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

VIDEO TOASTER® USER™

an Avid Media Group, Inc. magazine

THE PERSONAL VIDEO PRODUCTION MAGAZINE

FEBRUARY 1995 • $3.95 US/ $5.00 CAN

VIDEO TOASTER EXPO COVERAGE PAGE 20

Closing In On 3D Reality

- New Column: The Toaster in Post-Production
- TPaint Tutorial: The Ripped Page Effect
- Exploring Interactive Video and Animation with Marmalade's Mark Stross

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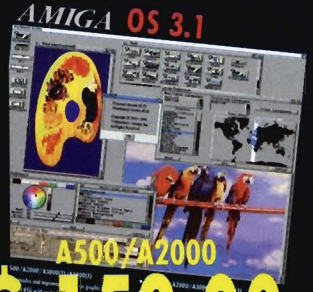
AMIGA OS 3.1



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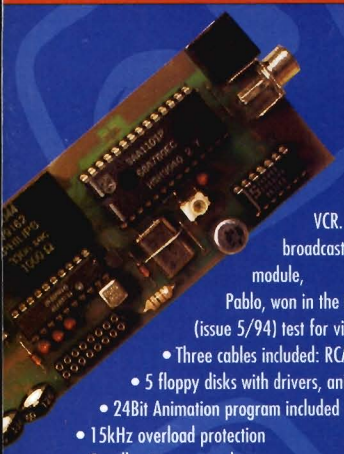
Pablo



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THE PERSONAL VIDEO PRODUCTION MAGAZINE

VIDEO TOASTER USER

FEBRUARY 1995 VOLUME 5 NUMBER 2

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LightWave Image by Don Pence, Cover photo by Curtis Fukuda

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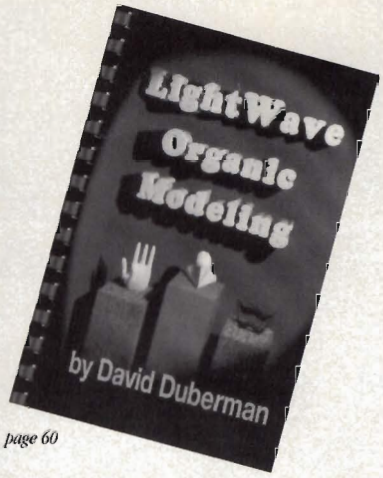

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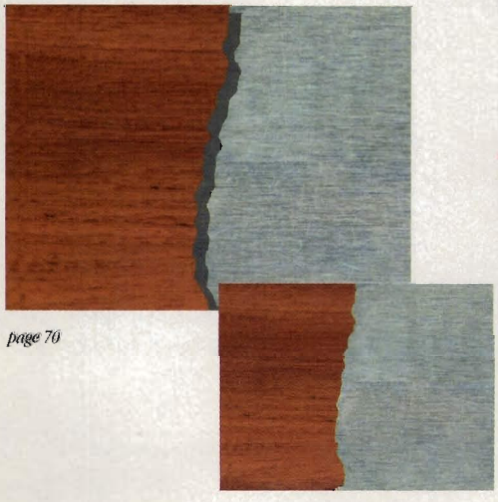

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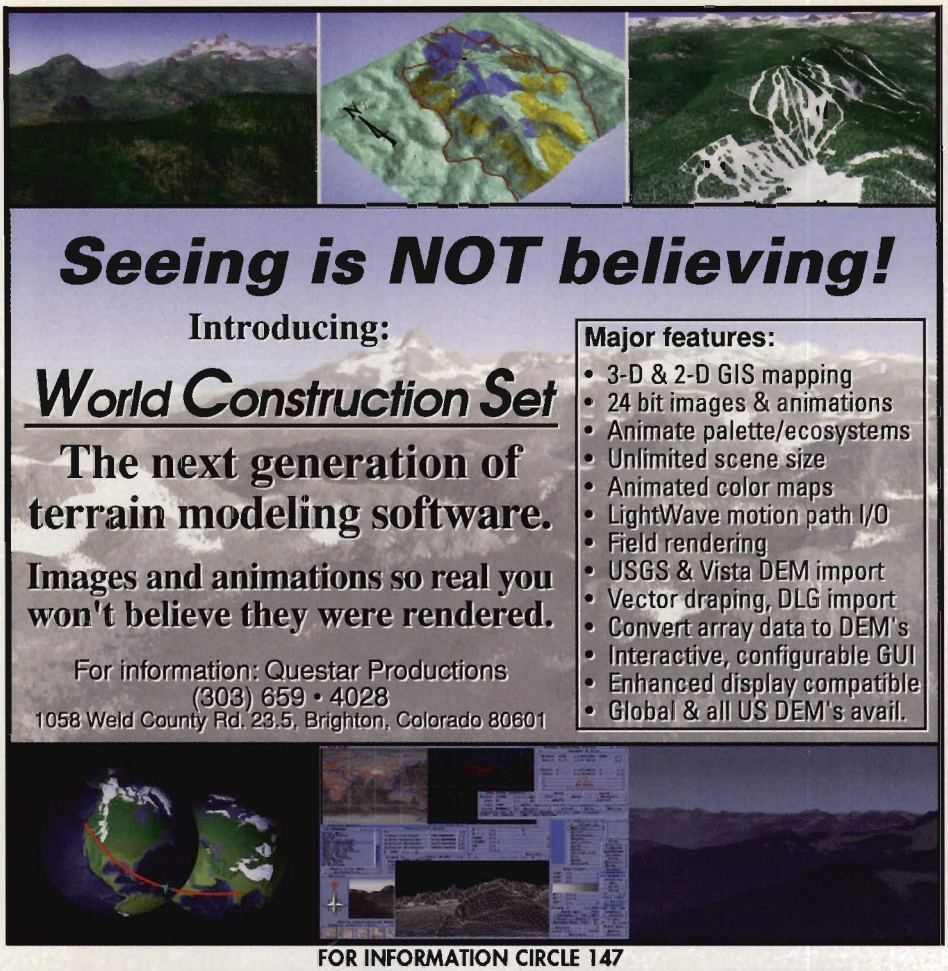

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THE PERSONAL VIDEO PRODUCTION MAGAZINE

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JVC. The three most important letters in S-VHS.

TOASTER TALK

Success Abounds at Toaster Expo

NewTek Shines with Flyer, Multi-platform LightWave 3D

by Jim Plant

NewTek's 1994 ended with a resoundingly optimistic bang at the Video Toaster Expo, held in mid-December in Southern California. Thousands of Toaster and LightWave enthusiasts converged on the Universal City Hilton & Towers to see the Flyer, multi-platform LightWave 3D and the latest products from the growing Toaster and LightWave third-party development community. Nearly 50 companies took advantage of the Expo to showcase their products before the largest crowd of Toaster and LightWave enthusiasts, dealers and distributors ever assembled for a single event.

Prior to the exhibition, many of these developers also attended the inaugural NewTek-sponsored developer's conference. Alcatraz programmers spent almost two full days revealing technical specifications for the Toaster, Flyer and the new plug-in technology for LightWave 3D. NewTek had never released this much information about its products before, and one developer described the technical sessions as "trying to get a drink of water from a fire hydrant." (I must note that he said it with a big smile on his face.) Considering how busy Alcatraz was in trying to complete the Flyer, it was nothing short of a small miracle that this conference even took place.

Jenison clearly pointed to multi-platform LightWave 3D and the Flyer as the anchors of NewTek's future product lines.

Special thanks must be given to MegageM's Dan Wolf, who was hired as a NewTek consultant primarily to prepare the documentation for the developer's conference. Dan spent most of the month of November in Topeka interviewing Alcatraz programmers and figuring out how the Toaster and Flyer hardware and software work. The result was a fine collection of developer documents and a set of development tools. Major kudos also to Alcatraz members Allen Hastings, Stuart Ferguson, Steve Kell, Marty Flickinger, Arnie Cachelin, Pat Brouilette and David Holt, and Flyer Product Manager Peter Tjeerdsma, who somehow found time amidst the chaos to work with Dan to organize and execute this developer's conference. I predict that Toaster users will see the result of this event manifested as early as the upcoming National Association of Broadcasters convention, in the form of new software and hardware that works in the Toaster/Flyer and LightWave environments. This developer's conference marked a fundamental change in the way NewTek has distributed technical information in the past, and shows great promise for the future.

Keynote Address

NewTek President Tim Jenison delivered the Expo's keynote address and revealed some interesting clues to NewTek's future. He clearly pointed to multi-platform LightWave 3D and the Flyer as the anchors of NewTek's future product lines. In discussing the Flyer, Jenison coyly described it as an intelligent and independent device that only required power and high-level commands from the host computer. "I'm not going to announce any new products," he told the crowd, "but if you follow that line of thinking..."

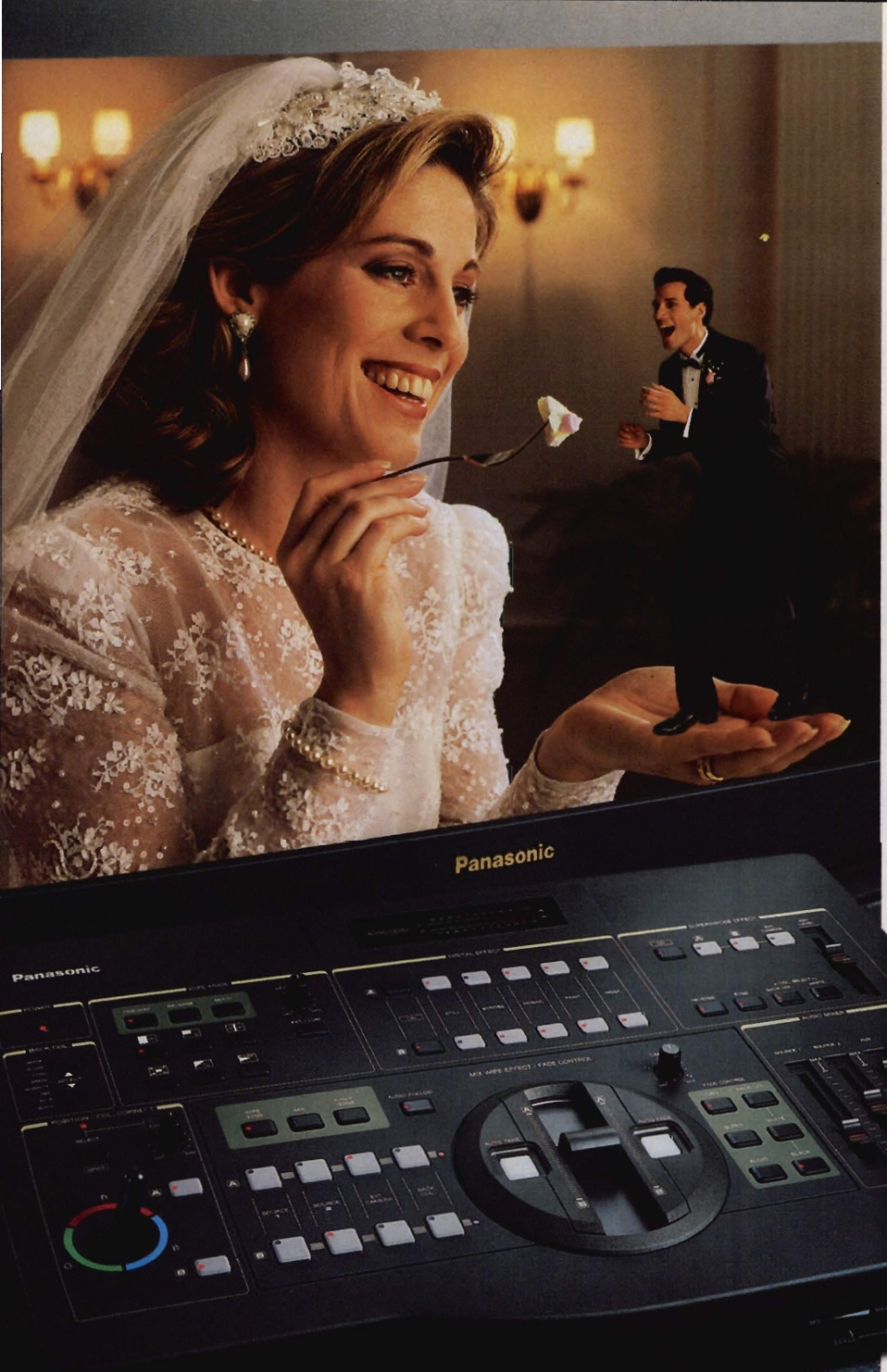
Jenison also updated Expo attendees on the shipping status of the Flyer, revealing that the hardware portion of the product was complete and that the software would be finalized "sometime in the first quarter."

Because the Flyer is in such great demand and the product is currently, as Jenison put it, "very usable...about 95 percent complete," NewTek will be offering its customers a 3.9 pre-release of the Flyer. This 3.9 program is very reminiscent of the .9 release of the Video Toaster back in 1990. Jenison said that dealers would soon be given a detailed list of the Flyer's current working and non-working features. In turn, the dealers will be asked to contact customers who had put down deposits earlier in 1994 and offer them the option of taking delivery of a 3.9 Flyer (with a free 4.0 upgrade) or waiting for the final release. Jenison said that NewTek planned to ship around 800 prerelease Flyer units by the end of 1994. A few Flyer customers will probably opt to wait for the final software version, which may result in the availability of Flyers to customers who did not put down a prepurchase deposit. If you are in this category, you may want to contact your local dealer and inquire about unexpected Flyer availability.

For a closer look at Video Toaster Expo '94, see pages 20-21. Extensive coverage of the Video Toaster Expo '94 is available on a two-hour videotape for $19.95 (add $3.00 for shipping; California residents add 8.25% sales tax). Call (800) 322-2843 to order the tape with VISA or MasterCard, or send your check for the appropriate amount to Avid Media Group, Inc., 273 N. Mathilda Avenue, Sunnyvale, CA 94086.

I'll see you at the Video Toaster Pavilion at NAB '95 in Las Vegas!

VTU



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LETTERS TO THE EDITOR

Readers Speak Out

Dear VTU:

The video production unit of the New York City Police Department has been using the Video Toaster for the past few years with great success. However, until reading *Video Toaster User*, our knowledge of certain techniques was somewhat limited. The many informative articles written by *VTU*'s staff, as well as many of the tips offered by readers, have greatly expanded our use of the Video Toaster.

VTU has proven to be an invaluable source of information for the video production unit of the New York City Police Department. Keep up the good work!

Captain John B. McManus
Video Production Unit
New York City Police Academy
New York, N.Y.

Dear VTU:

I just wanted to let you know about another reader that was extremely pleased to see the latest *VTU* looking more like the old ones!

Jerry Hatchett
via CompuServe

Dear VTU:

I just received my *VTU* and wanted to thank you for returning the magazine to the readers. The return of "Slices" and "Taming the Wave" is most welcome. You're doing an excellent job, and all I can say is keep it up!

Stan Shumlick
via CompuServe

Dear VTU:

I just wanted to drop a line that the latest issue of *VTU* is by far the best yet. I hope you continue with more emphasis on tutorials and reviews. Keep up the excellent work.

Andy Steph
via CompuServe

Dear VTU:

Just picked up the new *VTU*—boy, is it great to see all those tutorials and how-to articles! This is what *VTU* should always be like! Tutorials, tutorials, tutorials! I love those tutorials. Keep up the good work.

Mike Smith
via CompuServe

Dear VTU:

Having just read, cover to cover, the October issue of *VTU*, it felt like a reunion with an old friend. It was a pleasure to read and learn tips and tricks about my Toaster, and nothing but my Toaster.

If I want specifics on video production, I'll buy the video magazines. It's good to see that you have taken a closer look at the title of your magazine.

Luckily, I never got around to sending my first draft of this letter, dated June 1994. That letter was to cancel my subscription.

Thanks for getting back on track.

Peter Penny
Montreal, Quebec

Dear VTU:

I am a fairly new reader of your magazine. However, I'm glad to see you are getting back to articles about the Toaster.

For a few months you were beginning to look like *AV Video*. A great magazine, but I already receive it. I subscribe to *VTU* to learn more about the Toaster and its programs.

Your September issue had a number of letters to the editor that I agree with. Keep *VTU* a magazine for Toaster users and let the other production magazines get involved with other issues.

You can't be everything to everybody. You've got a terrific magazine, well-written and slick. Just keep getting articles that deal with your magazine's title and I'll be very happy.

Fred Berney
via CompuServe

Dear VTU:

After reading the October issue of *Video Toaster User*, I felt it was time to write to you and your staff to say thank you. *VTU* is once again the magazine it should be: a total Toaster-user magazine.

At the beginning of a new month, I would be working with one eye keeping watch for the postman, anticipating the latest issue of *VTU*. That urgency died down for awhile when *VTU* became just another video magazine. The October issue did for me what no other video magazine has done—it made me money! I immediately did the Kyle Thatch tutorial, "Well-Balanced Breakfast." The result was some of my clients saying: "Wow, that's neat! Can you do that with our boxes and drop some of our stuff into the box?"

Now the U.S. postal system can burn all the mail it wants to in Chicago, just as long as your magazine makes it to me on time.

Steve Johnston
TeleVideo Productions
Eau Claire, WI

Editor responds:

Through your numerous letters, faxes and e-mail posts, we've received the message loud and clear. It's really pretty simple, isn't it? You've invested thousands of dollars in your Video Toaster production or animation system and now you'd like to receive the information that will help you optimize your investment. You say you want more "how-to" tutorials on LightWave, ToasterCG and ToasterPaint? You say you want to know more about the software that works directly with the Toaster (like ImageFX, Alpha Paint, PowerMacros, Composite Studio, Hollywood FX, Sparks, etc.)? You say you want to know how to get more speed out of your Toaster/LightWave system? You say you want to make more money with your system? Well, that's exactly what you'll see in upcoming issues of *VTU*.

There are a variety of ways that you can communicate with the *Video Toaster User* editorial department. If you prowl the Internet or other on-line services, you can reach us at these addresses:

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continued on page 65

TOASTER TIMES

Commodore Update

Jim Plant

In the December/January 1995 issue of *VTU*, it was reported that a group of investors led by Alex Amor from Creative Equipment International (CEI) had reached a verbal agreement with the liquidators to sign a contract. Immediately following this agreement, Amor sent representatives to the Philippines to verify that components that had been removed from Commodore's Philippines manufacturing plant and put into storage did, in fact, actually exist. What was discovered, according to Amor, was "an unmitigated disaster. No inventory list, just boxes stacked on top of boxes." Amor told *VTU* that many of the most crucial components were eventually found, including custom Amiga chips, some of which would have taken up to six months to manufacture. "If we hadn't found those chips," said Amor, "we would have backed out of the deal completely."

With an acceptable Philippines inventory list in hand, Amor still has to deal with a couple of "lingering legal issues," including the reinstatement of several expired patents. A representative from CEI attended the recent Video Toaster Expo and reported that Amor was unable to attend because of meetings with the liquidators and his own legal staff.

On Dec. 16, *VTU* received a news release from CEI stating that the company had submitted an offer to purchase the assets of Commodore International and Commodore Electronics. "Now, it's up to the liquidator and creditors. Our intent is to complete this purchase and resume building the Amiga as soon as possible," Amor said.

The announcement marked the first time since the declaration of liquidation that an offer had been accompanied by cash.

VTU

The Toaster Goes Country

Douglas Carey

Strangely enough, there hasn't been a single best-selling book written about the newest fad diet that's quietly taking animators by storm. And don't even look for an endorsement from any stuffy board of nutritionists. It's not that kind of program.

This deadline-induced diet has become all-too-familar to animators such as Tommy Gunn, who spent up to 21 hours a day last November preparing one minute of animation for a television special featuring country music star Reba McEntire. Solid foods are looking pretty good to the New York-based animator these days.

Virtual Animation's Tommy Gunn created nearly two minutes of animation for an NBC concert special starring Reba McEntire.

"You know things are coming close to deadline when your diet consists of Marlboro Light cigarettes, a Nutrimint, and any food that doesn't take two hands to eat—that way you can have one hand on the mouse and one hand eating at the same time," said Gunn, describing the diet's primary ingredients. "A Pop Tart is perfect, for instance."

Gunn, who operates his company, Virtual Animations, from within his New York City triplex, was initially given three weeks for the assignment. A few days later, the deadline was cut in half. Even after recruiting freelance animators Michael Busillo and Marjan Moghaddam to assist on the project, Gunn had precious little time to spare.

Working together with his client, a New York-based video production house called Picture Vision, Gunn created nearly 90 seconds of animation for NBC's Reba McEntire concert special, which aired the day after Thanksgiving. While parts of his work were cut from the special, Gunn's complete effort aired as part of a full-length video released before Christmas.

Gunn's participation in the project invovled the creation of a photo album, complete with flying logos, morphing,

sequential imaging and image compositing. Gunn, who has two Video Toasters in his studio (a T4000 and a T2000), said he utilized every available resource to produce the desired results in a timely manner.

"On sequential animations, instead of rendering them out, we used an ADO [Ampex Digital Opticals] and mapped that onto the images that had a moving video on it," Gunn said. "So instead of having to render each frame out, I would cut a little keyhole out and paste in the moving video with an ADO. That saved me a lot of time."

Gunn, who was provided a five-page storyboard for the project, said the animation was completed on six machines, using programs such as Art Department Professsional, CineGraphics' PowerMacros and Pixel Pro for creating titles and logos.

For the final output, Gunn said, the project went straight to D-II with the Personal Single Frame Controller.

"That thing works like a charm," he said. "It's automatic. You push one button and you're done. And if you make a mistake, it lets you know right away."

So far, Gunn's entry into the country music arena has been anything but a mistake. After spending the past 14 years working with rock musicians in a variety of roles, Gunn handed his agency to a partner and began working on animations full-time. Ironically, much of his recent workload has been related to the exploding industry of country music.

"Here I'm supposedly this rock 'n' roller, and I'm starting to get all this country work," Gunn said. "[On the Reba McEntire project], people were joking with me, saying, 'You're a little bit rock 'n' roll, she's a little bit country."

For more information about Gunn's Virtual Animations, call (212) 254-9041.

The Way I See It

You Heard It Here First

Mike Danger

Toaster log—Stardate 1995: These are the thoughts of the blind columnist Mike Danger. To search out and report rumors and gossip. To boldly feel where no man has felt before. Prepare to energize and beam aboard, because these are your captain's orders.

It's a new year and in case you haven't come out of your closet, the Flyer's recent shipment has made this state-of-the-art product the happening event of 1994. For those of you who have been deemed lucky enough to have one to hold in your hot little hands, take a deep breath, because in the near future are S-VHS inputs, an add-on TBC and faders on the audio tracks.

Ron Seifried's Framestore of the Month

And if that isn't enough (and when it is it ever?), while deployed in Topeka recently I was witness to a new video game called Topeka Doom. This "hacked" game features some very familiar walls, elevators, and even some restrooms that bear close resemblance to the NewTek headquarters. With phaser in hand, amuse your friends as you chase ex-Toaster employees throughout the complex. While I doubt you will see a Nintendo version of this game at Toys R Us, the people responsible for this top-secret playtoy assure me that if you look hard enough, you, too, can be a proud owner of this software.

Though the Video Toaster Expo '94 was the event of the year, it was good to see all the new faces and products that cluttered the Universal City Hilton. Toasters abounded everywhere, of course, but there were Flyers, Toaster ovens, and more products for the Amiga computer, even more than Elizabeth Taylor has had in ex-husbands.

There have been a lot of projects coming out that feature LightWave and alternative Toaster technology. Some include a band from Cleveland, Ohio, called The Meek. These funsters titled their latest artsy Toaster project "I Dream in Red." Done with 2.0 software, this primitively made creation definitely proves that you don't need big bucks to make really good video. Though the band's spokesperson advised me to "splatter the tape on the highway," I think I'll definitely make this one a keeper.

Moving from low-end to high-end video, I recently was honored with a call from a Native American tribe from a reservation in Oklahoma. These video diehards have produced, filmed and released a major motion picture featured around the Toaster. Hopefully, by the next time we meet I'll have more information and a framegrab or two. If you get a chance, definitely experience this one for yourself.

Last month we told you about Ron Seifried, the once-removed cousin who

continued on page 14

Dive Into a LightWave World

Corey Cohen

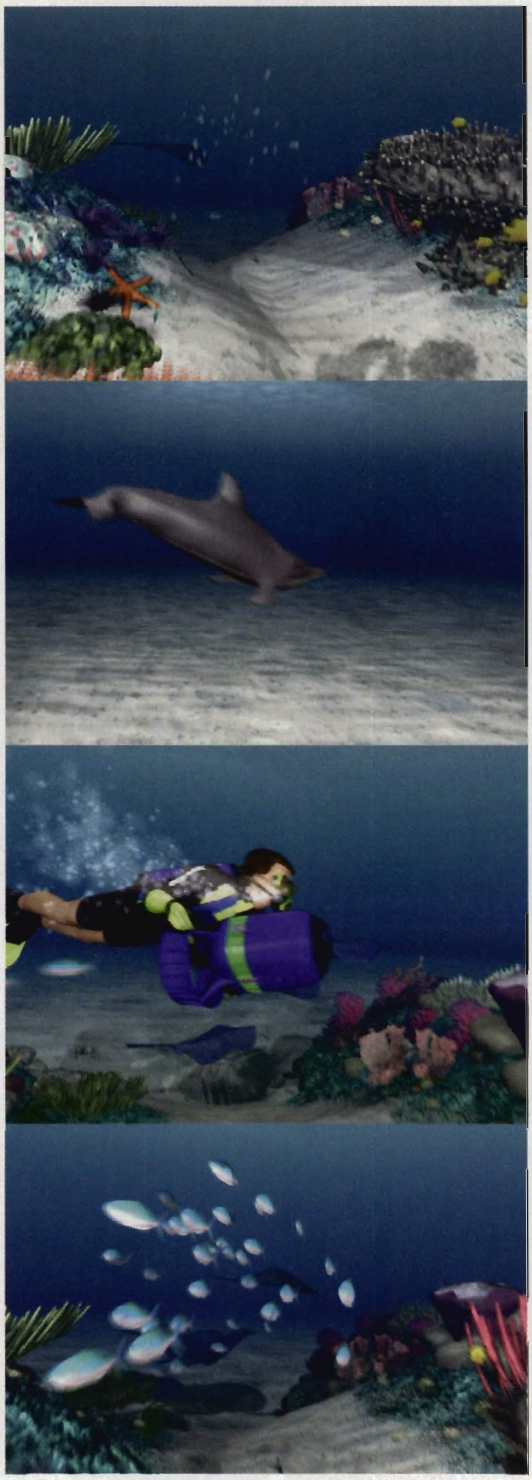
Part of the joy of computer animation is its ability to carry viewers into new, untouched realms. With the power of today's desktop video even the most phobic or homebound individuals can journey into the seemingly inaccessible, provided they can unshackle their senses and their disbelief.

A recent promotional video for Oceanic, a San Francisco-based scuba and watersports equipment company, explores an environment many people never see. Using LightWave, the video shows water buffs and others the ocean floor and a dolphin morphing into a diver, among other things.

Soon after being approached by Paula K. Productions on behalf of Oceanic, Computer Café, a 2D/3D animation house in Santa Maria, Calif., took on the detailed project. The studio's opening sequence for the video originated with the idea of mixing live footage of an Oceanic-outfitted diver with animation of a swimming dolphin, but when finding two shots that would fit the criteria for a perfect morph failed, Computer Café decided on a fully CGI presentation.

Though Tom Williamson, Computer Café's effects supervisor/technical director, was the only staff member with scuba-diving experience, a stockpile of reference material and Oceanic-supplied footage helped. Soon the company was busy creating an authentically detailed realm with a fantasy edge.

The 25-second sequence depicting the dolphin/diver swimming along the ocean floor utilized a number of familiar programs. The sea floor, coral and organic brushmaps were rendered with Forge. The PowerMacro Snake helped animate the dolphin, which was morphed into the animated diver via Morph Plus. Using Humanoid as a base, the diver was outfitted with Modeler-spawned Oceanic gear, with Sparks allowing him to exhale a stream of bubbles.



Top to bottom: As viewers glide over an authentically detailed ocean floor, they encounter a dolphin morphing into an Oceanic-outfitted diver, then see the company's logo collapse into a school of fish.

One of the toughest effects to produce was a full head of hair for the realistic swimmer Oceanic wanted, a goal the Café crew achievied using a complex combination of morph targets and procedural animation. The spot's final effect, the Oceanic logo dissolving into a school of fish, was completed using the PowerMacro Swarm.

The project, said Williamson, became one of the staff's most challenging assignments, in part because of the sheer amount of detail involved. "Every trick we ever learned we had to put into this one," he said.

Achieving the bright, pseudo-realistic, warm-water environment Oceanic wanted was also tough. Though comparisons between the animated sequence and the sparse, murky depths of the much-talked-about *seaQuest DSV* may be inevitable, "We didn't even think about [that show] at all," said Williamson.

Computer Café's projects deal mostly with effects for TV commercials and long-form video such as infomercials. The company's latest projects include ongoing work for BCH, a film documentary company, and an element removal shot for an upcoming feature film. Though the Computer Café staff is eager to break into the movie special effects industry, David Ebner, the company's co-owner, is aware of the difficulties involved.

"It's real hard to work on anything for a film unless you have film credits, even though the work might be easier than much of our animation," said Ebner.

"But for an effects company, we're still pretty young," he added. "We're optimistic."

Computer Café can be reached at (805) 922-9479.

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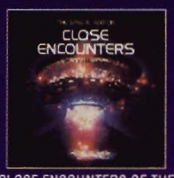

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Body Snatchers (1993)	*1251800

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Cliffhanger	*1149301
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The Last Action Hero	*1154806
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Wizards	0734905
Hard Target	*1179605
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Alien 3	*1042506
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The Empire Strikes Back	*0091009
Bram Stoker's Dracula	*1102904
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Die Hard 2: Die Harder	*0041806
Patriot Games	*1051309
Basic Instinct	*1033208
The Wizard Of Oz	0001404
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Batman Returns	*1029909
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Back To The Future Part II	*0921304
Back To The Future Part III	*0497008
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The Abyss	*0881102
The Hunt For Red October	*0825000
The Last Of The Mohicans (1992)	*1071406

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Predator 2	*0104307
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A Few Good Men	*1106301
The Firm	*1154400
Ghost	*0826008
Dragon: The Bruce Lee Story	*1150705
Robin Hood: Prince Of Thieves	*0976803
My Cousin Vinny	1033109
Eric Clapton: Unplugged	1038405
Chinatown	*0202507
Conan The Barbarian	*0220509
Robotech – Volume 1	1146604
Home Alone 2: Lost In New York	*1104900
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Jaws	*0844605
Carlito's Way	*1229301
Star Trek: The Motion Picture	*0203505
Star Trek II: The Wrath Of Khan	*0201301
Star Trek III: The Search For Spock	*0201608
Star Trek IV: The Voyage Home	*0430603
Star Trek V: The Final Frontier	*0448605
Star Trek VI: The Undiscovered Country	*1001007
History Of The World Part 1	*0055707
Mad Max – The Road Warrior	*1261106
Striking Distance	*1200708
The Prince Of Tides	*0847103

NEW RELEASES

Outland	*1328103
Crooklyn	*1293505
No Escape	*1288505
Bad Girls	*1285808
The Seventh Sign	*0591404
Fright Night	*0182006
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Monty Python And The Holy Grail	*0192005
The Naked Gun 33 1/3 – The Final Insult	1286707
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Rambo: First Blood	*0650309

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Hot Shots	0029108
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FOR INFORMATION CIRCLE 110

Rushing to Use the Toaster

Joan Burke

Rush Limbaugh has been called the country's most influential pop political voice. His nightly half-hour TV show is available to 99.82% of the nations households and guess what? He uses the Video Toaster. The late-night talk show host doesn't actually do the hands-on work, but the Video Toaster is used to create all of the graphics on *Rush Limbaugh, The Television Show.*

TPaint applications were used to create this image.

A columns effect in the Switcher module was used to create this show opening.

Joseph Abbenda, the program's technical director, suggested the purchase of a Toaster when he was hired in September 1993. "It's the perfect tool to use on the show in terms of what it costs," Abbenda said. He continuously tried to convince producers to purchase the Toaster. "The senior producer, Richard Mincer, was skeptical, but once I explained what it could do and he saw a demonstration, he was sold on it."

The show's equipment now consists of a Toaster 4000, an Amiga 4000 with a 68040 accelerator, 18MB of RAM and an additional 270MB hard drive.

"Unlike *seaQuest*, where they have a render farm with probably 40 Toasters, we're using the Toaster in its most basic configurations," Abbenda said.

All of the graphics seen on the show are done with the show's single Toaster. Some of the graphics include images such as New York ex-mayor Mario Cuomo made to look like the Pope and Ted Kennedy morphed into a martini glass.

"We use it for various applications," he said,"We use it for graphics. We do opens that are cartoonlike. [For example], we might have Clinton's head on a running body or next to Madonna."

The show's director, Chet Lishawa, attributes much of the cut-and-pasting work to the Toaster.

"Before we got the Toaster we did it [cutting and pasting] physically, but now it's done electronically. So it's faster in that respect," he said. "The whole thing is getting a design and rendering it. If we could render faster it would be nice."

On *Rush Limbaugh, The Television Show*, time is of the essence. Each show's open is based on a current event, so everything is done on the day of the show.

"We're limited by time," Abbenda said, "If the idea comes in at 2:00 p.m., it has to be done by 4:00 p.m."

The process starts with the producers giving the technical staff a script. The script is then evaluated to see which elements might be done with the Toaster, DVEs, CG, Ultimat, or a combination of all of these. The technical staff then puts the graphics together. The final step is editing, and then the show is ready to be aired.

Since the graphics usually have to be completed fairly quickly, Abbenda does not get the opportunity to actually use all of the Toaster's tools.

"I love LightWave. It's a powerful program. I just wish I had more time to work with it," Abbenda said.

In the future Abbenda hopes the show will purchase a Personal Animation Recorder (PAR) so he will be able to rotoscope, render images in high resolution and do longer animations. Overall, the technical staff is pleased with the Toaster's quality.

Abbenda said, "Having never used a 3D animation program [until *Rush Limbaugh, The Television Show*], I found it to be very user-friendly."

VTU

The Way I See It

continued from page 11

is residing in the Big Apple doing that job thing daily at Armato's Pro Video and moonlighting (minus Mattie and Dave from that same show) doing jobs for major TV companies. He is responsible for some of the file footage shipped with the Flyer. This devout Howard Stern fan was one of the first people to access his very own Flyer. In appreciation, Ron has offered a framegrab from his unit. He is ecstatic over the new paint program and transitional wipes (some of which are rumored to include the redneck-with-beer wipe, and the here-doesn't-come-the-bride effect). Ron has incorporated these features into an upcoming pilot for ABC called *Girlfriends*. This issue's Framegrab of the Month definitely shows that Ron is outstanding in his field. The question is, "Is that really Ron's field, and what is he growing?"

Speaking of *Girlfriends*, our Hollywood Insider department has learned that one-time David Letterman and Joan Rivers producer Sandra Furton-Gabriel has had this chit-chatty pilot picked up for morning syndication. The show relies heavily on the Toaster and Flyer for its success.

I hope I've answered some questions and questioned some answers. Once again, it's time to close the Toaster Times storybook, but if you get the urge to call or write, feel free. I can be reached at:

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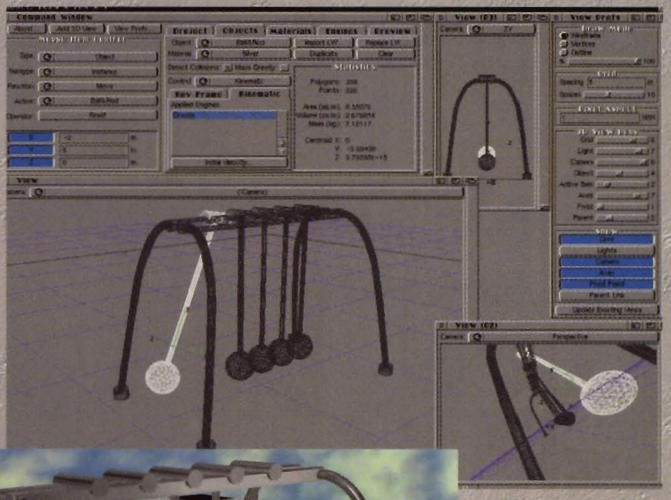

Setting up your scenes is simple with IMPACT!'s powerful and configurable interface. The shot shown is using a 1024x768 eight color screen running on a A3000.

Physics Support:

- Automatically computes physical properties of objects including mass, centroid, and inertia.
- Accurate and friendly collision detection ensures your objects do not penetrate.
- Objects don't get the 'jitters' when resting.
- Make your objects out of a variety of predefined materials of create your own by modifying the density, elasticity, and roughness.
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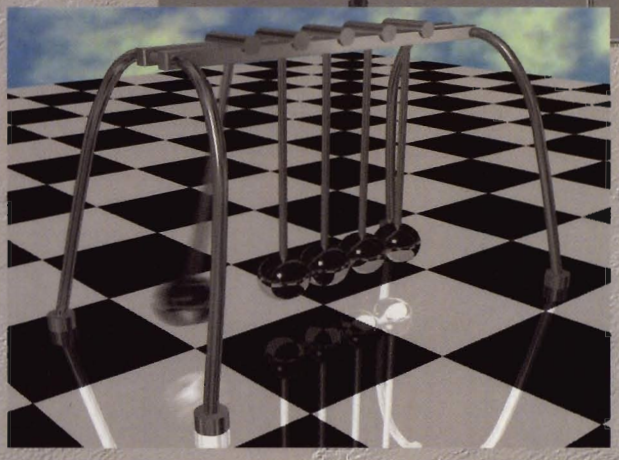
- Materials and Engines can be saved separately and selectively loaded into other projects.



After setting the initial conditions of your scene, press 'generate' and watch the results!

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FOR INFORMATION CIRCLE 121

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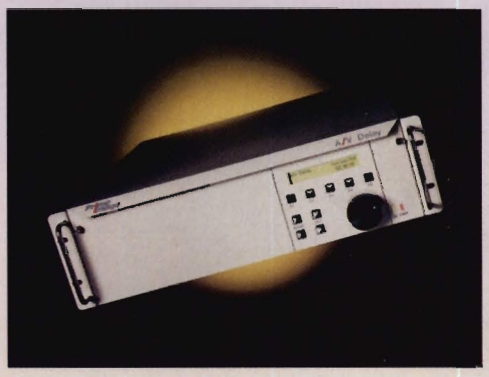
NEW PRODUCTS

Compiled by Joan Burke and Corey Cohen

A/V Delay

Take a Break

Product: A/V Delay
Description: Broadcast delay unit
Price: $5,900
Prime Image
19943 Via Escuela
Saratoga, CA 95070
(408) 867-6519
Fax (408) 926-7294



Prime Image has released *A/V Delay*, a self-contained audio-video delay unit used to delay live broadcasts and switch in alternate audio and video feeds as required. The product delays both video and audio for up to 30 seconds without data compression. Either audio or video, or both, can be replaced, recorded or rerouted as necessary within the unit. Standard features include a built-in genlockable synchronizer; controls for video, color and setup levels; and H phase adjustment. Available options include time-base correction and standards conversion for any combination of standards.

FOR INFORMATION CIRCLE 1

Gettin' Mobile

Product: CDD-3542
Description: Super Screen Mobile Display Console
Price: $1,995
Progressive Marketing Products, Inc.
391 N. Thor Place
Brea, CA 92691

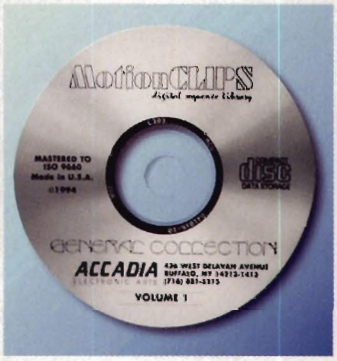
Progressive Marketing Products Inc.'s *CDD-3542* Super Screen Mobile Display Console has been designed for using and transporting "super screen" monitors of up to 42 inches in size. Ideal for the boardroom, classroom or trade-show floor, the CDD-3542 display console is all-welded, heavy-gauge steel construction that holds up to 500 pounds on either 8-inch pneumatic or solid rubber wheels. The top shelf is 44 inches wide and 34 inches deep, with a half-inch upper lip that provides security for the monitor while allowing access to monitor controls. Special features incorporated into the CDD-3542 include a side pullout keyboard drawer with mouse pad, CPU tower compartment, cable-access ports in the top shelf, lockable and removable hinged front doors, quick-release rear back panels for ease of cabling, two adjustable equipment shelves and a six-outlet, surge-protected power panel with a front-mounted master switch.

FOR INFORMATION CIRCLE 2

Moving Pictures

Product: MotionCLIPS
Description: CD-ROM
Price: $149.95
Accadia Electronic Arts
436 West Delavan Ave.
Buffalo, NY 14213
(716) 881-5215
Fax (716) 882-1774

Accadia Electronic Arts announced the release of *MotionCLIPS*, a CD-ROM that includes more than 8,000 frames of royalty-free footage. The volume contains 20 image sequences plus 16 bonus IFF static



backgrounds. The sequences can be used as textures, backgrounds or reflection maps. Scenes include "choppy and fast water," "time-lapse highway traffic," "marine fish," "city night traffic" and many others. By using a batch processing program the images can be modified with effects such as fresco, emboss and oil paint. The frames are easy to use and can be imported into a variety of programs, including LightWave, Hollywood FX and Alpha Paint.

FOR INFORMATION CIRCLE 3

Taking a Colorful Look

Product: CD-2001
Description: Color monitor
Price: $2,199
CD Solutions
2551 San Ramon Valley Blvd., Ste. 256
San Ramon, CA 94583
(510) 820-5400
Fax (510) 820-4115

CD Solutions is now shipping the *CD-2001*, a 20-inch color monitor specifically designed for Amiga computers and desktop video output. The CD-2001 supports all Amiga timings and automatically scans from 15kHz to 36kHz. The tri-dot analog RGB monitor features a sharp 0.31mm dot pitch and provides edge-to-edge capabilities. Users can rely on the CD-2001 to support unlimited colors.

FOR INFORMATION CIRCLE 4

New Acceleration

Product: Cyberstorm series
Description: Accelerator
Price: $1,995

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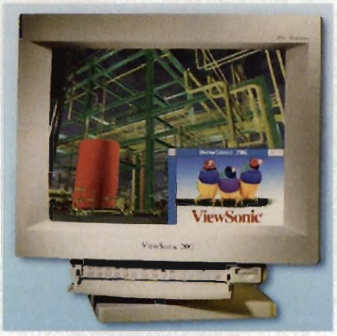
Dallas, TX 75204
(214) 821-7776
Fax (214) 821-3464
Advanced Systems & Software has announced the release of the *Cyberstorm*, a series of high-performance accelerators for the Amiga 4000. The high-end 50MHz version is the only accelerator in the series that will be available in the United States. Cyberstorm features the first 68060 CPU-based system and powers the Amiga 4000 to 90 MIPS. When equipped with Cyberstorm, the A4000 provides a performance comparable to many Pentium-based systems and workstations. The Cyberstorm is completely modular and includes a carrier board, a CPU module and a memory board. The CPU module and the memory board install onto the carrier board. An additional expansion connector is provided on the carrier board for a communication module. Cyberstorm also features full library support, including programs such as LightWave 3.5 and Imagine 2.0.

FOR INFORMATION CIRCLE 5

Extra Nice View

Product: ViewSonic 20G
Description: Digitally controlled color monitor
Price: $1,495
ViewSonic
20480 Business Parkway
Walnut, CA 91789
(800) 888-8583
Fax (909) 869-7958
The *ViewSonic 20G* Monitor from ViewSonic features a 20-inch screen that displays images that are sharp and clear. Non-interlaced resolutions up to 1600x1280, a .28mm dot pitch and a high refresh rate of up to 76MHz at 1280x1024 guarantee the user a defined image. The screen features an anti-static/anti-glare coating, and wide-range screen adjustments are possible with the built-in microprocessor-based controls. The ViewMatch color control ensures color accuracy to match



printer output. And the energy-efficient ViewSonic also conforms to the VESA DPMS power-savings standard, powering down in three stages and drawing less than five watts of power in "off" mode.

FOR INFORMATION CIRCLE 6

BIG Print

Product: Novajet III
Description: Color printer
Price: $8,495 (E size), $7,495 (D size)
ENCAD, Inc.
6059 Cornerstone Ct. West
San Diego, CA 92121
(619) 452-0882
Fax (619) 452-0891
The *Novajet III*, distributed by Still Magic Supergraphics (801-299-0558), is a full-color printer designed for large-format supergraphics. It delivers quality color or monochrome line drawings much faster than even the highest-performance pen plotter, with E-size monochrome line drawings taking as little as three minutes and color drawings as little as 10. A standard Centronics interface boosts file transmission speed—especially with an efficient HP-GL/2 driver—which frees your computer in a fraction of the time it takes for a typical RS-232/HP-GL configuration, so users can get back to work quickly. Quality pen plotter bonds and vellums deliver excellent results for monochrome or color line drawings and drawings with light shading or area fill. ENCAD offers a full line of high-quality inkjet media for heavy shading and large area fills. Special features include roll-feed with automatic cutter and catch tray, long plots, an ink level estimator, user-savable savings and remote control. Toaster users can use a Video Toaster Driver with their favorite Amiga software to duplicate their work in full-color posters, and the Novajet III is compatible with Windows, Macintosh and PostScript environments.

FOR INFORMATION CIRCLE 7

Adding Color

Product: UP-D8800
Description: Dye simulation color printer
Price: $7,495
Sony
1 Sony Drive
Park Ridge, NJ 07656
(201) 930-7454
Sony has announced the release of the *UP-D8800*, a color printer featuring high-quality, photorealistic prints. The UP-D8800 has a user-selectable output resolution (150 or 300 dots per inch). Each print is completed from 30 to less than 90 seconds at full resolution. The A4 format digital color printer is both PostScript- and SCSI-compatible, and is ideal for applications in the corporate presentation, graphic arts, prepress and photo proofing, and computer graphics markets. It is capable of outputting 8x10-inch images on letter-sized paper, useful for photo-related applications. Also included with the UP-D8800 is an optional interface board for PostScript level 2 compatibility, providing 35 fonts and a network interface that supports the most popular protocols.

FOR INFORMATION CIRCLE 8

Room to Work

Product: JSL-36
Description: Equipment Workstation
Price: $1,775
Delta Designs
391 N. Thor Place
Brea, CA 92621
(800) 368-9700
The *JSL-36* Reversible-Angle Workstation System, designed for either left- or right-handed users, offers a working surface depth of over 36 inches with a working width of 90 inches. It comes standard with a height-adjustable shelf section that can be assembled to face either to the left or

the right, a feature allowing for multiple J-series systems to be combined to create larger wing-style workstations. Optional additions include monitor bridges and adjustable keyboards.

FOR INFORMATION CIRCLE 9

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

NEW UPDATES

Power Up

Products: Nady 151VR, 351VR and 551VR with LT-10 lavalier wireless microphone transmitters
Description: Improved wireless camcorder microphone systems
Price: Starting at $199.95
Nady Systems, Inc.
6701 Bay St.
Emeryville, CA 94608
(510) 652-2411
Fax (510) 652-5075

Nady Systems, Inc. has

announced that the Nady *151VR*, *351VR* and *551VR* VHF camcorder wireless microphone systems now offer wireless microphone transmitters with the longest battery life in the wireless industry. The Nady 151VR, the ultra-compact 351VR and the two-channel 551VR are easy-to-use wireless microphone systems that start with a Nady VHF receiver. The VR series receivers are packaged as a system with the Nady LT-10 or LT-20 lavalier bodypack transmitter, or the Nady HT-10, a metal handheld microphone.

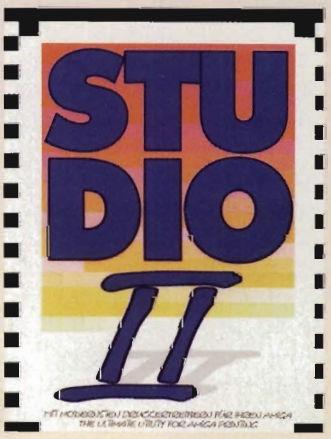
Both transmitters utilize Nady's new low-current technology to more than double previous battery life, for up to 20 hours of performance from a single 9-volt alkaline battery, with no reduction of transmitter output power or wireless operating range. The sound of a Nady VR is as good as the best hardware microphone, without the hassle of a cord. The VR systems work with all video cameras and camcorders with an external mic jack or audio input.

FOR INFORMATION CIRCLE 10

Fit to Print

Product: Studio Printer 2.0
Description: Set of Amiga printer drives
Price: $99 (upgrade $39)
NoahJi's
3591 Nyland Way
Lafayette, CO 80026
(303) 499-1975
Fax (303) 499-1979

Studio Printer 2.0 is a new set of printer drives available for the Amiga. The new version features the first color management system on the Amiga, which allows users to print colors closely matching the screen colors. It also has full driver support for all major printers, an improved user interface and improved Workbench printer drivers. Studio Printer 2.0 picture printing application now supports IFF ILBM, IFF DEEP, JPEG, GIF, TARGA, PGM, PPM and OS 3.0 data type



images, and additional image-processing functions such as sharpness, blur, historogram equalization and clipping are available.

FOR INFORMATION CIRCLE 11

Anybody CanDo It

Products: CanDo 3.0, CanDo Debugger
Description: Software authoring system, application debugger for the Amiga
Price: $399.95 ($179.95 upgrade price); $199.95 ($99.95 with CanDo 3.0)
Inovatronics, Inc.
8499 Greenville Ave., Ste. 209B
Dallas, TX 75231
(214) 340-4991
Fax (214) 340-8514

Inovatronics, Inc.'s *CanDo 3.0* is a software authoring program that allows users to quickly and easily create purpose-designed software. CanDo has numerous design tools providing access to sophisticated features without the learning curve and lead times typical for traditional software development. It includes a large assortment of graphic and non-graphic interface objects, with a powerful and easy-to-learn event-based program composition. Scripts can be typed manually or automatically generated by CanDo's Editor Tools, and CanDo's script editor automatically checks scripts for many common errors. CanDo is ideal for designing interactive kiosk applications, graphics-based training programs and multimedia presentations. The CanDo Debugger allows users to examine CanDo scripts as they execute. Using a point-and-click interface, users can step through a program one line at a time, use Breakpoints to define lines at which to stop, easily locate scripts, and more. Both CanDo 3.0 and the CanDo Debugger require 2.04 AmigaDOS.

FOR INFORMATION CIRCLE 12

It's Worth It

Product: Wordworth 3.1
Description: Word processor
Price: $135
Soft-Logik Publishing Corp.
P.O. Box 510589
St. Louis, MS 63151
(800) 829-8608
Fax (314) 894-3280

Soft-Logik is now marketing and supporting Digita International's Wordworth and Datastore. *Wordworth 3.1* is the latest version of Digita's powerful word processor. The Amiga word processor includes advanced on-line help tutorials, intuitive editing and text effects. Font support includes PostScript, TrueType and Compugraphic. Wordworth 3.1 features real-time spell-checking, drag-and-drop editing, tables,

built-in printer font support and enhanced PostScript printing.

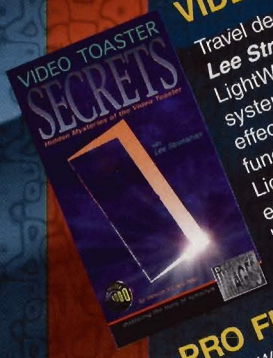
FOR INFORMATION CIRCLE 13

the secret is out

Four hot new videotapes from Desktop Images!

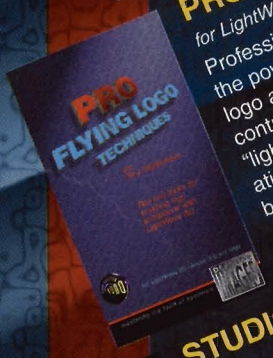
se'cret (see'kret; -krit), adj. [L. secretus] **1.** Hidden from others; revealed to none or to few; as "keep this *secret*." **2.** —***n***. The key to the solution of something; as the *secret* of your success.

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.



VIDEO TOASTER SECRETS

Travel deep within the Video Toaster as top instructor ***Lee Stranahan*** reveals little-known secrets inside LightWave 3D, ToasterPaint and the Amiga operating system! Create ToasterPaint graphic elements and effects automatically. Discover powerful automated functions in LightWave 3D. Customize ToasterPaint and Lightwave 3D preference files for increased speed and efficiency. Discover the power of *AREXX*. Plus, learn basic Amiga workbench functions to organize projects, change, move and maintain files. 95 min. **$49.95** + s/h



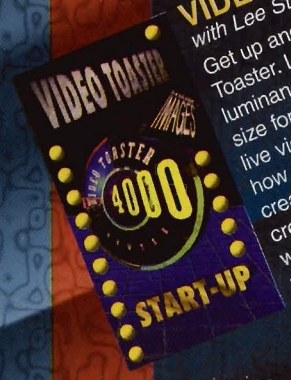
PRO FLYING LOGO TECHNIQUES

for LightWave 3D 3.0 and up

Professional LightWave artist ***Tony Stutterheim*** shares the powerful techniques he uses in creating high end 3D logo animations. Learn layout tips that give you more control over your logo animation, camera techniques, the "light speed" streak effect, the moving sheen effect, creating curved text, modeling tips to create sharper logos, beveling techniques, tips to reduce rendering time. Plus an overview of WaveMaker, the powerful logo scene creation program. 100 min. **$49.95** + s/h

STUDIO 16 PRO AUDIO FOR VIDEO

Learn how to use the powerful tools in the Studio 16 multi-track recording system to create a professional soundtrack for your video productions. Sunrize Industries' ***Tony Shannon*** hosts this complete step-by-step guide to Studio 16's Timeline Cue List, Digital Waveform Editor, Automated Mixer, Sample List, and Recorder. Follow along as he creates a soundtrack for a feature film trailer. Plus, ***Emmy award winning dialogue editor David Scharff*** demonstrates techniques he uses on such shows as *The Untouchables*, *Viper*, *Movies of the Week* and others! 95 min. **$49.95** + s/h



VIDEO TOASTER START-UP

with Lee Stranahan

Get up and running fast with this introduction to the Video Toaster. Learn the basics of the switcher's special effects, luminance keyer and ChromaFX. In ToasterCG, load and size fonts, select font colors and superimpose text over live video. In ToasterPaint, learn basic drawing tools and how to colorize and save framestores. In Lightwave 3D create three dimensional text objects, add motion, and create a complete 3D animation. This basic instruction will send you well on your way to operating today's most powerful video production system. 90 min. ~~$49.95~~ + s/h

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- *LightWave 3D Modeler I*
- *LightWave 3D Modeler II*
- *LightWave 3D Surfaces*
- *LightWave 3D Camera & Lighting Techniques*
- *LightWave 3D Displacement Mapping, Morphing & Bones*

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2.0 Titles

- *Video Toaster Essentials*
- *Toaster 3D Essentials*
- *ToasterPaint Essentials*
- *Professional Techniques for ToasterPaint & ToasterCG*
- *LightWave 3D Essentials*
- *LightWave 3D Modeler*
- *LightWave 3D Surfaces*
- *LightWave 3D Flying Logos*

$49.95 each + s/h.

Lee Stranahan, known as "The World's Smartest Toaster Guy", hosts this incredible videotape series providing a complete guide to the most powerful video production system available today! With his unique blend of experience and humor, Lee demonstrates the tricks and tips that will increase your speed and enhance your profits. A must for any serious Video Toaster User! Order individually or in specially priced sets.

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RAVE VIDEO P.O. Box 10908 Burbank, CA 91505

Phone 818-841-8980 FAX 818-841-8023

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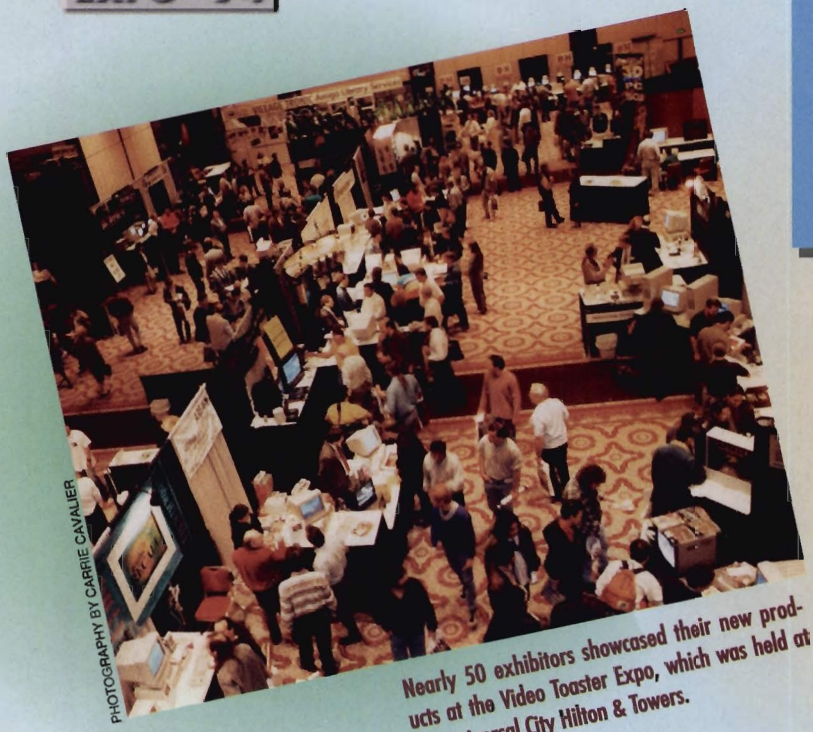
FOR INFORMATION CIRCLE 108

Video Toaster

VIDEO TOASTER EXPO '94



PHOTOGRAPHY BY CARRIE CAVALIER

Nearly 50 exhibitors showcased their new products at the Video Toaster Expo, which was held at the Universal City Hilton & Towers.

By offering a sneak preview at the potential of his own company and the limitless boundaries available for Toaster users, NewTek President Tim Jenison's keynote address before a standing-room-only crowd highlighted the inaugural Video Toaster Expo, held last December 11-15 at Universal City Hilton & Towers in North Hollywood.

Hosted by Avid Media Group, Inc., the Expo's weeklong schedule of events featured the first NewTek-sponsored developer's conference and more than 50 exhibitors showcasing the newest products in the industry for two successive days. Total Expo attendance was recorded at more than 3,000 people.

Among the exhibitors, NewTek's large display area drew a constant flow of traffic, with demonstrations of the Flyer capturing a large share of the audience. NewTek representatives also garnered the visitors' imagination by following up on Jenison's news about the upcoming release of LightWave 3D for the PC and SGI markets.

In addition to the exhibits and numerous product demonstrations, a full range of nearly 20 Toaster and LightWave 3D seminars was well-attended. Instructors such as John Gross, Dale K. Myers, Lee Stranahan and LightWave programmers Allen Hastings and Stuart Ferguson dazzled audiences with their tips and techniques.

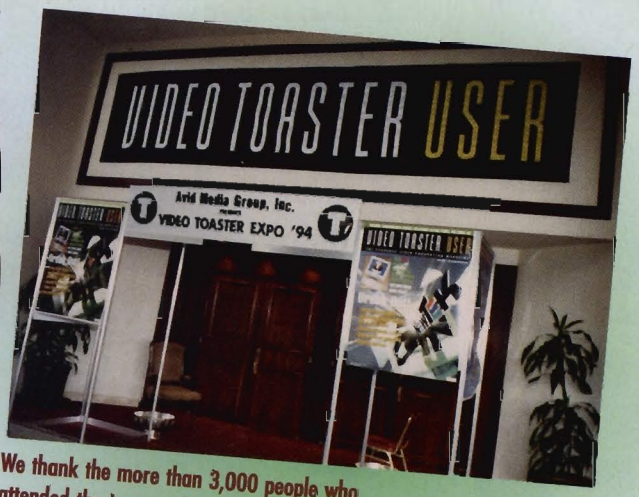
—Douglas Carey

VTU

At the Avid Media Group booth, attendees purchased subscriptions to *Video Toaster User* and *LIGHTWAVEPRO* and entered their names to win a DEC Alpha Alpine Workstation from Aspen Systems.

Perhaps the youngest Expo attendee, 4-year-old Steven Schoeber of Wyoming, displays one of his favorite periodicals.

Expo Shots™



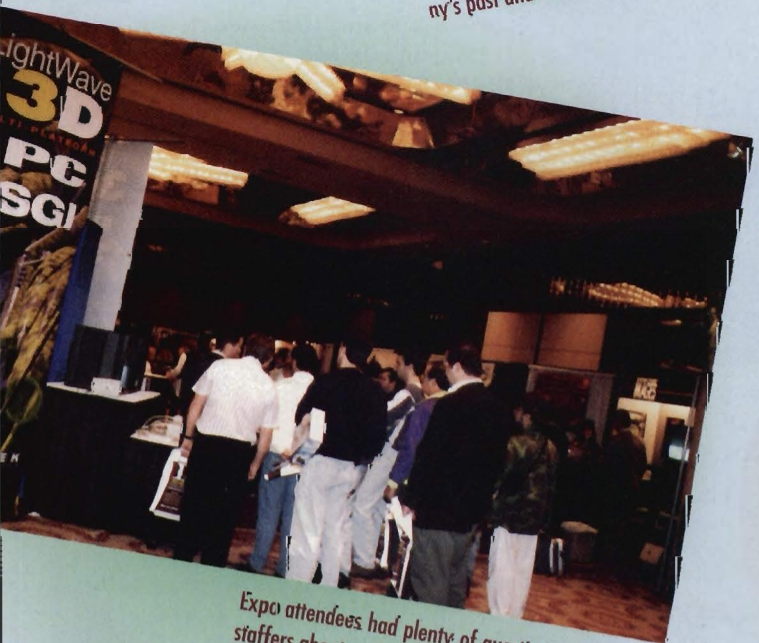
We thank the more than 3,000 people who attended the inaugural Video Toaster Expo, which was held last December 11-15.

In his keynote address, NewTek President Tim Jenison pointed to Toaster users' animations and productions as the key to the company's past and future success.

GET YOUR EXPO VIDEOTAPE!

Complete coverage of the Expo is available on a two-hour videotape for only $19.95 (add $3.00 for shipping; California residents add 8.25% sales tax). Call (800) 322-2843 to order the tape with VISA or MasterCard, or send your check for the appropriate amount to Avid Media Group, Inc., 273 N. Mathilda Ave., Sunnyvale, CA 94086.

LightWave 3D chief programmers Allen Hastings (left) and Stuart Ferguson spoke about the future of LightWave and Modeler as part of a panel discussion.



Expo attendees had plenty of questions for NewTek staffers about multi-platform LightWave 3D.

LIST OF EXHIBITORS

AirWorks Media
Amiga Library Services
Anti Gravity Products
Area 52
Aspen Systems
B&H Photo Video
Black Belt Systems
Blevins Enterprises, Inc.
Carrera Computers, Inc.
CD Solutions
Darius Technologies
DeskStation Technology
Desktop Images
Diemer Development
Digital Processing Systems
Dimension Technologies
Dynamic Realities
Flight Technology, Inc.
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Token Video Productions
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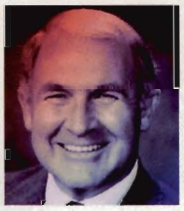
Village Tronic Marketing

TOASTER POST

Keying Without Bleeding

Debut Column Takes a Look at the Luminance Keyer

by Burt Wilson



My congratulations to Jim Plant and *VTU* for initiating this column. It shows a commitment to the Video Toaster as a mighty post-production device—which it really is—and demonstrates that this commitment will be supported in the same manner that *VTU* supports LightWave 3D. This column is dedicated to real-world post-production techniques that you can use to create better TV commercials and special-interest videos, so let's get right to it.

One technique that is always showing up in videos and commercials is the opening of a window on a framestore in which a person appears and talks about a product or delivers an important commercial message. The way this is usually set up is to fill the frame with 0-black and then use the luminance keyer on the Superimpose Panel to drop out the black and have the person show through.

The problem with this method is that usually the key will result in bleed-through of any other areas of the framestore that happen to be dark—not to mention a heavy black line on the left side of the window. This tutorial will show you how to key without fear of bleed-through.

First off, Toaster 3.1 makes using frames for keying easy because there is a great pre-built gold double-frame in the Brushes Drawer that can be accessed through the Images file in ToasterPaint. You can also use the great frame in the objects file in LightWave 3D—just render it and then save it as a framestore.

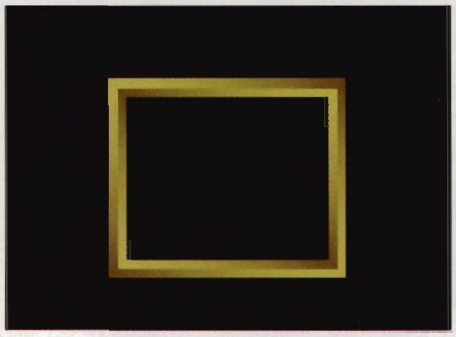
We'll use the double-frame for this tutorial. You can make this frame (or any frame) any size you want by using the smallest square brush size and the scissors tool to cut out a brush of the frame. Then you can save it and texture map it larger by using the Rectangle and the Fill tools in the TxMap mode and dragging it out.

You can also change the color of the frame by using the Vertical and Horizontal Hotspot buttons, which are located above and to the right of the hotspot locator sphere in the Transparency and Warping Control Panel. This is important because gold does not always fit the color scheme in which you're working—as per the example shown.

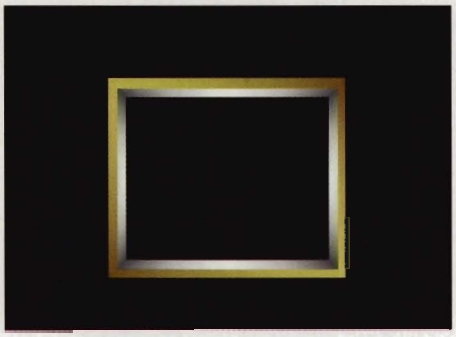
To change the color, set your two colors (white and dark gray in this case) in the Range control and then outline the left and right, upper and lower frame bars using the smallest square brush and the Polygon/Straight Line tool with the Fill button on. The trick is to get an honest 45-degree slant at the corners. You'll have to experiment a bit before you get it right, but once mastered, you will use this often to get wonderful multi-colored frames.

Another thing: you might find the aesthetics of the double frame by using the Rectangle tool with the Fill button in a 0-black mode. The single outer frame you will have left should suffice in most situations.

Now for keying without fear. Luminance keying on the Toaster is done according to the intensity of the color. That means that if you have 0-black drop shadows on your framestore text in the main bus that you're keying, the live video being fed into the Preview bus will bleed through in those areas. You can compensate for this problem by making all your borders and drop shadows a 20- or 30-black when you create them in the CG.



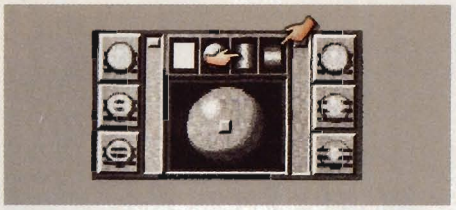
You'll find this handy pre-built frame in the Brushes Drawer of the Images file. If it's too thick, just brush out the inner half of it.



You can alter the color of the frame to any two colors you wish. The trick is in getting a precise 45-degree angle at the corners.

To allow a live person to say something within the frame, you would normally make it 0-black and then key the person in, using the Superimpose Bus.

A much better "key" can be obtained by using the Positionable Wipe Out effect. You must first make the frame in the exact aspect ratio of the effect, however.



To alter the color of the frame, use these two Hotspot buttons above the Transparency Control Panel in the Toaster's Transparency and Warping Drawer.

However, you might have critical material (as in my example) that you cannot change—a picture, for instance, with heavy dark areas. Even if you try as long and as hard as you can, you will not be able to key without bleed-through.

What to do? Use the Positionable Effect. That's correct. Forget keying as keying and use a Positionable Effect as your key. Here's how.

Positionable Effect

First, using the Positionable Wipe Out Effect, drag out a square the approximate size of the inside of the frame in which you want your talent to appear and then position it in place on the framestore. Then, using a washable marker, draw a square outline around it on your monitor.

Using the outline as your guide, texture map your frame around this outline. It's very important that your frame be in the same aspect-ratio as the Positionable Effect. You may have to go through this process a couple of times before you get it right. If the fit is not tight, you will get black lines between the Effect and the frame, or cut into part of the frame itself.

When you have finished this, save a duplicate of the framestore with the frame on it, because you will likely use it again, and next time you will have a frame already sized. You can then add it onto any new framestore using the Rub Thru mode and the Swap Screen in ToasterPaint.

Now for the grand unveiling. Put your framestore with the frame in it in the Main bus and any framestore in the Preview bus. This is just to have something there for reference purposes. Next, drag out the Positionable Wipe Out Effect to the proper size by clicking and holding down the left mouse button. Then, after releasing the mouse, move the effect into place within your frame. It may take you a few tries to get it right.

Now hit the space bar four times. This causes your Positionable Wipe Out Effect to cycle through its positions and lock into place inside your frame. Next, run your live video from your source deck into Preview Bus and your talent will be keyed nicely within the frame, with no bleed-through.

If you have an A/B-roll system, you will be able to dissolve to this effect. If you have a cuts-only system, you'll have to cut to this effect. However, if you want to, you can dissolve to your framestore with 0-black blank frame and then wipe-in the effect. Then, when you want to end it, hold down the Shift key and press the space bar, and the effect will collapse back out of sight.

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 available soon.

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FOR INFORMATION CIRCLE 148

DEAR JOHN

Field Rendering

Working with LightWave's Custom Size Feature

by John Gross

With the new year comes an entirely new batch of questions, and perhaps some old ones, too, as I get around to cleaning out my overflowing in-box.

Q: I was reading about LightWave's Custom Size feature in a recent article and it mentioned that you need to make sure that you use a resolution higher than your custom size setting because LightWave doesn't "uprez" and you may end up with black frames. What exactly does this mean? Also, the same article mentioned a bug with field rendering not working with RGB images. I have tried this and it seems to work fine. Am I missing something?

Anthony Reimhuttets
Pensacola, Fla.

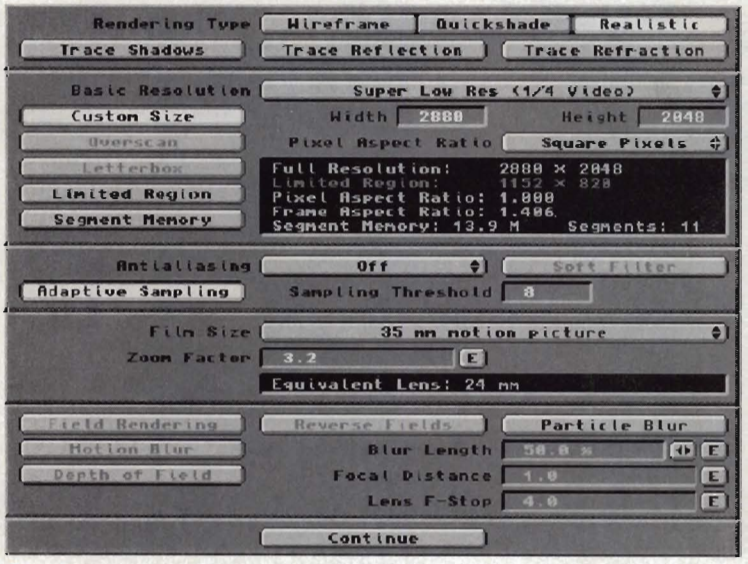


Figure 1

A: LightWave's Custom Size setting is totally independent of the Basic Resolution, with two exceptions (which I will get to in a moment). When you choose Custom Size (Camera panel, Figure 1), you can set your Basic Resolution to any of the five presets—it doesn't matter which. LightWave only pays attention to the Custom Size Width and Height values that you input. LightWave doesn't "uprez" the image or shrink it to fit into any other size; it simply renders it out in the width and height that you choose.

The author may have been having problems displaying a custom-sized image on his or her Toaster output monitor, but that pretty much defeats the purpose of the Custom Size feature. Normally, if you are rendering in custom sizes, you require something bigger than video resolutions (such as film resolution). At this point, you have probably set up and test-rendered your scene in a video resolution and just need to render it out for film (a common film size is 2048x1536, or 1024x768 if you can't afford the time for the better resolution). At this point, you can certainly set the Render Display (Effects panel) to None. If you are attempting to save these images as framestores, you are making a mistake. They should be saved as RGBs with square pixels for the most part.

I mentioned that there are two instances where the Basic Resolution setting plays a part in custom-sized images. One occurs when you have either single- or two-point polygons (particles or lines) in your scene and are using the Automatic setting for Particle/Line Size (Objects panel). When this occurs, LightWave will look at the Basic Resolution setting to determine the size for the particles or lines. If it is set to Super Low or Low, they will be one pixel thick. Medium will give you a line three pixels thick or a particle that is defined by a 3x3 pixel array (with the corner pixels a lighter color). Finally, if the Basic Resolution is set to High or Print, lines will be five pixels thick, and particles will become a 5x5 pixel array. At all other times, Basic Resolution doesn't matter at all when rendering custom resolutions.

As far as Field Rendering not working with RGB images—this is simply not true. Field rendering works fine with either framestores or RGB images. There can be a problem with certain display devices reversing the field order when displaying field-rendered images. To compensate for this (and people mistakenly blaming LightWave), the Reverse Fields option was added to reverse the field dominance, so that when the display device displays the image incorrectly, it will appear to be correct.

Incidentally, the second instance where Basic Resolution plays a part with custom-sized images is when using Field Rendering. Field Rendering is only selectable when the Basic Resolution is Medium or higher. Of course, if you are doing film work, you will more than likely not want to use Field Rendering, as it gives your animation that "video" look.

Q: I have a question about converting a batch of processed IFFs to framestores. Do I have to do them one at a time, or is there a converter that will do that? The files are generated on the Mac as graphics (with Photoshop, Illustrator and other programs). In Photoshop I save them as Amiga IFFs with the names 001.FS.graphic and so on. They are then sent to the Amiga in a whole folder with 40 IFFs via Fetch.

When I go to the Switcher and try to load them, I am told they are not the right format. I have loaded them into ToasterPaint before and saved them as frames, which works, but doing 40 or so frames would take a long time.

I talked to some people at NewTek who said that there is a converter in the Utilities folder, but I did not find it. I have two Amigas, one 2500 and one 4000, and they are both 3.1. Could you please help me or suggest what I need to convert batches of IFF files?

Cesar Romero
via Internet

A: The Toaster framestore format, as you have found out, is not the same as an IFF format. Naming the files in the framestore convention is not enough to get the Switcher to load them as framestores. There are a number of programs that will batch-convert a number of images from one format to another. Both ADPro and ImageFX 2.0 are commercial programs that will convert to framestores, and I am sure there are a number of public domain programs that will do so as well. Setting up a batch process in ADPro is not the easiest thing in the world, so if you have ImageFX 2.0, you may find it a bit easier.

As NewTek technicians have told you, there is an ARexx program (written by NewTek's ARexx guru, Arnie Cachelin) included with the Toaster that will batch process IFFs into framestores. However, it is located in the ARexx_Examples drawer and not the Utilities drawer. The program is called RGB2FS.rexx and can be run by performing the following:

1. Save all of your IFFs in the same drawer. Name them graphic001, graphic002, etc.
2. Open up a shell on the Workbench screen.
3. Start the Toaster and load ToasterPaint.
4. Once in ToasterPaint, hold down the left Amiga key and press the (n) key, which will return you to the Workbench.
5. In the shell, type "CD Drive-name: Toaster/Arexx_Examples" (Drivename is the name of the drive where the Toaster drawer is located).
6. Your prompt should now show you the pathname of where you are, such as DH0: Toaster/AREXX_Examples. If you are not in the ARexx_Examples drawer, try again.
7. Type "rx RGB2FS Filename Firstframe Lastframe." (Filename is the complete path of your saved images, minus the numbered extension. Firstframe is the first image you want converted. Lastframe is the last image you wish converted.) For example, let's say your images were located in a drawer called Images on a drive called Work and they were named graphic001, graphic002, etc. You would type "rx RGB2FS Work:Images/graphic 1 40." This assumes you wanted to convert images 1-40. If all of the images in this drawer needed to be converted, you could leave out the 1 and 40, and the script would convert every image named "graphic" in the drawer.
8. ToasterPaint will automatically load the images one at a time and save them in the framestore format to the current framestore directory. This is the framestore directory that is currently chosen in the Switcher's setup screen. In our example, framestores would be saved as 001.FS.graphic001, 002.FS.graphic002, etc.
9. The script will inform you which image it is working on, and when your prompt returns, it is finished.

There are a couple of things to remember when using this script. First, the Switcher can only find one framestore that uses the same three digits. For instance, if you have two framestores, 001.FS.graphic001 and 001-.FS.Bob'sHouse, only one will be located by the Switcher. If this happens, simply rename the offending framestores (a directory utility such as DirectoryOpus works well for this).

Second, framestore names are limited to 12 characters in the part after the .FS. You may want to keep your original files (including the numbered extension) at 12 or under to prevent them from being truncated.

Third, ToasterPaint always loads an image that is smaller than the Toaster's 752x480 into the upper lefthand corner. If your original images were under 752x480, they will not be centered.

Finally, in order to operate this script, you must have ARexx running. If you are uncertain whether or not it is, open a shell and type "RexxMast." This will either run ARexx or tell you it is already active.

Write Protection

I've received a few letters and e-mail responding similarly about helping a reader who wished to find a utility that would force users to save their work to a floppy disk as opposed to the hard drive ("Dear John," Nov. 1994 *VTU*). The following is the most detailed response:

I just received the November issue of *VTU* and read the letter about write protecting devices such as hard drives. I deal with hard drives on a daily basis, installing them into machines and the like. I have also written a hypertext book about computers called "The Amiga/Toaster Reference Manual," and have gone through hundreds of common problems such as this that users have. The answer to his question is very simple.

All he has to do is open a shell and use the AmigaDOS Lock command. Devices can be software- and hardware-protected, and may also be password-protected. Hardware protection can be added by installing or removing the write-protect jumper on most drives (see the user's manual for the drive). Or, using the Lock command, any partition on the drive may be write-protected. For example, try typing "lock sys: on." This will instantly write protect and delete protect the drive from AmigaDOS. Typing "lock sys: off" will turn off the write-protect mode. To add a password, type "lock sys: on password," and type "lock sys: off password" to add or remove the write-protect status. This line should be added to the user-startup sequence in order for it to work every time. Powering the computer off will turn off all software write protection. While not foolproof, it will definitely curb novices.

And if there are people using the machine who are AmigaDOS experts, simply change the Lock command to any other filename and hide it in a deep directory, such as prefs:env-archive/ or fonts:topaz/. Also change any resident status of the Lock command.

David Tiberio
Area 52

Questions can be sent electronically at jgross@netcom.com.

EDITORIAL EVALUATION

Circle number on Reader Service Card
I found this article:

Very Useful	Useful	Not Useful
Circle 021	Circle 022	Circle 023

SOUND REASONING

Signal-to-Noise Ratios

Determining Technical Quality of Audio Signals

by Cliff Roth

One of the two or three most basic factors that determine the overall technical quality of an audio signal is its signal-to-noise (S/N) ratio. When audio has a high S/N ratio, it sounds clean and punchy. Low S/N ratios sound hissy, muddy and full of static. Different audio tracks on different video and audio cassette formats vary in their S/N ratio potentials (see chart), but it takes careful attention to audio signal levels to realize these maximum capabilities. (The other major factors determining audio quality are frequency response and distortion.) Paying attention to achieving maximum S/N ratio at every stage of the production and post-production processes is one of the cheapest ways to achieve top-notch sound.

Each time an audio signal is copied, such as occurs in ordinary (analog) videotape editing, the S/N ratio deteriorates. The noise from one generation, such as the original recording, gets added to the inherent noise of the tape used to record the copy. Go down another generation, and even more noise gets piled on, reducing the S/N ratio further. Anyone who has ever made a copy of a duplicate audio cassette knows the problem: What started out as background hiss in the first generation ends up in the foreground by the third or fourth generation.

The better the S/N ratio of the format being copied to, the less generational deterioration there will be. A third-generation copy of VHS hi-fi tracks, for example, will sound better than even the first-generation VHS linear track recording.

The audio signal chain is only as strong as its weakest link: The ultimate S/N ratio of the finished product can never be better than the lowest S/N ratio recording system through which it passes. If your original sound was recorded on the relatively modest VHS linear track, for example, it will never sound better by copying to fancier formats. Editing and making subsequent copies onto hi-fi tracks will minimize any further deterioration, while further copying to several generations of linear tracks will result in a noticeable accumulation of hiss.

The Decibel

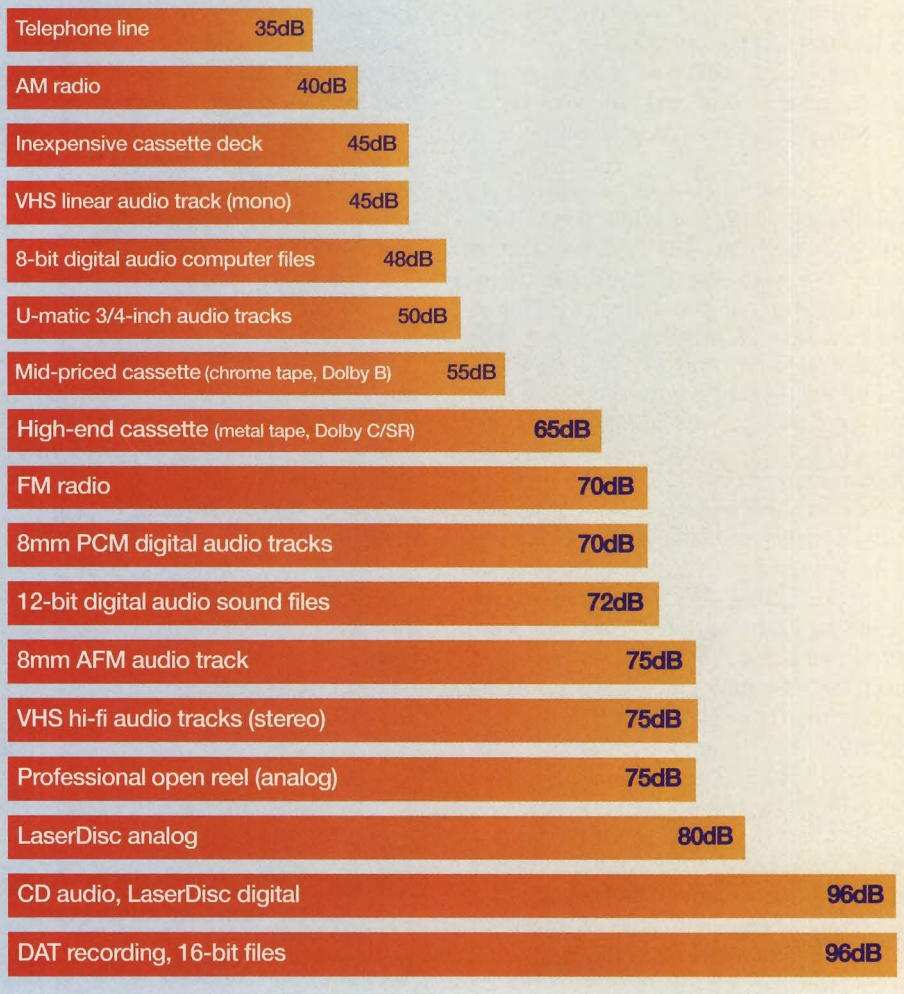
S/N ratios are technically measured in units of decibels, abbreviated dB. Decibels are what mathematicians would call a logarithmic measurement scale—based on powers of 10—similar to the well-known Richter earthquake rating system, in which a quake rating of seven has 10 times as much power as one with six.

If the maximum signal level sounds 100 times louder than the background

continued on page 28

SIGNAL-TO-NOISE RATIO

Typical signal-to-noise (S/N) ratios for various audio media. Exact numbers will vary depending on model reception quality, testing criteria, etc.



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FOR INFORMATION CIRCLE 138

noise, then it has a ratio of two bels, because 100 equals 10 to the second power (10 x 10). This is more commonly described as 20 decibels—a decibel is one tenth of a bel. (By the same logic, earthquakes with magnitudes of 5.3 and 6.0 on the Richter scale would become "deci-Richter" ratings of 53 and 60, respectively.)

A ratio of 1,000:1 is thus 30 dB; 10,000:1 is 40 dB; 100,000:1 is 50 dB; and so on. The best audio recordings have S/N ratios of about 100 dB, offering maximum signal levels that are some 10 billion (10,000,000,000) times louder than the inherent noise.

(Note that, technically, when measuring some types of signals, such as voltage, the number of decibels is doubled because the mathematical formula that converts voltage to power requires squaring the voltage number. The ratio of 100 volts to 1 volt is thus a 40 dB difference—double 20 dB. But when measuring power, such as electrical or acoustic power, the simpler formula holds—a 100-watt amplifier thus delivers 20 dB more power than a 1-watt amplifier.)

Every time you make an analog copy using the same recording format, the S/N ratio goes down by about three to six decibels. Copying the linear audio track on a VHS tape (which has about 45 dB S/N ratio) for 10 or 15 generations would thus bring the S/N ratio down below 0 dB. Would the signal disappear at this point? Absolutely not. Remember that decibels represent a ratio between two quantities. A 0-dB difference simply means that two numbers are the same; that is, there would be a 1:1 ratio between the signal and noise levels. (And, though you'd probably find it painful to listen to, a negative decibel rating would indicate that there's more noise than signal.)

Setting Levels

When you look at the chart comparing S/N ratios of various tape formats, keep in mind that they assume optimal signal recording levels. That's the purpose of the volume units (VU) meters found on most professional and semi-pro audio recording equipment (and not found on most consumer camcorders, with a few praiseworthy exceptions, including Canon's A-1, L-1 and L-2 lines).

You probably already know what happens if an audio recording level is set too high—you get massive distortion. Typically, the VU meters will be banging against their maximum readouts when this occurs. The technical name for this condition is clipping, because the top and bottom of the audio waveform are clipped off due to tape or electronic circuit saturation. (That is, the tape can only be magnetized so much, beyond which it can go no further. It has reached the point of saturation, and increases in signal level do not result in corresponding increases in magnetization.)

But setting recording levels too low is also problematic. Imagine you're playing an audio cassette with a weak recording and the VU meters on your cassette deck only come up to the -20 point, even at the loudest moments. You've got to turn up the amplifier volume just to hear this faint recording. What else do you hear? Noise—probably tape hiss, but also hum, and perhaps static or other forms of electrical noise. This recording obviously doesn't take advantage of the theoretical S/N ratio capability of the recording medium. Sure, a cassette tape can have a 50 or 60 dB S/N ratio, but that doesn't mean every cassette ever recorded lives up to this potential.

When you're talking about digital audio equipment, the term S/N ratio is usually replaced by dynamic range.

The optimum recording level is the best compromise between these two extremes—not too high, not too low. It is the maximum possible level that doesn't cause distortion. Since the onset of distortion is subtle, most equipment manufacturers set their recording equipment to offer a good deal of "headroom," extra breathing space above the recommended recording level. And what is the recommended level? It's usually the 0-VU calibration point on the level meters. Volume units are quite similar to decibels, and for this discussion, we can consider them identical. The 0-VU point represents the ideal level; it means the ratio between the actual level and the ideal recording level is 1:1.

Suppose you make a recording on a tape format that has a 45 dB S/N ratio, such as VHS linear audio. Now suppose you have manual recording level controls, but accidentally set them so the meter readings peak at just -20 VU. Then you've reduced your overall S/N ratio to about 25 dB, not a very desirable recording scenario.

For those wishing to squeeze every last decibel of quality out of their equipment, here's a tip: I have found that most manufacturers of VHS hi-fi VCRs have set the 0-VU point on the recording meters very conservatively—with sometimes as much as 18 to 24 dB of headroom before distortion occurs. Try experimenting with "hot" meter readings to find the point where distortion occurs, and then set your levels for meter readings about 3 dB (or VU) below this point. Be careful to identify the absolute loudest parts of recordings for setting levels. (The experimenting is best done using pure sine wave tones and an oscilloscope, so the onset of distortion is clearly visible.)

Dynamic Range

When you're talking about digital audio equipment, the term S/N ratio is usually replaced by dynamic range. The two terms are almost identical in meaning, and if you ask various audio engineers what the difference is, you'll probably get different answers. Generally speaking, dynamic range means the ratio between the smallest recordable signal and the strongest signal that doesn't cause distortion. Since the smallest signal is actually one that rises just slightly above the background noise level, it amounts to just about the same thing.

In a pure digital system, "noise" does not exist the way random tape hiss is heard in analog recordings. But depending on the number of bits used for each sample of the digital recording, there will be some inevitable error in the quantizing of the signal—rounding it up or down to the nearest increment. This quantizing error is also similar to noise, in that it represents a random distortion from the true signal level.

Audio engineers measure this form of digital distortion as signal-to-error ratio, or S/E ratio, which is very similar to S/N ratio. The rule of thumb is that you get 6 dB of S/E ratio for each bit of digital data. An 8-bit recording thus has roughly a 48 dB S/E—or S/N—ratio, and 16-bit systems, such as CD audio, have S/E ratios around 96 dB.

continued on page 32

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SLICES

New Features in ToasterCG 4.0

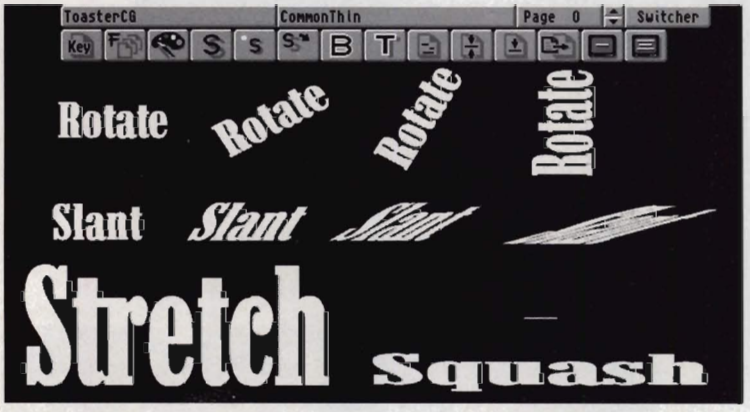
Spell-Checker Among the Additions

by James Hebert

For many years we at NewTek have joked that ToasterCG included everything users need except a spell-checker. Well, now we have one.

Sick, twisted minds of the world unite.

ToasterCG 4.0, currently part of the Video Toaster Flyer release but soon to be a standalone release for Toaster owners who choose not to purchase the Flyer, has a spell-checker. Through the magic of ARexx, ToasterCG has become open-ended. Arnie Cachelin, one of NewTek's Alcatraz research and development personnel (read: programmer) added ARexx support to ToasterCG. Bob Caron, a recent Alcatraz addition, has added some nifty ARexx scripts to the new ToasterCG. The result is a ToasterCG with guts, expandability and power.



Some examples of rotation and slant. The word Rotate was rotated at 0 degrees, 30 degrees, 60 degrees and 90 degrees. Higher values would continue this rotation around in a circle.
The word Slant was slanted at 0 degrees, 30 degrees, 60 degrees and 75 degrees. Higher values tend to slant too much to be readable.
Squash and Stretch were simply entered without rotation and slant, then resized with the sizing gadget. This lends itself to great use when you need to squeeze a large number of characters on a line, or into a small space in order to fit graphics and text together.

Along the way to version 4.0, ToasterCG has changed somewhat. Be forewarned: You may not like all of the changes that ToasterCG has incurred, especially if you have become set in your ways in the manner that you use it. On the positive side, I trust you will agree with me that these old habits are gladly put aside when you consider the benefits of the new ones you will develop.

As an example, I have always felt irritated at the myriad ways in which ToasterCG limited me. Taken individually, they were quibbling nuisances (resizing fonts, selecting and resizing boxes, lack of underline support, etc.). Taken as a whole, they were maddening. I had to find ways to work around them. You know that something isn't quite right when you spend as much time working around a program as you do working in it.

Anyway, these new alterations fit ToasterCG like a well-tailored suit rather than an ill-fitted hospital gown. Let's pop the hood and take a look-see under the cover.

First and foremost, ToasterCG no longer requires that you store your work in the form of a collection of pages called a book. The Flyer features a drag-and-drop interface that utilizes croutons organized into a specific sequence. In order for ToasterCG to support the Flyer, it had to save rendered pages with icons.

Simple situation, simple solution. ToasterCG already had the ability to save key and framestore pages as "buffer pages," so we're halfway there already. These pages, identified by the tiny lightning bolt symbol in their names, were simply rendered images that had been saved to the hard drive and that both ToasterCG and the Switcher knew about. When the Switcher received a call to render and display such a page, it instead loaded and displayed the pre-rendered page. The time saved was tremendous, and a page could be shown in about two seconds rather than rendered in about 15.

For the Flyer release, ToasterCG was taught how to save all four kinds of display pages. In fact, the concept of the buffer page no longer truly exists, since any page that has been saved as a page (not as part of a book) is now a fast-loader.

Are you beginning to see why the concept of the "book" is one that you may no longer need? Hang on, this gets better.

In addition, to make editing simpler, each page now contains all of the necessary information so that it can be edited on its own. If you edit 50 pages for a given program, you might save them in a single common directory, say "Evening News." Suppose there is a misspelling (didn't you use the spell-checker?) and you need to correct a page. Open up ToasterCG, select Load Page, select the page, and all of the text, fonts and graphics that it consists of appear on screen, loaded and ready for use. Edit the page, save it, and you're done.

This speeds up your work in a number of ways. One, you can go directly to the page(s) you need to work on. Two, you no longer need to wait for entire books full of fonts and graphics to be loaded. Three, there is no danger of accidentally changing another pre-rendered page and having to re-render it again.

There are other useful changes in ToasterCG that are related to the concept of books.

In earlier versions of the Toaster software, ToasterCG had to have a book loaded into system memory in order to render and display pages. In other words, the Evening

News book file I mentioned earlier, whether its pages were pre-rendered or not, would have to reside in ToasterCG in order for me to use those pages from the Switcher. This burdened the computer's RAM somewhat, and it meant that there had to be a mechanism in place for me to find the page I wanted so that I could load it into a framebuffer and display it. This function was filled by the quick-access box, which became a pop-up button later on.

This box is no longer there. It is no longer needed. (Remember, each page contains its own imagery and its own data.) With the drag-and-drop capabilities of the revised project editor, all of the graphics you need online can be placed in the grid at the top of the Switcher screen. So can all of the effects, and if you use the Flyer, all of your audio and video as well.

Therefore you will likely outgrow the book as you know it—except perhaps as a way to backup work. A rendered page may take from 100K to 750K, while a book full of pages may be only 200K. As a method for keeping a concise data file backup of a set of the pages, it's useful. As a necessary convention for loading and displaying work, it's history. The book is dead. Long live the book.

But what about the thousands of users who have tens of thousands of book files filling up their hard drives, you demand, grabbing me by the neck. Do you expect them to load each book, one at a time, and save each page, one at a time, just so their previous work can be used with the new system? Not at all. There's an ARexx script for that. It studies the current book and generates a rendered page of each one automatically.

The ARexx scripts that will be included with ToasterCG are still being written even as I write this column. However, the spell-checker and the book-to-page converter are definite. See the appendix section of the manual for notes on ARexx scripts. Or press (Ctrl+ F) to call up any one of 10 preset scripts. One of these shortcuts is special—it calls up a file requester and allows you to select which script you want to activate. With this, you'll have access to as many ToasterCG ARexx scripts as you can get hold of. Enjoy. And send me anything you find useful. I'll pass it along.

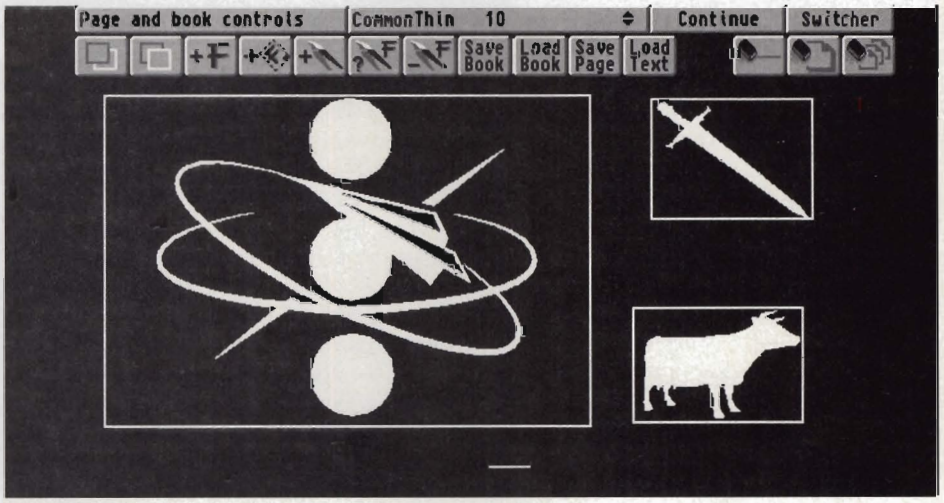
Loading Books

Speaking of arranging books (we weren't, I know), another useful trick in the new ToasterCG involves its ability to append and insert pages. If you've wished to rearrange the order of the pages in the book, here's your chance. When you select Load Page, the current page is overwritten with the one loaded. With this alone, you can use Load and Save as a form of cut and paste, rearranging the book order at will. This can be convenient when you want to save the pages with a sequential numbering system and it's important that they be in the correct order.

Also, when you select Load Book, the last-used page in the current book becomes the first page of the loaded book, with all subsequent pages following. In other words, the book you load is added in after the last page of the book you're working on. With this you can combine books, if you wish. Might be a useful way to combine a set of old short books before converting them to individual pages, if you have the hard disk space.

Hard disk space will be at a premium with the new Toaster software, whether you use the Flyer hardware or not. ChromaFX effects filters will be rendered images with croutons, as will ToasterCG pages, ToasterPaint images and Framestores. Of course, LightWave animations take up space as well!

For this reason, I recommend that you shop around for a large Amiga system hard drive if you intend to use Toaster System 4.0. If I had to name a figure, 500MB would be my preference. You can never have enough hard drive space, and these days I believe that 1GB will soon be what we consider the "basic" hard drive size to request. In addition, with all the SCSI devices that seem to hang off the back of my machine (Bernoulli, SyQuest, CD-ROM, scanners, etc.), I'd rather just have one main drive instead of several. Surprisingly, prices are dropping consistently (or drive size is increasing). Both trends are welcome.



Three brushes (a logo, a sword and a cow). This is the new appearance of brushes in ToasterCG. The opaque portion of the brush shows up in gray. The transparent portion (which you will never see, since it only helps define the bounding box as a rectangular shape) remains black. Lining up text with graphics like these is simplified with this new feature.

Unfortunately, all of this serious information avoids what I really wanted to talk about: stretchy text. OK, so the manual refers to these as rotated text, or angled text, text brushes, or some such serious phrase. The fact is, you can now rotate and angle text. While a spell-checker is cool, graphics tricks like this really whet my appetite.

In ToasterCG 3.1 you can currently load text (resizable if you use PostScript fonts), brushes (bitmapped, meaning one size only) and images (for use as backgrounds). In ToasterCG 4.0, NewTek has added a new form of brush, the text brush. First, select a PostScript font (this is a requirement). Second, select the Load Text Brush button. It looks like the Load Font button, but the letter F is rotated 45 degrees. ToasterCG will ask you to enter text, then a rotation angle value, then a slant value. (The latter is like shear in ToasterPaint and Modeler: with it you can make italics.) Press Return after all that, and nothing happens. Whoops!

SLICES

Now go to the font pop-up menu and scroll to the bottom of the list. There's your text brush. Select it, and it will appear on screen. Notice that the text brush has a sizing gadget in the lower righthand corner. At this point, you can select and drag the text brush around the screen as much as you like. To resize it, drag the sizing gadget around. Text brushes accept all of the standard color and shadow attributes that normal text accepts. Make sure to set up some gradient blends for eye-catching graphics. Angled text looks dynamic and energetic on screen. Use it whenever the message calls for action.

Here's a tip for angled text that maintains readability. Use the same values for Rotation and Slant. The rotation angle will rotate the entire word or phrase, while the matching Shear value will italicize it so that the upright portions of the letter remain perfectly vertical. The net result is attention-grabbing yet still legible. Experiment with other settings, including negative values for different looks. It's always good to know what your tools can do.

One final note about ToasterCG changes: The outline around brushes (and stretchy text graphics) is a rectangle that encompasses the entire item. Lining up text and graphics with these limitations was a trial-and-error process, since you could never see the graphic itself, only the outline box. ToasterCG 4.0 dramatically reduces the number of trials, and might even eliminate them. With 4.0, you'll be able to see the portion of the brush graphic itself shaded in solid gray within the box. If you have ever attempted this feat, you can see the benefit of this improvement immediately.

You may also find that when you size a text brush fairly large, portions of its bounding box will overlap other text or graphics on screen. Remember that in order to select one item out of a "stack" of items like this, hold down the Alt key and click in that area of the screen. With each click, one layer will highlight. Within a few clicks, you'll be able to select the item you're after. VTU

EDITORIAL EVALUATION
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I found this article:

Very Useful	Useful	Not Useful
Circle 027	Circle 028	Circle 029

SOUND REASONING

Listening Environment

So far this discussion has been concerned purely with the noise inherent in the recording and playback system. But video is meant to be watched and listened to, and the environment where that takes place can have a big impact on the overall S/N ratio. A noisy environment can actually render high-quality recordings (with wide dynamic range), but they are difficult to listen to. That's why most commercial FM radio stations use compressors, so that quiet musical passages don't drop down into the din of engine, fan and traffic noise when people are listening with their car radios. This is called the "noise floor," a bottom level you never want to go below.

The full spectrum of human hearing, from the faintest discernible sound to the threshold of pain in the ear, has a dynamic range of about 130 dB. But a quiet home has a background noise level of about 30 dB above the faintest sound, so most experts agree that a 100-dB dynamic range, such as what CD and other 16-bit audio systems offer, is about as much as you'd ever want. And since an office or factory has a background noise level that's typically about 40 to 70 dB above the threshold of human hearing perception, the benefits of recording formats with better S/N ratios and wider dynamic range are less discernible than in a quiet room.

In fact, some of the most lavish audio productions utilize elaborate systems for compressing the audio signal, in order to keep it consistently above the din of background noise in the listening environment.

One of the inherent audio advantages that filmmakers have is the expectation that listening will take place in a very quiet environment and allow for a rather wide range of volume levels in the mix. Television—especially commercial television—tends to avoid subtlety in the audio mix. To exaggerate a bit, it's as if the only levels are full and half. For people who watch TV while washing dishes, it makes it easier to hear everything. Considering how small the speaker and amplifier power are on some portable TV sets, there's a certain logic to this "canned" sound. But it's also one small technical reason why commercial TV sounds so monotonous. VTU

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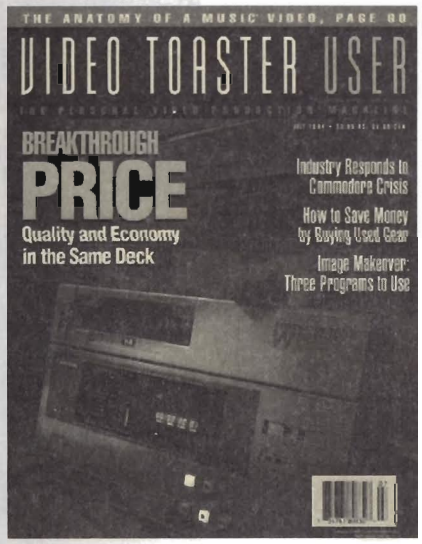

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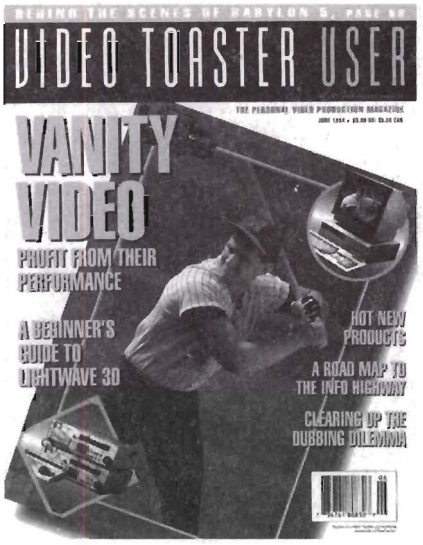

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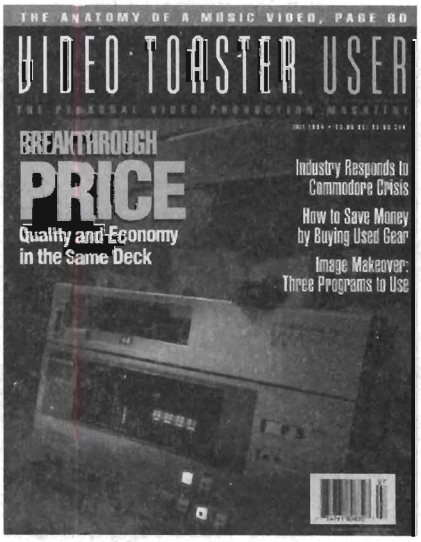

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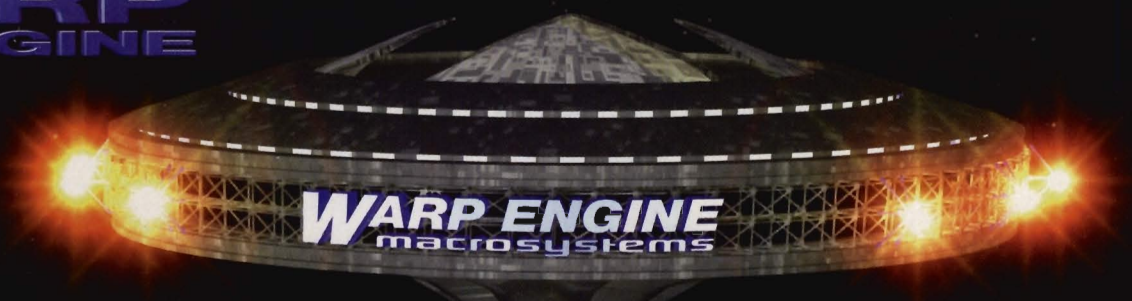

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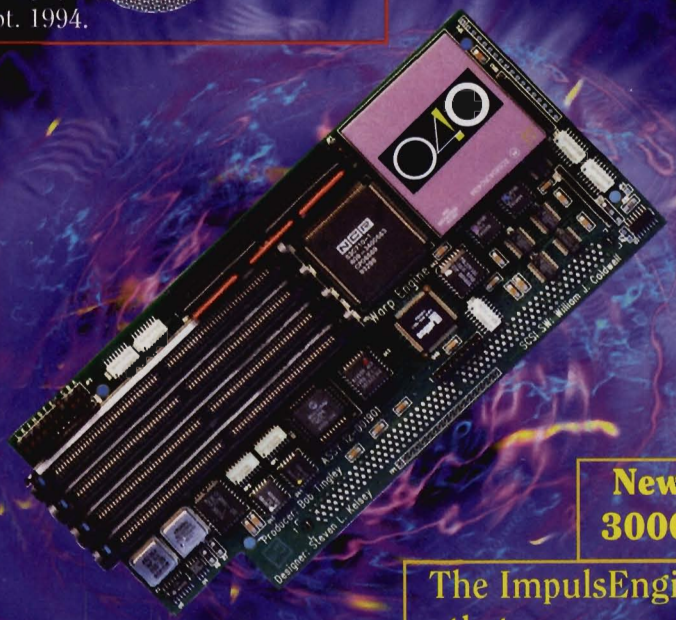

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FOR INFORMATION CIRCLE 128

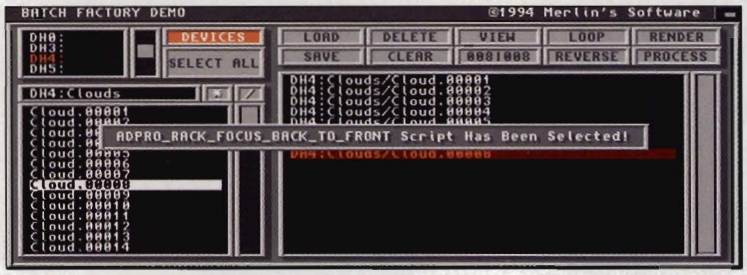
CYBERSPACE

A New Distribution Channel

Promotion Through the Internet

by Geoffrey Williams

What do developers do when they have little money for advertising and promoting their products? They turn to the Internet and commercial and private BBSs. This is the fastest avenue to distribute information about their products. Besides press releases, companies can also provide much more extensive information about their products. For example, NewTek has distributed a text file called FlyerFAQ. FAQ stands for frequently asked questions, and this file provides the information most people want to know about the Flyer (NewTek's BBS Number is 913-271-9299).



Automate your ARexx scripts with Batch Factory

Another important use of the nets for companies is the distribution of bug fixes. These bug fixes are often patches that physically modify original programs. They use a small program called spatch that lets the new code be incorporated into the old code. A good example of this is the currently available patch to LightWave Modeler version 3.5. As current users may know, LightWave 3.5 is not completely bug-free. The patch, intuitively called Mod35pf.lha, fixes both the "buffer too small" error message problems and the ARexx handling problems that may have kept some of your scripts from working.

One of the best ways for a company to inform people about its product is to post a demo version of that product on the nets and let people download it and give it a try. This is different from shareware, which allows you to use the complete program and decide if you want to send in the money. Commercial demos are usually crippled in some fashion. Loading and saving may have been disabled, or the demos have some other limitations that keep you from using them in any serious fashion.

It's always disappointing when a program that should be shareware or even freeware is distributed in crippled form, but it's a different issue with a serious commercial package. It is a real advantage to be able to play with a commercial program before purchasing it.

In this month's column, I'll point out a few significant programs available as demos on the nets that you may have heard very little about. I think they are very good values even in their demo forms, and are worth downloading and taking a look at.

Batch Processing

The Batch Factory demo from Merlin's Software does let you get some actual use out of the demo. Batch Factory is a batch processing front end that works with a variety of ARexx-compatible programs. It makes it simple to run an ARexx script on a series of frames, and set up lists of frames you want processed. It also comes with almost 300 ARexx scripts that work on programs such as Art Department Professional (ADPro), ImageFX, ImageMaster, Professional Page, PageStream, OpalPaint, PAR, and a few others. It will handle scripts for any ARexx-compatible program.

While the demo will not load and save scripts or configurations, and is limited to 15 images at a time, it does come with 26 scripts that you can play with. A script for Professional Page will automate the process of creating a storyboard from a series of pictures. One of the ImageFX scripts creates a moving spotlight across a series of frames over the image of your choice. One of the ADPro scripts will load background images and composite them with foreground images and an Alpha Channel using the Blur Operator to focus from background to foreground.

If you do a lot of batch processing, Batch Factory might be quite useful. Take a look for yourself and find out.

I received a call just a few days ago asking if I knew of a way to copy files from the Amiga onto a Macintosh-formatted SyQuest. At the time, I had no idea how to do it. I did know that it was possible to copy files to a PC-formatted SyQuest (and high-density floppies) using the commercial version of CrossDOS. A version of CrossDOS comes with Workbench 2.1, but it is limited to double-density floppies. Several days later, I discovered the demo version of CrossMac from Consultron (the same people who make CrossDOS).

CrossMac works much like CrossDOS, in that it lets you transparently move files back and forth between Mac-formatted devices. The demo version is read-only, meaning that you can read Mac floppies but not write to them. It will also not read Mac-formatted hard drives, SyQuests or CD-ROMs. The commercial version, though, will let you read and write to all of them. It also reads the Amax- and Emplant-formatted double-

density floppies, as well as the Amax and Emplant hard drive partitions.

Dealing with Mac-formatted files is difficult because of the way each file is actually two files, a resource fork and a data file. CrossMac supports both Mac data and resource "forks" as separate files. It will also do Amiga-to-Mac translation of international text characters. Mac icons are automatically displayed under Workbench.

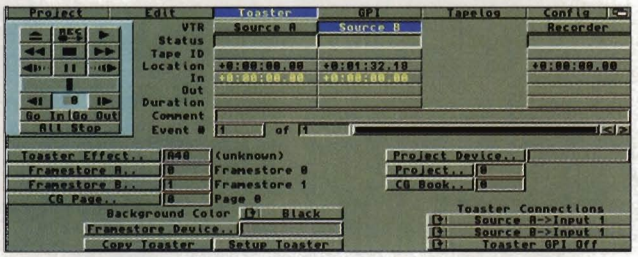
It also comes with a number of utilities, though only two of them are included with the demo: the Resource Extractor, whose ability to extract resources has been disabled, and a fully functional View Hex. In the commercial version you also receive a utility to configure CrossMac devices, a utility that allows you to try to recover files from a corrupted Mac disk, a utility that allows you to manage an internal CrossMac database to coordinate the Mac finder information to the file extension you can assign to the file, a utility to check and read the validity of any disk and report any errors, and a utility to force a disk change. It also comes with a diagnostic program.

If you have ever had to read a Mac floppy, this demo will be quite useful, though keep in mind that a high-density drive is needed to read high-density Mac floppies. If you need the ability to transfer files between a Mac and an Amiga, this utility is about the easiest way to go about it, and you have the opportunity to find out for yourself before you buy it whether you like it or not.

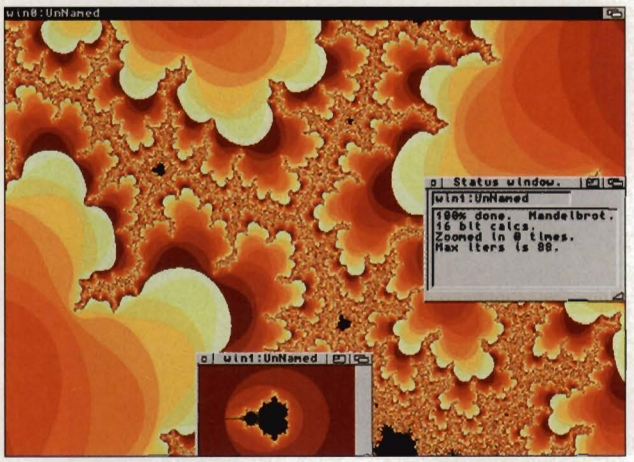
An Improving Future

I enjoyed reading the text file that comes with the demo of FutureVideo's VStation edit control software for their edit controller. They basically admit that FutureVideo has a poor reputation in the Amiga market, and blame this largely on their first port to the Amiga, which made it look like an IBM. I'm in agreement that this software was quite unimpressive to an Amiga user, and I appreciate their forthrightness. The author of the program states that this new software is a complete rewrite of their previous work, and that they have learned from past mistakes. With the VStation demo, you get a chance to see whether or not you agree with that assessment. It looks like a fairly major improvement to me.

The demo version does not save projects, allow ARexx results, or actually communicate with a controller.



VStation provides Toaster and edit control over most VCRs



Mand2000 lets you surf the Mandelbrot Set in real time

Other than that, all of the features are there. It does have an auto demo mode that goes through the basic features. This is just a simple ARexx script that shows off the product, but it is a very good idea, as you don't have to spend a lot of time fiddling with it to see what it can do.

Basic features include multi-event (unlimited number) EDLs with auto-assembly, Toaster Framestore/CG/background control (per event), online point-and-click help, park and preview/perform, A/B-roll using VTRs or Framestores, and two external GPIs with one internal GPI that can trigger another program. SMPTE timecode is an option. FutureVideo also claims to have better control of a wider variety of low-end VCRs than any other company.

I have always been fascinated by the Mandelbrot Set, used to create those amazing images with a simple mathematical formula. While it is mathematically simple and not that difficult to understand, it would take longer than the lifetime of the universe to completely explore the Mandelbrot Set and the images it can create. There are certainly a lot of public domain Mandelbrot generating programs around, but even so, you might want to check out the Mand2000 demo from Cygnus Software. It has features I haven't seen in any other Mandelbrot program, commercial or public domain forum.

It is a demo, so there are some limitations. You can only save using ARexx and some pictures might have a stripe along one edge. Also, there is a maximum save size and you can't save fractal location information. Other than that, everything works, and there is a lot to play with.

Mandelbrot images can be used to map on objects and to create backgrounds, and you can animate them for some amazing visual effects. They have such an endless fascination that Arthur C. Clarke made them a major part of his science-fiction novel "The Ghost From the Grand Banks." He even used the Amiga to generate the images for the book using an earlier and less sophisticated version of this very software, then called MandFXP.

A Mandelbrot image can be endlessly zoomed into to reveal new aspects of it. One of the impressive things about Mand2000 is that there is a real-time animated zoom, which makes zooming in a lot more fun than with other programs that simply redraw the new image. If you have a joystick, you can actually use it to steer around the Mandelbrot, zooming in and panning around. This is really slick. It is also quite fast at generating the images, as you might imagine.

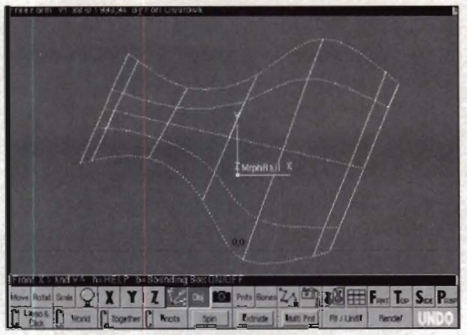
It has the ability to Morph a Mandelbrot into another shape, such as a circle, to create some very unusual animation. Another slick animation feature is an animated zoom that calculates just the key frames and adds the rest at playback using the included

TweenPlayer. The result is animations that are generated very quickly but take up very little disk space.

With Mand2000 you can zoom in a thousand times, taking you deep into the Mandelbrot set, and there is even a locater that will show where you are in the set no matter how deeply you have zoomed in. You may find uses for the images and animations you can create, but I think you'll also have fun exploring this amazing bit of visual mathematics.

People are Talking

The LightWave Modeler is pretty impressive, and serves most people quite well, but it is not the last word in modeling. There has been a lot of talk lately in the local LightWave community about a modeling program called FreeForm 3D, by Fori Owurowa. FreeForm is a true spline and NURBS editor. It offers some of the very slick modeling features of Real3D2, but is 20 times faster.



FreeForm 3D provides a LightWave-compatible spline and NURBS modeler.

Unlike the full version, the demo does not allow you to save objects in the LightWave, Aladdin, Real3D2, Caligari, Imagine and Renderman spline formats, and it has a few features disabled. Still, I was very impressed while playing around with this. I have seen some very sophisticated and organic-looking models that were created very quickly. I don't have the space to cover all of its features, but it is an excellent LightWave companion. If you are a LightWave user, I strongly suggest you take a look at this.

I believe that putting out demo versions of a program is a good way to let people know what a product is about. I've even done it myself with a disk-length demo of my new digital book, "Geoffrey Williams' Interactive Guide to Digital Video and Multimedia." You can find it under the name IGDVM.lha on the Internet and elsewhere.

As usual, if you do not want to spend the time hunting these down, I've put them all on a disk for you, including the LightWave patch, FlyerFAQ and demos. I will also include a second disk with the IGDVM demo. You can get both disks by sending $5 to: Geoffrey Williams, Demo Disk Offer, 1833 Verdugo Vista Drive, Glendale, CA 91208.

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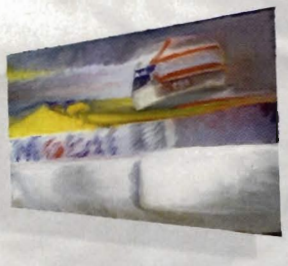

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FOR INFORMATION CIRCLE 134

TAMING THE WAVE

Modeling Assistance

Tricks to Solve the Missing Normal Problem

by David Hopkins

Welcome back to "Taming The Wave." This month's column takes a look at several helpful Modeler tools and tricks that you may not be familiar with. With this in mind, you should load up your Modeler and clear out anything that may have been there by using the "New" option.

We've all had this happen: You're building away and discover that a polygon doesn't have a normal. (The normal, of course, is the little dotted line that extends at a 90-degree angle from a "legit" polygon.) If you've never seen this problem, you are truly a LightWave master and probably shouldn't spend any more time reading. Otherwise, let's explore some possible solutions. The most important thing to remember in modeling is that every polygon must be perfectly flat. If you are working with a three-point polygon, you shouldn't have any problems, since three points can describe only a flat plane. It's when more points are added that things can (and often do) start going wrong.

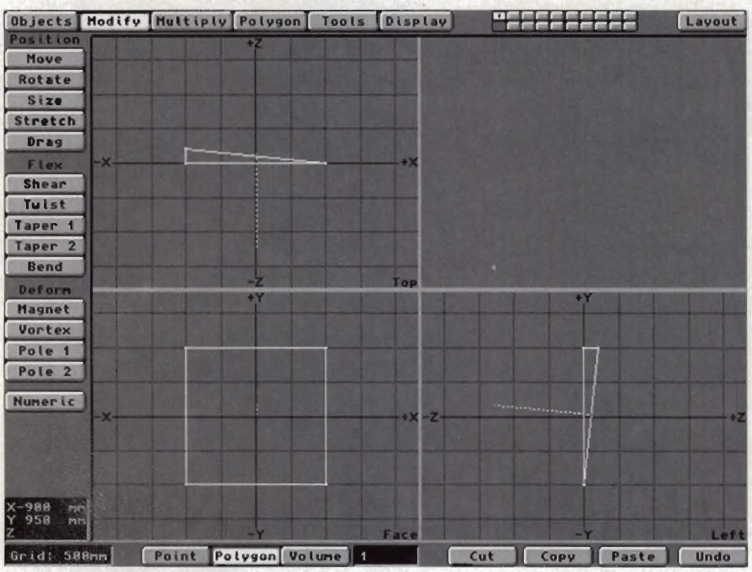

Figure 1

Let's set up a test bed for our work. In Modeler's Layer 1, select the Box tool and create a basic square in the Face view. Don't give the box any depth at this point in time, just a flat plane. Select the polygon and you should see the normal points away properly. So far, so good. Now, switch to Point Select Mode and grab any one of the points. In the Top or Left view, drag that point out of line with the others. It doesn't have to be moved a huge amount so long as it is out of the plane of the others. Switch back to Polygon Select Mode and choose the polygon. Notice that the normal is no longer straight. Figure 1 shows mine. Fixing this particular example would be quite easy—it's probably just a matter of moving the stray point back into line. True enough, but let's pretend that things aren't exactly that straightforward. If this one point out of line was actually a few points out of line (each off by a different amount), getting them back into line by hand would be a bit of trouble.

Here, however, is where the trick I'm about to illustrate shines. We know that in this case our desired plane is Z = 0, right? An easy way to find out for sure is to select some of the points (with Point Select Mode, of course) that are in the proper plane and press the "I" key on your keyboard to bring up the Point Info requester. By using the Next and Previous buttons, assuming you selected more than one point, you will notice that one axis stays the same for each. In this case, it is the Z axis, which remains at 0 for each point. Our goal, therefore, is Z = 0 for all of the points. Here's the trick. Select all of the points that need to be moved to the Z = 0 plane (in this case, that would just be the one we moved previously). Now, switch to the Modify menu and choose Stretch. Press the "N" key on your keyboard to bring up the numeric entry fields. Set the Z Factor to 0 and leave the other Factors set to 1. Make sure that the Z Center = 0 as well. Click OK.

Well, it worked, but why? If we had set the Z Factor to .5, the stray point would have moved halfway to Z = 0. A Factor of 1 would have left it exactly where it was. A Factor of 0, therefore, means move the point to whatever the defined Center is (in this case, it is Z = 0). If we had set the Z Center to be 2 and the Factor to be 0, the point would have moved to Z = 2. The same center setting with a Factor of .5 would have moved the stray point halfway to Z = 2 (a position that would depend on how far the point was from it in the first place).

A bit of experimentation should give you the hang of this technique, which is the most painless way to fix a non-planar polygon without tripling it. Of course, if the polygon's plane was not supposed to be straight along an axis (such as an angled surface), this trick might not help much, if at all, but now you have another toy for your bag of tricks.

In my discussions with other LightWave users, I've frequently heard a common myth about another Modeler tool: Weld. The story goes that Weld will take a set of points that you select and then roll them all up into one point somewhere in between them. This is not correct! In actuality, Weld rolls them all into one point that will be located wherever the last point you selected was. Once you understand this, Weld becomes a much more useful tool.

Let's take a moment to look at a nice trick with Modeler's Bevel tool. Click New in Modeler to reset all the defaults and lose the square we were fooling with earlier. Click on the box tool, then press "N" to get the Numeric Entry requester. Accept the defaults to generate a 1-meter cube.

With Polygon Select Mode, choose any (or all) of the faces. This trick requires that you have polygons selected. Once you do, press the "q" key on your keyboard to bring up the Surface Name requester. Set the surface name to "BoxEdge." Now, press the "b" key to bring up the Bevel tool. Set the Inset to 100, the Shift to 0 and Units to mm. Click OK. You'll notice that the faces that were selected still are, but now have a border around them.

Press "q" again and change the surface name to "BoxEdgeInset." Press (b) for Bevel again. This time, set the Inset to 0 and the Shift to -100. Click OK. One more thing—press (q) one more time. Set the Surface Name to "BoxFace." Now, press the (/) key to de-select the polygons.

Go to the Display menu and click Options, click Moving under Preview, then Solid, and finally OK. Take a look around your object in the 3D view. Notice that only the polygons you originally selected were affected by everything we did. But what did we do? We pre-defined surface names for each new polygon we made. When we did the first bevel (Inset = 100, Shift = 0), the selected polygons were named "BoxEdge." When we did the second bevel (Inset = 0, Shift = -100), the selected polygons were named "BoxEdge-Inset." This resulted in the polygons created during that bevel keeping the "BoxEdgeInset" name. Then we changed the surface name to "BoxFace," which affected only the polygons currently selected (those that were in the center of each inset). If you take this object into LightWave, you'll find that you can define those surfaces separately, and all it took was a little bit of forethought.

So, it's an interesting piece of information, but what can you do with it? Making an intricately beveled doorframe with accurate-mappable surfaces is a piece of cake. Maybe the front door of your house? How about a complex picture frame? Bevel takes all the hard work out of these and many other projects. You could even make an Egyptian pyramid with separate surface names (and thus textures) on each level. Experimenting is what learning is all about, and this is certainly worth getting the hang of.

At the time of this writing, I have just received a copy of Forge and Essence Textures from Apex Software. While I've only scratched the surface of the vast array of features and options, I can tell you that this is one incredible piece of software. If you've used every Texture City image 8,000 times, tired of Fractal Noising everything, or just want a powerful and versatile texture construction set, this is the ticket.

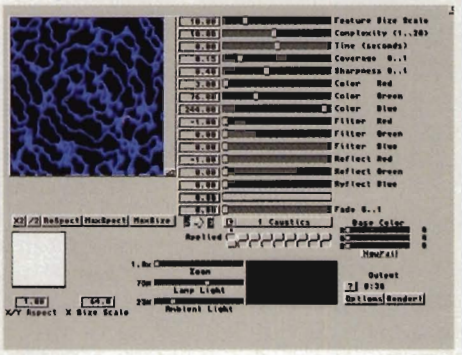

Figure 2

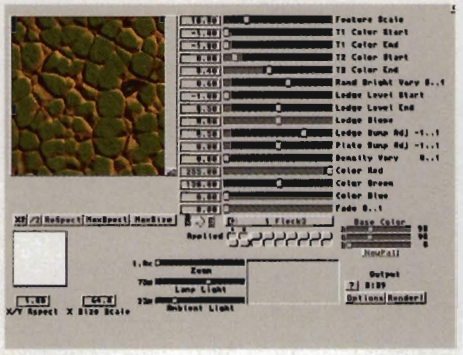

Figure 3

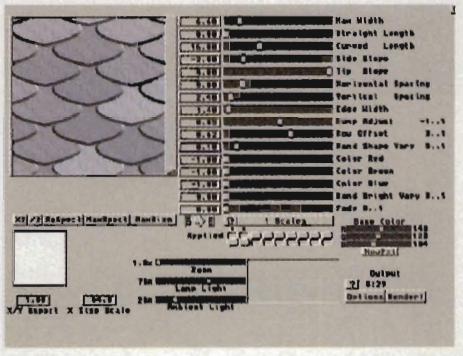

Figure 4

Based on the concept of procedural textures like those included with LightWave, Essence is a library of fascinating "template" textures that you can modify to meet your every whim. Since you control every aspect of these textures, the number of possible results is virtually unlimited. Add to that the fact that you can layer texture on top of texture on top of texture, and you start to get the idea. Factor in the fact that anything can be animated to evolve over time, and you see the formula for some seriously long nights of play...err...work. You can see a few examples in Figures 2, 3 and 4.

Forge is the part of the package that allows the resulting surfaces to be used in LightWave (or any other graphics program) as a sequence of image maps. Alas, this is the one weak link. Since all of the "frames" of a texture have to be rendered by Forge prior to being used in LightWave, it means waiting for another program to finish rendering. Of course, Forge does its work in a reasonably speedy and efficient manner, so it isn't a terrible thing. And the next release of LightWave (4.0) offers plug-in support for tools just like this. In fact, Apex is working very closely with NewTek, so we're sure to see more of these. Should any of this stop you from buying Forge and Essence? Not at all. You should make sure to follow the advice on the outside of the box, because it is absolutely correct: "The software contained is a serious tool for animators, but has been known to be so engrossing that hours and even days can be spent playing with different textures for mere entertainment. Do not install this product immediately before any important project deadlines."

That's it for this month. Please address all communications to:

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FOR INFORMATION CIRCLE 14

EDITORIAL EVALUATION

Circle number on Reader Service Card
I found this article:

Very Useful	Useful	Not Useful
Circle 033	Circle 034	Circle 035

TIPS & TECHNIQUES

Modeler Made Easy

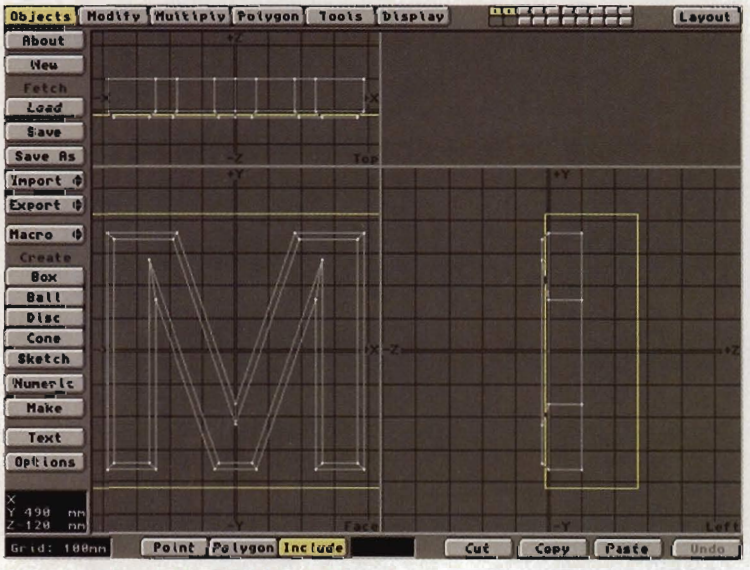
Tutorial Concludes with Object Rendering

by Brent Malnack

This is a continuation of last issue's excerpt from a new book I'm writing called "Modeler Made Easy."

When we left off last time, we had just finished creating a flat letter M. So, if you were working on that project, follow the steps that led up to this point, or load the flat M that you saved to disk.

Click on the Polygon button at the bottom of the screen. This puts us in polygon selection mode. If you have just followed last month's steps, the polygon



Using the volume tool, select all but the face polygon.

should be highlighted in yellow in the Face view, and a dotted line should be protruding away from the M in the Left and Top views. This is the polygon normal. It shows which way the polygon is facing. In the Top view, it should be pointing toward the bottom of your computer monitor. That is where the camera would be positioned by default in LightWave's Layout window. If the polygon normal was facing the opposite direction, then it would not be visible when rendered, unless the camera was placed behind the M. In that case, it would appear backward (which wouldn't matter in the case of an M, but would if it were a letter G).

Next, click on the Polygon button at the top of the screen. This brings up the polygon tool buttons. Click on the Surface button under the Transform menu. This opens a requester that will enable you to name the surface. By naming various polygons in objects differently, it becomes possible to set different attributes for various parts of an object. Type in Faces in the requester and click on the Apply button (or press the Return key).

Planning Ahead

Because we plan on beveling the M later, we need to copy what we have into the next layer. Click on the Copy button at the bottom of the screen. This copies the flat M into memory. Select layer 2 as the foreground layer by clicking on the second button, top row of the layer buttons. You should be presented with a blank work area. Click on the Paste button at the bottom of the screen. This will paste the flat M into layer 2. Return to layer 1 by clicking on the top left-most layer button.

Click on the Multiple button at the top of the screen. Next click on the Extrude button. This allows us to add depth to the now flat M. The mouse pointer will change its look to a red arrow in parentheses. Click the pointer in the Face view. This tells Modeler that you want to stretch the object in the Z axis, which will give the M thickness.

Now, click on the Numeric button, or press the (n) key on the keyboard. This opens the numerical requester for the Extrude tool, allowing us to specify a value different than the default setting. The Segments window defines how many sections should be used to define the extruded area, and in this case the default setting of one is sufficient. The Extent value defines the depth of the extrusion, and here the default setting of 1 meter would be too thick. Change the value to .5 and click on OK.

The thickness of the extrusion can be checked in the Top and Left view. It is shown by a solid yellow line coming off of the back of the object to a short white line. Click on the Make button (or press the return key). Modeler will then create the extrusion. Click your mouse pointer in a blank area. This will remove the extrusion tool from the view, showing just the result: an extruded letter M.

We now need to return to layer 2 to bevel the flat M polygon. Click on the second button in the top row of layer buttons. The flat M we copied here should still be here later. (In versions 3.1 or later of LightWave Modeler, layers that contain data are represented with a black dot.)

Click on the Multiply button at the top of the screen. Next, click on the Bevel button. This opens the Bevel requester. The Inset and Shift values determine how much bevel to produce. The default settings of 100mm (or .1 m) are fine. Click on the OK button. The M should now be beveled.

Until this point we have created two pieces, which we now need to combine into one object. While holding the shift key, click on the layer 1 button. This will display the contents of both layer 1 and layer 2 simultaneously. The last step before saving is to define separate surface names for the side and bevel polygons.

Click on the Volume button at the bottom center of the screen. It should now say Exclude. Click on it again so that it says Include. In the Left view, open a box that cuts through the center of the bevel on its left side, and stretch it so that it is large enough to encompass the rest of the M object off to the right. All but the front M face polygon should be engulfed within the dotted line box. If you make a mistake, try again until it is set up properly. Now press the (w) key. This will open the Volume Statistics requester. Click on the (+) button to the left of the Polygons in Volume window (the window should say 28). Now click on the Polygon button at the bottom of the screen.

The polygon normals should all be visible and shooting from the object in various directions. Right now, all but the front face polygon are selected.

Click on the Polygon menu at the top of the screen. Then click on the Surface button and type "Sides and Bevel." This will name the selected polygons. Now it's time to save the object so that it may be rendered in LightWave. Click on the Objects button at the top of the screen. Click on the Save button and type "M.lwob." Return to LightWave by clicking on the Layout button at the top right corner of the screen.

Load the object into LightWave by clicking on the Objects button, and then the Load Object button. Find the M.lwob in the list and click on OK. Click on the Surfaces button. The Current Surface button should say Face. Click on the Load Surface button and select Gold from the list. Click on the Smoothing button to de-select it. Change the Current Surface button to Sides and Bevel by clicking and holding the mouse button, and then moving up through the list until it's highlighted. Again click on the Load Surface button, and this time select Brass. Click on OK. Press F9 to render the object.

Live-Action Font Face Textures in Alpha Paint

This month's tip demonstrates the power of the new paint system for the Toaster, InnoVision Technology's Alpha Paint. It was submitted by Wayne Cole.

If you have ever used the Video Toaster to create a graphic with letters that are filled with live-action or full-motion video, you've probably also muttered something like, "Why can't I do this all in the same software package?" To create this type of graphic in the Toaster environment you must do something like this: create the text in the CG (that's where you can get to the PostScript fonts); go to ToasterPaint (where the Toaster's graphic tools are) and grab the rendered page of your text from one of the Toaster buffers; create the graphic using only the text as the key mask; create the graphic foreground; and finally, play with the keyhole effect in the Switcher (that's where your keyer control is) to play the video within the boundaries of the letters in your graphic. Whew!

With Alpha Paint, it's easy to use live video in the faces of the text.

Now the entire process can be done faster, easier and with better results in Alpha Paint. With Alpha Paint you can actually play the video on the face of the text, creating a live texture.

Design a graphic, or load your favorite Framestore, IFF or JPEG image. In the Buffers Menu select Clear and Video. This means that no video will show over the image you just loaded. Then, in the Brush Menu, select text as the brush source. Choose your favorite font in the text submenu and set the attributes of size, width and spacing. Then create the phrase, and specify its line spacing and justification. Maybe even use the circle layout, a nice feature not provided in the ToasterCG.

Now, back in the Brush menu, access the attribute submenus for the brush face, outline, shadow and cast. For the elements on which you wish the live action to play, set the "Video Visibility" sliders to 100 percent, and for those where you want to see your graphic instead, simply set the video visibility to 0 percent. (I like setting video visibility to 100 percent for the letter face and 0 percent for the outline, shadow and cast.) Remember, too, that the amount of video that shows depends on both the grayscale value of the color chosen and the video visibility setting. Exit the Brush Menu back to the Main Menu, then stamp your text down where you want it to appear on the graphic.

To view your handiwork, go to the Play Menu. On the Overlay Bus, select the Toaster input that carries the video source you want to paint on the letters. On the Background Bus select "Graphics." Choose the Fade transition and then click the play button. Set your live-action video in motion. Click the left mouse button and watch the face color of your text dissolve into your live-action video. Left click again, and the video dissolves into the text face color. You'll see a good clean key, of much higher quality than anything you can get just with the Toaster art card effect.

Hey—I hope you remembered to turn on the recorder.

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Fax (510) 638-6453
FOR INFORMATION CIRCLE 15

ILLUSTRATION BY DAVID SMITH

The Silent Witness

A Crash Course in Reconstructing an Accident With Forensic Animation

by Don Pence

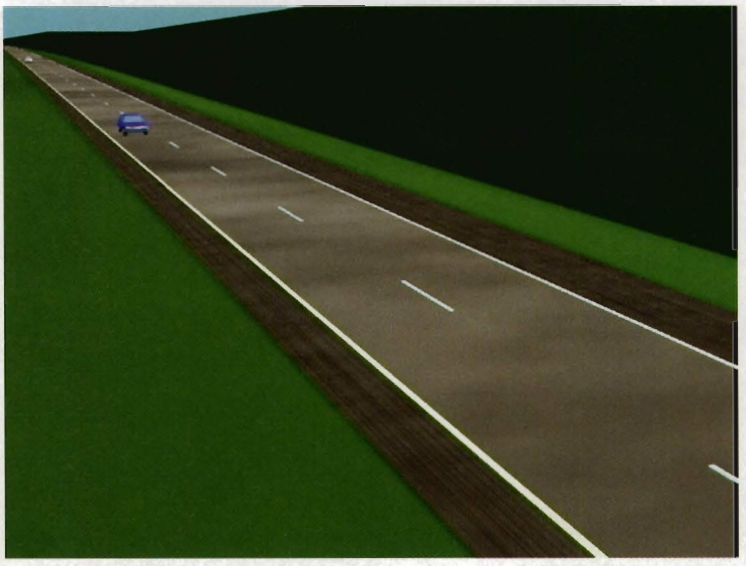
An attorney calls you and says that he would like to do an animation for a case. The case involves a 110-year-old man who became confused about his location and stopped on the highway where he was driving. During the process of stopping, another man, who was exceeding the speed limit in traveling at 90 mph, collided with the rear of the first man's car. The attorney wants to demonstrate that the speeding driver could have seen the stopped driver in time to avoid the accident.

The Silent Witness

First Step

Here is a list of the items that you need from the attorney to obtain the information necessary for bidding the project.

1. The accident report.
   This will give you the information about all of the vehicles involved in the case, plus the location of the accident scene. The accident report should also contain statements by the witnesses and possibly photographs of the accident scene and the vehicles' final resting positions.
2. The engineer's initial report about the accident.
   This will give you the initial opinions of the expert and possibly how he or she arrived at them. This will be helpful in giving you an idea of the type of information that you may have to create when doing the motion files for the animation. It will also give you some insight into how organized the engineer is and how well he or she communicates the information.



Frame 1

This is generally enough information for us to bid a project. The accident report gives us all the information that we need to get an idea of the modeling requirements for the project, as well as the information necessary to create the motion files.

Bidding is the tough part of the project. You want to make sure that you cover all of the aspects of the project, but you don't charge more than the market can bear. Generally, objects can be modeled, purchased or downloaded easily, and their cost can range from $100 to $600, depending on the source. Keep in mind that there is an increasing number of on-line services from which you can obtain the datasets at a reasonable cost or free. One such source is mentioned above. Other sources are Viewpoint Datalabs, Acuris and a dozen others that advertise in this and other computer graphics publications.

The motion files take some guesswork. Everyone who works in this field has to develop a feel for the experts that they work with. You have to consider whether the engineer that you are working with is going to acquire the information that you need in a timely fashion and in a form that you can use.

Generally, the motion files can be done in several hours using some mathematical formulas that will be discussed later in this article.

Once You Have the Job

As you can see, merely bidding on a forensic animation can be a bit of a task. It is something that you eventually gain a feel for. You will find that you may just break even on expenses for the first few cases, but it is important to remember that no matter how much of a loss you take on an animation, it will always be a learning experience. Please remember that it is important that you not give less than you said you would in this instance. If you do, you are almost certainly cutting yourself out of future business from that attorney, and you could also be cutting yourself and others out of the animation business of about 10 other attorneys.

A Tutorial for the Modem-wise

In the August Issue of *VTU*, we gave an overview of the Forensic Production arena. Within this article we are focusing on the Forensic Animation aspect of that field.

This topic is delivered in the form of a tutorial. If you are modem-wise we urge you to download the tutorial off of our BBS. The BBS name is The Society of Forensic Arts, (904) 396-0318. You will need to log onto the BBS and set up an account, then type FB (FileBase) when you get a MAIN prompt. Within the FileBase you will find several directories. The area that you will have access to as a new user will be named VTU TUTORIAL. Type in the number for this directory and download the file named VtuTut1.lzh. If you do not have Lharc of Lz you will want to download them as well, as they will be in this directory. Instructions for each are also in the directory.

When you unarc the file you will see an "objects" directory. You will need to place this directory somewhere that you can access it from your LightWave program.

If you cannot obtain these files you may use the following: Use an automobile of some variety. Make sure that you scale it to the proper size for the road that you create. Or just create a block or a simple model of an object to represent the automobile. Your road should be about 16 feet wide and you may place stripes down the center if you wish.

The Roadway object that you will use in the Tutorial files will be a real highway that we modeled from a section of I-10 in Florida.

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Once you have the job in-house you can begin the real work. It is at this point that you will ask to see all of the depositions of the experts on both sides. You also want the depositions and/or statements of all of the eyewitnesses in the case and the people involved in the accident.

After you read all of this information you should have developed an idea about exactly what happened in the collision. Now you are prepared to make suggestions to the attorney and the expert as to the points of view to be rendered.

Modeling Time

In modeling the accident scene, you may get lucky and find that the expert has made some detailed drawing of the area. If you don't, and the scene is accessible, you will want to go there. Measure everything, and when in doubt, measure it twice. There is nothing more frustrating than having to drive two hours to go back and get the widths of a stripe or the height of a curb. Photograph the things that have detail in them so that you can back up your memory and impressions of the items that may be difficult. Find out how much detail the attorneys want and give it to them. Keep in mind that you may be able to use the detail factor to give the attorney a better price on the animation if cost is an issue. Also keep in mind that you probably don't have much on a sample reel yet, so you may want to price the job at a low-detail rate but add much more for the sake of having something really nice to show in the future. You may not want to add these details to the job now, but get the information so that you can add them later.

After modeling the road it is time to start on the vehicles. If you cannot find a dataset of the vehicle that you need at a cost you can afford, you will have to locate the data you need to create the object in Modeler.

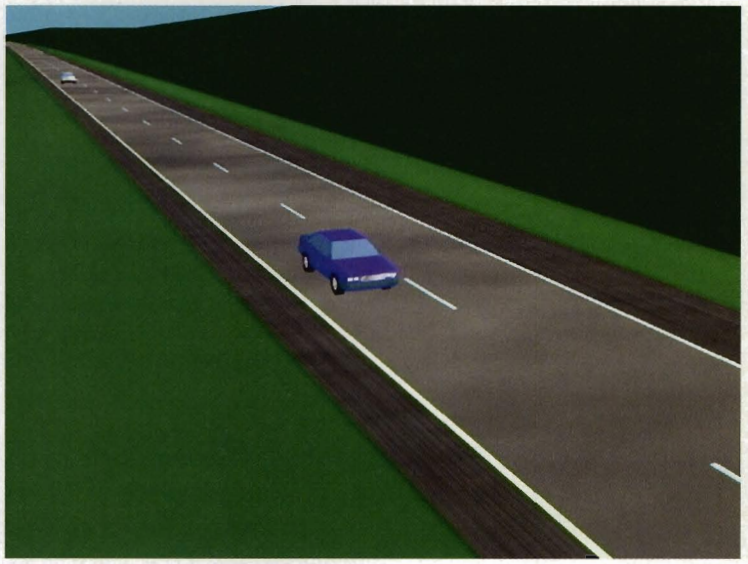
There are a number of resources for vehicles of all sorts. Some car dealers are very interested in the process of creating an animation. Your public library has copies of the National Automobile Dealers Association (NADA) book, which has all of the vehicle specifications and in most cases has a small wireframe thumbnail of the vehicle. You can also order past editions of automobile brochures from automobilia firms that specialize in providing brochures to collectors. Keep in mind that the brochures are not to scale and that the vehicles may be fitted to look good on the printed piece. Many of these firms can be located in a publication called *Hemmings Motor News*. *Hemmings* is available at most larger newsstands.

Motion Creation

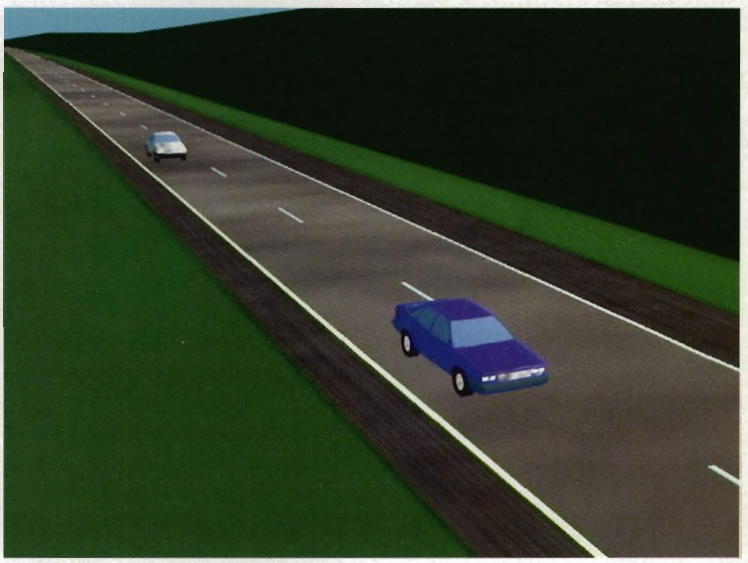
Now that you have constructed your models, it is time to create the motion files. This is where all of the work comes together.

There are several things to keep in mind regarding motion creation. In Modeler, I create my objects in feet and inches. In the layout area, you can only work in meters. This is not a problem, but is a bit inconvenient. The conversion for making your final measurements fit into the layout area is 1foot = .3048 meters.

So if you come up with a figure that says that you need to move a vehicle 32.6 feet in some direction, you have to multiply 32.6 x .3048. This will give you an answer of 9.9365 meters for the layout.



Frame 2



Frame 3

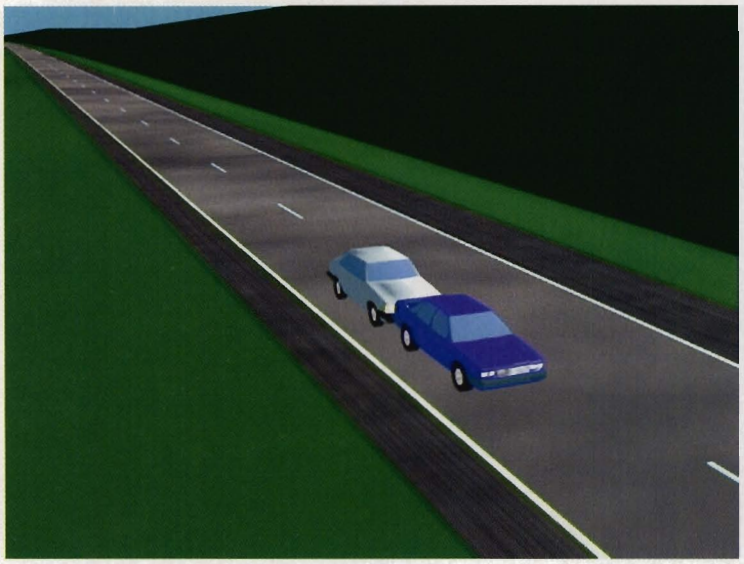
If you need to go the other way, from meters to feet, you multiply 9.9365 x 3.281. This will convert the figure to feet.

Math Class

In this accident, we have learned that our older driver (vehicle 1) was moving along at a rate of 40 mph. Our defendant (vehicle 2) was traveling at a rate of 90 mph. Our first task is to take these speeds (mph) and convert them to velocities (ft/sec). To do this we apply the following factor.

The basis for this factor is:

$$\frac{\text{(mph) x 5280 (ft./mile)}}{\text{(60 min. x 60 sec.)}} = \text{ft./sec.}$$



Vehicle 1 and 2 reach point of impact (POI). The coordinates used are 0,0,0.

or

$$\frac{\text{(mph) x 5280}}{3600} = \text{ft./sec.}$$

or

(mph) x 1.4.66=ft./sec.

so our multiplier is 1.466 to do the conversion. In turn, our velocities are 40 mph = 58.64 ft./sec. and 90 mph = 131.94 ft./sec.

You will want to make a note of this conversion and how it is arrived at for future information. It would be a good idea to start a reference sheet of conversions and formulas that you can keep in your LightWave manual.

The next step is to set up our scene file and start positioning the vehicles. Load the road object and the two vehicles into the layout area. Create a scene file that has 450 frames.

For this instance and for all animations that I do, I use the 0,0,0 coordinates for my point of impact (POI). Place the back of vehicle 1 even with the POI and the front of vehicle 2 against the back of vehicle 1. This is our final position for this tutorial. We always work backward from the end. Set keyframes for the objects at frame 450. Now make a note of the offsets of the vehicles relative to the POI. You will need these offsets because the next set of calculations that you do will be based on the objects' current positions.

To complete our motion files we will have to calculate the following things:

1. How long it took both vehicles to stop
2. What their acceleration rates were
3. What the stopping distances were
4. What the distances were for each second of deceleration time

When calculating the stopping distances for the vehicles we will use the following formula. We have learned from all of our data and the engineer that vehicle 1 stopped from 40 mph with a deceleration rate of .35 (also called a friction factor or factor of gravity). Vehicle 2 decelerated with a factor of .80 but still hit vehicle 1.

The following things are true within our formulas:

a = acceleration/deceleration
f = factor of gravity that is used to describe friction factor and acceleration/deceleration factor.
t = time
v = velocity
d = distance
S = speed

First we want to figure the deceleration rate for the two vehicles. (a) is equal to the factor of gravity multiplied by gravity (32.2).

a = fg or a = .35 x 32.2, so a = 11.27 ft./sec./sec.

We will let you work out the deceleration rate for vehicle 2.

Now for the stopping time.

Time (t) = velocity divided by deceleration.
t = v / a or t = 58.64 / 11.27 so that t = 5.2 seconds

You can apply the second vehicles values.

Stopping distance is figured as follows.

Distance (d) = 16.1 times (f) times (t) squared
or
d = 16.1 x .35 x 5.2 x 5.2
or
d = 16.1 x .35 x 27.04
or
d = 16.1 x 9.464
so that
d = 152.37 ft to stop.

The only other thing that we need to do is figure the distance for each second (30 frames of animation) the vehicles traveled. To do this we use the following equation, substituting the Time factor several times.

d = v x t - .5 x a x t x t
or
d = (58.64 x 1) - (.5 x 11.27 x 1 x 1)
or
d = 58.64 - 5.635
so
d = 53 ft. in the first second
d = (58.64 x 2) - (.5 x 11.27 x 2 x 2)
or
d = 117.28 - 22.54
so
d = 94.74 ft. after two seconds.

During the second, vehicle 1 travels 41.74 feet. You repeat this formula for every second so that you can get the deceleration to be fluid and not so linear. Once you have obtained all of this data you are ready to apply the figures to your vehicles and set your keyframes backward from the POI. Remember to take into account the offsets that we discussed earlier.

This process is a bit monotonous but goes rather quickly. Our offset for vehicle 1 if you are using the downloaded project is -1m in the Z axis. So the following numbers are the setup for the Z axis and their conversions to metric for the layout area -1m:

Frame 420 - sec 14 - z position 0 ft. = 0 meters - 1m = z-1 m.

Frame 384 - sec 12.8 - z position 8.11 ft. = 2.47m - 1 m = z1.47 m.

Frame 354 - sec 11.8 - z position 27.27 ft. = 8.31m - 1m = z7.31 m.

Frame 324 - sec 10.8 - z position 52.89 ft. = 16.12m - 1m = z15.12 m.

Frame 294 - sec 9.8 - z position 99.39 ft. = 30.29m - 1m = z29.29m.

Frame 264 - sec 8.8 - z position 152.35 ft. = 46.43 m - 1m = z45.43m.

Frame 0 - sec 0 - z position 516.03 ft. = 157.28m - 1m = 156.28m.

The last entry is the beginning of the animation. It was calculated by multiplying the remainder of the time for the animation, 8.8 sec., by the velocity of vehicle prior to breaking. Be sure that you go through the animation and look in the ZY view and check that the vehicles are on the road and not beneath it or above it. The same process is then applied to vehicle 2, only with one added factor, and that is that there were 220 ft. of skid marks up until the POI. This gives you the point at which you begin your stopping of vehicle 2. We will also assume that vehicle 2 hit vehicle 1 one second after vehicle 1 came to a complete stop.

Once you have the project completed, you can set up your camera and render a few frames. It should look similar to the pictures in the series shown here. If you study and use these formulas you will be able to create the data that you don't have. Just be aware that you need to get approval from the expert on the case so there are no problems in getting the exhibit admitted.

If you want to check your data against mine you will find within the VtuTut.lzh file a scene called "finalscene," which has all of the setups for all of the motions.

To obtain a complete booklet of formulas for accident re-creation, you may write to me at Video Law Services, Inc., 1533 Lakewood Road, Jacksonville, FL 32207. Or leave me e-mail on the SFA BBS or at Amigen@aol.com.

VTU

Don Pence is a forensic animator with Video Law Services, Inc., in Jacksonville, Fla. He has spoken to numerous trial lawyer groups around the country and also provides information at seminars with The Association of Professional Videographers, and The Institute of Police Technology and Management.

EDITORIAL EVALUATION

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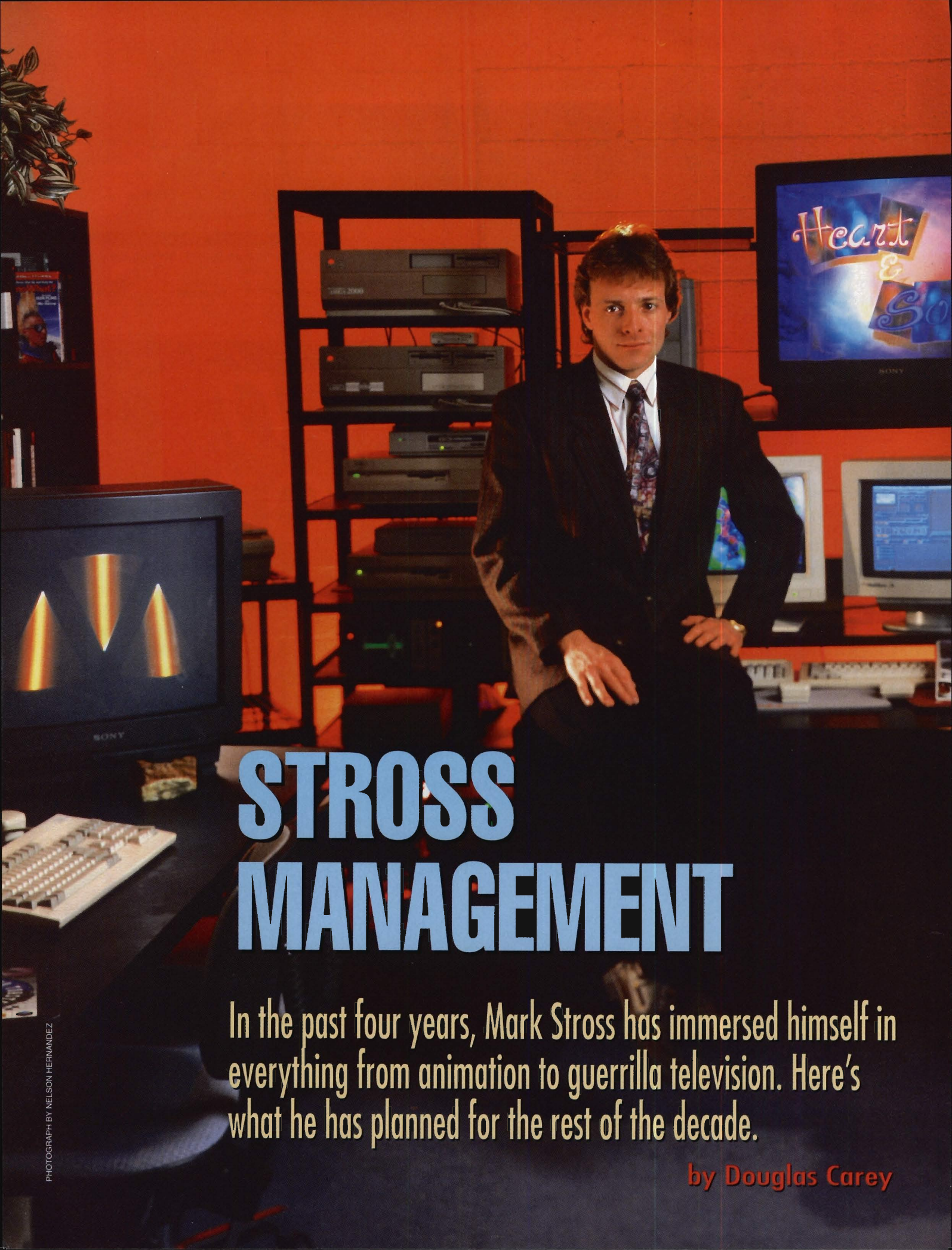
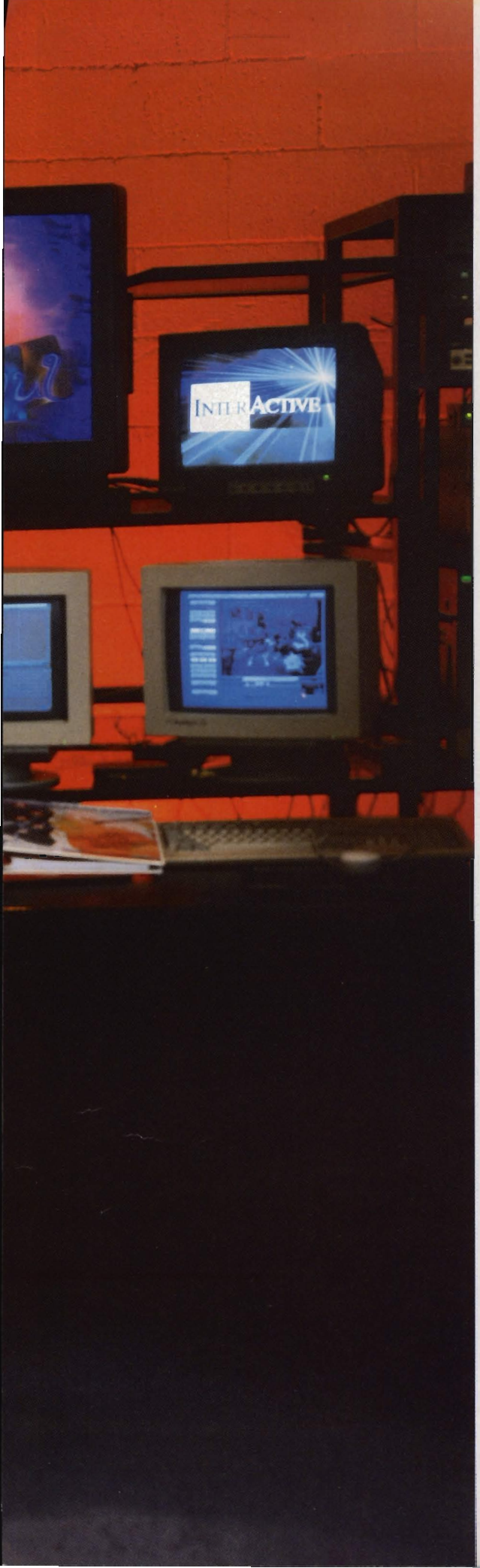


STROSS MANAGEMENT

In the past four years, Mark Stross has immersed himself in everything from animation to guerrilla television. Here's what he has planned for the rest of the decade.

by Douglas Carey

PHOTOGRAPH BY NELSON HERNANDEZ



The surprising thing about many of today's visionaries is their uncertainties about tomorrow. Like a flock of seagulls, they're forever in transit, living in expansive environments and adjusting their direction with the ever-changing climate. Quite often, unpredictability is their only constant. It's what makes them great.

For all of the questions, there are no limits to their specific projections of a world complete with wireless cable, interactive television, even voice-activated computers. The uncertainty lies in the journey. In the course of reaching their destinations, our visionaries will spend years traveling different routes, evangelizing across the cyberspace. The frantic race to provide solutions has evolved from the back page to center stage, and we have become a captive audience, eager to eavesdrop on their ideas for the future. However, in our exuberance to enjoy their discoveries of tomorrow, we frequently neglect their accomplishments of today.

Pioneering Spirit

Mark Stross, for one, is offering no guarantees about what tomorrow might bring. While he has a few scenarios in mind, there is no master plan in place, no instructions to follow. As a result, Stross is laying a broad range of groundwork for his own track on the infamous information highway.

"I want to be part of the bandwagon that connects every single home to the cable company, to the phone company, to your department store and to everything else," said Stross, who celebrated his 32nd birthday last month.

"There is going to be a tremendous need for pioneers to create systems that work, systems that make life easier. And one of the problems will be about explaining all the information in a graphic, easy-to-read, well-presented way. That's what I think the companies of today are going to find themselves responding to in the future."

Creating an avenue for everyone to benefit from the information highway is just one of many projects on Stross's desk each day. Among other things, Stross is founder and president of his own animation house, board member and facility manager for a guerrilla satellite network, former president of the largest Video Toaster user group in the country, and an operator of his own information channel with Interactive Cable Systems.

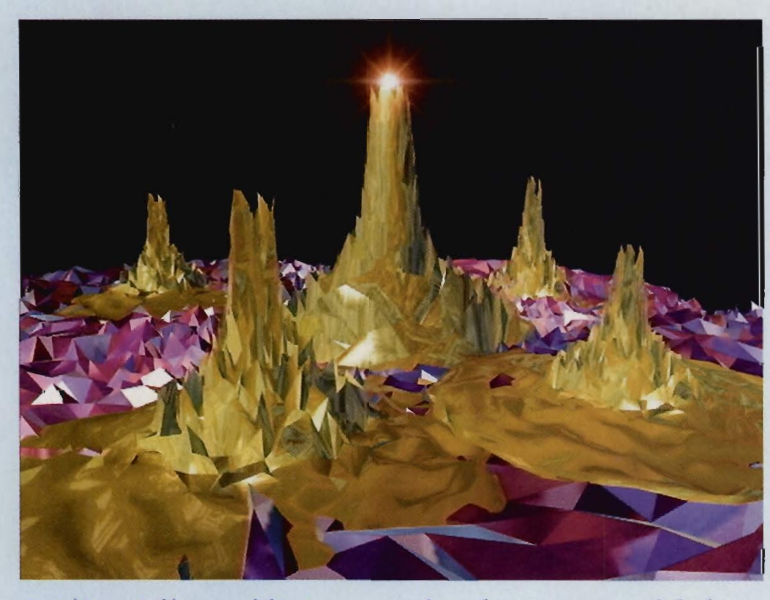
Most of his time and energy, however, are devoted to Marmalade, the animation house he founded three years ago in Glendale, Calif., located just outside Los Angeles. Formerly known as Toaster Marmalade, Stross recently trimmed the name at about the same time the company moved several miles away to a larger 1,200-square-foot facility.

Stross said the Marmalade concept originated from a simple late-night discussion with his partner, Gerry McNamara. After bringing the idea to life, Stross began building a staff that now includes graphic artists Mark Smollin, Suzie McKig and Jim Gorman, along with

STROSS MANAGEMENT

Diane Orem, Stross' personal assistant. Marmalade head animator Ken Wilder, charged with the task of maximizing his staff's resources, said his responsibilities are lessened with the help of a fully integrated network of computers.

Razor Fighter: Created by Marmalade head animator Ken Wilder, this image utilizes Metaform in LightWave's Modeler.



Crystal Tower: Wilder created this image as part of a work in progress. Marmalade plans to make the still part of the company's new demo reel.

"I have the luxury of having seven Amigas networked together that I have instant access to," Wilder said, describing the Marmalade studio. "Six of those computers are '040s, and four of them have over 32MB of memory in them. We also have about 5GB of online storage and two Emplant cards—one's in the 4000 and one's in the 3000—so we have full Mac compatibility, which is really nice."

For all of its firepower—including multi-sync monitors on each workstation for the many long workdays and trendsetting programs such as InnoVision's Alpha Paint—Marmalade harbors no illusions of competing directly with the top animation houses in the business. In keeping with Stross's lofty sights, the company isn't straying from its original plan of starting slow.

"This is not about money," Stross said, discussing Marmalade's current strategy. "This is about reputation and positioning. We've given up quite a few accounts lately in order to pursue our long-term goals. So our expansion is a lot slower than some of our competitors.

"Seeing Amblin [Imaging] and what they're doing with their digital division is wonderful, and sometimes I get really envious looking at that material. Sometimes I really wish we had the budget to do all that. But that's when I'm losing sight of what we're actually doing. The difference is that if we hit it with one of our enterprises, we're going to own it.

"So it's a very different approach. I don't know if I'm right. But I'm motivated, and we're going to persist until we succeed somehow."

Driven to Success

Stross himself points to his family background as a source for his determination and undeniable drive to succeed. In a world full of people looking for role models, Stross never had to go far.

By the time Stross was 11, he was already a world traveler. Born in London to parents firmly established in the film industry, Stross was a constant companion at many film sites across the globe during his youth, attending boarding schools in exotic locales such as Italy, Czechoslovakia, Switzerland and the former Soviet Union.

Stross' parents, Raymond Stross and Anne Heywood, compiled a portfolio of work in the film industry that stands strong even today. His father built a stellar reputation while producing 38 films, including groundbreaking productions such as *The Fox* (starring Sandy Dennis, Keir Dullea and Heywood), which was widely credited for starting the sexual revolution in the cinema. Before passing away in 1989, the elder Stross won two Golden Globe awards and the top honor for a producer, the Samuel Goldwyn award, for his work on *The Mark*, starring Rod Steiger and Stuart Whitman. Heywood, meanwhile, performed in 27 films, including classics such as *Upstairs, Downstairs*, *The Very Edge*, *The Shaming*, and *The Chairman*, starring Gregory Peck.

Upon moving to the United States on a permanent basis during junior high school, Mark Stross appeared to be following in his parents' prodigious footsteps. In addition to immersing himself in various theater activities, Stross also discovered the world of computers by knocking out programs on a Teletype while serving as editor of his school paper.

Stross' involvement with computers continued through his years at Pepperdine University, but his natural theatre skills easily took center stage, climaxing in 1980 when he became the first student in school histo-

ry to direct a theater production. Fresh from his successful debut, however, Stross made a surprising decision to leave the life of a director behind.

"I hadn't quite finished my education yet, but I realized theater was not going to be profitable, and it certainly wasn't going to make a living for me," he said. "So I went back into computers, my second love."

In the years that followed, Stross worked as a sales manager for several computer companies, accumulating impressive records and networking with a wide range of people in the exploding industry. Also during this time, he purchased his first Amiga, which later became the centerpiece of his own company.

Somehow during this period, Stross found the time to attend the highly respected Pasadena Art Center, where he studied computer animation and film—including several of his parents' films—before graduating in 1987 at the top of his class.

Marmalade Magic

Multimedia was next for Stross, who began working with NewTek's DigiPaint, DigiView and related software during his presentations to studios across the country.

"During that period, NewTek started showing this weird box that they used to keep covered up, and I began seeing video this woman's face floating all over the screen," Stross said. "Immediately, I became very interested in the Toaster, since it was impossible at the time to do anything under $10,000 to go into a video suite with graphics."

Soon after meeting with Wilder and several other Amiga enthusiasts, Stross received one of the first Toaster boards and began working on a variety of projects, ranging from small industrial work to studio productions.

But Marmalade really took shape some time later, when Stross was asked about the possibility of producing a new half-hour series for Universal Television's SciFi Channel, *Mysteries from Beyond the Other Dominion*. Backed with the Video Toaster and a little entrepreneurial savvy, Stross proposed that he could make each episode fit under its $22,000 budget.

"At the meeting at Universal," Stross said, "their whole supposition was, 'How could this Video Toaster device handle a whole show?' I explained to them that not only could it handle the show, but I was confident that we could actually get the project in on budget and do graphics that would never be possible otherwise."

Universal's executive in charge of finance remained skeptical. To capture her imagination and Marmalade's acceptance, Stross produced a truly unique follow-up letter.

"I went out and bought 12 roses and a rose box and submitted a tape where the letter was done in the Toaster, with 11 roses composited against all these different backgrounds," he said. "I wrote her a letter about how I felt we were confident and capable about handling the project. Then I put one rose in the box with the tape and submitted it."

Shortly thereafter, Marmalade received an order to produce a full season of episodes (26 half-hour installments) for *Mysteries*, which became the SciFi Channel's top-rated show before concluding its run early last year.

Beholder Attack: Created with LightWave by Marmalade graphic artist Jim Gorman, this image shows a fully articulated CG character for a project in progress.

Rose Still: This image was created by Gorman using Fori Owurowa's Freeform 3D, allowing the artist to achieve intricate detail in the blooming flower.

Todd Stevens, a producer with the current NBC sitcom *Friends*, was instrumental in helping introduce Marmalade to the SciFi Channel. Now working with Stross as part of a side venture called Weird TV—a guerrilla satellite network originating from a facility inside the Marmalade site (see page 54)—Stevens said Marmalade surpassed everyone's expectations with *Mysteries*.

"[Universal] is used to spending 10 to 30 times what was spent on that show," Stevens said. "Because of the Toaster,

they got more than they ever could have any other way."

Armed with the success of *Mysteries* and positive word of mouth, Marmalade has added clients such as Great Western Savings, TransAmerica, MCA and HBO in the past year. Marmalade is also currently producing a weekly series for the Discovery Channel, *Movie Magic*, a half-hour show focusing on special effects in the film industry.

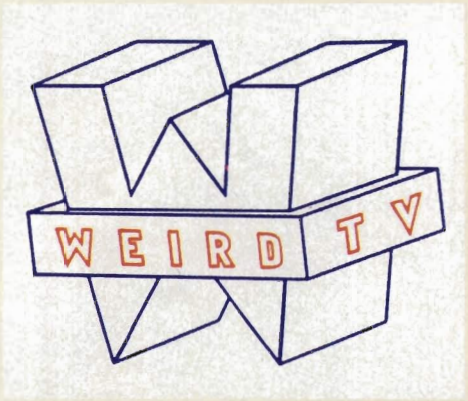
Stross said Marmalade's diversified agenda includes a working relationship with Toluca Lake, Calif.-based Optical Cinema Service (OCS) to serve as the company's 3D animation outlet. In turn, OCS vice president Ray McIntyre Jr. said Marmalade utilizes his company's Cineon (by Kodak) and SGI Onyx when looking to reduce rendering time on certain projects. Stross said establishing reciprocal relationships with well-placed companies such as OCS is all in keeping with the company's original mission.

"Marmalade is not trying to pursue *seaQuest*- or *Babylon 5*-type work. What we're trying to do is own our own shows from beginning to end. We're going after intellectual property," he said. "By using the desktop systems, we're able to inexpensively create presentations and proposals. We're also getting our name in

Weird TV Finds a Home

Tucked innocently enough inside the Marmalade animation house, Weird TV has taken on a bizarre life of its own. Its collaborators couldn't be happier.

"It's MTV without the music," said Todd Stevens, founder and president of Weird TV, a guerrilla



satellite network originating from a facility inside Mark Stross' 1,200-square-foot Marmalade site in Glendale, Calif. "I think everything is much too corporate in America; Weird TV is a chance to watch something that is kind of edgy and genuine, and not corporate."

After a test run last July, Weird TV made its debut in October and currently runs on a weekly basis in a two-hour time frame. Using the Toaster, Marmalade supplies the graphics for openings, closers and bumpers, and producers from across the country provide the truly different programming.

"These are shows that depict UFOs, aliens, monsters, weirdness in America; for example, rock bands that are convinced they've been abducted by aliens. It is very different," Stross said, in an understatement of tabloidlike proportions.

Stevens said the idea for Weird TV evolved from years of discussions with other potentially Weird producers.

"I've tried to get a couple of things off the ground with individual shows before, only to find out that everyone thought what I was doing was a little weird," Stevens said. "So I thought if I put all the weird stuff together and called it Weird TV, everything would be fitting."

Lest one think that Weird TV is a low-budget public access operation (a la *Wayne's World*), Stevens is adamant about the project's legitimacy. Don't let the abducted rock stars tell you otherwise.

"People aren't being paid to have their shows aired, but none of [the programming] looks like public access," he said. "It is not two people sitting in chairs babbling on. It is all videotape rollins, all location stuff and prepacket segments. None of it looks like public access."

For a sampling of Weird TV's typical broadcast, take a peek at the following list of actual programming (complete with *TV Guide*-like descriptions from Stevens):

- *Weird America*—Produced by Chuck Cirino, a composer and prolific programmer who's been producing half-hour television shows and videos for years. ("*Weird America* is like a journey through America's crawl space. It covers things that you would never cover on *60 Minutes* or *PM Magazine*.")
- *Space Bass Medicine Hour*—Produced by Corky Quackenbush, Stevens calls the show (comprised of stop-frame animation and short films) Weird TV's version of liquid television. ("*Space Bass Medicine Hour* is like a fantastic animated journey that's not computer-based. It's all animation cutouts, and it's almost refreshing to see such low-tech genuineness.")
- *The Dr. Ruehl Show*—Weird TV's own Dr. Science is the show's producer, Dr. Franklin Ruehl. ("*The Dr. Ruehl Show* is kind of like our own little twisted *In Search Of*.")

For now, Weird TV is content to grow with its attentive satellite audience, but eventually Stevens and his collaborators would like to take the Weirdness to cable television. At that point, Weird TV will begin looking for even more Weird programming to fill the air.

"In the event that growth happens," he said, "we will need contributors. And no one, to me, is more suited for that then Toaster users."

For those with access to a satellite dish, Weird TV airs on Galaxy 7, Transponder 10 from midnight to 2 a.m. (eastern time) each Sunday morning. To learn more about the world of Weird TV, call (800) 4WEIRDTV.

VTU

places where normally you'd never get it because we have the technology in-house to put together whatever's needed on the spur of the moment. And that's the magic."

Strictly Business

At a time when every enterprising businessman needs all the friends he can find—with his business struggling to emerge from its infancy stage—Stross was busy making his fair share of enemies.

"I fell on my face so often the first few years of running the business," Stross said. "I burned bridges and I made a lot of mistakes. You have to learn that everyone has potential and is an asset. All bridges are viable."

Many of the bridges Stross has since reconstructed were related in some way to his involvement with the Los Angeles Video Toaster User Group, an organization left in disarray when Stross inherited the presidency nearly two years ago.

In his effort to rejuvenate the group, Stross was caught in a whirlwind of politics, simultaneously pumping his own money into the club's coffers while rubbing some people the wrong way with his strong stand on many group issues.

"Mark is very opinionated, and I think that comes in large part to his upbringing," said Wilder, who was elected as the club's president when Stross' term ended early last year. "He doesn't have a fear of telling someone—say, another businessman who's just starting out—that they don't know what they're doing. But the people who have listened to Mark and taken his advice have all called back and thanked him."

Stevens said he has gained immense respect for Stross' technical knowledge and effective business style through their work together on both the SciFi Channel and Weird TV.

"Sometimes he's a little eccentric, like any genius," said Stevens, a former line producer for the comedy *Major Dad*. "Sometimes I think when you're really smart, you see things clearly and in a certain way, and sometimes laymen aren't quite up to speed. I would call him a good man and an enjoyably eccentric genius when it comes to the technical side."

While Stross' genius status may be debatable, there's no denying Stross' enthusiasm at Los Angeles User Group meetings (held every second Saturday of the month at the N. Weddington Community Center, 10844 Acama St., N. Hollywood; 818-552-5024), where attendance has rebounded to an average of 100 members per meeting.

"We've built this user group up to the point where we're giving classes now, and people are really getting a benefit from it," Stross said. "The loyalty is pretty phenomenal."

Whatever problems people may have had with Stross in the past appear to have subsided. The learning curve now complete, Stross said avenues that he once closed have reopened because of his renewed perspective on both business and personal relations.

"The knowledge [to excel in business] was there always. The ability to execute it has a lot to do with maturity," said Stross, who credits his father as the source of his own business acumen. "I think business tends to create maturity because of all the situations you find yourself in."

Texas John: Marmalade's Mark Stross created the image above using ToasterPaint for the SciFi Channel series *Mysteries from Beyond the Other Dominion.*

Aztec Calendar: Created by Marmalade's Jim Gorman, this image was made using LightWave and several hand-drawn image maps for complex detail.

Becoming Interactive

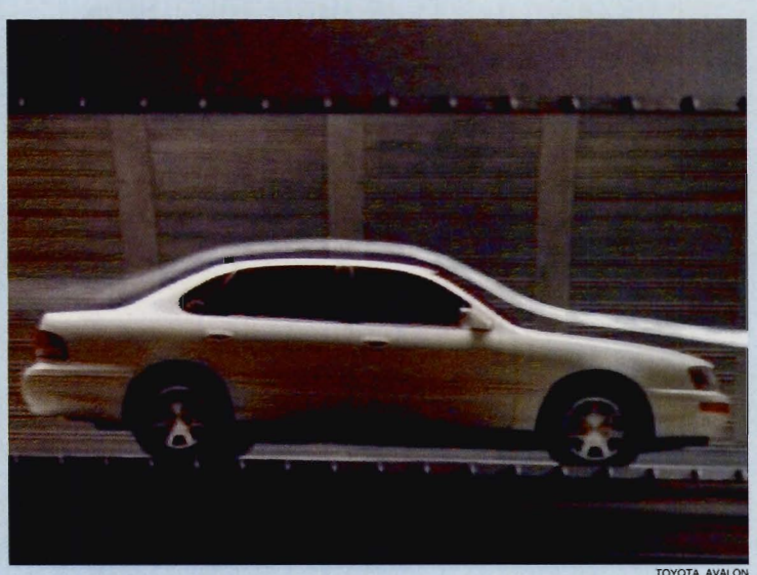
An extremely articulate communicator, Stross' theater background quickly becomes evident in a simple conversation. Complex ideas about the future of computers are explained in a clear, concise manner, leaving little room for misinterpretation. For Stross, executing the fine art of communication is a precise science, and an effective presentation means everything.

"Success is not exactly about how good your product is," he said. "Success is about how good you are at

STROSS MANAGEMENT

communicating and how many people you can convince that you're good.

"Your product apparently is not as important as your ability to convince [others] that your product is good. That has been a major lesson."



TOYOTA AVALON

Toyota Avalon: In a still from a project for Saatchi & Saatchi Advertising, Marmalade shows smoke from a 3D wind tunnel being sent over Toyota's new flagship, the Avalon.

Spline Butterfly: Created by Ken Wilder, the above image is an early still from a project currently in progress.

Along those same lines, Stross believes that discovering the correct and most effective communication vehicles is vital to the successful implementation of future technology. Creating the interface for everyone to benefit from the information highway, he said, will be a monumental but necessary task.

"I've always wanted to make a difference," Stross said. "The bottom line was that I never knew quite what that difference meant, technologically speaking. Today I do. There's so few people who can actually verbalize the future, let alone understand enough about it.

"Multimedia and CD-ROMs are not the wave of the future. The wave of the future is going to be the integration of all media—and I'm not sure if it's going to be wireless or fiber—into people's homes."

For the past year, Stross has been exploring the potential of interactive television while working with Interactive Cable Systems, the strongest cable operation in the United States not bound by any cables or wiring. Catering to apartment buildings, the company installs a full head-end for reception of all satellite channels, while providing local programming through its own antennae system. In addition to providing a custom lineup for every building it enters, the company can also provide both local and long-distance telephone service.

Stross' involvement comes into play with Interactive Cable Systems' Information Channel, a sales vehicle for the company's many options available to viewers. Stross has provided the R&D, creation and graphics for the channel, which runs 24 hours a day on Interactive Cable Systems outlets.

"All in all, the future is going to be either for telephone or wireless transmission, and this company seems to be extremely well-positioned to exploit either technology depending on which wins out," he said.

Constant Positioning

Stross' involvement in so many diverse arenas is no coincidence. After several years spent establishing a wide range of contacts, Marmalade is in position to expand into new markets and create many of its own opportunities.

Stross, who calls laboring for clients "a self-defeating process," much prefers having Marmalade work on a project where there's an actual investment on the part of everyone involved.

For the past year-and-a-half, one of Marmalade's prized in-house projects is the company's first attempt at a cartoon, *Little Martians*, which features eight animated characters interacting with two personalities on Earth. Marmalade just put the finishing touches on a seven-minute trailer, which will be used to market the cartoon to prospective buyers.

Of course, not every project Marmalade has undertaken includes a piece of ownership. Take, for instance, when the company received a high-profile assignment from Saatchi & Saatchi Advertising to create a wind tunnel effect as part of the promotion for Toyota's new flagship, the Avalon.

Stross said the project is another example of the limitless potential of LightWave 3D in the corporate setting.

"A friend of mine told me that he's always wanted to be the director, the producer and the cameraman," Stross said. "He's wanted to have complete control over the reality he's trying to depict, and LightWave offers him an easy solution to do that."

Added Marmalade's Wilder: "I know that LightWave can do *Jurassic Park*-quality animation. My goal is to get us up to a point where you can't tell our images apart from the best SGI images."

LightWave was certainly instrumental to the success of Marmalade's participation in the Saatchi & Saatchi project, part of an 8-1/2-minute video brochure for the Avalon. After bringing in video with a D-I Exabyte, Wilder simply imported frames and began the process of creating organic smoke.

"With LightWave's Fractal Noise, I was able to make real smoke, give it real dimensions, give it a real velocity over time—and it was constant," Wilder said. "It was a random generating element. It looked absolutely real, and I could easily adjust things like the velocity once I made the smoke look right."

Producing such an effect in a timely and cost-effective manner was impressive to Elaine Adachi, a producer in Saatchi & Saatchi's broadcast production department in charge of the Avalon project. Adachi, whose department has its own in-house edit facility, said she chose Marmalade ahead of other options primarily because of its quick turnaround time and its ability to stay within Toyota's budget for the project. She also took notice of Stross' constant attention to detail.

"At any time along the project, [Stross] would always come back to me and ask, 'Are you happy? If you're not happy, please tell me what you want improved.' And continually, I would say, 'Well, the texture on this isn't quite right, or the bandwidth on the wind effect is too wide,' and he would always come back with improved results," Adachi said.

Ironically, Marmalade found itself in the clouds again soon after the Toyota project. In producing cloud composites for Wesley Snipes' crime thriller *Drop Zone*, Marmalade used five different Fractal Noises behind each other and generated a mathematical fractal pattern that created an image of clouds drifting past a group of parachutists.

While Marmalade may not have the most flashy demo reel in the industry—after all, how exciting can a cluster of cloud composites be?—the company has maintained a steady workload thanks to dozens of basic, unspectacular projects. Excelling in that specific area, Stross said, has helped the company carve a niche in the competitive and exploding field of animation.

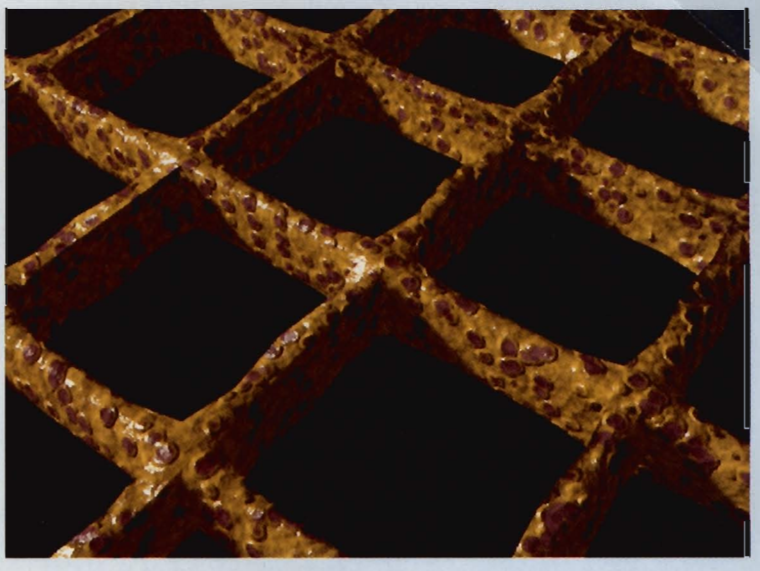
"We don't have the beautiful digitally composited graphic that you'll get from the *seaQuest* team. But we have on-line right now over 3,000 images that we have created that have gone into all our different pieces," he said. "These images are the ADO (Ampex Digital Opticals) backdrops, the things that TV production relies on. That's what we have done for the industry. We have provided the backbone support."

Looking Back, Looking Ahead

Like any visionary, Stross continues to change. Always casting for greater markets, he works to discover an improved mechanism for communication, enabling him to meet his own high expectations. These days, though, his expectations are more realistic, more obtainable. Lessons have been learned.

"I think when you start a company, you try to do it all," Stross said. "Then somewhere along the line, through some divine intervention, you get a little more intelligent and you find better ways to work.

"I would say that the best thing about [Marmalade] is that we've discovered a few better ways to work, and we still probably have a long way to go before we make our work environment better. But we are working smarter."



The Rusty Gate: Marmalade's graphic artists utilized LightWave 3.5's new textures to create this image.

In a stellar display of Marmalade's capabilities, Mark Stross (left) and Ken Wilder are shown in a composite image with several of the LightWave objects found within this very article.

VIO

EDITORIAL EVALUATION

Circle number on Reader Service Card

I found this article:

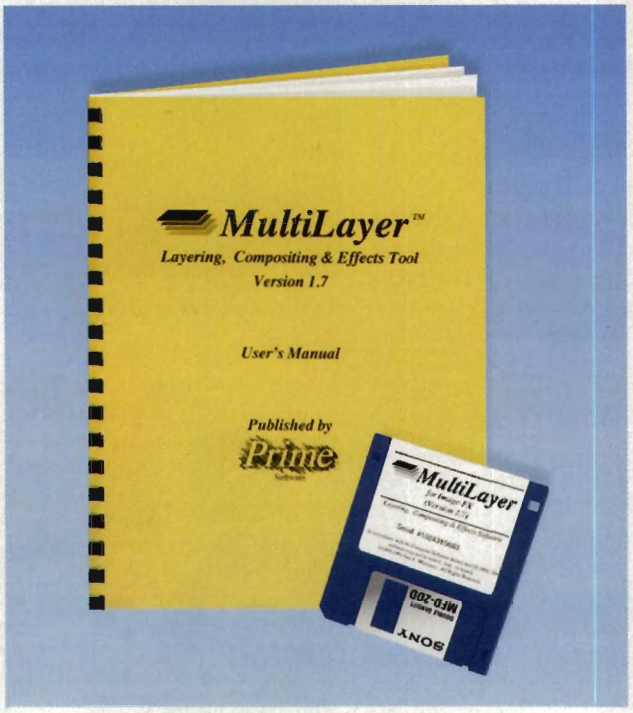
Very Useful	Useful	Not Useful
Circle 038	Circle 040	Circle 041

MultiLayer

A Complete Digital Compositing Program

by Matt Drabick

The wait for a digital compositing program is over. Prime Software's MultiLayer composites sequences of digital layers together and comes in two versions. One uses Art Department Professional (ADPro) from ASDG (now called Elastic Reality) and the other works with Green Valley Products' ImageFX. Both versions are virtually identical and cost $129.95. MultiLayer provides a user-friendly interface to control still or motion images moving in the X and Y axes over time as solid or semi-transparent layers with optional keying, acceleration and deceleration plus special effects using a timeline window. Once the images and other parameters for each layer have been selected, MultiLayer automatically creates the appropriate ARexx script and executes the desired operation without any further user-input.



"Potential uses for MultiLayer include cel animation, flying logos and Digital Video Effects."

Potential uses for MultiLayer include cel animation, flying logos and Digital Video Effects. Because each layer is independent, it's easy to make changes to a specific layer as needed. For example, if your client wants the background to be a darker shade of blue after you've rendered a few test frames of a sequence, but the foreground layers are OK, simply correct the background frames and composite the entire sequence. While MultiLayer doesn't work in real-time like a dedicated DVE box (MultiLayer must render each and every composited frame), up to 99 moving layers can be rendered at the same time and played back in real-time from tape or hard drive.

Depending on the version used, you must have ADPro 2.5 or higher or ImageFX 1.5 or higher when using MultiLayer. Other requirements include Workbench 2.04 or higher and about 5MB of RAM. Because MultiLayer never has more than four images in memory at a time, additional RAM isn't necessary. An accelerated CPU and a large, fast hard drive are highly recommended. You'll also need rexxsyslib.library installed in your Libs drawer, plus the RexxMast server running in the WBStartup drawer on your Workbench or system hard drive partition.

For compositing sequences of live video you'll need a video capture device such as the Personal Animation Recorder (PAR) and TBC-IV, VLab, VLab Motion, or perhaps the Flyer. Of course, computer-generated frames created by LightWave and other software can be used. To record the finished images you'll need a frame-accurate VCR and single-frame controller or a disk-based playback device such as the PAR, VLab Motion or Flyer. While not a requirement, a high-resolution display card like the Retina is nice for simultaneously viewing MultiLayer's various control windows.

All file formats supported by ADPro and ImageFX can be loaded and saved, including IFF, JPEG and Framestores. Note that ImageFX 2.0 finally loads and saves Toaster Framestores. Besides using the Amiga's display, images can be directly rendered to 24-bit display devices such as the Retina, Firecracker, OpalVision, Harlequin and DCTV and recorded to videotape when using a single-frame controller. While ADPro has long had the ability to display images using the Toaster's frame buffer, older versions of ImageFX (1.5 and earlier) require working with ToasterFX to do the same thing. The recently released ImageFX 2.0 reportedly displays rendered images to the Toaster's framebuffer without using ToasterFX. By staying in the digital domain and not out-

putting each frame as a video signal for recording purposes, you can use a disk-based system such as the PAR, VLab Motion or Flyer for recording individual frames as compressed files. In addition, an optional GPI trigger is available for recording images to a DDR such as an Abekas digital recorder.

MultiLayer can composite up to 99 layers in a single pass (expect extremely long rendering times when using that many layers). A sequence must have at least nine frames, up to a maximum of 9,999 frames. All calculations are performed using 24-bit color depth and 8-bit alpha channel support with resolutions up to 32K by 32K pixels, well-suited for video, multimedia, desktop publishing and motion picture applications.

The MultiLayer Arrangement

MultiLayer is organized into modules or windows such as project, info, input/output, preview, timeline, etc., which are opened onto the Workbench screen or their own custom screens. The timeline and preview windows are resizable and every window can be dragged around the screen. Windows can be opened and closed as needed. A nice touch is the ability to automatically open every window and neatly stack them on top of each other.

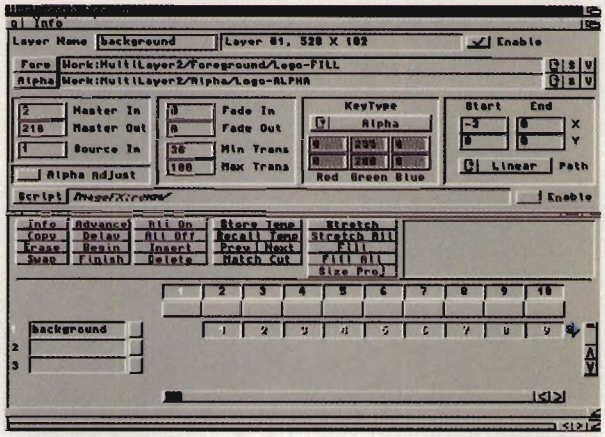
The names of frames used with MultiLayer must have a period separating the filename and numeric extension (Pix.001, Pix.002, etc.). Various types of keying are supported, including alpha channel, luminance, chroma, chroma range and black. The latter simply uses RGB values of 0,0,0 or black. Currently, foreground and alpha images must be the same size. Both still and moving images can be combined, allowing a flying logo over a background or combining still and moving text and objects with captured digital video sequences.

Working with Layers

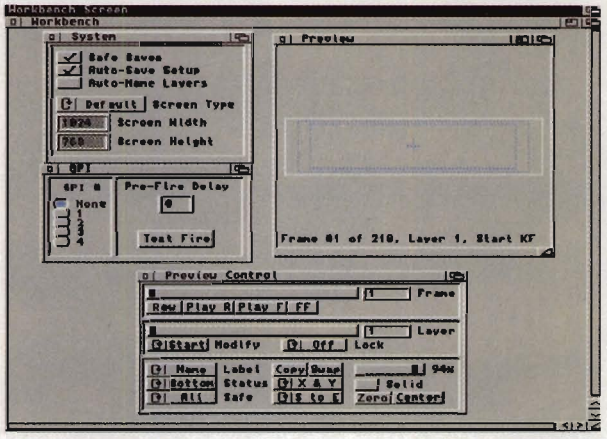
Layers can fly on and off screen with or without acceleration or deceleration. The starting and ending positions of each layer can be easily typed in. The start and end times of each layer can be staggered, allowing them to be successively brought in and out of the sequence. Layers can have variable transparency, allowing them to be faded in and out of the sequence, maintain a user-defined amount of transparency throughout the se-quence, or a combination of the two. Special effects are currently limited to those that don't change the size of the image, such as antique, ripples and embossed. Effects that can't be currently used include rotations and distortions such as twirls.

The timeline window provides controls for adding, inserting and deleting layers, swapping the current layer with the next layer, advancing or delaying the current layer by one frame, adjusting the current layer to start or end on a designated frame while maintaining the layer's duration, stretching a single layer or all layers by adding frames to end at the end of the timeline, plus other useful tools.

Once the various layers have been selected and their motion path, acceleration, deceleration, type of keying, duration, transparency and any special effects are defined, all layers can be previewed using wireframe outlines of each layer. VCR-style controls provide rewind, fast forward or real-time playback and reverse action. Previews can also be manually advanced using a horizontal scroller. The resizeable preview window provides safe action and safe title areas plus crosshairs for accurately positioning and centering layers. Layers can be selectively disabled while previewing a sequence, allowing other layers to be more easily observed. You can also zoom in or out of the preview window to more accurately check the positioning of each layer. Rendered composites can be saved as JPEG or 24-bit files, Amiga native-display images such as HAM, or even ANIM-5 animations.



This timeline allows you to insert up to 99 layers at a time, and add, delay or delete them.



The System, GPI, Preview and Preview Control screens, whose functions include providing layer wireframes and VCR-style control over layers.

MultiLayer version 2.0 will ship soon, replacing the current version, 1.7. New features will reportedly include the ability to independently scale layers over time to finally provide control over the Z axis, compositing foreground and alpha images of different sizes, automatic soft-edge transparency with drop shadows, shadows that travel independently of their associated images to mimic 3D lighting, improved timeline and editing tools, matte fills and layers, control over groups of layers, plus automatically adding canned effects such as oil paint or emboss to frames. Though the exact price of version 2.0 wasn't set at press time, expect a slight price increase over the current version. In future versions of MultiLayer, expect the comprehensive special-effects capabilities found with MultiFrame to be included with MultiLayer. While sold by different companies, both programs were written by the same programmer.

MultiLayer is a very complete program for compositing multiple digital layers, and it features the added bonus of a user-friendly interface with powerful editing and previewing tools.

VTU

Company mentioned:
Prime Software
(MultiLayer—list price $129.95)
31164 Country Way
Farmington Hills, MI 48331-1035
(810) 661-3393

FOR INFORMATION CIRCLE 16

EDITORIAL EVALUATION

Circle number on Reader Service Card
I found this article:

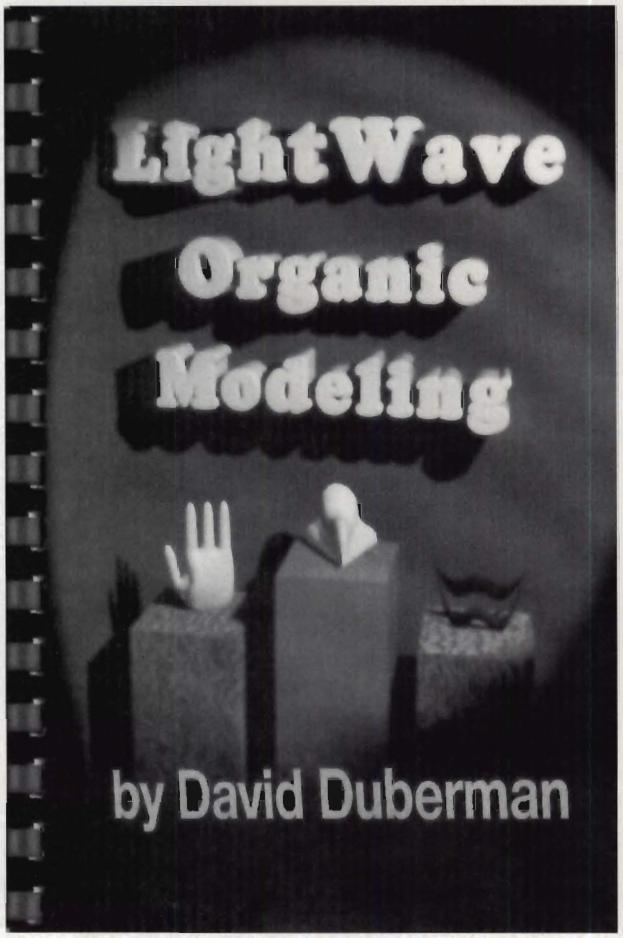
Very Useful	Useful	Not Useful
Circle 042	Circle 043	Circle 044

'LightWave Organic Modeling'

by Taylor Kurosaki

LightWave 3D enthusiasts represent a wide spectrum: hobbyists, moonlighters and professionals alike. If there is one thing they all crave, it's insight into the program they love. The continuing success of *LIGHTWAVEPRO* newsletter is a testament to this fact. "LightWave Organic Modeling," the first volume in the LightWave Power Tutorial Series by David Duberman, offers the LightWave community yet another source of information.

Released by Motion Blur Publishing, the 94-page book begins by describing the theory and concepts behind Spline-based modeling, accompanied by a step-by-step walk-through of Spline and Patch creation. Several basic object-building tutorials follow. The book concludes with a "seamless hand" tutorial, incorporating the methods described earlier in the text into one object.



"A testament to the clarity of the writing is that animators familiar with Modeler should be able to gain much from the tutorials, even if they're not in front of their computers."

Complete Introduction

"LightWave Organic Modeling" represents a fairly complete introduction to Spline Curves and Patches. This book is aimed at the beginning LightWave user with little or no experience modeling with Splines and Patches. A testament to the clarity of the writing is that animators familiar with Modeler should be able to gain much from the tutorials, even if they're not in front of their computers. Even the most inexperienced LightWave user should have no trouble following these straightforward tutorials.

Users with a fair amount of Spline-patching experience, however, will most likely find the tutorials redundant and the objects uninspiring. It is difficult to see the purpose of the "Exploring Triangular Patches" chapter. In it, the author spends 18 pages showing the reader why triangular patches don't smooth with one another as well as four-sided ones. It would have been much more useful to receive a concise explanation of the shortcomings of three-sided patches, followed by several workaround scenarios. For example, in this case, the tutorial object is a spaceship's nose-cone. The goal is to make the left half flow smoothly with the right half. Three-sided patches work flawlessly in this application if the curve that runs along one-half the width of the nose-cone is mirrored across the center of the nose-cone. The resulting two curves are then smoothed together, yielding patches that are perfectly seamless. The book merely suggests turning the three-sided patches into four-sided ones, a solution that isn't always practical.

LightWave Lessons

The "seamless hand" tutorial serves to solidify the concepts discussed earlier in the book. It is a good example with which to apply the methods learned

through the other tutorials, yet on a bigger scale. Aside from this, however, this lesson doesn't really extrapolate the basic ideas beyond their initial implementation. Rather, it's just more of the same basic patching techniques applied to an object that doesn't render all that smoothly anyway. Throughout the text, Duberman acknowledges this, admitting his object "isn't perfect." This may be true, but as one tries to gain a basic knowledge of Splines, it would be reassuring to see some effective utilization of them. If you really want to do truly "organic modeling," do as the author says, not as he does.

The usefulness of this book is further reduced due to the addition of the Metaform feature in LightWave 3.1. All of the objects described within can now be constructed much more efficiently utilizing Metaform instead of Splines.

In the Spline of Things

The LightWave Power Tutorial Series will be a great asset to the beginning animator if this first installment is any indication of what is to come. "LightWave Organic Modeling" is a great supplement to the LightWave manual, and is in many ways clearer and more useful. For the intermediate to advanced animator, the book becomes less beneficial due to the simplicity of its tutorials and objects. Modeling with Splines is still preferable to Metaform for some applications, and if you've never really explored the world of patching, this book is a great place to start.

VTU

Taylor Kurosaki is a visual effects artist at Amblin Imaging. His work can be seen weekly on NBC's seaQuest DSV.

Company mentioned:
Motion Blur Publishing
("LightWave Organic Modeling"—list price $14.95)
915-A Stambaugh St.
Redwood City, CA 94063
FOR INFORMATION CIRCLE 17

EDITORIAL EVALUATION
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Very Useful	Useful	Not Useful
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FOR INFORMATION CIRCLE 162

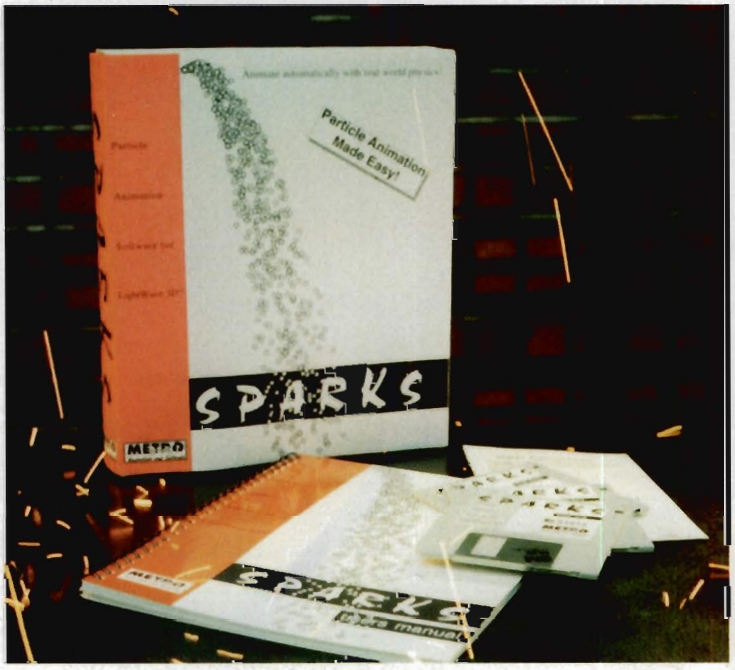
415

Sparks

New Particle Animation System for LightWave 3D

by Tim Doherty

For all of its power and flexibility, there are many high-end features that the present version of LightWave does not yet support. Rendering or animation techniques such as collision detection, inverse kinetics, radiosity and particle animation add a level of sophistication to 3D software that can greatly enhance the artist's ability to create complex and realistic scenes. Fortunately, third-party software developers have been quick to realize the need for such advanced features. MetroGrafx's Sparks is one such program. As its name implies, Sparks is a particle animation system for LightWave 3D.



What is Particle Animation?

A particle is a dimensionless point. It can be assigned a position in LightWave, but it takes up no volume. Regardless of how close or far away the camera gets to the particle, it always remains the same size, and is rendered as a single pixel. A familiar example of a particle object is the starfield included with LightWave. Each star is a single-pixel polygon that can be named and assigned surface attributes, but always renders as a single point, even if the star is positioned right in front of the camera.

Particles have a wide variety of uses beyond the obvious star. Rain, snow, fountains, sprinklers, sparkles, fire, smoke and explosions are just a few of the effects that particles are ideal for. Trying to manually create and control such scenes in a realistic way would be difficult and time-consuming, since key frames might be required for hundreds of individual particle objects. Sparks provides the software tools for controlling particles and for automatically setting up complex particle effects in LightWave.

Sparks provides the software tools for controlling particles and for automatically setting up complex particle effects in LightWave.

The Sparks Interface

Though it can be loaded independently, Sparks is designed to multitask with LightWave, running concurrently and communicating via ARexx. Figure 1 shows the main interface screen of the program. The user begins by creating a particle cloud in LightWave. This is most easily accomplished with Modeler's Points Distribution macro. In Sparks, you use the Particle Quantity box to identify the number of particles in the scene. Then the fun begins.

The power of Sparks lies in the flexibility of its controls.

Clicking on the Set Angle button opens a small graphical interface for determining the width and direction of the virtual nozzle (Figure 2). Users can position the nozzle, define the initial velocity of the spray, add some variation to the velocity, identify the Y coordinate of the ground plane and turn on gravity. As with LightWave, negative values are accepted, so a negative value for gravity will cause things to fall up. This is useful for bubbles or balloons. The nozzle can also be assigned to a LightWave motion file in order to move it through your scene.

continued on page 64

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FOR INFORMATION CIRCLE 161

 continued from page 62

Figure 1

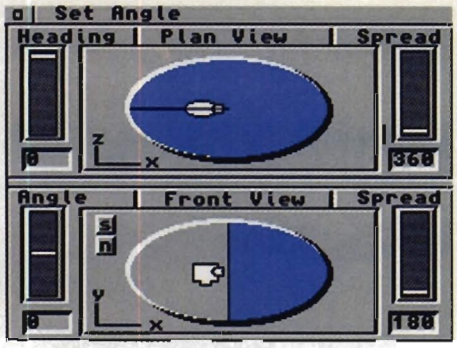

Figure 2

Similarly, the Flock requester sends a group of particles down a LightWave path, but adds spring controls for pulling particles back to the path as they are influenced by external forces. This results in very natural-looking movements. There are Birthrate controls to select whether all the particles fire at once or in defined quantities per frame. Randomness can be incorporated into the birthrate. Air drag and bounce values can be assigned as well.

The Effects and Gravities requesters add even more sophistication. Constant or gusting wind can be applied to your particle stream, in addition to flaking (ideal for snow) or swirling. Randomness can be adjusted for the bounce and direction of the particles. Stationary or moving gravity wells can be placed in your scene to push, pull and bend the stream.

Trying to obtain the exact look you are striving for will probably require a bit of testing since there are so many interacting variables. You can watch LightWave's layout screen generate the animation in wireframe as Sparks calculates the particle movement. Because particles render quickly, previews are generally quite fast. Once satisfied with your effect, you can specify an RGB save path in LightWave, and then render the final animation.

Replacing Particles

The Scene menu in Sparks contains a number of powerful features, not the least of which is the ability to substitute other LightWave objects for the points initially loaded into Sparks. Animations such as leaves blowing in the wind, a flock of birds flying, or flames dancing off of a log can easily be created by replacing the particle objects with the appropriate LightWave models. Once you have substituted your mesh objects for the particles, Sparks will generate a LightWave scene file, which you can then load into LightWave for previewing, tweaking or rendering.

Other Scene options include the ability to fade objects, set displacement maps on your objects, tag bones to objects, and parent particles to a null object for easy repositioning within the scene. All of these are useful functions that can greatly enhance your animations. One of the demo scenes included with Sparks features a group of bats that are animated using a combination of particle flocking and displacement mapping. The results are quite realistic.

There are 25 other demo scenes included in the three Sparks disks. They are archived, and are all made to self-extract and load from your RAM disk. Included are things like Planebreakup, Trails, Nozzle, SpinSwirl, Blast, Shatter and NegativeGravityPath. In addition, Sparks also has several Modeler ARexx scripts. One of these, Fragment, will break up your LightWave model into pieces, which can then be assigned particle movement. This makes it simple to explode your models in a convincing manner. Figure 3 shows a flat X,Y plane crumbling from left to right and blowing toward the camera. It took about five minutes to create, including the time Sparks spent calculating the scene.

Figure 3

High-End Results

My only disappointment with Sparks is the user manual, which is fraught with grammatical errors, printing mistakes and omissions. Still, it does an adequate job of explaining the software, and includes several useful tutorials. I'd rather have excellent software with a so-so manual than the other way around. And Sparks is an excellent software package. It opens up a new realm of animation possibilities to LightWave users. I regret not having Sparks for numerous projects in the past, ranging from corporate videos to scientific animation for broadcast television. I expect it to become an indispensable tool for future projects. Its high-end manipulation of dimensionless particles adds an entirely new dimension to LightWave 3D.

VTU

Company mentioned:
MetroGrafx
(Sparks—$179.95)
625 Newton Dr.
Lake Orion, MI 48362
(810) 693-5134

FOR INFORMATION CIRCLE 18

EDITORIAL EVALUATION

Circle number on Reader Service Card
I found this article:

Very Useful	Useful	Not Useful
Circle 048	Circle 049	Circle 050

continued from page 9

software and hardware, contact Managing Editor Douglas Carey at the Internet address listed above or by telephone at (408) 774-6770 and ask for *VTU* writer's guidelines.

Getting the Last Word

Dear VTU:

This is in response to Mojo's "Last Word" (*VTU*, November 1994) regarding those people who don't watch television.

Mojo is a bit presumptuous by making some sweeping generalizations about "us." He says we don't understand television. Believe it or not, I am a Video Toaster fan and I don't watch television. (My wife and I have a set, but it's not hooked up to an antenna or cable.) We settle for watching rented movies on the VCR. But I still think I have a fairly solid understanding and appreciation of the power of video.

In recent years, I've turned to industrial video, where I've been the last four years, happily using the Video Toaster to produce training videos for a major railroad company. Rewarding? You bet! I feel gratified knowing that I'm contributing toward an effort to help employees do their jobs safely and more efficiently. Don't forget, the Video Toaster has found a place in the industrial and educational sectors. Not all of us are yearning to have our video creations aired over the airwaves. Exciting? Well, I can honestly say I'm rarely bored. It's true, of course, that most training videos don't allow for the "glitzy razzle-dazzle" that can make production work fun at times. However, there's a real challenge in making a "dry" subject more interesting. Furthermore, I don't think it's realistic to expect your job to be fun all the time.

What about the remaining five percent on the tube that Mojo insists is worth digging for? I'll leave that for you to decide. I used to think it was, but now I'm not so sure. I certainly don't fault those who do find it worthwhile. I am grateful that Mojo reminded me not to be arrogant about my convictions. I know that I am no better than those who choose to watch TV, and I hope I never give anyone the impression that I am.

I stick to my belief that watching commercial television, as a whole, is a waste of time. If most of us agree that 95 percent of it is junk, why do the broadcast and cable networks see no reason to change what they're offering? Because, of course, we're still buying.

Mojo believes that he, along with others in the broadcast industry, has a duty to try to create more of those "nuggets of gold," and I respect that. I hope he will respect those of us who have decided to give up on "prospecting" for decent television, and return to other (and hopefully more rewarding) means of devoting our time.

Stan Palmer
Overland Park, KS

Help Wanted

Dear VTU:

We have had an encouraging response to Joan Burke's article on *Technical Difficulties*, the Charleston, S.C., alternative music show produced by Todd Boggess and I (*VTU*, October 1994, pg. 8-9).

Since our telephone and fax number were not included in the original article, it may appear as though we are hard to contact. Let this be the case no longer! Those who are interested in becoming involved with *Technical Difficulties* should call (803) 720-8619, send a fax to (803) 722-1949, or mail work samples to The Video Company, Attn.: Tom Werner, 52 Society St., Charleston, SC 29401.

As stated in Burke's article, we are seeking local-segment producers for *TD* throughout the nation. Responsibilities for these individuals will include securing air time within their television market; securing local sponsors, e.g., radio station night club, newspaper, commercial advertisers, etc.; producing a weekly eight- to 10-minute segment that will air within the national portion of *Technical Difficulties* (the local producer will retain a large degree of control as to the content of this segment). Sure, it's a brief job description, but we're busy guys!

Thomas J. Werner
The Video Company
Charleston, S.C.

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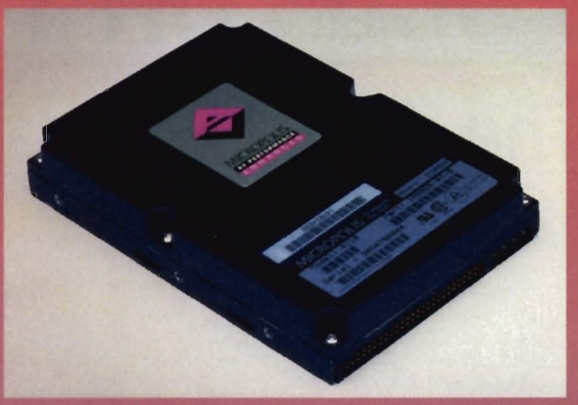

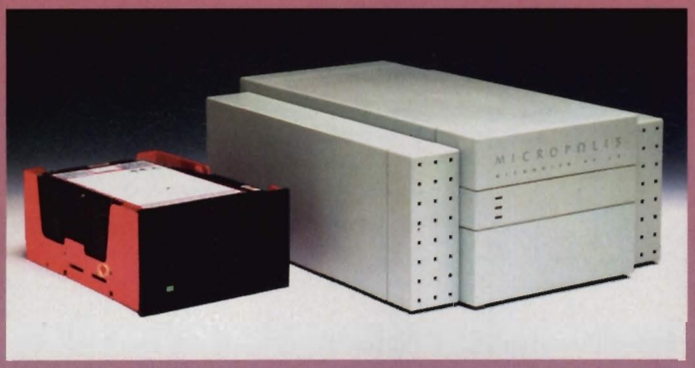

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FOR INFORMATION CIRCLE 141

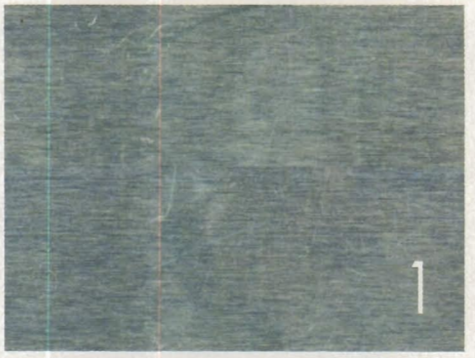
Focus on TPaint

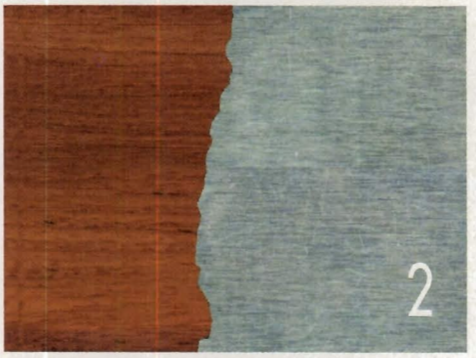
The Ripped Page Effect

by Lee Stranahan

This month's ToasterPaint lesson will show you how to create a "ripped page" effect for your graphics. This is a fairly common look that can add some real visual interest to any text page.

Once the following steps have been completed, all that remains is adding whatever text you want. You should also note that this technique can be used very well in a number of cases where you want a drop shadow. Simply pick up the item as a brush, stamp down a shadow in darken mode, and then go to RubThru or normal mode to stamp down the regular item.





1 Start by loading your images. In our case, we started with two. Load one image, then press the j key to jump to the spare page and load the other one. Then hit j to return to the original page.

2 Next, let's do a test of our ripped page, which will also establish the brush area. Go to RubThru mode and select the filled freehand tool (hotkey—D). Draw a ripped-looking part over on one side. One drawing hint—start drawing at one corner, draw the ripped part, then release the mouse button in another corner. The "loop" will automatically be closed, which creates a nice straight edge with less work.

3 You'll see a preview of your ripped page, but creating it as a drop shadow might be a pain—you'd have to draw an exact duplicate. Fear not. Press the b key or click on the scissors tool to go into brush mode. Now press a or hit the Redo button. This will pick up the area you just drew as a brush. To draw the shadow, go to darken mode and stamp down the brush next to and slightly above or below the shadow you've drawn. Simply position the brush and click the left mouse button. Using the original shadow as a guide will help, especially in version 3.0 or earlier. Another 3.0 hint is to press the Esc key to hide the menu bar, as this makes drawing much easier.

4 To complete, move to the RubThru mode again (hitting the 5 key is the quickest way). By stamping the brush down over the original ripped area, it will bring the other image you have loaded up through nicely.

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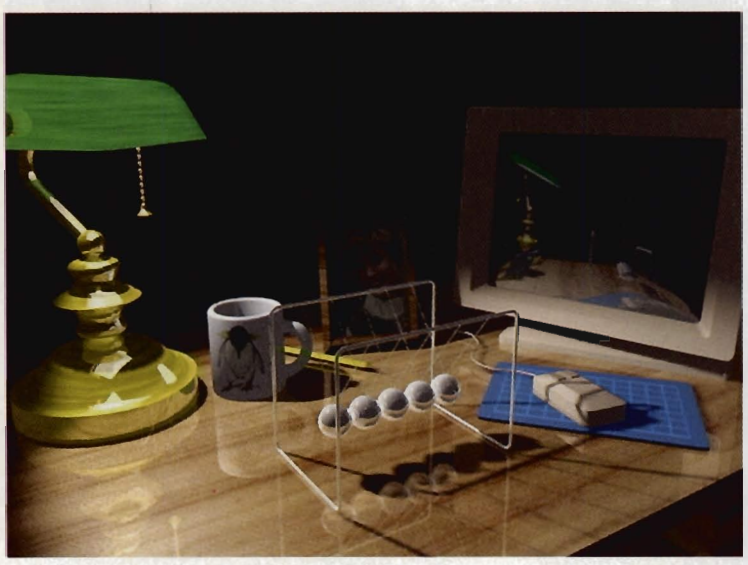
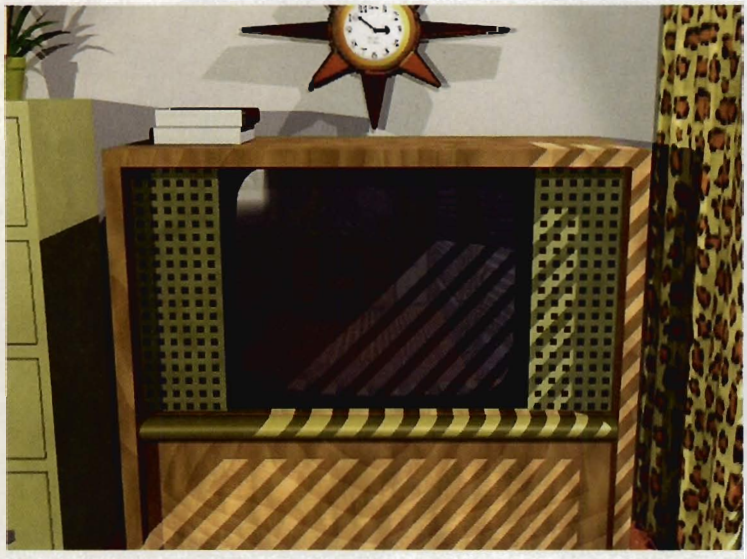


Desktop by Rex Carter

Desktop, a composite of objects for a demo tape, was created on an Amiga 2000 with an '030 accelerator and Toaster 3.1 software. It consists of 24 objects and 9,625 polygons, and was rendered in 4 hours, 55 minutes with Medium Resolution, Antialias High, Trace Shadow (Shadow Mapped) and Trace Reflection.

Champagne Glass by Enrique Muñoz

Using the Lathe tool in Modeler, *Champagne Glass* was created in two days by Muñoz, a senior animator at MVP Productions in South Gate, Calif. He can be reached at (213) 566-0640.



TV Set by Don Myers

TV Set, part of an unfinished comedy short titled *Dr. Pillman's HappyTabs*, was created with a Toaster 3000, LightWave 3.0 and 10MB RAM. It contains 36 objects, 56 surfaces and 7 lights.

Dandruff Landing by Don Myers

Dandruff Landing, also taken from *Dr. Pillman's HappyTabs*, was created with a Toaster 3000, LightWave 3.0, DeluxePaint and Brilliance. Myers, an award-winning animator and owner of PixSell, can be reached at (513) 861-9159.

Still Machine by Mark Brown

Part of a three-minute animation, *Still Machine* was created in LightWave 3D in less than one week. Brown, a professional freelance animator, can be reached at (714) 847-8628.

Rocket by Mark Brown

Modeled from an actual photograph of a 1934 *Buck Rogers* toy, *Rocket* is part of a three-minute animation Brown recently created.

Stealthwatch by Joe Dean

Stealthwatch was created using an Amiga 2000, LightWave 3.1, ToasterPaint and 12MB of RAM, and took approximately 25 minutes to render. Joe Dean can be reached at (407) 453-2425.

Crypt 3 by Bruce Shapka

Crypt 3 was created on a Toaster 2500 with an '040 accelerator and 32MB of RAM. The image contains nine objects, 28 surfaces and 33,455 polygons, and was rendered in about 16 minutes. Shapka, an independent video producer/animator for Talon Communication Services, can be reached at (604) 271-1345.

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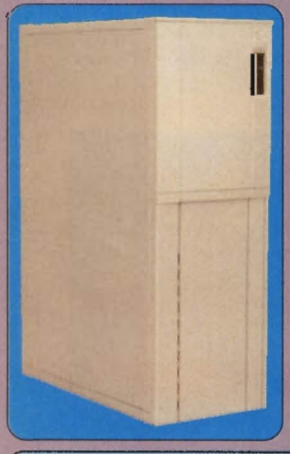
Ambitious Technologies — ToasterOven GT

The Most Powerful DeskTop Video System In The World! JustGot More Powerful!!!



The ToasterOven GT has been Completely Redesigned. Its bigger and has a new slotboard called the BigEthyl Sisterboard* that greatly expands the versatility of the your system.

NEW

The new ToasterOven GT has:
- BigEthyl Sisterboard
- More room for Full-Height drive bays.
- More System Cooling Power.
- SCSI-2 wiring harness for upto 6 internal drives and an external port.
- 3 External Flyer SCSI-2 Ports
- All Metal RF Enclosure
- Switches Monitor On/Off

*BigEthyl is available as an option for the ToasterOven 4000. Other configurations available.

Options

ToasterOven SixPac 6 FullHeight DriveBays with a 250Watt PowerSupply	$Call
ToasterOven Thermometer	$Call
ToasterOven Zorro Adapter	$100
SCSI-2 External/Internal Kit	$120

BigEthyl Sisterboard

11 slots positions:
- 2 video slots
- 7 Zorro slots (4 standard 3 power slots)
- 6 PC slots (5 Full Function 3 power slots)

ToasterOven 4000 — $ 895
300watt Switchable Power Supply
11 Bays (2- 3½; 5- 5¼; & 4 LPS Bays**)

ToasterOven GT-4300 — $1295
BigEthyl Sisterboard
300watt Switchable Power Supply
11 Bays (2- 3½; 5- 5¼; & 4 LPS Bays**)

ToasterOven GT-4400 — $1495
BigEthyl Sisterboard
400watt Switchable Power Supply
19 Bays (2- 3½; 17- 5¼ Bays**)
Greater Cooling capacity

Renders LightWave! scean files with ScreamerNet

Prepare for the Future! Don't be left behind with a standard PC-clone!

MIPS & Alpha Rendersaurus systems are many times faster than Pentium systems. With WindowsNT as the unifying operating system you can run your normal windows programs on your Rendersaurus, and use the greater capabilities of WindowsNT with NT-specific programs.

Rip into the toughest task at an affordable price.

NOTE: Background Image Made With SnapMaps

MacroSystem Development

WARP ENGINE

HARDWARE FEATURES

Very High Speed Local 040 Memory Bus with full 040 burst access.
- NCR 53C710 40MHz SCSI-2 Fast Controller connects directly to 040.
- 32Bit SCSI host bus DMA interface supporting burst to and from RAM
- Supports 10MB/s SCSI transfers.
- Full DMA allows the CPU 90% Processing Power while Transferring.
- No Zorro III DMA Problems.
- Autoconfig w/optnl. SCSI Autoboot
- 32Bit Ram Expansion Up To 128MB.
- Uses Standard 72Pin SIMM Modules.
- Supports 4, 8, 16, 32 MB SIMMs
- Supports DMA access from Zorro III Devices to onboard Memory.
- A3000 Ver. to 64MB of 32Bit mem.
- A3000 Engine will clock 16MHz
- Compatible with the Video Toaster, Retina Z-III and OpalVision
- Requires AmigaDos 2.1 or greater.
- Full Two Year warranty

A3000 WARPS NOW AVAIL.

WARP-3000: 28MHZ with a 040 CPU	$895
WARP-3000: 33MHZ 0 MB Ram	$1185
with a 4MB 60ns	$ Call
WARP-3000: 40MHZ 0MB Ram	$1425
with a 16MB 60ns	$ Call
with a 32MB 60ns	$ Call

A4000 WARPS AVAIL.

WARP-4000: 28MHZ with an 040 CPU	$ 895
WARP-4000: 33MHZ 0 MB Ram	$1185
with a 4MB 60ns	$ Call
WARP-4000: 40MHZ 0MB Ram	$1425
with a 16MB 60ns	$ Call
with a 32MB 60ns	$ Call

40 MHz 68040 Accelerator for the VideoToaster/4000

The WARP ENGINE is an 040 Accelerator with a High-Speed SCSI-2 controller & up to 128Mb of ram expansion, All-In-One!

How Fast Is The Warp Engine?

Rendering Lw3D Texture Example
- A4000/040-25MHz: 160 sec.
- A4000 Warp 28MHz: 82 sec.- apx. 2x faster
- A4000 Warp40MHz: 56 sec.- apx. 3x faster

Warp SCSI-2 Speed:
Using Diskspeed the 2.1 GB BarracudaDrive: Read 9MB/sec with 94% of the CPU still avail.

BARRACUDA Seagate

3.5" FAAAAST !!!
7200 RPM
500,000 MTBF
Fast SCSI-2 8ms

Barracuda-2
ST12550N
2.1 GB $1345
Barracuda-4
ST15150N
4.3 GB $3395

T-Net

Now Availible*
Lightwave Network Renderer
$325

EtherNet Card	$350
ENLAN-DFS	$265**
Custom size cable, T-connectors, & Terminators Availible	$ Call

*Requires ENLAN-DFS **ENLAN-DFS only $265 while supplies last,... Hurry!! Beat thePrice increase!!!

NEW 600 DPI Primera PRO

FARGO ELECTRONICS, INCORPORATED

Primera's bright, sharp color knocks the socks off any other color printer on the market today!

Primera Pro $1495
Primera $ 995
Dye Sublimation kit available! $ Call

EXABYTE

Great Digital Video Backup Device!

ExaByte 8mm Tape Drive:

Drive	Size	Int	Ext
EXB-8505	5-10*GB	$1945	$2045
EXB-8505XL	5-10*GB	$2095	$2195

* With Compression !

Data Cartridges

	each	Qt-5
112m	$20	$90
160m	$35	$160
Cleaning Tape	$20	$90
Abekas Driver (Amiga,Mac,PC,SGI)		$Call

The first Particle Animation system for LightWave 3D 3.0. Animators everywhere are discovering the creative power of SPARKS. From simple trajectories to complex gravitational effects!

Explode Your Horizon with these additional utilities!

MotionMaster Volumes I&II is a collection of LightWave utilities expert and novice animators will find irresistible.

Volume I	$135	Volume II	$135
TimeMachine	morph mgmt.	Child2World	coord. translation
ExtractAudio	sound-animation	Wobbler	springs & mass
Pathflock	behav.flocking	PointAt	target an object
MouseRecorder	realtime capt.	VolumeCube	linear bouncing

DIGITAL

PROCESSING SYSTEMS INC.

PERSONAL ANIMATION RECORDER:
24-Bit Real Time Video Playback/Recorder in both PC's & Amiga (Outputs: S-Video, NTSC, Beta/MII)
PC (ISA bus) NTSC $ 1850
PAL $2395

PAR HARDDISKS
1.0GB $ 745
1.7GB $ 1175

PERSONALTBC IV (NTSC)	$ 830
PERSONAL AD-3000 (PAL)	$1295
PERSONAL V-SCOPE	$ 775

Today, the effects on every TV or film you see are computer 3D graphics. Now, with LightWave 3D from NewTek, you have the same Emmy winning graphics tools used on prime-time TV shows such as seaQuest, Babylon 5, Robocop, and Star Trek: TNG. No other 3D system combines this power and flexibility with such ease of use. From flying logos to broadcast special effects, LightWave 3D is Hollywood's choice.

LightWave 3D 4.0 $995

MOVING TEXTURES 100

Royalty free Stock Footage for Computer ANIMATORS!

$235

FX Maps:
Boiling, Burst, Calm, Disturb, Jagde Liquid, Pow, Rough, Spots, Swirl, Tide, Water A, Water B, Waves A, & Waves B

Tru Maps:
2 versions of a Time Lapse cloud animation, crackling fire, smooth burning flames, bubbling steam, ocean, and slow moving smoke.

The RENDERSAURUS comes with either a MIPS R4600 or an Alpha AXP 21064 CPU !

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

RENDERSAUR-BC100M™ $5995
100MHz R4600 RISC CPU / 32MB of TrueCache Memory

RENDERSAUR-BC200A™ $7995
200MHz Alpha AXP21064A CPU / 2MB of Cache & 32MB Ram

RENDERSAUR-BC275A™ $9995
275MHz Alpha AXP 21064A CPU / 2MB of Cache & 32MB Ram

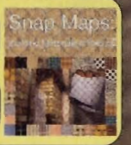
RENDERSAUR™ UpGrades Available $Call

FOR INFORMATION CIRCLE 106

SNAP MAPS: Fields & Foliage / Building Materials & Fabrics

Whereas other texture libraries help you enhance objects you created, Snap Maps help you create objects!

Fields & Foliage	$129.95
Building Materials & Fabrics	$129.95
Super Bundle: F&F plus BM&F	$240



HUMANOID

human animation designer

Hierarchical Models with Morphing Features

Formats:	
Lightwave/Amiga	$160
Lightwave/Windows	$Call
3D Studio	$180
Imagine/Amiga	$160
Imagine/PC	$180

Micropolis

1.0 GB	AV	$ 650
2.0 GB	AV	$1450
3.0 GB	AV	$1750
4.0 GB	AV	$ Call
8.9 GB	AV	$ Call

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Toccata 16 BIT AUDIO Card/Sampler

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MovieShop! Video Editing Software Included with VLab Motion

VLab Motion — $1575

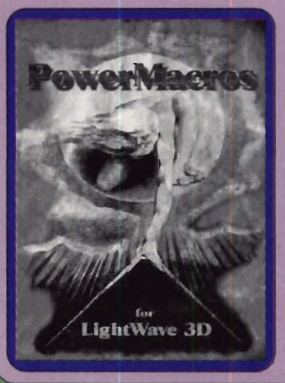
System Bundle: VLabMotion + Toccata — $1975

PowerMacros $95 for LightWave 3D

A New Level of Lightwave Mastery

Seventeen new and powerful macros for LightWave 3D and Modeler

STREAMLINE FUNCTIONS TO SAVE MODELING, SCENE CREATION, AND RENDERING TIME.



ENERGY:
Shatter
BlowUp
Swarm

LAYOUT:
Snake
Render Batch
Move Scene
Smooth Velocity
Focal Distance

MODELER:
Attach to Polygon
Clone Object & Surface
Flip Around Polygon
Load From Scene
Mirror Using Polygon
Save Pivot Point

BUSINESS:
Chart1
Chart2

Pro Wipes $70

is a six disk set of 75 Toaster Transitions and Effects that can be added to ANY Video Toaster 3.0, 3.1, or 4000. Pro Wipes are not animation, they are real Video Toaster format transitions that work just like original toaster wipes. Pro Wipes Volume 1 includes 33 Live (Actor) Action Wipes and 42 assorted 3D Style Wipes, Matte Wipes, Soft Edge Wipes, 16 level Alpha Effects, and our own 24bit Effects that work on ANY Toaster System. Pro Wipes cover such categories as Weddings, Sports, Dance, Money, and Music, not to mention a large variety of general purpose wipes that can be used in a multitude of video applications. Pro Wipes Volume 1 comes with easy to use, one step, point and click installation, Workbench 2.04 or greater required.

PLANTATION

Scalable Distributed Rendering for Lightwave3D

Plantation orchestrates the rendering of Lightwave scenes by using multiple Lightwave-equipped Amigas on a network. Working in tandem, the networked computers spread the work of rendering across the entire network, decreasing rendering time and increasing productivity.

Features:

- Any Number of scenes
- Any number of machines
- Supports DPS-PAR
- Attractive Intuition Interface
- Upgradable Node license
- Scene Manager
- Supported Networks: ENLAN, Envoy, Parnet, & AmiTCP (with NFS)

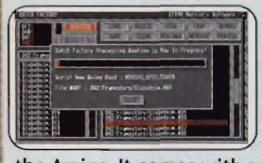
interVISUAL Software

Node License:

Number of Machines	*Price*
2	$100
5	$150
10	$200
20	$300

Visual Inspirations

BATCH FACTORY $55

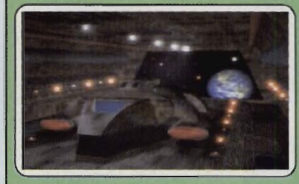


The most powerful and easy to use Batch Processing Utility on the Amiga. It comes with over 350 ARexx scripts that range from creating animations to compositing images to making custom video wipes.

DIGITAL SOUND TRACK $95

Add audio to your videos and animations with ease. Simply create an EDL to tell where you want the sounds to play and Digital Sound Track does the rest. It gives you complete control of your VCR. With over 5 Mb of special effect samples and MOD files.

SURFACE PRO FOR LIGHTWAVE 3D $95



Finally, a collection of useful, ready to use, low memory, seamless surfaces for the LightWave professional. Surface Pro offers a wide varietiy of seamless image-based LightWave surfaces. Surface Pro gives ;you over 60 newsurfaces that are instantly available through LightWav: Liquid Metal, Clrcuit Board, Nebula, Wood, Globe Wrap, Water, Flame,

Marble, Chrome, and more.

ROAD SIGNS FOR LIGHTWAVE 3D

$50 Road Signs is a collection of over 50 hand-crafted Lightwave objects, consisting of all major U.S. traffic signs. Ideal for accident reconstruction or any out door scene. Simply add text to the Road Signs Construction Kit to create unlimited signs, and tailor them to fit your scene. Requires LightWave 3.0 or higher and about 1 Mb of HD space.

ALPHA PAINT $555

The New Paint Standard for the Video Toaster!

Features:

- Realtime free-form painting in 16.8 million colors
- Full-screen WYSIWYG operation
- Toaster Hardware Video Mixing Alpha Channel
- Sharpening & Contrast Filters, Oil Painting, Airbrushing,...
- XYZ Text rotation, PostScript Circular Text Wrap
- Pressure Sensitive Drawing Tablet support

And Much More ! !!

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Panasonic
Broadcast & Television Systems

AG-3 3-CCD S-VHS-C Camcorder

The AG-3 is an industrial 3-CCD camcorder. Don't be fooled by its size. It delivers extra precise color reproduction in addition to its excellent mobility making it ideal for almost any professional application. The AG-3 utilizes technology and engineering used in Panasonic broadcast cameras. A few examples; the capstan motor is coated with evaporated diamond-like carbon to provide the optimum smoothness/friction balance for positive traction and uniform tape tension. The AG-3 features high performance laminated amorphous pro heads which are far superior to those of conventional ferrite heads. The AG-3 uses a newly-developed 8-group/10-piece lens system that includes two double-sided aspherical lenses (4 sides). It is highly resistant to aberrations caused by flare, color fringing and other distortions that diminish contrast.

- Three 1/3" CCD image sensor system delivers over 530 lines of horizontal resolution
- New 10:1 2-speed zoom lens (see above) 6-60mm F1.6 with automatic and manual zoom. Also features 20:1 digital zoom.
- High resolution color viewfinder lets you preview and shoot scenes exactly as they are
- Built-in digital TBC (Time Base Corrector) eliminates jitter and skew and assures stable, distortion-free playback
- **Digital Mix** – for soft fade-over between memorized still and moving images
- **Digital Still** – lets you freeze a particular scene for as long as you like, without interrupting sound recording
- **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.

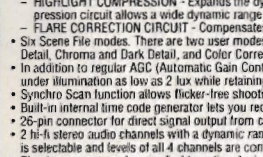
AG-455 2-Hour S-VHS Camcorder

- S-VHS system – records and plays back over 400 lines horizontal resolution
- 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, Telephoto or automatic zoom.
- Built-in VITC (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 ½ sec. to 1/2000 sec.
- Built-in internal time code generator lets you record with SMPTE LTC/VITC (Longitudinal/Vertical Internal) 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-X2
3-CCD S-VHS CAMCORDER

- Three 1/2" CCD image sensor delivers 650 lines of horizontal resolution
- New micro-lens technology provides exceptional sensitivity of F7.0 at 2000 lux and new LOLUX mode lets you shoot with almost no light! Now you can shoot superb footage with excellent color balanced 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-X2U features JVC's extraordinary Hi-Fi VHS sound system. Using 2 separate rotary FM-audio heads the GY-X2U 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-X2U also features a built-in microphone.
- Built-in speaker provides monitoring of audio and warning signals during recording.

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 extrawide 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 $5495.00

TOSHIBA

TSC-200
3 CCD Hi-8 Camcorder

- Three ½" 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 Y/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. Also 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 15 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.

porta brace

Quick-Draw Professional
FOR CAMCORDERS OR STAND ALONE CAMERAS

- Designed for working from the back of a van or the trunk of your car. The top loading case has a wide open fold back top that stays neatly out of the way. It's lighter and more compact than shipping cases, thus saving valuable storage space. With other equipment crowded around it the sturdy built-in frame provides added protection.
- Heavy duty shoulder strap & comfortable leather hand grip.
- 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.
- Lid closes with Velcro for quick-opening or secure with full-length zippers.
- Two trim exterior pockets and clip board pocket.
- Dual purpose rear pouch is an expandable battery chamber or all-purpose pocket.

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800-947-9003
212-444-5001

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GVR-S950 S-VHS Single Frame Recording VCR

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

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 can be programmed via the RS-422 bus for complete audio/video breakaway editing. As a result of this "audio/video breakaway" feature, time code can be added to tapes with exisiting video.

JVC

S-VHS EDIT-DESK SYSTEM

BR-S500U Player • BR-S800U Edit Recorder
RM-G800U Edit Controller

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

OPEN ARCHITECTURE

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

CONTROL TRACK TIME CODE SYSTEM

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

SUPERB VIDEO PERFORMANCE

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

32X VARIABLE-SPEED SEARCH

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

FOUR-TRACK AUDIO

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

RM-G800U EDIT CONTROLLER

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

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 DOC, 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 tiltable control panel.

- Built-in digital Dropout Compensator (DOC) performs dropout compensation for the luminance 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 leaked carriers 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 overplayed tapes.
- A Capstan Bump Function operates during preroll. 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 L/R 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 preroll 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 OTR programming.
- Also features: 181-channel tuner, full digital quartz timing, real-time counter, Auto repeat/Auto playback, Standby OTR.

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

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

- Uses amorphous video heads which are clearly superior to conventional ferrite heads. They are better because their magnetizing strength is much greater, yielding a higher signal-to-noise ratio.
- Incredibly accurate with optional AG-A570 Edit Controller, an accuracy of ± 3 frames can be achieved.
- Built-in RS-232 provides machine control of playback, recording and editing functions from a computer. You can use the power of your computer (with optional software) to assemble hundreds of scenes, create edit decision lists and do complex editing jobs. Currently supported by Amiilink, FutureVideo, VideoMedia, TAO, and Matrox.
- Auto Repeat function continuously replays a tape which can be cued for tape's end or when recorded material ends. Allows the AG-5700 to be used in showrooms, lobbies, or any in-store video display.
- Separate Hi-Fi (Ch.1/Ch.2) audio recording level controls with display. There is also a headphone output with volume control.
- For unattended recording there is a Sensor Recording function. When a video signal is detected the power is automatically switched on and the AG-5700 begins recording.
- 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 cuing 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, -¾, -½, -¼, -⅛, -1/16, +1/16, +⅛, +¼, +½).
- 3-dimensional digital TBC with a correction range of one field. With the VCRs continuously retaining one field in memory, the data is used for 3-D type processing thereby providing excellent dropout compensation.
- Digital Signal Processing for improved picture quality, and for maintaining uniform picture quality during editing. A Chrome Aperture Compensation (CAC) circuit eliminates color blurring and expands chroma bandwidth. Other digital processing circuits include:
  - Dig. Noise Reduct. (DNR): Processes Y & C signals separately to boost S/N Ratio by minimizing noise during playback.
  - Digital Comb Filter: Advanced 3-dimensional system for total Y/C separation providing reduced color and luminance blurring.
  - Switching Noise Mask Circuit: Eliminates noise caused by head switching during slo-mo playback.
- Employs amorphous video heads that have a higher magnetic coercivity than conventional ferrite heads. Expanded frecuency 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.

MII "W-Series" AU-W32H/W33H/W35H

For years, Panasonic's MII 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 models 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 ± 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 MII 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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B&H PHOTO-VIDEO

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. YNR (Luminance Noise Reduction) offers High, Middle Low, Very Low and Off positions. Jitter and skew are eliminated at the same time to give clear, stable pictures.

A/B ROLL EXPANSION CAPABILITY

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

ADDITIONAL FEATURES

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

COLOR MONITORS

PVM-1350

13˝ Presentation Monitor

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

PVM-1351Q

13˝ Production Monitor

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

- Is also a multisystem monitor. It accepts NTSC, PAL and NTSC video signals. NTSC 4.43 can also be reproduced.
- Equipped with a SMPTE 259M Serial Digital Interface. By inserting the optional serial digital interface kit BKM-101C for video and the BKM-102 for audio the PVM-1351Q can accept SMPTE 259M component serial digital signals.

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

PVM-1354Q/PVM-1954Q

13˝ and 19˝ Production Monitors

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

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

SONY

PROFESSIONAL S-VHS SYSTEM

SVP-9000 Player

SVP-9600 Player/Recorder

The SVP-9000 S-VHS and SVO-9600 are designed as multi-purpose machines with the use of various optional interface boards. By selecting one or more of a particular board, they become dedicated machines for satellite recording, office viewing, video library, sports analysis and editing. At the same time, they adhere to Sonys professional VTR concept of reliable mechanism, rigid construction and easy operation, ensuring reliable and reliable operation in the industrial and professional environment.

- SYNC IN for synchronizing with other video sources
- Picture search from -10 to +10 times normal speed.
- Four channel audio system – Two Hi-fi with a dynamic range of 90dB and two linear channels with Dolby NR.
- The SVO-9600 (only) features sensor recording. When video signals are input, it automatically starts recording.
- Automatic repeat and automatic rewind operation.
- 19˝ EIA rack mountable plus adjustable front controls.
- There is a TIMER switch for either REC or PLAY (SVP-9000 PLAY only) when selected automatically executes the selected mode when the power is turned on. This is very useful for unattended operation such as satellite recording.

OPTIONAL INTERFACE BOARDS

SVBK-100 33-pin interface board provides a 33-pin parallel remote interface capability to allow remote control of basic VCR functions **279.00**

SVBK-120 RS-232 interface board provides an RS-232 interface allowing either VCR to be directly connected and controlled by external computer **389.00**

SVBK-140 RS-422 interface board provides a professional 9-pin interface allowing either machine to be configured into a professional system. **628.50**

SVBK-150 Digital noise reducer board has separate YNR (Luminance Noise Reducer) and CNR (Chrominance Noise Reducer) delivering superior picture quality. Included in the circuitry is a field memory which removes jitter and Y/C delay providing stable, sharp images or clear, crisp still frames **559.00**

SVBK-160 Time Code interface board attaches to the SVBK-140 RS-422 board, it allows reading and generating of SMPTE LTC time code. **409.00**

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-232 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 Sculpt 4-D etc.
- Provides a variety of digital effects like 3x3 matrix display, 2x zoom 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-9800A Hi-8 Player/Recorder/ Edit Feeder

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

EVO-9850 Hi8 Editing Recorder

- For enhanced picture quality, there is a built-in digital noise reducer for both the chrominance and luminance signals. In the CNR (Chrominance Noise Reducer) mode you can select low or high level of noise reduction according to picture conditions.
- Equipped with four channels of audio. Two AFM Hi-Fi stereo tracks plus two PCM digital stereo tracks. Each channel has balanced XLR inputs and outputs, plus there is individual level volumes for each track
- Assemble and insert editing modes. In the insert mode there is independent editing of video, PCM-1, PCM-2 and time code.
- Built-in TBC (Time Base Corrector). With TBC the EVO-9850 outputs highly stable video signals. A digital drop-out compensator is also built-in. TBC adjustments can also be remotely controlled with the optional BVR-55 TBC Remote Control Unit.
- Absolute frame accuracy for video editing and single frame recording. Accuracy of ±0 frames is achieved with advanced servo system, quick response mechanism and built-in 8mm time code reader/generator.
- The EVO-9850 is equipped with a built-in 8mm time code generator. Since the 8mm time code is recorded between the video and the PCM audio tracks in a separate and dedicated location, 8mm time code insertion or overwrite is possible without losing a generation. An RS-422 9-pin connector is utilized for communicating edit command and time code data. The 8mm time code is output as SMPTE time code through the RS-422 connection to the edit controller.
- With the optional EVBK-100 the EVO-9850 inputs and outputs SMPTE time code data via BNC connectors. Accordingly the EVO-9850 can feed time code to another VCR or can lock to an external time code.
- The Jog/Shuttle mode provides high speed picture search from -17 to 17 times normal speed.
- To minimize picture deterioration during the editing process, the EVO-9850 incorporates Dub In/Out (7-pin) connectors.
- With the optional RMM-960, 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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- They provide minimum sustained data rate of 3.0 MBs and a maximum uninterrupted data rate of 2.9 MBs. This ensures a smooth and continuous data delivery for audio/video reproduction.
- Worst case data access of 30 ms makes sure there are no more frozen frames or audio drop outs.
- Multi-segmented, Read-Ahead Caching (internal memory) improves read performance dramatically, improving non-interlaced audio/video by eliminating extra seeks.
- They provide the super capacity required for serious audio/video applications:

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Model 1936AV 5.25 in 3.0 GB Drive .....CALL
Model 1991AV 5.25 in 9.1 GB Drive .....CALL

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, multiple-event A/B Roll editing software provides you with direct communication and control over your Video Toaster. The three VTR controller unit provides the neccessary 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, framestores, 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 Kitchen Sync

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.....**1279.00**

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 DOC (Drop-out compensator)

AP41-SF

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

AP41-SP

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

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 drop 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**

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.

Machine Control

- 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 tail 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 easily 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 $1499.00

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 (Sync-roll) 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 module included
- Dynamic motion control/auto tracking support
- Controls industry standard audio mixers
- Reads VITC 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 tail 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 easily 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 $2499.00

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 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.

SUNRIZE 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 roto-scoping 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, Fractle Pro, Imagine, Vista Pro, and Cinemorph.
- Real-time video capture for roto-scoping and other video capture applications is possible when used in combination with a DPS TBC IV card.

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SAMSON

MR-1 Wireless System

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

Lavalier (clip mic) Systems

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

Hand-Held Systems

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

SUPER TD SERIES TRANSMITTERS

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

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

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

SENNHEISER

MKE-300 Short Shotgun

- Lightweight electret condenser mic to support the excellent video capabilities of most camcorders with the superior audio they deserve.
- Ideal for mounting on camcorders with an integrated shoe assembly and an extremely lightweight compact design.
- Tight, supercardioid polar pattern has the ability to pick up only those sounds that correspond to the scene being filmed and rejects any disturbing ambient noise.
- Integrated wind screen eliminates handling and wind noise.
- Operating time of over 200 hrs. using its own built-in battery so will not put added strain on your camcorders already limited power supply **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 (200W) and terminates in a standard 3-pin XLR connector.The K6 series was designed to bring studio quality sound to the broadcast and field recording market. The K6 power supply can accept microphone capsules ranging in polar pattern from omnidirectional to highly directional shotgun, as well as special application lavalier microphones.

K6

Microphone handgrip and power supply capable of battery/phantom powering all microphone capsules in this series. One "AA" battery supplies power for approximately 150 hours or phantom power (12-48 volts). The K6 power supply has an integrated bass roll off switch and on/off switch with LED indicator for battery condition **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 pod 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 Campak. The lightweight Campak attaches easily to your waistband, pocket, powerbelt or optional Campak 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.
- Spring steel clip securely fastens Campak on waistband, pocket or belt • Includes soft case and charger.

CAMPAK PRO 12-Volt

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

CAMPAK PRO 13.2-Volt

- Has all of the features of CAMPAK 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 bulb 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 Versalight Pro (DC only) with a sophisticated electronic light management system. Thanks to on-board control IC's using NRG's Light-Gate technology, light intensity can be infinitely adjusted by the user within a range of 10% to 100% of the lamp's rated power. Instantly adjust light output to exactly meet changing light requirements. Best of all, it virtually eliminates color shift.

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

POWER 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 display.
- Belt w/cellpack 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-III charger.
- Includes Power-Pro+ belt and power chassis, 12-volt 10-amp cell pack, model 600 overnight charger and comprehensive owner's manual. Fits waist size 30" - 40".

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 12910D features dual outputs in any combination of cigarette or 4-pin, and 9 amps of output current

PROFESSIONAL VIDEO TAPE

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P660HMP	7.19	E660HME	11.89
P6120HMP	9.69	E6120HME	15.79

maxell

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P6-60 HG BQ ..... 5.09 P6-120 HG BQ **6.69**

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Roger L. Elowitz
32 Duncan Dr.
Morganville, NJ 07751-1649
(908) 536-4786
Meets on the second Friday of the month, 7:30 p.m.

Pittsburgh Commodore Group No. 346
Robert W. Peach
P.O. Box 16126
Pittsburgh, PA 15242
BBS: (412) 396-5483
Meets on the third Sunday of each month at Duquesne University's Mellon Hall (except July and August).

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Richie Suraci
Fine Art Production
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MicroWave User Group
Art Baldwin
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Buffalo, NY 14217
(716) 873-1856
BBS: (716) 873-9262
Meets on the first Wednesday of the month, 7-9 p.m.

Suffolk Video Club
Attn: William Pinto
15 Columbus Ave.
Brentwood, NY 11717-2506
(516) 273-4876
Meets on the second and fourth Thursday of the month (except July and August).

Toasterholics Anonymous
Armato's Pro Video
Chris Hendrick
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Glendale, NY 11385
(718) 628-6800
Meets on the second Thursday of the month, 7 p.m.

LightWave User Group
System Eyes Computer Store
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Nashua, NH 03063
(603) 889-1234
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Ste. 131 High Point, NC 27265 (910) 841-6988
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VA Toaster Forum
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George Triolet
902 Tabb Lakes Dr.
Yorktown, VA 23693
(804) 867-9056
Meets the first and third Wednesdays of the month, 7 p.m.

WV Video Toaster Users Group
Destiny Images
Jamie Cope
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Charleston, WV 25364
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Meets on the second Tuesday of the month at Computers Plus in S. Charleston, 7 p.m.

A-TUG Border States Amiga Group
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1614 Towson Ave.
Fort Smith, AR 72901
(501) 782-4048
Meets on the second Saturday of the month, 9 a.m.

West Tennessee Video Toaster Users Group
Brian Churchill
8886 Davies Plantation
Memphis, TN 38133
(901) 385-1711
Meets on the third Tuesday of the month at the Main Library at 1850 Peabody 7:00 -9:00 p.m.

Club Toaster
St.Petersburg/Clearwater Tampa
Jeff Asbury, Michael Price
9125 U.S. 19 North
Pinellas Park, FL 34666
(813) 576-5242
BBS: 813-398-0371
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Toast 'n Jam
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Computers Plus
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Channel Z Toaster User Forum
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Arthur Szczygielski
4046 Hubbell Ave., Ste. 155
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Chicago, IL 60611
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Bloomington, IN 47404
(812) 330-0124
Meets the second Saturday of the month, 4 p.m.

Toast of Tulsa
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Southfield, MI 48034
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Neil Abeynayake
1033 Pacific St.
San Bernardino, CA 92404
(909) 885-5259
Meets on the first Thursday of the month, 6:30-9:30 p.m.

LA Toaster User Group
Ken Wilder
1818 W. Victory Blvd.
Glendale, CA 91201
(818) 552-5024
Fax (818) 552-5025
Meets on the second Saturday of the month from noon to 5 p.m. at 10844 Acama St., No. Hollywood.

Orange County Toaster Users Group
Bruce Gleason
Thumbs Up Video
1206 W. Collins
Orange, CA 92667
(714) 633-3629
Meets on the third Thursday of the month, 6:30 p.m.

Sacramento Video Toaster Society
Glen Cornish
Applied Computer Systems
6108 Watt Ave.
North Highlands, CA 95660
(916) 692-0520
(916) 338-2000
BBS:(916) 338-2543
Meets on the third Wednesday of the month, 6:30 p.m.

San Diego Video Toaster Users Group
Mike Amron
2334 Galahad Rd.
San Diego, CA 92123
(619) 277-5699

Silicon Valley VTU Group
HT Electronics
Andrew Timmons
2427 Hart Ave.
Santa Clara, CA 95050
(408) 243-9233
Meets on the last Thursday of the month at
HT Electronics, 275 N. Mathilda Ave., 7 p.m.

Amiga LightWave User Group
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Mark Miller
6660 Reservoir Ln.
San Diego, CA 92115
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N.A.G. Desktop Video SIG
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Infinite Solutions
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Monte Strohl
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Spectral Multi-Media
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Bay Area Video Toaster Users Group
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Richmond, CA 94805
(510) 620-6759
BBS (510) 228-0886
Meets on the fourth Tuesday of the month, 7 p.m.

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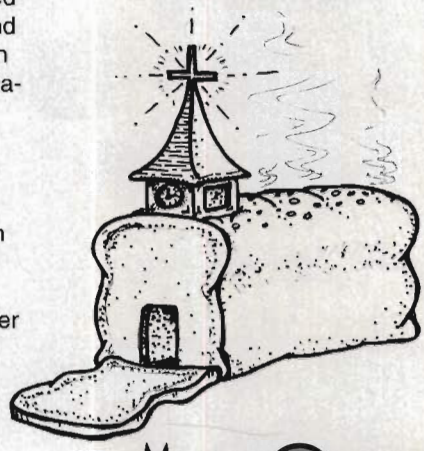

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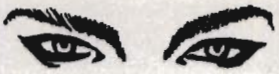

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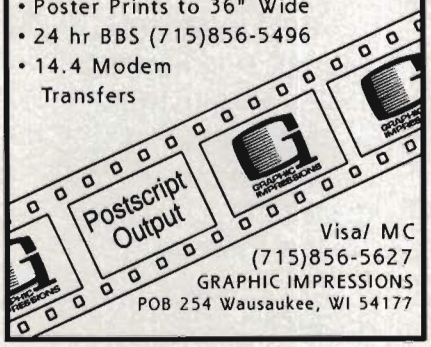

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LAST WORD

Black and White

Making a Difference in a Two-Star World

by Mojo

I love my job.

Surprisingly enough, I also hate my job.

"How can that be?" you might wonder. "They're opposites."

Not true, I say.

I recently read someone explain that hate is not the opposite of love, but apathy is, since we only get angry over the things we are passionate about; to not care at all would truly be contrary to both love and hate.

I agree with this. It goes along with my general philosophy that mediocrity is our enemy. Let me give you an example: two-star movies. These average, basic, vanilla, take-no-chances yawnfests are the worst kind of drek that Hollywood can pour out. Let's face it, folks, you can love and learn from a really good movie, you can despise and poke fun at a really bad movie, but *Coneheads? Sleeping With the Enemy? Beverly Hills Cop III?* These things are a waste of time. You walk out of movies like these and within three minutes you start talking about where to go for dinner.

...is it enough to say "I can't complain" when someone asks you how it's going? Wouldn't you rather answer, "I'm in financial and spiritual ecstasy"?

They serve no useful purpose and are utterly pointless.

The same goes for top-40 music, sensible cars, mall food and just about anything else in life. Nothing offensive, but nothing to get excited about either. Who do you remember from high school (or, depending on your age, junior high)? It's probably going to be your best friends and the people you absolutely hated. Maybe the weird guy, too. But most of them? Average. Unmemorable. Lost in time.

Does this sound harsh? Maybe. Is it true? Definitely. People will argue that we don't live in a black and white world and that we cannot live within a constant flow of extremism—life simply cannot always be wonderful or terrible, and most of the time it will be just OK. But the extremes are what we live for, what we aspire toward. Sure, no one likes it when things are miserable, but the hard times are what we learn the most from. True, if you don't reach high you probably won't have too many bad falls, but playing it safe never got anybody anything other than an average, two-star life.

The 3D animation world I'm in—the business many of you probably want to be in—is full of extremists. People who want to make lots of money, drive really fast cars, date glamorous people and live in big houses.

Who doesn't?

But, unlike most people, these folks (most of them, anyway) are trying to accomplish something grand. They want to make movies and tell stories that might somehow "make a difference." It may be ridiculously idealistic, but droves of them move to Los Angeles penniless and ready to risk it all for a shot at making this dream come true. Most don't make it and fall hard. Some of them fall hard, work at it even harder, maybe have a little luck, and make it.

Taking Risks

But they all have one very strong bond in common: they try. They don't want to settle for mediocrity and will risk the Big Fall for the High Peak. The only alternative for them is the worst thing in the world—to settle for the average. To go through life accomplishing nothing they consider important.

Of course, making a good movie isn't the only worthwhile endeavor on our planet (to us, maybe). There are people who want to preserve the environment, educate children, catch bad guys or be the best damn accountant the world has ever seen. They all want to be the best at what they do in a job that can "make a difference." A job that defies mediocrity in the face of doing something important.

Maybe being an accountant isn't what you or I would consider to be an "important" job, but it doesn't matter what anybody else thinks as long as the accountant sees it that way.

Whatever it is you plan to do, make it great. Don't let yourself settle for mediocrity. You want to produce videos? Be an editor? An animator? A director? Reach high. Sick of wedding videos? Reach higher. Don't let yourself stagnate because it's comfortable and safe.

Get moving in whatever direction will satisfy you. Sure, maybe your job pays the bills and maybe your Hyundai runs fine and maybe you don't fight too often with your girlfriend—but is it enough to say "I can't complain" when someone asks you how it's going? Wouldn't you rather answer, "I'm in financial and spiritual ecstasy"?

It's never too early or too late to start. There's no question that there could be a lot of risk involved. However, as they say, "nothing ventured, nothing gained." Be willing to take a few falls. It's worth it, because although the world is made up of many colors, the best ones are black and white.

VTU

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

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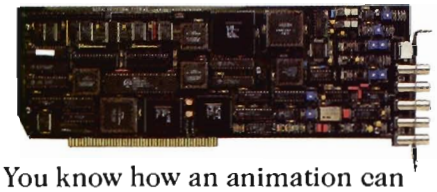

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