down the

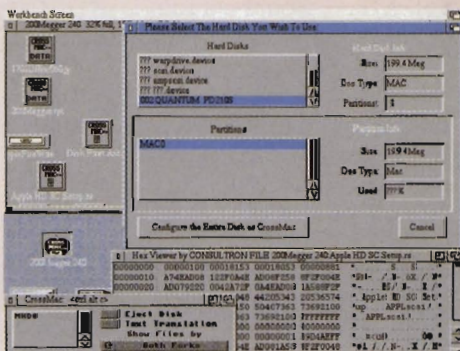


Figure 1

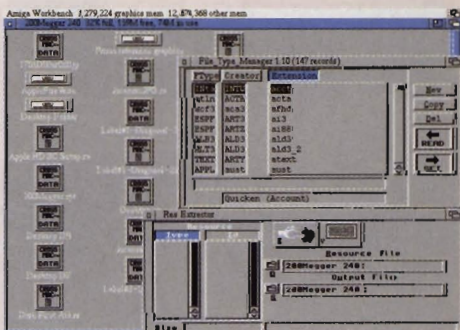


Figure 2

center of a brand-new four-lane suspension bridge. The speed and accuracy of these direct-transfer methods virtually eliminates the possibility of any file corruption or loss.

As convenient as this solution is, the emulator hardware can cost up to \$400, and once you find the Apple ROMs, they could cost another \$100. If you buy an EMPLANT and don't have a high-density floppy drive, you'll need to buy one—another \$150 or more. Then there's the "simple" task of installing the hardware and the entire Macintosh system. Though the benefits of having a full-blown Macintosh in your Amiga shouldn't be understated, this can end up being an

expensive solution if all you need to do is transfer a few files to a Mac floppy or hard disk.

Recently, two separate companies have announced software solutions that allow an Amiga to directly read and write Macintosh-formatted media, such as hard disks and high-density floppies. Media4 productions was first out of the gate with its package entitled MaxDOS, followed closely by the release of CrossMAC, from Consultron (of CrossDOS fame). Both programs offer the same basic capability to read and write to Mac floppies and hard disks, though CrossDOS also supports AMAXII+/AMAXIV floppy drives for access to low-density Mac disks.

What really makes these products stand out is their ease of use and overall speed. Instead of having to go through a pair of clumsy file requesters, copying files is as simple as dragging them from your AmigaDOS drive and dropping them onto the Mac drive, or vice-versa. In tests on an Amiga 4000 with a 40MHz WarpEngine, file transfers were up to four times faster than using the EMPLANT File Transfer utility: a 67MB directory of RGB images was copied from an AmigaDOS directory to a Mac hard disk in approximately one minute, compared to more than four minutes for EMPLANT. Transferring the same amount of data using a modem would take at least 10 hours.

On top of improved performance, both MaxDOS and CrossMAC offer enhanced file transfer capabilities that greatly simplify the task of moving data between the two different filesystems. Both can be set to recognize MacBinary files and provide transparent conversion into the correct type. (As an example, this is useful when transferring archived files to the Mac that were downloaded onto an Amiga from a Mac BBS.) Both also support Mac-HFS CD-ROMs, and can be configured for other types of CDs—though neither is a complete replacement for a standard AmigaDOS CD-ROM driver.

CrossMAC offers an innovative FileType database that will automatically embed the correct FileType and Creator information for data being copied to the Mac, allowing it to be recognized correctly by the Mac OS. The only drawback to the system is that it's based on the Amiga filename extension (i.e., .tif, .jpg, .rgb, etc.), which you need to make sure to tag



# What is a **Macintosh** Emulator Anyway?

**A**n "emulator" is hardware and/or software that attempts to completely duplicate the performance of another piece of hardware or software. As an example, RJ Mical used the Amiga as an emulator when developing the Lynx handheld video game system for Epyx. Other more recent examples include the emulation mode found in modern PowerPC Macintoshes to run old 680x0 Mac software, and in the "DOS Shell" on MIPS WinNT systems (basically, a 16-bit '286 emulator) to run IBM-PC applications.

The Amiga is unique among platforms in the range and quality of "emulator" products that have been developed for it. The most common emulators for the Amiga are designed to simulate other common computer systems like the IBM-PC and the Macintosh. The original Mac emulator, AMAX, was sold by a Canadian company called ReadySoft, and was released more than four years ago. The first AMAX was a box that plugged into an Amiga floppy disk port. Inside was a pair of Mac ROMs from an older 128K Mac, and some circuitry that allowed you to hook up an external Mac floppy drive. Macintosh SCSI emulation was supported on a number of Amiga controllers, allowing you to actually use Macintosh-formatted hard drives and CD-ROMs while running the emulator. (Unfortunately, it was impossible to access the Mac drives from the Amiga WorkBench.) When running the Mac emulator, AMAX basically took over the entire Amiga, and turned it into a black and white Macintosh. System performance was quite good, and compatibility was high. For its time, the price/performance of ReadySoft's product was exceptional, as the company was the first to offer a complete Mac emulation for the Amiga.

Eventually, ReadySoft released the AMAXII+, a Zorro-II card that plugged into any A2000, 3000 or 4000. Enhanced features of the board included faster load times, Mac floppy support for all Amiga drives, and a pair of serial

ports with Apple-style DIN connectors so you could hook the emulator up to Mac peripherals or (more importantly) an AppleTalk network. The one thing sorely lacking was support of 32-bit color QuickDraw. Without color support, a number of key applications, including PhotoShop 2.5+ and QuickTime, would not run.

About the time ReadySoft announced QuickDraw compatibility with the release of its AMAX-IV product, a company called Utilities Unlimited began promising a new Mac emulator—the "EMPLANT" (an acronym for "Electronic Micro-Processor Level

that of a Mac of equal speed. The accompanying screenshot in Figure 1, of a speed test on the EMPLANT, shows results that are on average greater than those found in a Quadra 950. Given the overall performance of the product, it seems to have an unparalleled price/performance ratio.

However, the most astounding feature of the EMPLANT Mac emulation is that it runs as a task on the Amiga, allowing you to switch between the Mac and the Amiga with a single keystroke. It'll even work on Toaster systems—though to take full advantage of the emulator's display capabilities, you would rarely want to run the two applications at the same time. As an example, it's possible to be running LightWave on the Amiga while running PhotoShop on the EMPLANT (see image on page 54). You're only limited by how much RAM you have to spare.

(As an example of how stable the emulator is, check out Figure 2, a screen capture of Wolfenstein 3-D being played on the Mac while the Amiga WorkBench can be seen obscuring the score panel at the bottom of the screen.)

In closing, it is with some sadness that we must announce that ReadySoft seems to have left the Amiga market. When contacted by VTU, ReadySoft confirmed that they are no longer actively developing for the Amiga market at this time. They will continue to support those units still in operation, but have no plans for future development.

Utilities Unlimited, on the other hand, is expected to release its long-promised 586 emulator for the EMPLANT. This product has been kept under tight wraps for the last year, and interest is reaching a fever pitch. If the emulator works as advertised, Amiga owners will be able to run any PC application, including graphic-intensive products like DOOM (the game), and Windows. When this product arrives, it will allow Toaster owners to run all three platforms (Amiga, Mac and PC) on a single computer, all at the same time!



Figure 1



Figure 2

Amiga Native Task"—whew!)—that claimed to do everything the AMAX offered, and more.

Eventually, the EMPLANT card greatly surpassed the capabilities of the AMAX product. Based on MacII ROMs, the EMPLANT now offers up to 24-bit color support for virtually every third-party graphics card currently available, stereo sound through the Amiga, dual serial ports and a built-in SCSI controller.

Also, due to specially optimized math libraries, the overall performance of the emulator is actually *faster* than



onto the end. This doesn't work when trying to transfer image sequences, since they often end in a frame number. Media4's MaxDOS solves this problem by allowing you to set the default FileType and Creator for all files being copied. The downside is that you have to set it for different FileTypes as necessary. Conversely, version 2.5 of MaxDOS will offer the ability to create a database of Mac FileTypes, and appropriate Amiga software needed to open it. This would allow a user to double-click on an Adobe PhotoShop PICT file on a Mac drive, and have it be automatically opened by some program like ImageFX.

Consultron's CrossMac product is slightly more expensive, but comes with a variety of utilities not found in MaxDOS version 2.0, like a small Hex file viewer utility, a tool to extract data from the resource fork of files, and a utility to rescue files from a corrupted Mac hard disk. Overall speed of the CrossMAC version 1.01 package was also approximately 20 percent faster than version 2.0 of MaxDOS. (It should be noted that the 1.0 version was approximately 10 times slower, and I only received the 1.01 version in late December. If purchasing this product, make sure that you are getting at least the 1.01 version.) The ConfigDisk utility, CrossMAC control panel and hex viewer are shown in Figure 1. (Note the CrossMac disk icon and the open folder in the background.) The File\_Type\_Manager and ResExtractor control panels are shown in Figure 2.

Media4 Productions showed MaxDOS version 2.5 at the Video Toaster Expo, but a version did not arrive in time for this review. I was able to get a few screenshots and play with the interface a bit. Most notable about the 2.5 upgrade are a number of improvements to help simplify the installation process, including a pull-down menu of device drivers

and full 3.0 Amiga Style Guide compliance. One nice new feature is the ability to see the black and white Mac icons for those files that have black and white icon resources. This feature is supposed to be available in CrossMAC, but I was unable to find any files that would show up with anything except the default CrossMAC icons. Figure 3 shows a sample of the MaxDOS Mounter control panel, where the Mountlists for the Mac devices are

created. Note the three open windows below the control panel—they're all folders from a Mac drive, complete with icons.

Figure 4 shows the new MaxDOS-Files and MaxDOS-Types commodities that are used to control the file translation and recognition.

Compared to older file transfer techniques, new products such as EMPLANT, CrossMac and MaxDOS seem like four-lane superhighways—installation is easy, transfer is as simple

as dragging and dropping files, speed is 2-3 magnitudes faster, and overall reliability is outstanding.

So, the next time you need to get something to or from a Macintosh, remember that there are a number of techniques you can use, ranging from free to several hundred dollars in price. The only problem is that the cheaper they are, the harder they are to use. For those with only the occasional text file or small graphic, a PC floppy or modem will work just fine. If all you need is to move lots of data between the two platforms, then MaxDOS or CrossMAC are excellent solutions. If you don't already have a Mac, you might consider getting an EMPLANT—for a few hundred dollars more, you can have your own Macintosh.

VTU

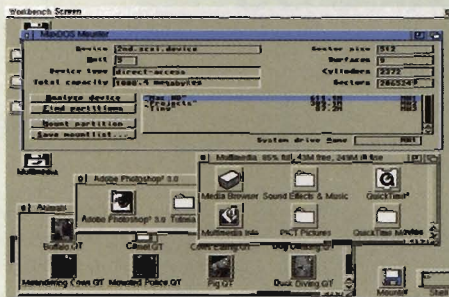


Figure 3

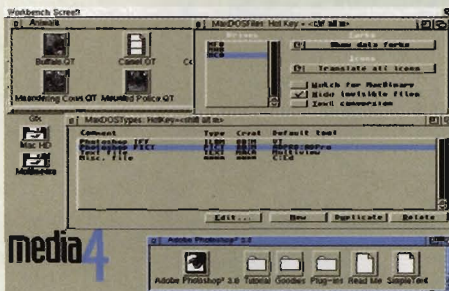


Figure 4

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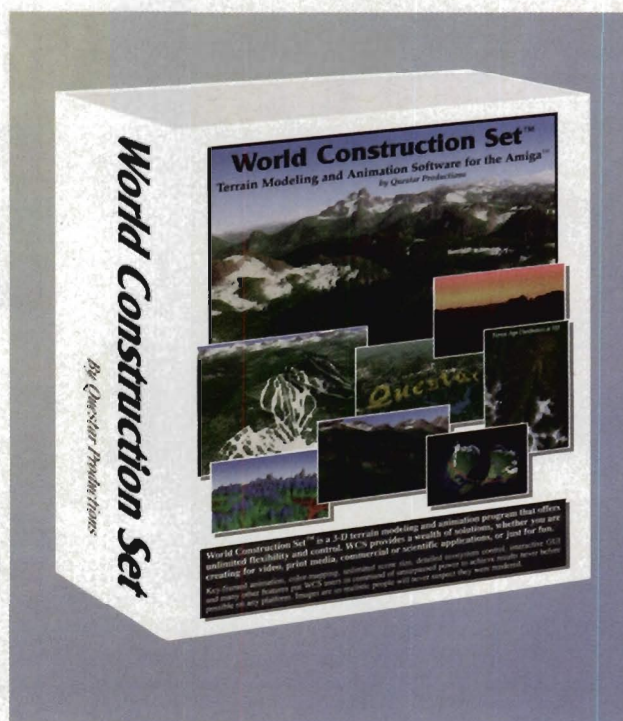
# World Construction Set

## Creating Realistic Landscape

by R. Shamms Mortier

One of the software genres that remains popular as both an addictive delight for computer hobbyists and a potential utility for professionals is that of "fractal scene generators." These packages are known for their ability to render near-photographic landscapes from lists of numerical data. Some of these numerical data lists are known as "DEM" files ("Digital Elevation Models"). Painstakingly collected over the years through satellite observations and other methods by organizations such as the U.S. Geographical Survey, DEM data exists for a wide selection of the Earth's topologies. The Amiga user has been treated to a wealth of fractal landscape software over the years. Among these are packages like Vista and Vista Pro from Virtual Reality Labs, Scenery Animator from Natural Graphics and Panorama from AmiGadget Publishing. The output from all of these packages can be formatted to interface with Light-Wave as either background pictures or animation data.

Though the aforementioned software seems to at first cover all of the possible needs of an artist/ animator in search of a fractal landscape for a production, the field is still wide enough to admit another member to the club, providing that the newcomer has something new to offer. Questar Production's World Construction Set (WCS) pushes the stakes of fractal landscape generation to yet another level with its almost limitless ability to allow the user to change every aspect of the elements of the rendered graphic.



"World Construction Set pushes the stakes of fractal landscape generation to yet another level."

### Module Control Panels

Unlike the competition's interface designs, which address the fractal landscape parameters in a global manner, WCS alters the parameters by applying changes to the data in four separate Module Control Panels: Database, DataOps, Parameters and Map View. A fifth module, Render, is accessed when the final output of the calculations is desired. Learning to maneuver in these control panels assures you of getting the expected rendering results. The modules can be accessed from the keyboard, from pull-down menus, or by clicking on the five graphic icons residing on the main screen. Let's take a look at them in more specific detail.

Every item in a fractal landscape picture that has the potential to be rendered with WCS comes from the data stored in specific project databases. The Database contains all of the information needed to render each object as a "record." Any record may also be turned "off" so that it does not appear in the render. This is quite convenient when specific area renders are needed rather than the entire DEM list.

DataOps ("Operations") represents another WCS module. This module is dedicated to interfacing

with data produced outside of WCS, so that it can be incorporated into the WCS environment. Here, DEMs can be "extracted" from USGS data files. There is a separate "Converter" that allows you to input WCS DEMs, Binary Arrays, Z-Buffers, ASCII Arrays and Vista DEMs (258x258), and output WCS DEMs, Z-Buffers, Color Maps and BIN Arrays. Imported DEMs can then have their relative elevations configured and can be interpolated to higher resolutions. USGS vec-



tor objects can also be brought into the program from here, as can DXF and "World Data Bank" vector objects.

The Parameters module is at the heart of WCS operations. It contains six specific requesters, each of which addresses important rendering command data. The "Motion" requester lists all available parameters for adjustment, from latitude/longitude placement to banking, scaling, sun positioning and much more. Everything is available for reinterpretation and tweaking in exact numerical increments. When you are satisfied, all changes are "applied" to the rendering data files. Inside of this requester is a "camera view" toggle that brings up a screen displaying the wireframe or shaded data in graphic form, an indispensable option in this complex arena.

A Color Editor in the Parameters list allows you to determine and adjust the colors of any of the ecological elements, from rocks and trees to sunlight, while the Ecosystem editor is where determinations are made as to what features are to be a part of your rendered world. "Settings" brings up a requester that allows for sizing of the output file, its aspect ratio, field rendering for animations, save options and paths, motion paths and vectors, colormaps, and whether to apply "surfaces" (external texture mapping) to the DEM renders. You could, for instance, apply a chrome-like texture map to your landscape in "settings." This is also where you apply "fractal depth," which we mentioned earlier as a determinant of the apparent detail of the rendered image. Other pre- and post-processing of the image are addressed here as well. A separate requester can be brought up that will allow you to set whatever current information you have altered as the new "default" for that DEM file.

The most alluring aspect of the Parameters module is the Camera View screen. This is where preview rendering happens, and the associated list allows you to tweak the ecosystem elements to your creative intent. A bundle of alternatives exist here for manipulating the final render.

"Map View" provides a topological view of the data, and it contains a wealth of 2D scaling, positioning and drawing features. You can set this view to your own area of coverage, or shift the view in any direction. The topological elevation views can be rendered in grayscale or color, though grayscale is probably the best choice for visualizing the slope of the terrain. Camera, Focus

and Haze positions can also be drawn in the topological view. It is even possible to render a series of zooms, save the graphics as individual frames, and set the whole business animating. The result is like a vehicle traveling toward the ground—very nice when this kind of footage is needed.

The Render command is fairly self-explanatory. Rendering obeys all of the conditions you have assigned to your image beforehand, including resolution detail, image size, storage path, and all of the parameters saved out and assigned to the drawing. Rendering time

varies according to the settings imposed upon the result.

### The Z-Buffer

This is a specific data type in WCS, and one that Questar would like to see NewTek, as well as other Amiga 3D developers, adopt. You might compare it to an alpha channel for rendering in 3D. Brighter values represent data farther from the camera view, while darker values are "up close." Z-buffers are created by WCS when it renders an image so that the program knows which elements

continued on page 70

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# CD-ROM Panorama

## Texture Imagery to Make Your LightWave Heart Sing

by R. Shamms Mortier

I remember a time (was it just yesterday?) when decent textures for the 3D objects in our animations were hard to come by. The last two years have seen a dramatic rise in 3D libraries for all platforms and purposes. Not only have texture libraries multiplied like rabbits in a short amount of time, but they have found the perfect medium: CD-ROMs. If you have a hard drive filled with your own textures, you can dump about 650MB worth to a CD-ROM yourself. Just contact AsimWare Innovations. For about \$100, they'll give you an almost undamagable CD-ROM stuffed with your imagery. (Think of all of the hard drive space you can free up!)

Commercial CD-ROMs come in many flavors these days, with everything from games to reference media to images, animations and sounds. We will concentrate on three very different discs in this article, though they all contain the kind of texture imagery that will make your LightWave heart sing. The best thing about CD-ROMs, other than the actual data they contain, is that they take almost no room to store and they hold more data than many users' hard drives are capable of. These days, when the price of storage media still hasn't come down fast enough, a \$200 double-speed CD-ROM player is worth its weight in gold for computer artists and animators.



"These days, when the price of storage media still hasn't come down fast enough, a \$200 double-speed CD-ROM player is worth its weight in gold for computer artists and animators."

### Texture Heaven

This selection is a bargain, and the most economical of the three CDs covered here. There are four drawers on the CD: 24-bit, 8-bit, Symbols and Thumbs. Thumbs are thumbnails, small representations of the images on the disc, a video catalog that you can peruse while writing down the images you like. The 24-bit images are 768x480 pixels, so you'll have to shrink them in order to use them as LightWave backdrops (use Nova Design's excellent ImageFX 2.0 or Elastic Reality's ADPro). Symbols are the standard international symbol set whose likenesses grace the restrooms and highways of the world, and these images are great for making your own signs in LightWave. Just project them on rectangular surfaces. The real beef here is the 24-bit (16,000,000+ colors) and 8-bit (256 colors) libraries. The textures contained number 245 Woods, 53 Marbles, 8 Tiles, 59 Abstract Designs and 18 Wilderness Scenery backdrops. Of all of these, I found the Woods and Marbles to be the best. In several cases, I used a Gamma correction (about a 75 setting with ImageFX 2.0) over the image before I stored my favorites to a hard drive. Gamma corrections lighten the image without fading the colors. I recommend that you investigate doing this before using almost any textures in a 3D environment, as textures usually look best when they





Figure 1: Texture Heaven volume 1 consists of four drawers and offers some appealing organic textures for a modest investment.

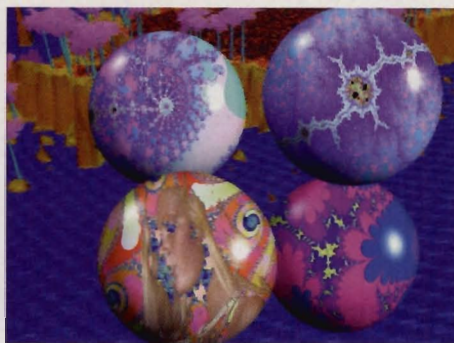


Figure 2: The Fractal Imagery CD-ROM from MegageM is bursting at the seams with all manner of fractal images ready to be used as texture maps.



Figure 3: There is no other CD-ROM like the Moving Textures volume. If you are a computer artist or animator, treat yourself to these beauties.

are artificially gamma-corrected first. See Figure 1 for an example of how these textures look when applied to spheres in LightWave.

### The Fractal Pro Image Library, Volume 1

This is an absolute gem of a CD-ROM, and texture obsessives will want to run to their nearest dealer to get it. If you are involved in the admiration and application of Fractal textures, you have to be familiar with Daniel Wolf, the head honcho at MegageM. Over the years, Dr. Wolf has been neck-deep in the creation of a series of software packages that allow you to explore and create all manner of fractal images, from Mandelbrot sets to Julia sets and beyond. Those who don't know him may be unaware that he also has been busy creating a large collection of pictures and animations that takes you deep into the fractal universe. This collection of fractal images features some of his best, and they look awesome when used as texture maps. But wait—there's more. This CD-ROM is multi-format, so that Amiga, Mac and MS/DOS users can access its wonders. The images come in IFF, GIF and BMP modes, and (just for good measure) many also come as DEMs (Digital Elevation Models) for use in Virtual Reality Labs' VistaPro 3D fractal landscape software.

Though thumbnail representations of images as a CD catalog are a good idea, this CD-ROM takes the whole preview process to a new level. Do you want to see what a particular image looks like? Just double click on it! That's right. What an easy and inviting way to browse through the imagery. If you don't enjoy clicking on each image, then run either the slide show display in each drawer of

images, or the larger slide show display that runs through all the images. These slide displays are for Amiga users only. The smaller ones have a HAM display, while the larger slide shows can play in IFF or HAM on a vanilla Amiga, or will display to the OpalVision Retina, FireCracker24, or IV24 boards in real 24-bit. See Figure 2 for an example of how these exemplary fractal textures map in LightWave.

### Moving Textures

LightWave and every other major piece of 3D software has the ability to map a series of single frames on a 3D object. When the animation is played back, this can be perceived as an animated texture, an animation within an animation. As far as I know, there is no competition to this CD-ROM. There's good reason: It probably took a massive amount of time to create it. The CD is full of stop-frame motion studies of clouds, fire and other organic animated textures. Many of the textures have 900+ frames each! There are two categories of images: Tru-Maps and FX-Maps. Tru-Maps are true 24-bit (and in some cases 8-bit) photos and consist of Clouds, Fire, Flames, Ocean, Smoke and Steam. FX-Maps are graphically manipulated images (but no less valuable) sized to 192x120 pixels: Boiling, Burst, Calm, Disturb, Jiggle, Liquid, Pour, Rough, Spots, Swift, Tide, Water A & B and Waves A & B. The FX-Maps make great bump maps and displacement maps, as well as textures. The Clouds alone come in 736x480, with the rest of the Tru-Maps sized to 368x240 or 320x200. The 24-bit Clouds make an absolutely stunning background to an animation. With 300 frames, that's enough for a 10-second moving cloud

background, ample for most sequences. If not, just "ping-pong" the animation (make the clouds move from start to finish and then finish to start). Mapping the clouds, or any of these textures, on a glass globe is a treat to behold. Exacting directions for translating these frames so they can be used in LightWave come with the package. For a teasing appreciation of what these textures look like, see Figure 3.

As more graphics and animation CD-ROMs become available, we will continue to cover them in VTU. Till next time, enjoy! See you in ROMulan space.

VTU

### Companies mentioned:

AsimWare Innovations  
(Texture Heaven—\$29.95)  
101 Country Club Dr.  
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# Motion Master

## Opening New Doors to 3D Design

by Tim Doherty

**M**otion Master volumes 1 and 2 are sets of unique LightWave utilities from innovative programmer Jon Tindall of MetroGrafx. Tindall and MetroGrafx have already made a name for themselves with Sparks, a particle animation system that allows users to add sophisticated high-end particle effects to LightWave 3D. The Motion Master volumes follow suit, offering a smorgasbord of interesting and advanced applications for LightWave users.

Both Motion Master volumes contain four utilities, which are installed simply by dragging them into the directory of your choice. They take up little memory and multitask effortlessly with LightWave. Also included in each Motion Master set is a concise manual and a wide assortment of tutorial files. I'll examine each of the two volumes separately.

### Volume 1

Time Machine is a time-line editor for multiple object morphs. It was written as a means of easily lip syncing LightWave animations to a dialogue track. It can also be used as a general multiple-morph editor. Figure 1 shows Time Machine's editing screen with a waveform display of some sampled sound on the bottom. A separate sound control panel allows you to adjust and load standard Amiga audio samples.



"The Motion Master volumes offer a smorgasbord of interesting and advanced applications for LightWave users."

On the editing screen, Time in frames runs left to right and morph objects run from bottom to top. Constructing a LightWave multiple object morph is a simple matter of creating keys by clicking on the various object's slots at a particular frame, then clicking on the Make Scene button to output a LightWave scene file.

Time Machine will even print out a modified version of a standard industry exposure sheet for planning and fine-tuning your animation.

Another Motion Master utility that uses sampled 8-bit audio files is Extract Audio. Extract Audio reads 8svx IFF files and then outputs the amplitude data to a motion file or envelope. Easy to use, the program has a number of interesting applications.

For example, an envelope can be generated and then applied to a lens flare so that the glow of a light will exactly match the audio sample.

Pathflock is used for creating a flocking motion for a group of objects. Anyone who has ever tried to create such motions by hand will appreciate the complexity and difficulty of setting individual paths for a large number of objects, especially when trying to incorporate realistic features such as randomness and collision detection.

Pathflock provides a simple interface to accomplish such realistic flocks. A slider bar controls the amount of chaos



exhibited by the flock. Another bar adjusts the stiffness of the collision avoidance. Soft collisions take longer to generate but allow for realistic jostling and jockeying for position. There is even a pull-down menu for applying a displacement map to your objects as they flock. This is useful for making birds in the flock flap their wings.

Mouse Recorder, the fourth utility in Volume 1, is the easiest to use. It opens a window that will record the Y movement of your mouse every 1/30 of a second. This data can be saved as an envelope or motion file. A poor man's motion capture, Mouse Recorder can be used for creating random envelopes by recording your chaotic mouse movements.

## Volume 2

PointAt and Child2World are two utilities that work with a series of LightWave motion files. PointAt allows objects to target other objects, just as the camera and lights can. For instance, it can be employed to track anti-aircraft guns to enemy planes, or to follow a flying bug with a person's eyes.

Child2World unparents a child from its hierarchy while preserving the proper movement and rotation of the object. This is useful for creating an animation in which an object will be thrown, dropped or detached. A good example of this, which is included as a tutorial, is a car wheel that comes off as the car is driving.

VolumeCube is utilized for setting up movements with random trajectories but constant speed, providing another method of animating mass objects. The random movements are established within an area that the user defines. As with Pathflock, there is a pull-down menu for applying a displacement map to the objects.

Wobbler is by far my favorite of all the Motion Master programs. It is a spring and mass simulator. Figure 2 shows the control panel for Wobbler, which has only three sliders. This simple interface masks some very impressive power. After loading a motion file into Wobbler, you can adjust settings

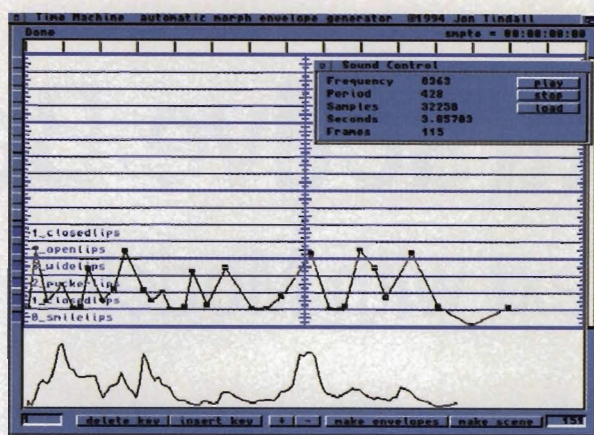


Figure 1

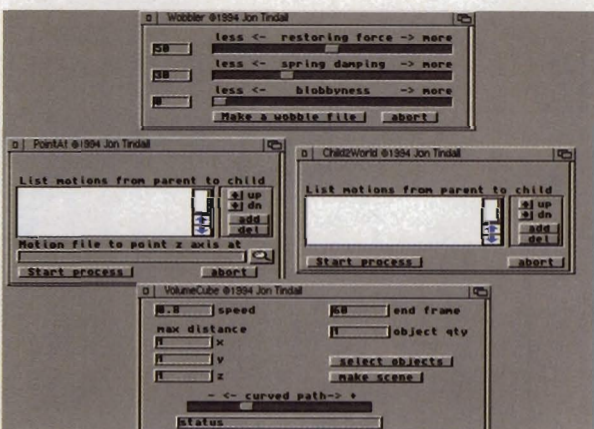


Figure 2

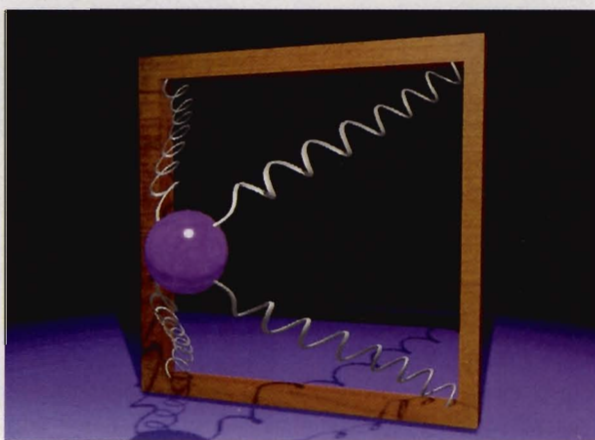


Figure 3

that control the spring algorithm applied to the object, and then save the resulting new motion file. The Blobbyness control enables you to incorporate squashing and stretching of the object for effects ranging from very realistic to wonderfully cartoonish exaggerations. The beauty of the Wobbler is demonstrated in Figure 3, but must really be seen in motion to be appreciated. Springs, jello cubes or the jiggling stomach of T-Rex as he

runs are just a few of the many things that this great utility can be used for.

## Opening Doors

Motion Master's manuals are the weakest part of the package. There are many grammatical errors and a few omissions. Some information is presented rather cryptically. Fortunately, the Motion Master programs are generally user-friendly, with simplified and straightforward control panels.

The only exception is Time Machine, which felt a bit less accessible to me than the others, and also a little hard to read on screen. The included tutorials do a good job of demonstrating the power and application of each utility. I experienced one crash when Time Machine mysteriously locked up after generating an envelope, but otherwise the software performed well.

Motion Master provides an interesting assortment of LightWave utilities. Many of them are highly specialized and may seem exotic to the casual LightWave user.

However, I've found that they've enabled me to approach my animations with greater creativity by allowing me to consider techniques and effects that would have been too difficult or time-consuming to achieve manually. Best of all, the Motion Master utilities accomplish this with friendly, simple interfaces.

Like Sparks, the other program from MetroGrafx, Motion Master opens new doors to sophisticated 3D scene design. Serious LightWave users will find both Motion Master volumes to be valuable assets.

VTU

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MetroGrafx  
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# More Attractive Bevels

## Enhancing Text with Modeler

by Jim Woodruff

In the past, I've often created beveled logos and text by hand, so I was one of the first LightWave users to stand up and cheer when NewTek added the beveling function to Modeler version 3.0. This new feature saves an untold amount of time. But, as good as it is, it still has a discrepancy that I first noticed in the beveled Chancery font that came with LightWave 2.0. When rendered, the bevels just don't look realistic.

### Start With an Object

The solution to this problem is quite simple, but we'll need a beveled object to begin. For this example we'll create an "8" using the Text Macro. Load the Modeler and select Text from within the Macro option. Next, highlight Chisel and enter 8 for depth, 1 for edge width and an "8" for the actual text (Figure 1).

Then click OK. This will create a nice, fat, beveled number eight to work with.

Resize the viewport to make editing the "8" a little easier and use the Volume/Include selection tool to enclose just the face of the number eight (Figure 2).



Select cut (or press X) and the bevels and the face polygons will be cut away from the remainder of the object (Figure 3).

Now, select Paste (or V) to paste the cut section back into the eight. Since the Text macro generates a bevel on the front and back of our "8," you need to repeat the previous procedure on the back of the object as well.

Next, click on the Polygon button before moving to the Display/Stats option (Figure 4).

Scroll the "8\_Face" surface into the surface requester and click on the Plus button by "with surface:" to highlight just the face polygons (Figure 5).

Click OK. Press X to cut the faces and press V to paste them back.

When surface smoothing is turned on, the bevels and the side of the object will smooth together, causing it to have a rounded or tubular look. This is quite different than the hard, cut-edge appearance of an object that has actually been beveled. When using reflection mapping for the always desirable chrome appearance, the problems become especially apparent.

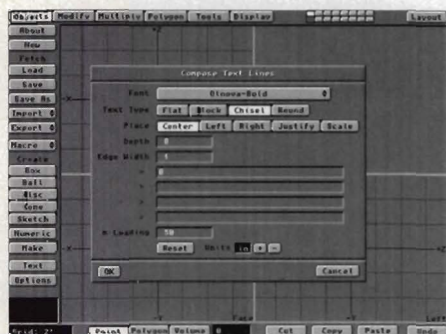


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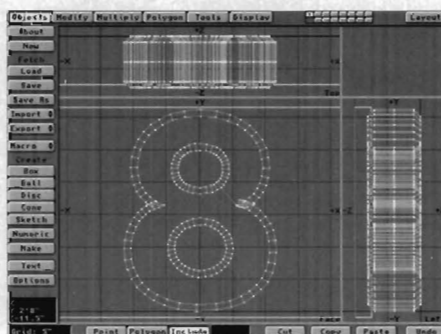


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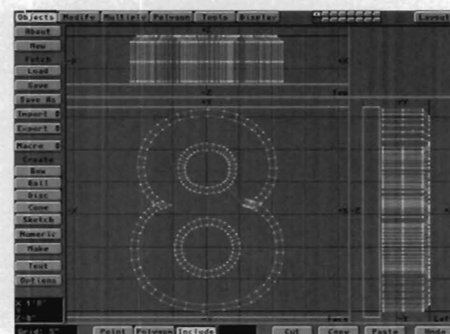


Figure 3



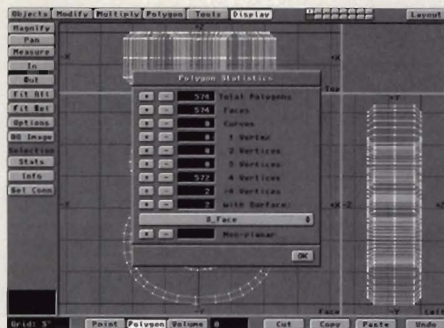


Figure 4

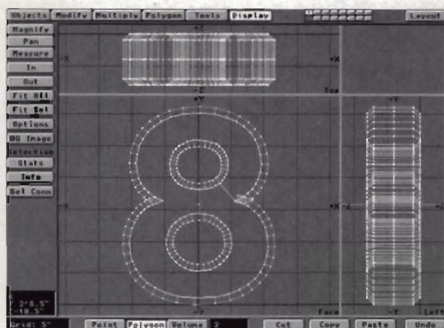


Figure 5

Save the object and render it. As evident in the color image, the bevels (and the sides, for that matter) look much more realistic. The "8" on the left is the original object that the Text Macro created, while the modified version is on the right.

The reason this works is that, initially, the side, face and bevel polygons of the object share common edges and points. This causes LightWave to render them as if they were actually one continuous surface. By cutting and then pasting the various surfaces, Modeler is forced to separate certain polygons and create new points (thus, new edges) for each detached polygon. The object will now render in a more suitable fashion.

Note that this procedure causes the number of points in this particular object to increase from 715 to 1,287. I think the results are worth it.

VTO

*A Toaster user for more than three years, Jim Woodruff has spent 13 years in production/operations at an NBC affiliate.*

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## "The Macintosh/Amiga file transfer solution... an indispensable tool..."

Video Toaster User Magazine, Nov '94

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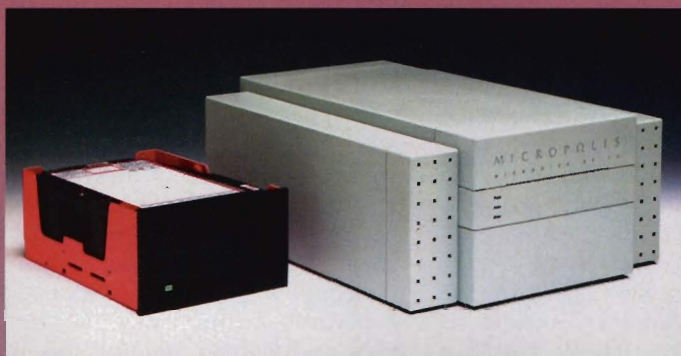
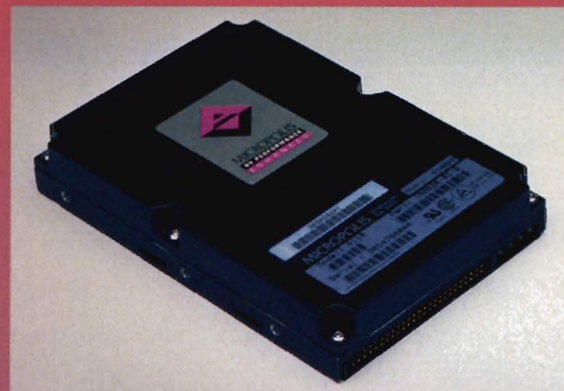


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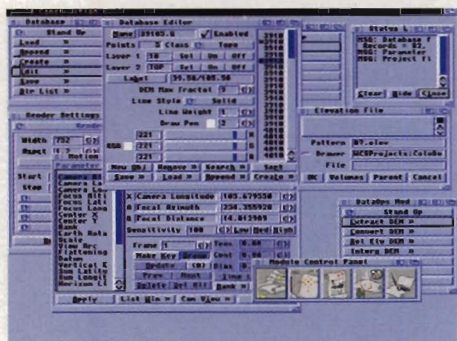
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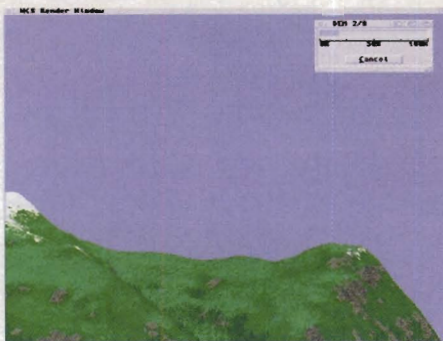
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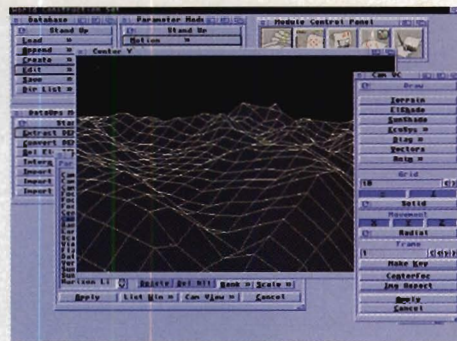




As you can see, the quantity of interactive possibilities in WCS is almost limitless.



The rendering window shows a 16-color representation of the final 24-bit image.



The Map View window represents the data in its polygonal format, though it can also be saved in several ways as your work progresses.

in the scene are to be covered by intervening elements. Clouds loaded as a Z-buffer would be able to appear at specific 3D levels relative to the intervening terrain, making some appear in the background while others might cover a mountain top. Questar remains available as a resource to any developer who wants to use Z-buffer data in his program.

## Animations

As different from any other fractal landscape generator I have seen on any desktop platform, WCS allows users to animate most of the elements that can be data-manipulated, including color ranges, topographical elevations and movements, and tree/grass/snow coverage. Watching these elements change over time can have a startling effect on the viewer. WCS works on the keyframe method that LightWave and other 3D animators will find familiar. Creating the desired motion paths is as simple as clicking the mouse and changing the graphic parameters.

## Sweet Options

WCS offers you three ways to smooth a polygonal surface to achieve the most natural look possible. The first is that the actual number of polygons can be increased. Secondly, the "fractal depth" can be upgraded on a scale of zero to nine. Increasing fractal depth does increase the apparent resolution of the render, but task time is also increased dramatically. I found that a fractal depth of three was very sufficient for my needs. The third way to increase the apparent resolution is to alter the coverage quality of various attributes like rocks and other features. This can be done without seriously affecting rendering times.

When you render a sample of the Ecosystem, selecting various aspects of it (rocks, aspens, water, etc.) in the

Ecosystem editor list lights up that aspect in the graphic, allowing you to see the exact coverage of various ecosystem elements and their respective colors. From here, it's easy to change any of the elements with respect to coverage and color and to do another sampling graphic. As long as the succeeding graphics windows are left open, you can select the graphic you like best and render the finished picture with its specific parameter settings. This is a great aid in developing the exact look you require.

LightWave users will appreciate the LightWave-specific Motion module in the Parameters section. Here, you can import and export motion paths to and from LightWave in either flat or spherical modes. Though WCS works in kilometer ranges, the associated motion paths may be converted to millimeters, centimeters, miles, feet or inches to better suit the LightWave user. Keyframe data for the camera and focus data are also kept in tact.

## Rollin' Your Own

This version of WCS doesn't have a random fractal landscape generator included, so there are some limitations on how much you can alter the DEM terrain as far as the actual database. With color and vegetation, however, the results are limitless. You can decide to plant trees anywhere at all, and water can make an island out of a mountain chain. The vertical exaggeration of the terrain can be altered to make mountains out of molehills. The upcoming 2.0 version of the software will offer more variety and options in all of these areas.

## Documentation

The new documentation is excellent. The manual, rewritten and updated since the 1.0 release, comes with a load of tutorials and graphics, and

includes an index when you forget exactly what menu a specific item is in. A videotape series is planned for the near future to guide users through WCS worlds even more clearly.

## Addition/Revision Wish List

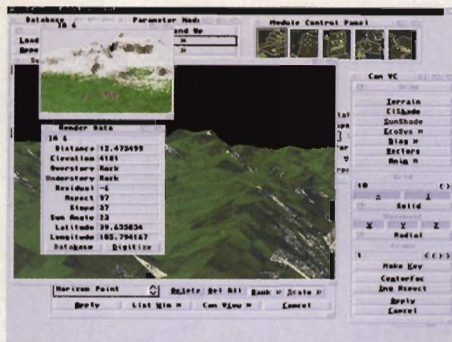
WCS's preview and rendered camera views are limited to a 16-color display. Often this is sufficient to give you the courage to attempt a final render, but there are instances when it would be useful to see a bit deeper before final rendering. WCS should incorporate AGA displays in the previews (at least 256 color and HAM8), because this would allow an accurate color representation of the final rendering. I would also like to see a DCTV render added (especially for animations).

WCS currently renders to a "Sculpt" format. This should be dropped, as Sculpt (from Byte by Byte) is an outmoded and archaic option that most artists and animators left behind a long time ago. As for global lights, I would rather see a separate "sun system" window that allowed for the interactive placement of the "sun" on a 3D box grid, which would also display an outline of the DEM. Numerically placing light sources is too risky for my tastes.

One missing item in all of the fractal landscape generators (including KPT Bryce on the Mac) is the generation of clouds in the sky, especially for animation purposes. WCS could lead the pack with a quality cloud generator. (Just imagine choosing not only the type of cloud, but various effects like rainstorm with lightning, aurora borealis, or sandstorm!)

According to Gary Huber, the president of Questar Productions, WCS will eventually contain an option-oriented cloud/sky generator, though Questar will wait until it is developed as deeply as the rest of the program,

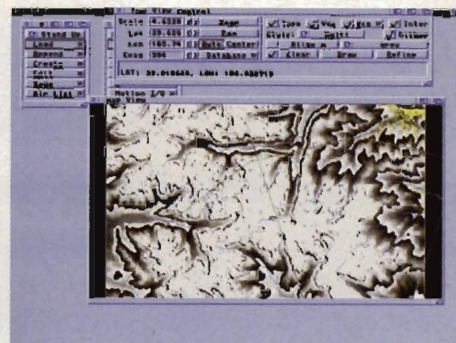




An Ecosystem window can be rendered in the Camera View to give you a better look at the colorizing of a selected portion of the image.



A finished WCS scene offers resplendent resolution detail and color. Here I have painted in the clouds, though hopefully the WCS revision will have its own cloud generator.



Very accurate topological data is represented in the Map View module.

rather than simply add it as an extra feature with little depth. Somehow, his answer reassured me that I was dealing with a high-end product and a devoted developer. Huber said that a number of new features were being considered for the 2.0 release (late spring?).

One of them under consideration is a random landscape generator, so that users are not tied to the mere rendering of the real world alone. Also in the pre-development stage is a transfer utility that would allow LightWave to input WCS DEM files and their ecology.

## Conclusions

For professional artists and animators, considering the wealth of USGS data files available, this software should find its way into many Amiga libraries.

Questar offers a wide array of DEM data files, from a low-resolution overview of the U.S. (one disk for \$25) to a high-resolution overview (14 disks for \$75) to specific high-resolution DEMs for your state or areas of interest (call for details and pricing).

If your videographic work includes clients who need graphics for specific

geographical and climatic programming, look into WCS.

VTU

## Company mentioned:

Questar Productions  
(World Construction Set version 1.1—\$250)  
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FOR INFORMATION CIRCLE 13

## EDITORIAL EVALUATION

### Circle number on Reader Service Card

I found this article:

Very Useful  
Circle 045

Useful  
Circle 046

Not Useful  
Circle 047

## TOASTER POST continued from page 21

to the particular method of transition. If you plan to use this technique, you'll find that no matter how difficult the transition may appear to be, one combination of these different fades used with the appropriate speed setting will be sure to work for you. The variations are endless.

Another documentary technique the Toaster makes easy is the one where a scene fades in with a voice-over narration, but after a few seconds the image of the person doing the talking fades into the scene as if by magic, continuing with the narration. To utilize this effect, set up your camera with a static shot of the scene you want and click off 10 seconds. Then, without moving the camera, put your narrator in the scene and have him or her say the lines.

In post, grab a freeze of the scene and put it in the Preview Bus, click on Input 4 in the Main Bus and click on the Dissolve Effect with the speed set to M, for medium. Also, cue-up the segment in which the narrator is talking to come in a couple of seconds after the fade-in.

Next, hit your "Make Edit" button and when the edit point is reached, hit the space bar. You will fade in on the static scene while your narrator is talking. Now, while this is going on, quickly click on the #1 Input of the Preview Bus—where your source tape of the narrator is running—and change the transition speed to S, for slow. Now hit the space bar again. You will see your narrator magically fade into the static scene without a hitch (if you didn't jiggle your camera) in perfect sync while in the middle of the narration.

This technique works best when the static shot is on a wide-angle lens and the narrator is completely in the scene—like in a chair in the right third of the screen area. The narrator then appears sitting in the chair. Also, an extreme close-up of the narrator in that same screen area, the face turned slightly to the right, works. You can also use the Variable Speed Control to make the fade-in longer and more magical.

This is a very new technique and it hasn't been done to death yet, so try

it. It has a riveting effect on the viewer and demands attention. If it is used as a running method of introducing the various segments of a documentary throughout, the viewer will come to expect it, wondering how it will be used next. It works!

That's it for this month. I hope you can make use of these Toaster post-production techniques, and if you'd care to share your own hot or cool post-production goodies in this column, send them to me in care of VTU. Happy Toaster Posting!

VTU

Burt Wilson is an award-winning producer/director/editor in Southern California who also serves as the head of the Video SIG of the Los Angeles Video Toaster User Group. His book, "Complete Post-Production with the Video Toaster," will be out soon.

## EDITORIAL EVALUATION

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Useful  
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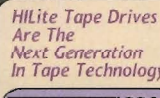


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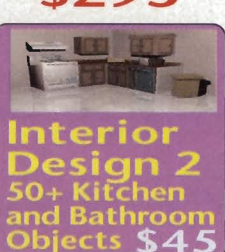


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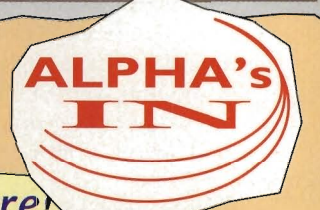
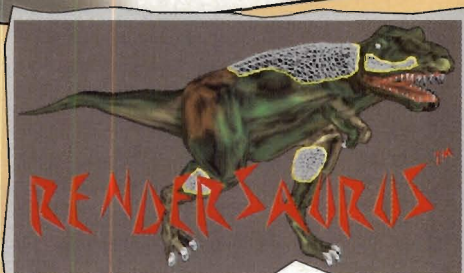
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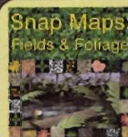
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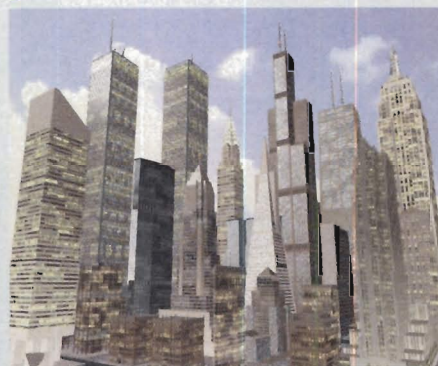
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- Laminated amorphous heads assure exceptional picture quality, high resolution, superb color reproduction, and high signal-to-noise ratio
- 12:1 power zoom lens with continuously variable speed zoom
- Hi-Fi stereo and linear track for recording. Also has 'Audio Out' select switch for Hi-Fi/Normal/Mix combinations
- High performance stereo zoom microphone features three different settings: Wide, Telephone or automatic zoom
- Built-in VTC (Vertical Interval Time Code) time code generator gives absolute address to each frame of video for frame accurate editing
- Audio/Video Fade-In and Fade-Out for smooth, professional scene transitions
- Automatic Iris plus manual control for fine adjustment
- Variable high-speed shutter from 1/50 to 1/8000 second
- **Digital Mix** - for soft fade-over between memorized still and moving images
- **Digital Tracer** - to add an after-image effect to moving subjects
- **Digital Still** - lets you freeze a particular scene for as long as you like, without interrupting sound recording
- **Digital Zoom** - Thanks to digital processing, you can enjoy shots with ultra-high magnifications of up to 100:1
- **Digital Gain-Up** - delivers clear, distinct images in low-light levels, even down to 1 lux!
- **Digital Strobe & Digital Wipe** - add professional effects to your shooting.



### AG-DP800 SUPERCAM S-VHS FIT 3-CCD Digital Signal Processing Camcorder



- Three high-density 380,000 pixel CCDs with half-pitch pixel offset to achieve over 700 lines of horizontal resolution, a S/N ratio exceeding 60dB and remarkable sensitivity of 18 at 2000 lux result in simply extraordinary image quality. Additionally the Frame Interline Transfer (FIT) CCDs minimize vertical smear, so you maintain impressive picture quality even in very bright illumination.
- Uses advanced digital signal processing circuitry which 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 from 1/60 sec. to 1/1000 sec.
- Built-in internal time code generator lets you record with SMPTE LTC/VITC (Longitudinal/Vertical Interval) time code
- 26-pin connector for direct signal output from camera section for easy backups using 2nd VCR.
- 2 Hi-Fi stereo audio channels with a dynamic range of 80 dB, and 2 linear audio channels with Dolby NR. Normal/Hi-Fi recording is selectable and levels of all 4 channels are controllable. Uses XLR connectors to further ensure high-quality sound.
- Phantom power can be supplied to optional microphone. Power can be switched off to prevent battery drain when not in use.



### JVC GY-X2B 3-CCD S-VHS CAMCORDER

- Newly designed three 1/2" CCD image sensors deliver 750 lines of horizontal resolution and superb signal-to-noise ratio of 62dB
- New micro-lens technology provides exceptional sensitivity of F7.0 at 2000 lux and new LXLUX mode lets you shoot with almost no light! Now you can shoot superb footage with excellent color balance at a mere 3 lux illumination
- Variable Scan View allows flicker-free shooting of a computer monitor.
- **Quick Record Mode** - when turned on the camera is set to the auto iris even if lens is set at manual. Also activated is (ALC) Automatic Level Control and EEI Extended Electronic Iris which provides both variable gain and variable shutter. Now you can shoot continuously from dark room to bright outdoors without having to adjust gain, iris or ND filter.
- Full Time Auto White circuit lets you move from incandescent to fluorescent to outdoor lighting without changing white balance or the filter wheel.
- Genlock input allows synchronization with other cameras.
- Dual output system allows camera output to be connected directly to an external recorder
- The GY-X2B features JVC's extraordinary Hi-Fi VHS sound system. Using 2 separate rotary FM-audio heads the GY-X2B provides 2 channels of near CD-quality audio with a dynamic range of more than 80 dB. In addition, there are 2 linear audio channels. XLR connectors are provided for up to 2 external microphones. The GY-X2B also features a built-in microphone.
- Built-in speaker provides monitoring of audio and warning signals during recording.

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## Canon L2 Hi-8 Camcorder

- 1/2" CCD with 410,000 pixels delivers over 450 lines of horizontal resolution
- VL Mount System allows use of a full range of interchangeable lenses from extra-wide angle to super telephoto plus, optional EOS-VL adapter allows mounting of over 65 Canon EOS 35mm Autofocus lenses.
- 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 Code capability for frame accurate editing.
- Advanced encoding functions mean the L2 can record much more than audio and video. It will mark tapes for speedy identification, and even find recordings by their date.
- 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.
- High speed Piezo autofocus allows focusing through glass or water. Also provides focus lock and manual focusing.
- Provides two different grips with independent start/stop and zoom controls. Built-in sports finder lets you view the viewfinder from arm's length away.
- 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 1/100 to 1/10,000 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 from fully stopped down to fully open.



- The L2 has a variety of special effects. Add an extra dimension to your video productions with digital image manipulation and striking scene transitions:
  - **Close-up** - instantly doubles the magnification of the lens
  - **Slow shutter** - four slow shutter speeds allow recording in light levels as low as 0.5 lux or adds artistic after-images to selected scenes.
  - **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.

## SONY

### EVW-300 3-CCD Hi-8 Camcorder

- 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.
- Provides high quality PCM digital stereo and single channel AFM Hi-Fi recording. Has 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.
- Compact, lightweight (12 lbs with NP-1B) ergonomic design provides well balanced and extremely comfortable operation.



EVW-300 with Canon 13:1 Servo Zoom Lens, VCT-12 Tripod Mounting Plate and Thermodyne LC-422TH Shipping/Carrying Case ..... \$5495<sup>00</sup>

## TOSHIBA TSC-200 3 CCD Hi-8 Camcorder

- Three 2/3" CCD chips mounted with spatial offset technology deliver resolution of 700 horizontal lines
- Low noise design provides extreme sensitivity of F8.0 at 2000 lux. Min. illumination 7.5 lux with excellent color reproduction
- New LNA (low noise amplifier) delivers a S/N (signal-to-noise) ratio of 62dB - the highest achieved for this type of camera
- 26-pin connector outputs V/C or component video signal allowing hook up to a portable S-VHS, MII or Betacam recorder and simultaneously record with Hi-8.
- Quick-start 1.5" viewfinder needs no warm up time so you never miss a shot. Zebra pattern in the viewfinder alerts operator to excessive video levels.
- Genlock capability allows synchronization with other cameras. Full calibration functions are built-in as well as color bar generator.
- Variable high speed shutter from 1/60 to 1/2000 second
- Built-in 8mm time code generator records an absolute address to every frame.
- High-performance back electret condenser mic records to all three audio tracks. Low cut filter eliminates wind noise.
- Very low power consumption. Draws only 16 watts per hour allowing 100 minutes of recording time with 1 NP-1B battery.
- Body made of magnesium alloy previously found only on broadcast cameras. Still only 13 lbs. in standard configuration.



## NEW! TSC-100G 3-CCD Hi-8 Camcorder

• Same features as TSC-200 except no 26-pin connector



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- Carry it in crowds - crush proof aluminum guard protects viewfinder.
- Fits into back seat and fastens securely with seat belt.
- Holds camera with on-board battery attached.
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## SANYO

### 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.
- SMPTC Time Code Generator and Reader with Built-in Drop and Non-Drop Frame Read/Write is fully programmable from an external computer and resettle 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 RS-232 or RS-422 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.



### NEW! GVR-S955

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 uses 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 existing 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-K28U RS-422 board. Other boards include the SA-K28UA 45-pin board for connection to older JVC editing systems, the SA-NS0U 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.

#### 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 go to 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.

### BR-S622U/BR-S822U S-VHS Feeder Recorder/S-VHS Editing Recorder

The BR-S622U and BR-S822U meet the most sophisticated broadcast level requirements. They are equipped with flying pre-rec amp, digital DDC, digital Y/C separator, high precision CNR, improved chroma enhancer, and more. Their "Open-Ended System Architecture" lets you choose from a variety of optional circuit boards and plug-in modules, including a time-code reader/generator, TBC with component out, and several remote control interfaces. They also have a full range of advanced editing functions, including direct player control, precision search/jog dials, RS-422 interface, high-speed search at up to 32x, and a titillable control panel.



- Built-in digital Dropout Compensator (DOC) performs dropout compensation for black persistence signal on an all-digital basis. With chroma dropout compensation also being performed you get a stable, high-quality picture.
- An SC leak canceler detects and removes very low-level chroma signals on closed captions without interfering with overall signal quality. This helps eliminate much of the deterioration often noticed in repeated dubbing.
- Equipped with high-precision Chroma Noise Reducer (CNR). It conducts chroma noise detection on a pixel-by-pixel basis, allowing it to completely eliminate the color streaking normally caused by lags in CNR phase adjustment. This ensures a much-improved chroma signal-to-noise ratio in playback.
- Luminance Signal Enhancer allows you to select frequency responses of 0 dB, +2 dB, and +4 dB with the luminance signal at 2.5 MHz. High resolution is maintained even in multi-generational dubbing. Automatic equalizer prevents deterioration of the luminance signal frequency response when using overlapped tapes.
- A Capstan Bump Function operates during pre-roll. This assures precise synchronization of the player and recorder during editing. This function can be set to operate at either the player or recorder.
- Features a built-in black burst signal generator. Preparing a black master tape for insert editing is now a simple matter of inserting a blank tape and pressing a button.
- Two Hi-Fi stereo audio channels with a wide frequency response and dynamic range of more than 90 dB. Two linear tracks with Dolby NR (Noise Reduction) are also provided. Audio output is selectable between Hi-Fi and the linear tracks while an audio monitor select switch allows independent monitoring of the Hi-Fi or the linear track. Separate or combined LR channel monitoring is also possible. Four recording level controls permit separate adjustment of all audio channels in recording.
- On-Screen Menu system with built-in memory which allows simple dial setting and switching of most basic functions while referring to the counter or on-screen display. Mode selection and initialization are all possible via the menu display. Over 70 items are selectable including frame servo, TBC mode, Hi-Fi recording, audio limiter, and pre-roll times. On-screen warning indications are also provided.
- The BR-S822U has a comprehensive set of editing functions including automatic or manual insert and assemble editing. Editing features include Go-to, Pre-roll, Preview, and Review, providing high-performance cuts-only editing even without a controller.
- The BR-S822U features built-in machine-to-machine editing control capability. This permits control of any deck with RS-422 control directly from the BR-S822U. Player/Recorder select buttons are provided, and time code or CTL readings from the controlled player are displayed on the BR-S822U's counter display. You control all operations including search, FF, REW, edit point entry, and more.

## 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 DTR programming.
- Also features: 181-channel tuner, full digital quartz timing, real-time counter, Auto repeat/Auto playback, Standby DTR.



### 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 packages 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  $\pm 3$  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 Matrix.
- Auto Repeat function continuously replays a tape which can be used 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.
- If you need to do a presentation with video the AG-5700 is ready to go. It 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 cueing and quick confirmation of audio recording.
- What makes the AG-1970 the perfect editing VCR? The advanced dual-loading mechanism features a quick response time, exceptional tape protection, remarkable tape control accuracy — all make for outstanding editing precision and ease.
- Automatic head cleaner removes dust and other particles from the heads to help maintain optimum performance.



### 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 (-1, -1/2, -1/4, -1/8, -1/16, -1/32, -1/64, -1/128, -1/256, -1/512).
- 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 Chroma Aperture Compensator (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 slow-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.



### MI "W-Series" AU-W32H/W33H/W35H

- For years, Panasonic's MI VCRs have consistently brought professionals the superior broadcast quality of component recording. Now the "W-Series" brings the power of component recording to an ever wider range of users. They are equipped with 3-D type TBC for exceptional playback stability and excellent dropout compensation and they each feature color framing — essential for animation and editing.
- Uses true component recording technology, with separate tracks for the luminance (Y) and chrominance (C) signals. Delivers vivid colors and super sharp details — thanks to the full 4.5 MHz luminance bandwidth.
- Each is equipped with a digital 3-dimensional type TBC boasting a correction range of one full field (262.5 H lines). Continuously retains an entire video field of information in memory, and is used for 3-D processing, providing excellent dropout compensation and eliminating horizontal and vertical jitter.
- All units have 4 high-quality audio channels — 2 Hi-Fi channels, with dynamic range of 85 dB and 2 linear channels with Dolby NR.
- "W-Series" models offer high precision time code editing, with  $\pm 0$  frame accuracy. Both players include a SMPTE time code reader, while the AU-W35H has a time code reader/generator. The AU-W35H records VITC and LTC separately, and MI VCRs automatically switch between them during playback, according to tape speed, for consistent, reliable time code identification. User bits are recorded in either LTC or VITC (or both), with the capability of making either one (or both) an internally generated time of day clock.
- AT (Auto Tracking) is a standard feature on the AU-W33H player. When used with an edit controller or the AG-A300 Slow Motion Controller, the AU-W33H provides noiseless still, slow-motion and quick-motion playback with a range of 1x to 2x normal speed. It also allows fine control over playback speed — highly effective for situations where "fit and fill" capability is required.
- They allow TBC adjustment on the VCRs itself. Conveniently located adjustment knobs for all TBC controls, including video level, chroma level, chroma phase, setup level sync and subcarrier phase. A 15-pin terminal allows external TBC remote control.



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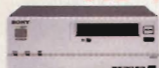
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## SONY

### 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 out-point 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. The EVO-9720 can memorize 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 - The EVO-9720 provides separate editing of the 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. VNR (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 cut-only functionality of the machine, the EVO-9720 lends itself to A/B roll expansion capability. Both the player and recorder have RS-232C 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.

## 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 built-in 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 multistandard 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-101 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.
- 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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## SONY

### NEW! 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 DDC 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. The field memory also includes a Digital Field DDC (Dropout Compensator), which replaces signal dropout with information from the previous field.
- 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. This makes them ideal for animation and computer graphic recording, where a frame-by-frame editing function is indispensable.
- 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 capability of normal audio tracks 1 and 2. In the insert mode, video, audio and time code can be inserted independently, or in any combination.

#### 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 reproduction. XLR connectors are used for the inputs and outputs for all four channels.

#### 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 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, V/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. The UVR-60 also accesses field freeze function in the still mode and allows on/off control of the chroma and luminance noise reducer.
- 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 to 10x normal speed in forward or reverse.

### REBATES: Buy an SVP-5600 or SVO-5800 Professional S-VHS VCR or UVW-1600, UVW-1800 Betacam SP VCR with:

- Sony PVE-5500 A/B Roll Edit Controller and receive \$500 instant rebate!
- Sony FXE-100 A/B Roll Edit Controller/SEG and receive \$1000 instant rebate!

### EVO-9650 Hi-8 Single Frame Recording VCR

- Facilitates fast and accurate single frame recording which is indispensable for animation creation. With a short 3-second pre-roll the EVO-9650 is twice as fast as any other machine.
- Built-in RS-232 interface directly connects the EVO-9650 to an external computer, allowing all of the VCR operation commands to be directly communicated to the computer. The RS-232C baud rate can be selected from 9600/4800/2400/1200 bps.
- There is separate DNR circuitry for both the Y (luminance) and C (chrominance) signals providing playback of superior images.
- Fully compatible with the Video Toaster 4000, no single frame controller required. Most animation programs work directly without a controller. They include Autodesk 3-D Studio, Crystal Graphics Topaz, BYTE-by-BYTE Script 4-D etc.
- Provides a variety of digital effects like 3x3 digital display, 2x room and 1/30, 1/10, 1/5, 1/3 times normal speed in a noiseless slow motion playback.
- Incorporates a memory device for frame/field storage to provide an accurate frame image in recording and playback. This memory can be used in either the BUFFER or the DNR mode.
- DNR (Digital Noise Reducer) A clear and stable picture is played back with no guard band noise and no picture movement. Field or frame can be selected. DNR mode is great for image analysis and medical applications.
- BUFFER for fast recording of sequential frames. Stores a frame in its buffer thus freeing up the computer to proceed immediately to the next frame. During this time the EVO-9650 performs its pre-roll and edit functions. This effectively cuts in half the time needed for single frame recording.



- Built-in 8mm time code generator records an absolute address on every frame allowing absolute frame accuracy.
- Additional audio, such as music or commentary, can be dubbed to existing video. Audio is recorded on the PCM sound track.
- Optional EVBK-65 RGB encoder board allows the EVO-9650 to accept RGB signals, ensuring optimum picture quality recording.
- Optional EVBK-66 VISCA interface board allows communication with VISCA control signals. The EVBK-66 translates VISCA control signals into the Sony standard RS-232C protocol.
- Supplied RM-9650 Remote Control covers not only basic functions, but also provides digital special effects, assemble/insert editing and jog/shuttle picture search up to 19x normal speeds.

### 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.
- To minimize picture deterioration during the editing process, the EVO-9850 incorporates Dub In/Out (7-pin) connectors.
- With the optional BMM-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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## INNOVATION Alpha Paint

The New Paint Standard for the Video Toaster

Alpha Paint elevates painting quality and performance on the Toaster to unprecedented new heights with 36-bits of painting power! It breaks new ground with Full-screen Realtime 24-bit Painting and exclusive 12-bit Alpha Channel support for Anti-Aliasing, Blending and Compositing.



- Realtime free-form painting in 16.8 million colors directly on the Toaster's full-color program output.
- Full-screen WYSIWYG operation with multiple Undo/Redo - no more waiting, redrawing or HAM artifacts.
- Complete utilization of the Toaster's Hardware Video Mixing Alpha Channel for unique Soft Edge Feathering and Transparency Effects played back over any Live Video source.
- Advanced set of Image Enhancement, Painting and Drawing tools such as Sharpening and Contrast Filters, Oil Painting, Airbrushing, Image Resizing & Unlimited Compositing, Automatic Edging Effects, 3-D Perspective Rotation and more.
- Sophisticated Text Tool with support for Helvetica, Chroma, and Postscript fonts including XYZ Text Rotation, Postscript Circular Text Wrap, Texture Mapping, Glow and Neon Effects.
- Pressure Sensitive Drawing Tablet supported.
- Compatible with Video Toaster 2.0, 3.0, 3.1 and Toaster 4000.

Alpha Paint is the all-in-one professional paint solution for the Video Toaster with NO additional utilities, programs, Chip RAM upgrades required.

## FutureVideo V-STATION 3300 for Toaster A/B Roll Edit Controller

- V-Station 3300 for Toaster is an integrated software and hardware solution for precise A/B Roll editing on your Amiga/Toaster system. The advanced multi-tasking, multi-event A/B Roll editing software provides you with direct communication and control over your Video Toaster. The three VTR controller unit provides the necessary machine control and computer interface.
- The V-Station 3300 for Toaster system fully integrates the power of A/B roll multi-event edit control with the versatility of the Video Toaster's effects, fast-forward, and character generation. You'll appreciate the easy-to-read software screens and the comprehensive online help system.
- Provides true A/B roll editing even with low-end industrial and prosumer VCRs. Various VCRs using Panasonic's 5-pin or Sony Control-L editing protocol can be used. Optional VTR Driver kits provide compatibility with VCRs using VISCA, RS-232 and RS-422 serial control protocols.
- Reads RC time code and with optional SMPTE LTC option can read SMPTE time code for frame accurate editing.

## The KitchenSync Dual Channel TBC

- Two complete infinite window time base correctors on one IBM AT/Amiga compatible card
- Plugs into any Amiga or PC compatible
- Use more than one Kitchen Sync linked together to synchronize even more channels.
- S-VHS and Hi-8 compatible. Has S-video input with option for S-video out
- Complete 100% accurate sync generator built-in. Totally regenerates all sync and blanking signals.
- Absolute 100% broadcast quality output
- Built-in Proc amp with Hue, Saturation, Contrast and Brightness adjustments
- Complete digital design - no pot adjustments necessary. The Kitchen Sync is completely microprocessor controlled
- Advanced sync output - useful with any VCR capable of taking an Advanced Sync in. **\$1299.00**

## 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 DDC (Drop-out compensator)

### AP41-SF

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

### AP41-SP

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

## NewTek LIGHTWAVE 3D 4.0

The Ultimate 3D Rendering and Animation System for Broadcast Graphics

LightWave 3D offers all the high-end features you need to produce network-quality graphics. You can model, render, surface and animate three-dimensional graphics, all from within a single straightforward environment. Everything from flying logos and scientific visualization to the most sophisticated effects seen on television are now available on your desktop. LightWave consists of two powerful programs in one easy-to-use package:

- Creating objects is simple with LightWave Modeler. PostScript fonts allow you to generate 3D text easily. You can construct models by combining built-in primitive shapes, or by using Modeler's freehand draw functions. Tools like Lathe or Extrude add depth to 2D shapes. Boolean functions let you cut and combine objects. LightWave Modeler gives you ten different modeling layers to work in. Powerful tools like magnet, bevel, and clone are all available.
- LightWave Layout lets you design the perfect scene. You can load and position objects, edit surfaces, and design dramatic lighting effects and camera moves. You can even include spectacular effects like lens flare, fog, or depth of field. Bring 3D characters to life simply by using the object parenting and bones features. Check your scenes by creating wire frame preview animations that you can play back in real time. Render still images or entire animations in up to 16.8 million colors.

## Toaster FLYER TAPELESS EDITOR

No editing system in the world compares to the quality, price, and ease of use of NewTek's revolutionary new Video Toaster Flyer. The Flyer is a D2, broadcast-quality, tapeless nonlinear edit system that costs under \$5,000. Forget the hassle of hooking up a complicated A-B Roll editing system. Forget the expense of buying an edit controller and three VTRs. Forget waiting for sluggish tape access in an offline studio. With the Video Toaster Flyer, all that is history. Now you can record your video direct-to-disk, make edit decisions with the Flyer's drag and drop controls, and enjoy the finished program all in the same afternoon. Don't like the way a sequence looks? Drag the video clips into a new order, insert a new scene, or drop in background music with the click of a mouse. The choice is yours. Best of all, every change is immediate. There's no re-recording, no tape generation loss, and there are no botched edits. For a fraction of the cost, the Video Toaster Flyer provides the quality you expect from a \$50,000 digital video deck. Plus, the Flyer seamlessly integrates into the Video Toaster system.

### AFFORDABLE ONLINE EDITING

- For under \$5,000, the Video Toaster Flyer provides the same D2 quality image you expect from a \$50,000 digital video deck. The Flyer integrates so seamlessly with the Video Toaster that you'll be able to experiment with effects, try out different titles, or add animations with ease.
- NewTek's exciting new video compression standard, VTASC, gives you the quality you want without the artifacts associated with JPEG, MPEG, Wavelet and other compression techniques. Your final productions look better with the Flyer since there's no tape generation loss.

- Add a Video Toaster Flyer and a couple of hard drives to the Video Toaster 4000 to form a complete audio and video production suite that fits on your desk.

### SEAMLESS INTEGRATION WITH THE VIDEO TOASTER

- Since the Flyer has been designed as a component of the Video Toaster system, it seamlessly integrates with your Toaster-based studio. Harness all of the effects, graphics and animation features that have made the Toaster one of the most popular video tools ever. Use recorded video clips as easily as video still frames. You can even insert video clips into your LightWave animations. This feature, called rotoscoping, allows you to place live video segments - as many as you want - inside your LightWave animations. You have unlimited control over moving images.

### EDITS AUDIO

- With the Flyer, your Video Toaster system edits audio as well as video. Its audio capabilities allow you to use it as a sophisticated sound mixer featuring multiple tracks of CD-quality digital audio. Add background music, perform audio sweetening, or bring up the volume of a quiet passage.

### SIMPLE, FAST EDITING

- With the Flyer, editing is an exciting process of experimentation and creativity. You start by recording clips into the Flyer (a clip is a segment of video along with stereo audio).
- Each clip is represented by a color picture taken from one of its video frames called a crouton. You fine-tune each crouton - select in and out points, and adjust audio characteristics - until the clips are perfect.
- Next, simply drag a video crouton into position, place an effect crouton after it, then drag another video crouton after the effect. You've just created a transition from one video clip to another. To add a graphic or overlay CG text, drag and drop a graphic crouton. With the Flyer it's easy to build a storyboard where every scene, sound, graphic, and animation appears in the order you want.
- Finally, press the Play button. Watch the entire production roll as each of your clips, effects and graphics plays back in real-time. Record your finished production directly to another Flyer-controlled hard drive or to any video format.

## RGB COMPUTER

### Amilink CIP

Amilink CIP is an Amiga-based A/B roll edit controller. It is a combination of hardware and software that provides flawless control of three VCRs. It is also the most complete personal video editor for the Video Toaster. It controls low-cost industrial VCRs like the Panasonic AG-1970 or with Control-L protocol like Sony EVS-3000 and SLV-R1000. You can use three of the same or in any combination. Best of all, Amilink CIP is upgradeable for professional machine control. To upgrade, you buy an upgrade kit that includes new software and professional level control cards. The system includes a new version of Amilink software designed especially for the Toaster 4000. With the new Amilink VT-4000 software, the Video Toaster is seamlessly integrated into your editing suite.

- Choice of joystick, mouse, keyboard and trackball, plus an optional jog/shuttle editing keyboard
- Industry standard keyboard layout (CMX/GVG)
- Auto calculated GPI, plus 48 additional GPI triggers per edit with optional hardware
- Controls industry standard audio mixers

### Edit List Management

- Sophisticated search list by edit comment, content or number
- Import/Export CMX 3600 edit list on MS-DOS & Amiga-DOS
- Automatic edit list back-up
- Edit list cleaning, list rippling, multi-field sorting
- Optimized edit list auto assembly with special integration

### Editing Control

- Preview, Perform, Review and Auto review functions
- Multi-set, Multi-trim • Reverse play and auto review
- Pre-Roll, Post-Roll and Preview select

### Edit Modes

- Provides for multiple audio/video splits per edit event
- Open ended immediate/delayed transition edits
- Performs all edit modes plus "Music Video Mode" for easy synchronizing edits to music.
- Integrate graphics, animation and character generation
- Scene-based editing with advanced park and perform features
- Cut and Paste EDL management

CIP w/VT-4000 Software ..... \$1499\*\*

### VT-4000 Software (Toaster Control)

- Amilink/VT gives you total control over the Video Toaster as a fully integrated post-production switcher.
- Amilink/VT remembers all of the Frame Stores, CG Titles, and DVEs used for your production in the Amilink/VT edit list. You never lose any of the information you need to recreate your production.
- All of the Video Toaster post-production functions are easily accessed from the Amilink/VT interface screen. Toaster Digital Effects, Character Generator pages and the Digital Video Frame Stores, as well as standard wipes and dissolves, can all be called up automatically during edits, and are stored in the edit list for later auto-assembly.

### Amilink AL-3Ni Professional

Amilink AL-3Ni is the professional version of Amilink. It is designed exclusively for machines equipped with RS-422 9-pin serial interface. Amilink AL-3Ni is actually 2 edit systems in one, including both Windows and Amiga software.

### Machine Control

- Controls up to 16 source VTRs and 4 record VTRs
- Choice of joystick, mouse, keyboard and trackball, plus an optional jog/shuttle editing keyboard
- Industry standard keyboard layout (CMX/GVG)
- Auto calculated GPI, plus 48 additional GPI triggers per edit with optional hardware
- Single frame animation mode included
- Dynamic motion control/auto tracking support
- Controls industry standard audio mixers
- Reads VTRC and LTC time code, plus fully supports SMPTE Drop-Frame and non Drop-Frame, mixed and PAL/EBU

### Edit List

- Sophisticated search list by edit comment, content or number
- Import/Export CMX 3600 edit list on MS-DOS & Amiga-DOS
- Automatic edit list back-up
- Edit list cleaning, list rippling, multi-field sorting
- Optimized edit list auto assembly with special integration

### Editing Control

- Preview, Perform, Review and Auto review functions
- Multi-set, Multi-trim • Reverse play and auto review
- Pre-Roll, Post-Roll and Preview select

### Edit Modes

- Provides for multiple audio/video splits per edit event
- Open ended immediate/delayed transition edits
- Performs all edit modes plus "Music Video Mode" for easy synchronizing edits to music.
- Recorder only edits for recording graphics/audio
- Integrate graphics, animation and character generation
- Scene-based editing with advanced park and perform features
- Six forms of Match-Frame edits
- Cut and Paste EDL management
- Multiple time-code and edit clip-board registers

AL-3Ni w/VT-4000 Software ..... \$2295\*\*

## SUNRISE INDUSTRIES AD 516 and Studio 16 The Complete Digital Audio Solution



The AD 516 is a professional quality 16-bit high fidelity sound board and hard disk recording system for the Amiga. It includes the feature packed Studio 16 software that allows you to perform all traditional audio post-production tasks. You can create sound effects, edit and replace dialog, and build multi-channel soundtracks in the digital domain.

- Record, edit and playback directly off hard disk
- Play up to 8 simultaneous tracks off one or multiple hard disks in real time.
- Use a mouse to slice up and rearrange sound quickly
- Mix tracks with no generation loss
- Synchronize background music with your productions
- Fade, cross fade, or eliminate sections of audio
- Create unlimited variations of echoes, flanges, and choruses
- Optional Video Toaster Handler expansion module lets you play audio during many of the Toaster's digital video effects.

## DIGITAL PROCESSING SYSTEMS

### DC-2350

#### Personal Component Adapter

The DC-2350 Personal Component Adapter is a combination 3-Line Adaptive Digital Comb Filter Decoder and Y/C encoder designed for use with the Video Toaster.

- Has two S-Video outputs plus switchable Betacam/MII component output which allows the Video Toaster to be connected to Y/C monitors, S-VHS, Hi8, Betacam and MII recorders.
- Equipped with three S-Video inputs which are converted to Video Toaster input feeds. This allows devices such as TBCs and VCRs with S-Video output to be connected directly to the Video Toaster.
- Its 3-line Adaptive Digital Comb Filter provides superior diagonal luminance resolution compared to products using two-line comb filter designs.

DC-2350 ..... \$299.95

### 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.
- 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.
- 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.
- 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, Fractal Pro, Imagine, Vista Pro, and Cinemorph.
- Real-time video capture for rotoscoping and other video capture applications is possible when used in combination with a DPS TBC IV card.



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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/SB Shure SM58 Dynamic mic element & MR-1 Receiver ..... **434.95**
- SH-2/SB Shure SM-58 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

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- Sony ECM-55 ..... **653.95** Sony ECM-77 ..... **724.95**
- Senheiser MKE-2 ..... **747.95**



### 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 add added strain on your camcorders already limited power supply. .... **189.95**

### 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 (200V) 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 ..... **194.95**

### 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 ..... **204.95**  
ME66 with K6 Powering Module ..... **397.95**

### 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 ..... **144.95**  
ME64 with K6 Powering Module ..... **334.95**

### 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 ..... **119.95**  
ME62 with K6 Powering Module ..... **309.95**

## MACKIE



### MicroSeries 1202

Ultra-compact 12 channel audio mixer featuring the same specs and performance as the proven CR-1604. In less than 1 sq. ft. of work space it provides 4 low-noise/high headroom mic inputs with +48V phantom power, 4 bal./unbal. mono inputs, 4 stereo inputs, 2 AUX sends per channel, 2 stereo effects returns, 4 channel access inserts, tape in/out, 2 band EQ, headphone monitor w/level control, 12 LED peak meter display, sealed potentiometers, rugged steel construction and built-in power supply.

### CR-1604

Sixteen-channel audio mixer designed to deliver exceptional performance in a wide range of situations, including studio recording, live recording, live music PA systems, broadcasting studios, and high quality installed systems. Exclusive mix amp technology delivers 2X more headroom than ordinary mixers, along with the lowest distortion and highest possible S/N ratio. Convertible design allows physical format to be changed between tabletop, jacks-to-top and rack mount with jack pot rotated 90° to back. Rack mount brackets included.

## TASCAM



### 688 Midistudio

The 688 MIDISTUDIO is a compact, 20 input audio mixer combined with an 8 track cassette recorder system. Designed for the MIDI-based studio, this unit will work well for both the production facility and the individual artist. In the MIDI environment, sources can be selected, destinations assigned and routing designated, all from the remote MIDI controller. With its wide input range and ability to be remotely synchronized, the 688 can be the heart of a high tech, compact 8 track studio.

- Full featured 20 input mixer (10 balanced XLR inputs)
- 8 x 2 cue monitor mixer
- Built-in dbx noise reduction system (defeatable)
- Unique "Scene Display" system to monitor MIDI-controlled setups
- Gapless auto punch in/out and rehearsal modes
- Serial interface for external synchronization

## NRG

### CAMPAK

### 12 Volt Power Packs

If you are tired of short camcorder run times and stacks of batteries try NRG's powerful solution - the CAMPAPK. The lightweight CAMPAPK attaches easily to your waistband, pocket, powerbelt or optional CAMPAPK belt and uses ultra-high capacity nicad cells to deliver 3-5 hours of continuous camcorder run time.

### CAMPAK 12-Volt

- 12 V DC (cigarette lighter) output, adapts to any camcorder.
- Ultra-light weight (only 38 oz.) and compact palm size.
- Highest-density Nicad cells provide 4 amps of power.
- 2500 charge/discharge cycles for years of service.
- Sprung steel clip securely fastens CAMPAPK on waistband, pocket or belt
- Includes soft case and charger.

### CAMPAK PRO 12-Volt

- Has all the features of the CAMPAPK 12-volt, except uses 4-pin XLR output connector for more reliable connection.

### CAMPAK PRO 13.2-Volt

- Has all the features of CAMPAPK 12-Volt Pro except it uses 13.2 volt pack which offers 15-20% longer runtimes.

### Versalite Pro

### Professional AC/DC On-Camera Light

High efficiency AC/DC light at an affordable price. Proportioned for mid- to full-size camcorders, it's well-suited for the serious videographer.

- Unique dispersion grid eliminates hot spots.
- Dichroic-coated bulbs assure accurate color.
- Front housing snaps open for instant bulb exchange.
- AC/DC capability in unmatched wattage ranges (20W, 35W, 50W, 75W, 100W DC, and 150W, 250W, 300W AC) and patterns (flood, medium flood, spot).
- Includes 150W AC lamp, 50W DC lamp, clear dispersion grid, AC cord, and DC cigarette lighter converter.



### Varalite Pro

### Professional DC On-Camera Light

Combines the ruggedness, light efficiency and versatility of NRG's best selling Versalite 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. Instantly adjust light output to exactly meet changing light requirements. Best of all, it virtually eliminates color shift.



- Accommodates bulbs from 20W to 100W DC.
- Prismatic dispersion grid provides smooth even light output 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 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 user.

### 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.
- 5-step multi-color power indicator displays.
- Belt w/clip weighs only 4.9 lbs for all day comfort.
- Dual outputs for 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-ili 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".

### 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, overnight charger, comprehensive manual. Fits waist size 29"-44".
  - Also available in 13.2-volt 14-amp version. The 13.2-volt version offers 15-20% longer run times.

### POWER STATION SERIES



### Worldwide AC Power Adapters

Replaces expensive original-manufacture AC power supplies, delivering precisely-regulated 12-volt DC power from AC sources worldwide. High-current capability allows for powering not only large camcorders, but lights, monitors, and other high draw 12-volt equipment as well. They provide up to 9 amps of precisely regulated DC power.

- Different configurations: The 12560 features a single cigarette or 4-pin output and up to 5 amps of output current. The 125100 features dual outputs in any combination of cigarette or 4-pin, and 9 amps of output current.

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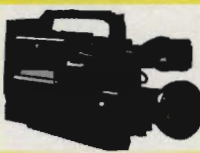
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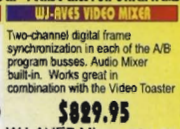
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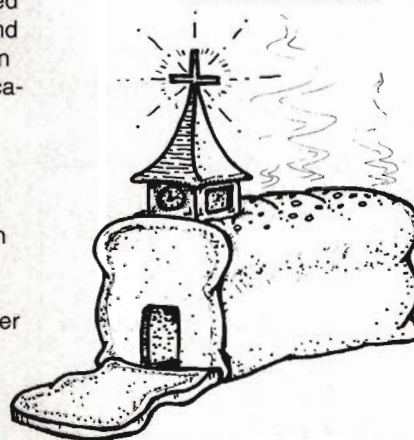
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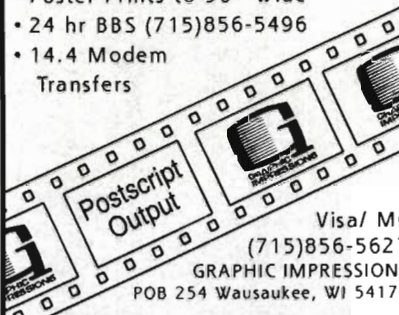
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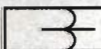
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# LAST WORD

## All Shook Up

Learning to Accept the PC

by Mojo



**Y**our head's in a spin. Dazed and confused, you stare at that big hunk of burnin' microchips on your desk with the word "Amiga" emblazoned on it.

"Omega?" people still ask when told about it.

Amiga, Omega, whatever. You might as well call it Dodo now, 'cause they're both up there with Elvis in Silicon Heaven. So you're worried.

Hell, if I spent as much money on my Toaster system as I did my car (and I'm sure a lot of you have), I'd be worried, too! Still, I've got a pretty penny sunk into my desktop and I can't help but have pondered my computing future along with the rest of you. But you know what? I really don't think it's so grim. The first thing you must accept is that the Amiga has about as much chance of coming back as

the King of Rock 'n' Roll. Sure, there will be reports of sightings and around-the-corner comebacks, but let's face it—it just ain't gonna happen. [This is the writer's opinion and not that of the editor. I believe Amigas will be made in the near future. —JP] But that's OK, because life will go on regardless.

I own a Mazda Miata. It's a great, unique little car and I wouldn't dream of owning anything else. In fact, I'm probably as snobbish about that car as I am about using the Amiga. Now, let's say Mazda goes out of busi-

ness tomorrow. Would my Miata suddenly become useless and just fall apart on the spot? No way. It runs fine and in all likelihood will do so for years to come. If it needed service, there are so many of these cars out there that I can guarantee people will be fixing them for as long as there are people driving them. The only downfall will be not being able to buy the next model when mine finally does go kaput. I'll just have to look at other convertibles and hope I can eventually find one that I like.

All this holds true for the Amiga. Right now there's simply nothing out there that performs in quite the way a Toaster/Flyer system does, and hopefully yours is working fine. If not, I'm sure NewTek will be fixing

burnt Toasters for quite a while, and, as long as there are a couple of million working Amigas out there, you can bet that somebody will make a living fixing them. So don't panic, and don't let any news of Commodore's demise worry you any further.

However, it is clear that we all should be keeping a close eye on developments in the rest of the computer-video world, because somewhere out there lies our eventual replacement.

In all likelihood, it will wind up being the PC. It may not sound pretty, but that's just the way it is. Although it's a little early to tell, some people are already forecasting the demise of the Macintosh. It's expensive, development is slower, and there are zillions more PC owners out there, supporting and driving the skyrocketing market. People have always wished for universal computer compatibility and, like it or leave it, I think that around the turn of the century the world is going to be PC-compatible. I could be wrong, but I hope not.

Think about it. Right now, the best thing about the PC is its open architecture. There are several operating systems to choose from and so many add-on boards to buy that when you get right down to it, the PC is really only a box with a processor chip: a body to run whatever brain you stick into it. In fact, there is such a variety of hardware out there that it's almost reached the point where no two machines are exactly alike. When PCs are universal, the market will be even larger and there will be more developers producing an even wider array of even less expensive products. You will be able to tailor your computer from the ground up to do exactly what you want—finances, publishing, video, *anything*—in just the way you want it.

We used to say that PCs were for business, Macs for publishing and Amigas for video. Although only one machine will remain, all three categories will survive—they'll just be on the PC, each with a host of companies providing the hardware and software to turn that metal box into your personal dream machine. Everybody's computer will be unique, yet all compatible.

And that sounds pretty darn good to me. So enjoy your Toaster and keep listening to Elvis records as you hum along, creating the same cool videos and animation you always have. It's still the best tool out there for the job and probably will be for awhile. Just remember to keep your eyes open, because the future will be here sooner or later.

VTU

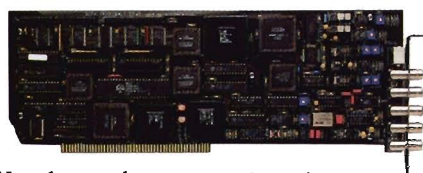
*Mojo works on the syndicated series Babylon 5 as an animator/technical director with Foundation Imaging.*

**"People have always wished for universal computer compatibility and, like it or leave it, I think that around the turn of the century the world is going to be PC-compatible."**





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