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VIDEO TOASTER USER

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

SEPTEMBER 1995

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APPLYING EDITING MAGIC — BROADCASTER ELITE

Brand-New FLYER COLUMN

an Avid Media Group, Inc. magazine

$3.95 US/ $5.00 CAN

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

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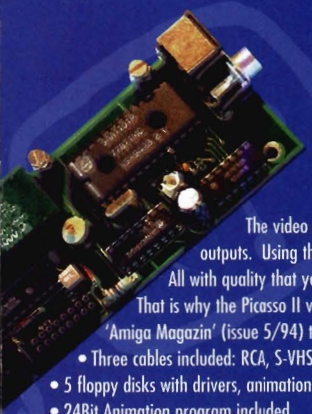
- Includes Commodore's Envoy networking software
- English manual
- automatically reconnection after (re-)booting without new startup
- Every machine usable as server and client

$ 99.00

Pablo



The video module, Pablo, expands your Picasso II with two new video outputs. Using the Pablo, you can view your Picasso output on any TV or VCR. All with quality that you would only expect to see from broadcast video encoders. That is why the Picasso II video encoder module, Pablo, won in the (German) magazine 'Amiga Magazin' (issue 5/94) test for video encoders.

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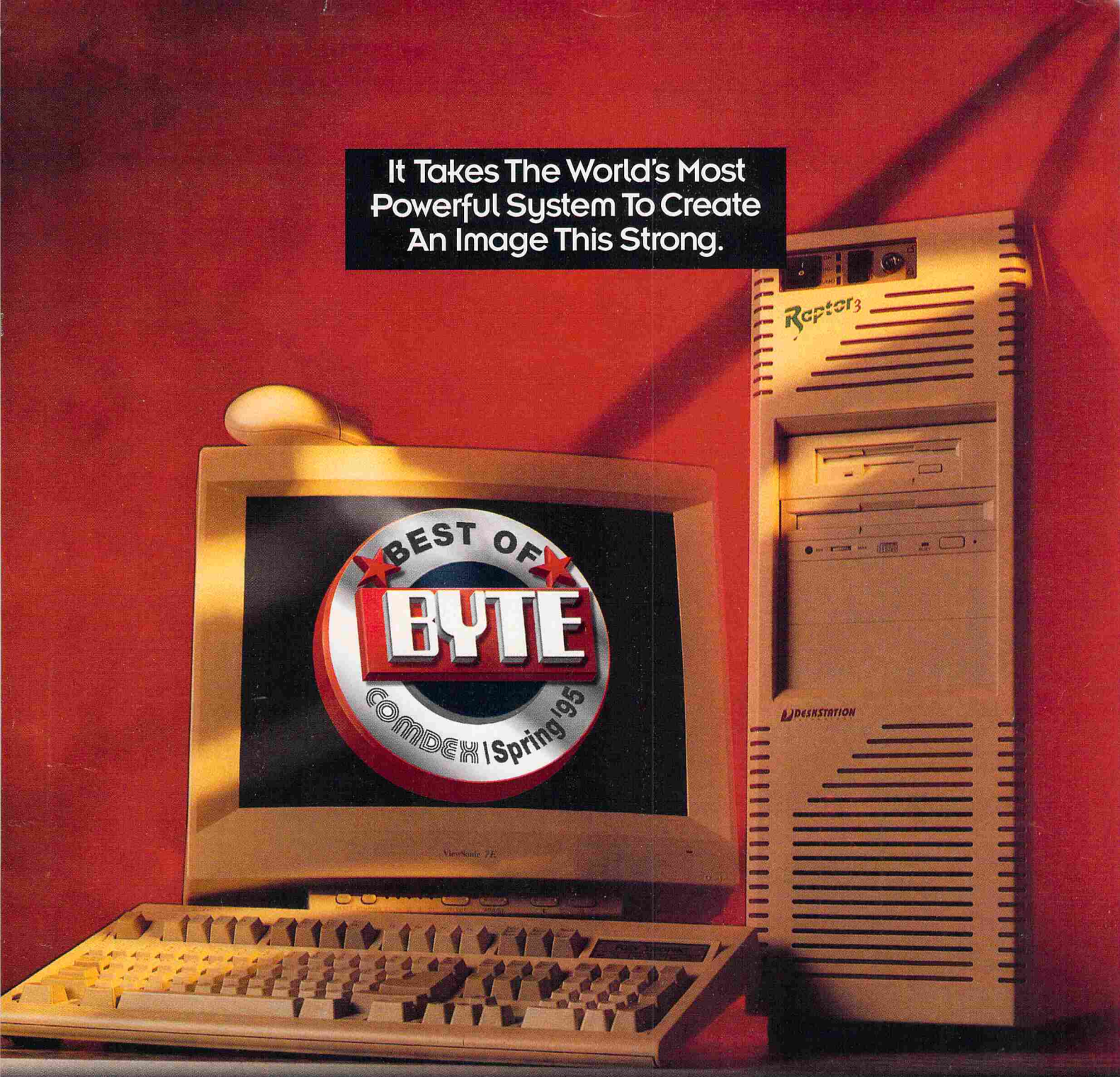

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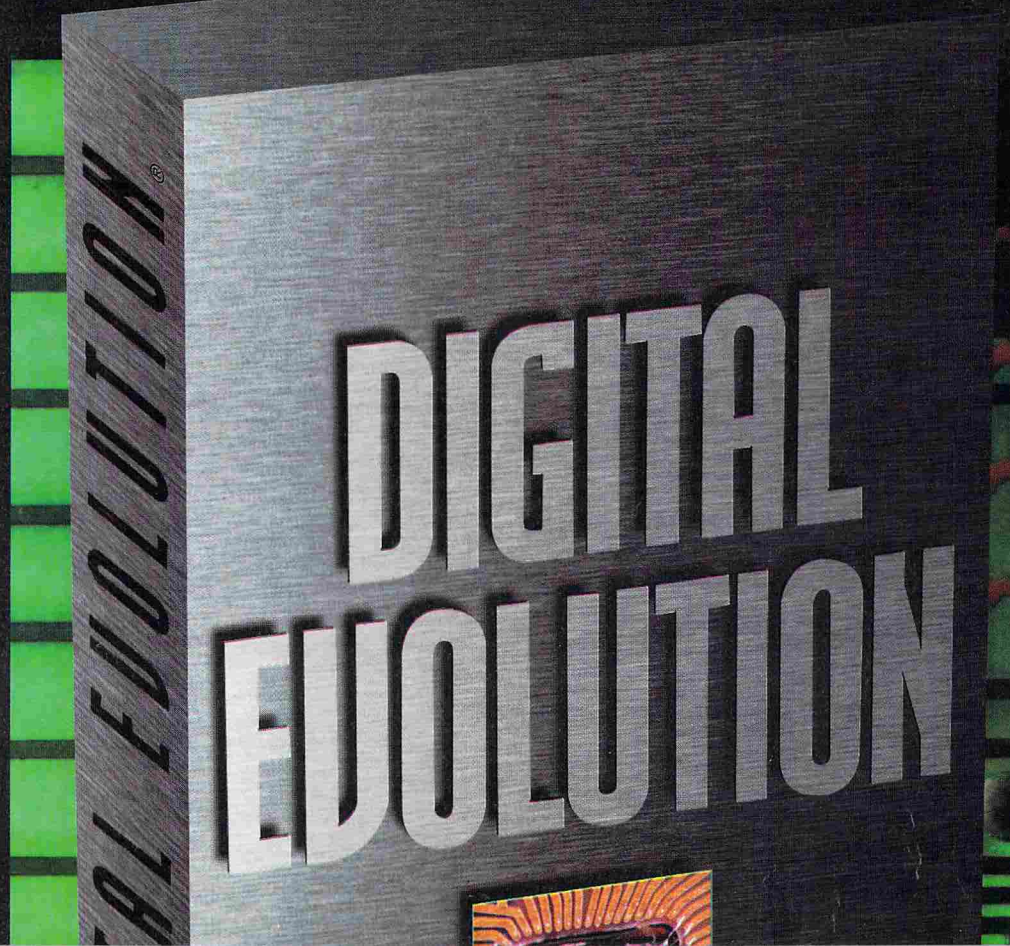

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by Frank Kelly
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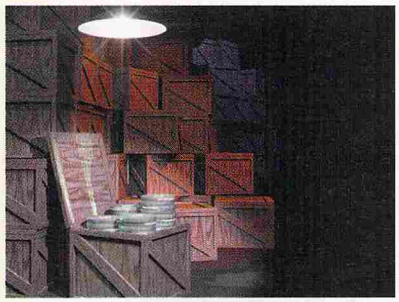
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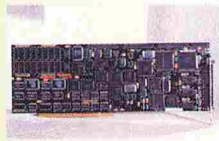
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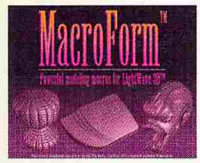

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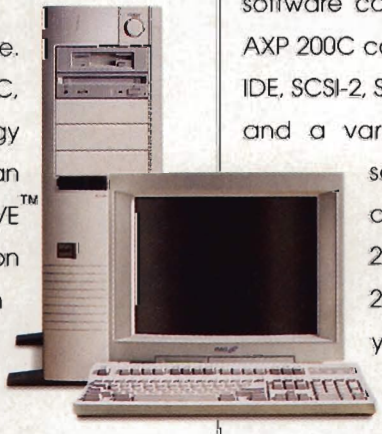

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*As seen in the May 1995 **LIGHTWAVEPRO**™ newsletter article, "LIGHTWAVE 4.0 Benchmarks"*

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BreadBoard provides delay for timing Toaster™ inputs with PGM output, or linear analog key cut and key fill video signals, for use with downstream switcher.

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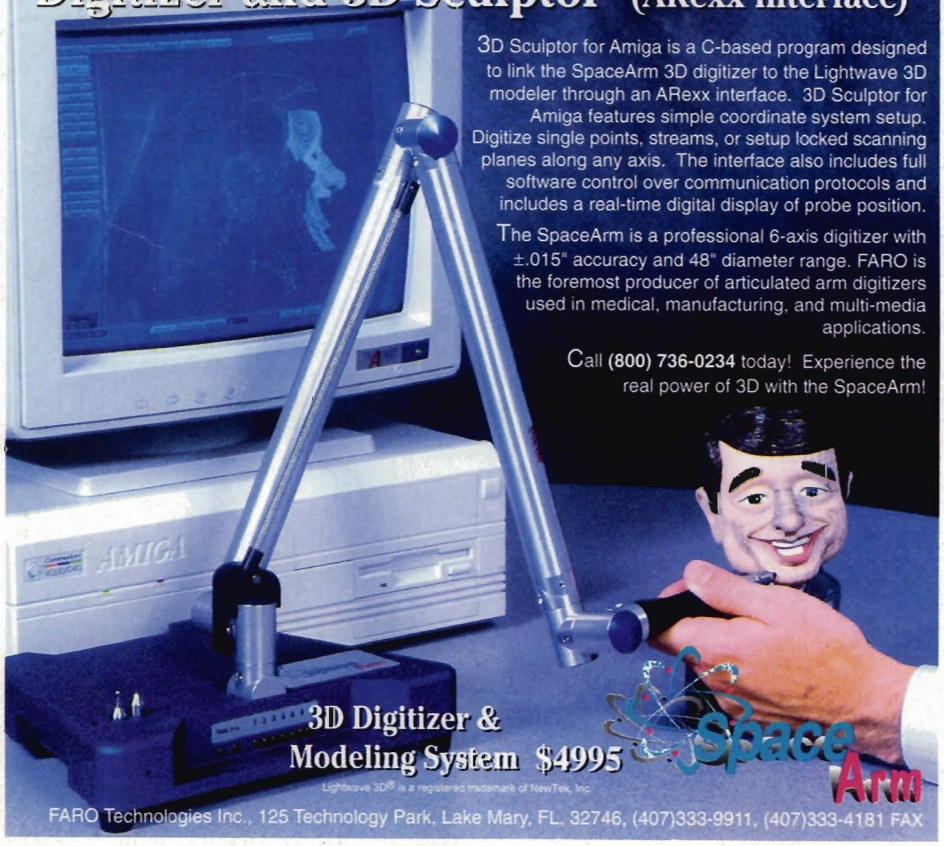

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This month we recognize **Kristin Fladager** for contributing extraordinary accomplishments to our company.

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TOASTER TALK

Passing the Torch

A Look Back—and a Look Ahead

by Jim Plant and
Tom Patrick McAuliffe

This April Avid Media Group celebrated its fifth anniversary. As many of you know, we began as Avid Publications in April 1990. I still have very vivid memories of walking the NAB show floor in Atlanta and handing out copies of the very first issue of *Avid-The Amiga-Video Journal* to anyone who would take one. Commodore had a booth at NAB that year, and so did NewTek, Digital Creations and a few other Amiga-video developers. At the time, the Video Toaster was still many months from its late-1990 debut.

As the popularity of the Toaster grew, so did we. In early 1992 we purchased a small 400-subscriber newsletter, called *BreadBox*, changed the name to *Video Toaster User* (*VTU*), and the rest, as they say, is history. Riding the success of the Video Toaster, *VTU* is now read each month by more than 30,000 people around the world. Along the way, we also started *LIGHTWAVEPRO*, a newsletter for LightWave 3D animators. With NewTek unbundling LightWave from the Toaster and making it available on SGI, Intel, MIPS and DEC Alpha processors, we expect *LIGHTWAVEPRO* to grow considerably.

Lately, I've been quite fascinated with the development of several new forms of information distribution technology, most notably the Internet and the World Wide Web. Avid Media Group President Michael Kornet and I have made a commitment to allocate resources to explore the potential of these new ways of delivering information. I am very excited about the possibilities.

I am also very excited to introduce you to Tom Patrick McAuliffe, our new editor-in-chief. As the former marketing director for InnoVision Technology (the company that brought the Amiga/Toaster community outstanding products like Broadcast Titler 2, MONTAGE and Alpha Paint) and as a video producer with over 15 years of experience, Tom has the enthusiasm and exactly the right qualifications to direct the editorial content of *Video Toaster User*. He'll definitely make *Video Toaster User* an even better resource for you. He has "hit the ground running."

As for me, I'll be right here, shoulder-to-shoulder with Tom and the rest of Avid Media Group staff as we continue to improve the value of the personal video production and 3D animation information we provide. Take it away, Tom.

In "A Tale of Two Cities," Dickens wrote, "It was the best of times, it was the worst of times," and while today's Toaster user isn't exactly in the French Revolution, there *is* a rapid revolution/evolution occurring. Today's warp-speed changes in video technology (both inside and outside Toasterland) are difficult enough to keep up with for those that live and breathe the 3 a.m. Jolt! cola render, let alone mere mortals like you and me. As we go to press...

The Best of Times!

SIGGRAPH 1995 in Los Angeles saw *VTU* magazine sponsor the first annual "**WAVEYs**" awarding excellence in 3D animation. LightWave 4.0, regular Flyer software improvements and Amiga Toaster 4.0 are also happening. New Amiga machines from Escom are here or on the way and the NewTek Toaster for Windows is on the immediate horizon. Things are looking rosy indeed.

Also this month, check out the new column "The Flyer Suite" discussing Flyer editing, issues and information. We also cover the edifying uses and opportunities in Education and talk about saving money with Stock Footage. Next month: the Toaster in Medicine!

The Worst of Times?

Let's face it: with the long Commodore liquidation and the rapid changes happening, there have been some tough times in parts of Toasterland. After pre-release difficulties, bumpy initial flights and NewTek growing pains the Flyer is still not, at press time, in final release. The issues of Flyer hard drive performance and compatibility have been, or are being, addressed, and hopefully, quickly resolved. The tough issues of digital vs. analog and price vs. performance are also something every visual communicator is now wrestling with. Hard decisions with lasting consequences are being made. With so many choices and the bombardment of information it's easy to see why, for some, it might be "the worst of times."

Who?

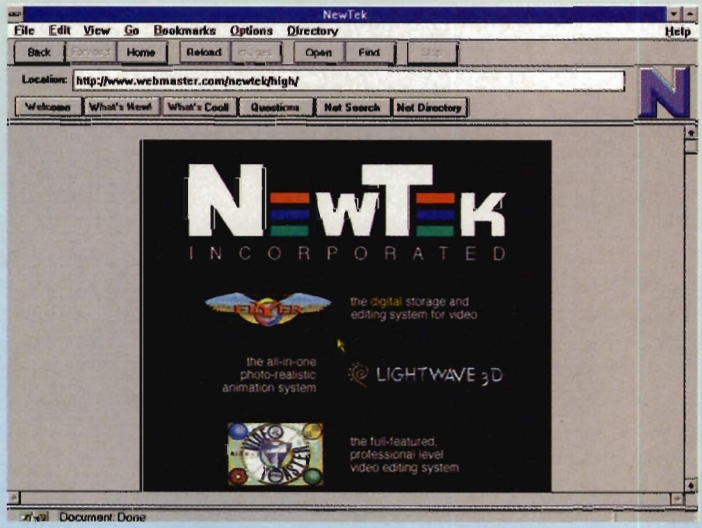
Over the past 15 years, and especially the last few, it has been my good fortune to meet video and Toaster users from around the world. Your ingenuity, camaraderie and tenacity never cease to amaze me. Your stories and achievements have both touched my heart and stirred my imagination. Now I work for you! My background and expertise in print and broadcasting media, computers and video production hope to serve you well. I look forward to hearing from you and to listening. *After all, it's your magazine!* Please let us know how we can serve you better. Keeping you on the cutting edge of technologies that are changing overnight and giving you timely, actionable information has been and will continue to be Job 1. Exploring the vast digital wilderness for information and resources will be challenging and rewarding for all of us. *VTU* and I are committed to being one step ahead of the changes for you, through the best... and the worst... of Toaster times!

VTU

NEWTEK Expands On-line Services

Tom Patrick McAuliffe

With the recent explosion of the World Wide Web (WWW) and Internet service providers and sites, it seems like everyone is going on-line or setting up a home page. Listening to the requests of its customers, NewTek Inc. has recently increased its on-line presence. In addition to more sites and expanded services, technical support staffer Chuck Baker has been re-assigned as a full-time electronic support services technical representative. Alcatraz staffer Bob Caron has added Internet operations management to his duties, and administers the new Internet FTP and WWW sites (see sidebar). The two will work closely to ensure that all NewTek sites maintain the most current files and information. This marks the first time a staff member has been dedicated full-time to on-line services and support. "We're also exploring the possibility of adding additional staff members to assist in handling the expanding volume from the Internet," said NewTek Director of Marketing Donetta Colboch.



NewTek's new World Wide Web page

Baker's full-time job is assisting Video Toaster users at NewTek's various on-line sites, concentrating on the company's BBS and CompuServe area within the Amiga Vendor forum. "We are offering information, patches and updates to the software via BBS and CompuServe. For some downloads, users need to have their Toaster or Flyer serial number," Baker said. Flyer owners have been

Olympic Feats

Corey Cohen

It was something to see—and it probably seemed like the whole world was there to see it. This year's Special Olympic World Games (SOWG), held July 1-9 in New Haven, Conn., and neighboring cities, will almost certainly be the United States' largest sporting event in 1995. Supporters were everywhere—an estimated 500,000-plus spectators, 7,200 athletes from 140 countries, 45,000 volunteers, even President Bill Clinton—eagerly pursuing the sportsmanship and excitement the Games promote. With such a mammoth turnout for such a thrilling week, preserving the good times and the moments of glory was crucial.

A lens flare sun and an animated Running Man with reflective surface make this SOWG animation shine.

And the Flyer was there to help.

NewTek was one of several companies loaning equipment for the squad of 28 volunteers recording the event. When first contacted by Hank Teller, the Games' technical support provider, the response in Topeka was sheer positive.

"We were certainly enthusiastic—and impressed by how the [SOWG] has grown," said Donetta Colboch, NewTek's director of marketing. "I think it's a great event, and I'm glad we could provide tools to make it an even better one."

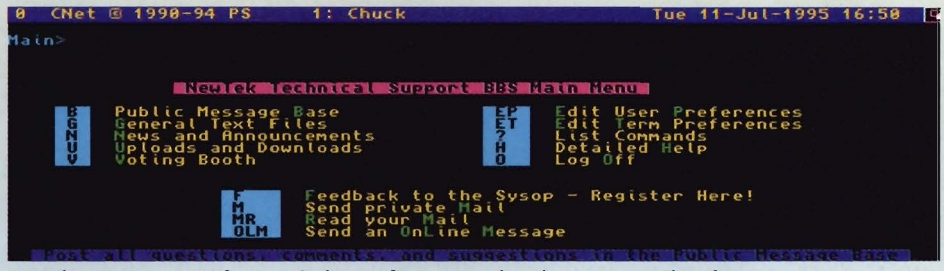
The two Flyer 4.04 systems the company supplied seemed a good complement to Panasonic's contribution of 22 SuperCams and an A/B-roll tape edit system and WJ-MX50. One Flyer acted as a field switcher, CG and live video playback unit in a site dubbed "Olympic Town." The cameras would wirelessly transmit a broadcast-quality signal that was to be

continued on page 16

getting rapid regular updates via their modems. "This has been working very well, so much so that the two or three updates after 4.04B will not be sent on disks to dealers or end-users. Those wanting these updates will need to download them or find a dealer or friend who can download the updates for them," he continued.

The BBS for NewTek clients was started in the summer of 1994. It currently supports up to 19,200 baud, with plans for faster 28,800 baud support in the near future. USENET mail-tossing support is also being planned, and additional phone lines have also been added to the BBS to allow more user access. "We are now using CNET, which gives us the ability to set up a wider variety of user 'classes' for different levels of access. It also provides a much easier way of message handling on the BBS since CNET supports QWK bundling for off-line reading and responding to messages," Baker asserted.

Toaster and LightWave users are encouraged to upload images, utilities and tech support questions to the BBS. "All tech support questions, on any site, should always be posted publicly so that all users can benefit from the answer provided," he said. "For technical support we use our BBS and CompuServe." Including a description of your system, your serial number and the exact nature of the difficulty always helps. In general, you can never supply too much information, according to Baker.



NewTek's proprietary BBS features the latest information and quick answers to technical support questions.

NewTek on CompuServe

NewTek's area on CompuServe, in the AmigaVendor Forum, also enjoys Baker's presence. It's been very active recently, with new users and those non-users who are eager to find out more visiting every day. "With CIS, our current Library storage space is rather limited, so we're not really inviting uploads," Baker said. "However, all the latest information is there for the downloading."

The company's first on-line conference took place in July, with NewTek

continued on page 12

ESSENTIAL TOOLS FOR LIGHTWAVE 3D...

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Create eye-catching, professional-looking flying logo scenes in just a few minutes with WaveMaker! WaveMaker has quickly become the "must have" utility for LightWave 3D animators. And its easy-to-use interface makes it perfect for people who have little or no LightWave experience. With the click of a few buttons, you can set up smooth logo motion paths, backgrounds, and cool background elements.

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FOR INFORMATION CIRCLE 143

The Way I See It

Escom Excitement

Mike Danger

This month's column has more information and gossip than Motley Crue's Tommy Lee has ex-girlfriends. So saddle up, for your columnly dose of who did what. You'll get the facts and a whole heck of a lot more.

As you've probably learned, overseas-based Escom has acquired the Amiga assets lock, stock and barrel. By the time this column reaches your keyboard-crippled little hands, 25,000 '040 and '060 4000 machines should be arriving in some of the dealers' showrooms. The new 4000T Tower case should be available by year's end. It looks

Framegrab of the Month goes to Jim Murphy

very sleek, and should correct most heating and lack-of-room problems found in the table-top version. But wait, there's more! The package should also have software and support by Scala. Faxes found by yours truly from Area 52's fax-on-demand system (516-476-1584) and Escom itself have informed me that RISC OS ports are a possibility real soon. The company will also offer beefier and updated versions of the machines we have become accustomed to.

Besides new logos, new machines and all-new excitement over the goings on at Escom, there are also the new Pentium 75 and 100 PC machines bearing the Commodore name. These units are very big overseas and should give Big Blue a real run for the money.

Run out and start bugging your neighborhood dealer now! The cool thing is the all-new Escom T-shirt. It's the politically correct replacement for your Commodore *Deathbed Vigil* shirt. Who knows? Maybe walking shorts and boxer shorts are next?

I know you're asking, "What's going to happen to Commodore in the United States?" Well, ask and ye shall receive. The Norristown plant is open and under the leadership of Eduard Goff. It is my understanding that some of the old crew will be returning. The engineering department is under the helm of Dr. Peter Hittel, who will be working with Motorola on its '040 and '060 CPUs. For more information, contact Area 52, or Escom at:

Escom UK Ltd.
3 Riverside Way
Riverside Business Park
Irvine KA11 5DJ, Scotland
Fax 0124-223294

From where else but California come these Flyer- and Toaster-worthy items. Be looking for a "B"-movie called *Video Pirates*. This flick, according to Richard McEnroe, doesn't have a gigabuck budget or the stars you see in *People* magazine, but looks to be great just the same.

B-movies have traditionally depended on action, titillation and/or concepts that the "A" list won't touch. These days, even if you come up with an "out-there" concept, you still have to deliver the production value. If you know your film's longest life span is going to be on video and cable, then the Toaster and Flyer make a lot of sense. You can shoot 16mm for that "film look" with the possibility of an optical blow-up if needed for theatrical release, while the

On-line Services

continued from page 11

Founder Tim Jenison and Flyer Product Manager Jim Parsons giving forum members the opportunity to speak with them on-line in real time. The session was well-attended and provided users with the latest information on the status of the Flyer and other products. NewTek plans to host these conferences on a regular basis, to provide Video Toaster and LightWave users with timely information while allowing NewTek to receive fast input from its users.

NewTek has been "on the net" since before the service became well-known. The company's staff members created a "do it yourself" home page during the setup process at the FTP and WWW sites. When these sites became popular sooner than expected, a consultant was called in and has recently completed a new home page design. "The FTP site has a large capacity available, so we do invite uploads of anything interesting," said Caron. A WWW link to the FTP site is planned for the future so that users can upload files from the Web. An increased number of linked sites is also available from the NewTek areas providing more specialized areas of information and additional Special Interest Groups. One such area is the LightWaveSIG on CompuServe (GO GUGRPA), where members can exchange information, objects and anything else of interest. Many other links and SIG news groups are being added daily, giving users and members an awesome array of information and choices.

VTU

WHERE TO FIND NEWTEK ON-LINE

- **NewTek BBS—(913) 271-9299**

8-bit word length, no parity, 1 stop bit, up to 19,200 baud. Call to join with serial number from Toaster, Flyer or ScreamerNet. Increased access upon subsequent visits.

- **World Wide Web**

HTTP://WWW.NewTek.Com

- **Internet**

FTP.NewTek.Com

- **CompuServe Information Services (CIS)**

Type "Go AmigaVendor" and join the forum for increased access privileges.

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Data General	PC 386/ix
DEC SCSI	PC MS-DOS
DEC BI-Bus	PC Xenix/Unix
DEC DSSI	Pertec
DEC HSC	PICK
DEC Q-Bus	Plexus
DEC TU/TA81	Prime
DEC Unibus	Pyramid
Gould/Encore	Sequent
HP	Silicon Graphics
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FOR INFORMATION CIRCLE 125

Flyer's D-2 quality is sufficient for any video distribution medium currently or immediately planned. You can also buy a Flyer for the cost of a month's editing on an Avid or equivalent system. And if you're willing to trade time for money (the kind of trade a low-budget filmmaker learns to make whenever possible), you can do CGI that, when properly designed and staged, will be as good for your purposes as anything you'll get from film. Which is the point, right? Making the best picture you can with the resources you've got. The audience doesn't really care about the picture on the package. I feel the Toaster and Flyer combo will provide the high-end results needed for that audience. This movie has aliens invade our planet by mimicking our commercials, rock videos and Earth TV shows and taking control of a television station. They plan to turn helpless dance party participants into breeding stock for their planet with the help of monsters from horror flicks past and present. This sci-fi adventure features Elaine Joyce and scream queen Brinke Stevens. Could it be the *Pocahontas* of late 1995? Who cares? It sounds like quality entertainment to me!

From Glendale, Calif. comes a TV show called *Weird TV*, and that it is. This one-hour block of alternative uplinked weekly television has been on the airwaves since July 1994. Its contents come under the description of the bizarre. The show's segments include Weird TV theatre, Weird America, Shadowvision and the Doctor Ruehl show. Though each section is unique, it's obvious that the Toaster is used throughout. Todd Stevens, Chuck Cirino and Arthur Maturo, who head up this weird production, see it as an opportunity to bypass the corporate network executive pinheads that deem weirdness "commercially unacceptable." It has been rumored that this celluloid concoction might be taking the place of the ancient and outdated nightflight TV show. For more information or to contribute materials, contact:

Arthur Maturo
Weird TV
1811 West Victory Blvd.
Glendale, CA 91201
(818) 637-2820
Fax (818) 637-2823

I was recently alerted by a gentlemen in New Hampshire about the ongoing problem of computer components overheating during heavy use. The caller, whose name I can't remember, informed me of a fan that attaches itself to the CPU chip to keep it cool. This CPU fan, which is originally built for 486 PC chips, seems to do the trick. Also, while we all know the Amiga power supply fan lacks the humph to adequately cool the system, a replacement solution is available at your local Radio Shack for about $13. Get one now to avoid those hot flashes as the summer heats up. Thank you, caller, wherever you are.

As we come to an end, lest we not forget the framegrab of the month belonging to the ever-capable Jim Murphy of Virtual Prototyping Services, located in Russell, Penn. I learned about his company from the classified ads in this very magazine, and boy, was I surprised by his expert workmanship. Jim specializes in LightWave applications, 3D modeling, and everything else in between. I was so impressed that even though I wanted to buy his company, I opted to use his services instead.

Once again, it has been my pleasure to entertain you and supply you with some useful information. Please send all comments, faxes, complaints and other reusable chip RAM to:

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

VTU

EDITORIAL EVALUATION
Circle number on Reader Service Card
I found this article:

Very Useful	Useful	Not Useful
Circle 049	Circle 050	Circle 051

News & Notes

Tragedy Relived

Animators, news buffs and others may be interested in one of Engineering Animation Inc.'s latest projects. EAI, an Ames, Iowa-based visualization company, has produced a 3D animation that realistically depicts the explosion that rocked the Alfred P. Murrah Federal Building in Oklahoma City, Okla., on April 19, 1995. The company worked with explosives expert Kenneth Waltz to estimate the force of the shockwave, while original co-architect James Loftis helped determine the dimensions for the building's structure. EAI used VisLab, custom animation software that incorporates the principles of physics, and a Silicon Graphics Indy for rendering. The sequence, a project for King World Productions, was completed within a week of the disaster. It aired on *Inside Edition* shortly after, going on to appear on *CBS Morning News* and numerous other programs nationwide. The FBI, said a representative from EAI, now plans to use the animation in both its investigation of the incident and an ongoing bomb training program.

The Murrah Federal Building before the devastating April 19, 1995 explosion.

Though the animation may suggest precautions for construction of new federal offices, "The only way to design a building that can take the force of a 4000-pound bomb is to build the entire structure out of three-feet thick concrete walls with no windows and no exposed entrances," said Loftis.

VTU

TECSOFT

TVPaint

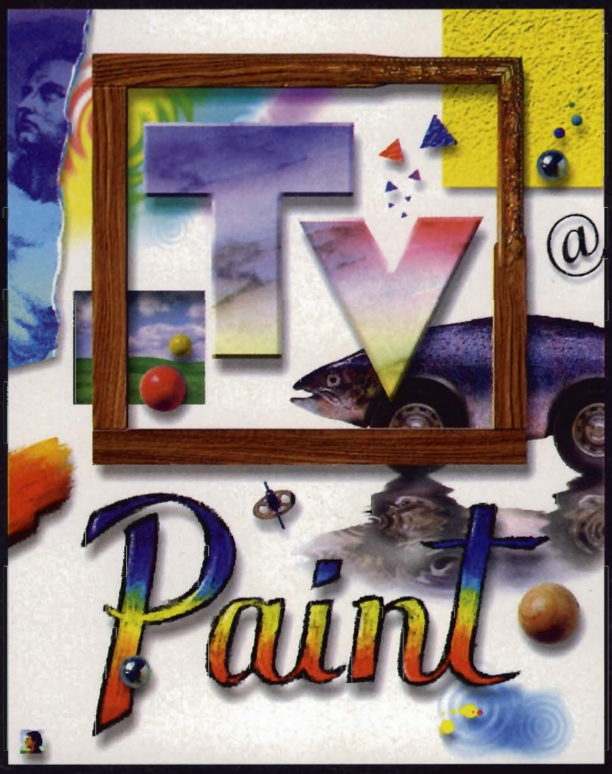
3.0 NOW SHIPPING, MSWINDOWS AND AMIGA

LAYER A

Imagine you had an unlimited number of brushes, pencils and crayons... more than you could ever count, with as many colors as you can think of. An infinite number of

and logically accessed from the stylus or mouse, you can let your creativity flow. Once you've used TVPaint, you'll wonder how you got by before.

LAYER B



canvases. '3 plates of glass' to paint on, access to digital animation recorders,for rotoscoping, or retouching frames of video, and

If you want to restrict your artistic talents to antique dealers and posterity, then consider buying an easel.

LAYER C

suddenly imagination takes over. These are just a few of the 2100 functions that make up TVPaint. Since each of these functions performs as quick as lightning and are easy

However, if you want the sensation of painting on canvas, combined with the power and productivity of a superb graphics package, then what you want is the best tool available.

ALL LAYERS

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FOR INFORMATION CIRCLE 109

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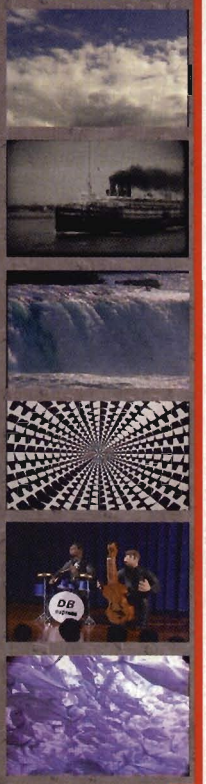

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EAST COAST: (716) 873-1856

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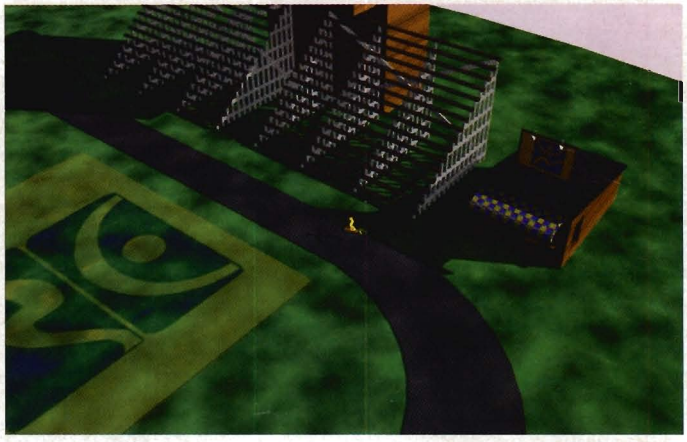
FOR INFORMATION CIRCLE 102

Olympic Feats

continued from page 10

fed into the Flyer, mixed with Toaster graphics and Flyer video, and output to video monitors in Olympic Town's VIP tent. The second Flyer, placed in the SOWG's Media Center, was used to edit venue tapes for the Special Olympics committee. With it, videographers added straight CG pages, titles, lead-in compilations of events and company logos.

Among those working hard on the lead-ins was freelance animator Sean Maynard. Using a copy of LightWave



Maynard spent two weeks using LightWave PC to create a sequence in which Special Olympics' Running Man circles a track, passing bleachers and the SO logo.

PC loaned by NewTek, Maynard spent two weeks creating animated sequences featuring Special Olympics' running man symbol.

SOWG commissioner of visuals Ken Boehm, who spent two years planning coverage of the event, was pleased with the overall results. "We recorded 70 hours of videotape and 36,000 still images. [Through it all], the Flyer worked flawlessly, and it helped spark Panasonic's involvement, since the lack of generational loss lets you maintain the high quality of a piece. The process basically married NewTek and Panasonic."

As for the event itself, an exhausted Teller said he'd be back for more in '99. "I think the Special Olympics is an absolutely marvelous experience. It brings out the brotherhood of man better than anything I've ever seen."

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FOR INFORMATION CIRCLE 123

NEW PRODUCTS

Compiled by Corey Cohen

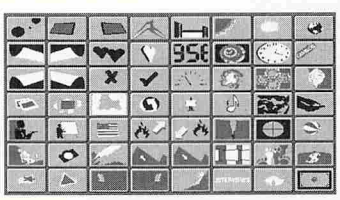
Cheap Storage

All That Jazz
Product: Jaz drive
Description: 1GB removable hard drive
Price: Mfg. projected price is $499
Iomega Corporation
1821 West Iomega Way
Roy, UT 84067
(800) 697-8833

Iomega has announced the development of its new *Jaz drive*, a 1GB removable drive aiming to offer users one of the highest-capacity, fastest and most versatile solutions for desktop and mobile computing. The new drive will be capable of storing and playing high-quality audio and video on a single removable disk, yet affordable enough to provide home and small office computer users a powerful hard drive upgrade. The 3.5-inch 1GB Jaz disks are expected to sell as low as $99 each; when users need additional hard drive space, they simply use another Jaz disk. With a sustained transfer rate of up to 6.73MB per second and a 10MB per second synchronous SCSI transfer rate, the Jaz drive will exceed the performance of any removable storage option today, and that of most current hard

drives. The Jaz drive will be capable of operating with virtually any desktop system, and bundled with it will be Jaz tools, the industry's most comprehensive software solution for storing, moving and managing information. Weighing just two pounds, the external drive is extremely portable.
FOR INFORMATION CIRCLE 1

Wipeout
Product: Pro Wipes 3.0 Volume 2
Description: Video Toaster effects/transitions
Price: $119.95
Matrix Productions
1111 Dover St. N.E.
Cedar Rapids, IA 52402
(319) 378-9648



Pro Wipes 3.0 Volume 2 has more than 60 new effects and transitions for the Video Toaster. Inside are wipes with trails; soft-edge wipes and fades; four new page peels; wipes for weddings, holidays, and sales and commercial use; consumer video wipes for vacations, children and birthdays; and more. Pro Wipes requires no animation skills, programming, or any other third-party software. Installation is a snap: just run the Pro Wipes installer, select your Toaster hard drive and hit go. Within minutes your videos will take on a whole new look that distinguishes you from the rest. The program requires an Amiga 2000, 3000 or 4000 with a Video Toaster, 3.0 or 3.1 Switcher software, and a minimum of 14MB of free hard drive space.
FOR INFORMATION CIRCLE 2

Logo Heaven
Product: Scene Machine
Description: LightWave PC logo program
Price: $249
Radiosity
3970 N. Victoria St.
Shoreview, MN 55126
(612) 787-0855
Fax (612) 787-0856
By bringing the scene-generating features of Radiosity's WaveMaker to LightWave for the PC, *Scene Machine* gives users the ability to develop LightWave flying-logo scenes in minutes. This Windows-based product duplicates WaveMaker's easy-to-use interface and adds several new features, like making animations of all logo mo-

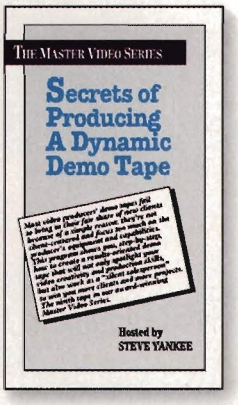
tions accessible on-screen. Using this capability, users get a better feel for the motion their logo will have in their LightWave scene, and it allows clients to interactively design their own animations. In addition, since Scene Machine comes on CD-ROM, it includes dozens of pre-rendered background images. These professional-looking images can be used as backgrounds for animations or wherever a generic background is handy. The package also includes new animation Elements and Prefabs, and an on-line manual.
FOR INFORMATION CIRCLE 3

Full-Screen Glory
Product: CD-1501
Description: 15-inch RGB color monitor
Price: $899
CD Solutions
2551 San Ramon Valley Blvd., Ste. 256
San Ramon, CA 94583
(510) 820-5400
Fax (510) 820-4115
CD Solutions has announced the release of the *CD-1501*, a flat-square, 15-inch RGB color monitor for those looking to do output of NTSC, PAL and VGA. The CD-1501 is a sharp 15-inch color dis-

play monitor with a 0.28 mm dot pitch CRT and up to 800x600 resolution. It delivers crisp, brilliant images with exceptional detail. The nonglare screen provides full-screen images side to side and top to bottom for Edge-to-Edge display. The CD-1501's versatile scanning capability means users can interface with all compatible video adapter standards. And the CD-1501 automatically syncs to a wide range of frequencies and has a wide video bandwidth of 85 MHz. The monitor allows users to work with a variety of computers that provide signals

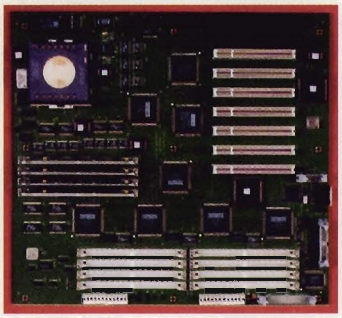
ranging from 15 MHz to 36 MHz, including the Amiga, the Macintosh and the PC.
FOR INFORMATION CIRCLE 4

Show It With Style
Product: Secrets of Producing a Dynamite Demo Tape
Description: Instructional video
Price: $39.95
Skyward Productions Inc.
1320 Front NW
Grand Rapids, MI 49504
(800) 544-4649
Secrets of Producing a Dynamite Demo Tape is the ninth program in Skyward's Master Video Series, designed to teach video producers new marketing skills and profitable production techniques. This 72-minute instructional video is a step-by-step guide promising, when followed correctly, to help viewers create a result-oriented video demo that will dramatically increase their business. *Secrets* includes writer and host Steve Yankee's "Seven Commandments" for best results,



and has a section on why and how to use testimonials from satisfied clients. It also contains several examples of actual demo tapes used by successful producers and production companies.
FOR INFORMATION CIRCLE 5

Wield the Power
Product: Telluride Power Workstation
Description:PCI-based workstation
Price: $9,994-$14,607
Aspen Systems Inc.
4026 Youngfield St.
Wheat Ridge, CO 80033
(303) 431-4606
Fax (303) 431-7196
The Telluride Power Workstation provides LightWave animators with a robust, high-end system combining extreme computing capabilities and an impressive price/performance ratio.



Based on Digital Equipment Corporation's 21064A Alpha processor, the workstation supports upgradable processing speeds of 200 MHz and 275 MHz, and its user-upgradable secondary cache can be expanded to 8MB of 128-bit wide write-back cache. The Telluride has 128-bit access to the system RAM with two speed- and size-independent RAM banks (60, 70, 80ns RAM). The Telluride is configured with six dedicated PCI slots (three are full-length), one dedicated ISA slot, and one PCI/ISA shared slot. It fully supports Windows NT Workstation, Windows NT Server, Digital UNIX and Digital OpenVMS operating systems.
FOR INFORMATION CIRCLE 6

Mighty Subsystems
Product: Stack series
Description: External disk subsystems

Silent Paw Productions
Portable Amiga Workstation
PAWS 3000 and 4000
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FOR INFORMATION CIRCLE 128

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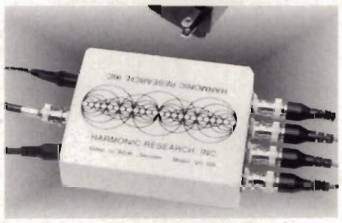
Fax (716) 337-0642

Replica Technology has announced the release of the *Stack series*, high-quality external disk subsystems designed for high-end digital video, multimedia and pre-press professionals. The Stack subsystems provide from 2GB to 72GB per enclosure, using the fastest Wide SCSI-3 drives on the market for superior performance and reliability. These enclosures include 7,200-rpm Wide Barracuda drives, Universal power supplies, 4-bit SCSI address switches, high-density SCSI-3 68-pin cabling and front panel bezels with LEDs in an attractive desktop chassis. Replica Stack subsystems are built to provide a complete external desktop SCSI solution. They also include formatting software and utilities for modifying or fine-tuning the drive's mode pages. RAID software, cabling, high-performance controllers and terminators are optional. These subsystems are compatible with Windows, Macintosh, SGI, Amiga and Unix platforms.

FOR INFORMATION CIRCLE 7

Enhanced Video
Product: VC303
Description: Scan doubler
Price: $399.95
Harmonic Research
40 Wiley Lane
Woodstock, NY 12498
(914) 679-5856 Voice/Fax

If you're tired of waiting for HDTV or mixing low-res video with your high-res graphics, Harmonic Research's *VC303* might help you. It takes standard video and turns it into double-scanned and enhanced RGB signals, which can plug directly into your VGA or Multisync monitor, LCD, or large-screen projector. Harmonic's proprietary conversion process makes even average-looking video look great: scan lines disappear, comb filters and a dynamic interpolation process make everything appear sharper with more apparent resolution, and the increased scan rate practically eliminates flicker. Standard features include automatic color control, a wide lock-in range, and auto-selection of composite or S-Video inputs. Sync capabilities include "Sync-on-Green," separate H and V, and composite sync.



FOR INFORMATION CIRCLE 8

VTC

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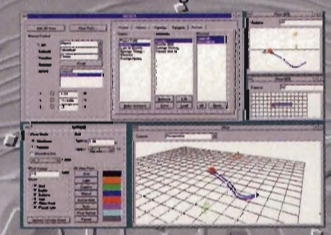

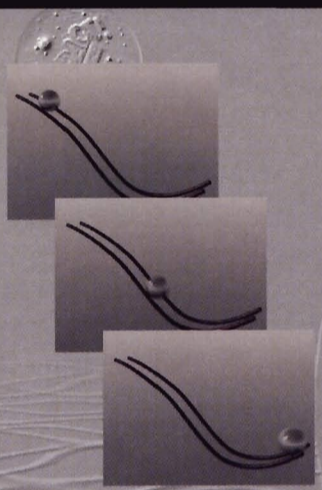

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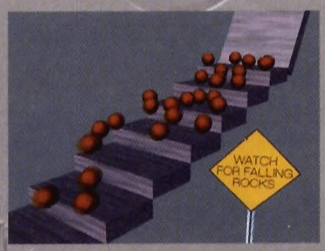

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FOR INFORMATION CIRCLE 116

THE FLYER SUITE

For Your Edit-fication

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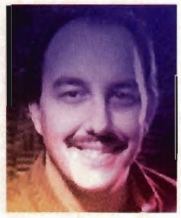

by Frank Kelly

Welcome to the first of what will be many columns about the Video Toaster Flyer's non-linear editing system. For those of you who have a Flyer or are thinking of getting one, I hope to become your teacher, advocate, snoop and gossip. I will share my trials and triumphs, tips and product information. I will also be answering your questions submitted by either fax, mail or on-line.

Like many of you, I own a Toaster-based edit suite. Although most of my work is for television commercials, I also work with industrial clients to produce marketing and training videos and do projects for non-profit organizations. Over the years I have progressed up the technical "food chain," from a modest cuts-only VHS edit system up through Umatic, Umatic SP, S-VHS, Betacam, BetacamSP and MII. Along the way I have worked with a number of different edit system configurations comprising many different tape formats and edit controllers. Recently I took the plunge into digital non-linear editing and purchased the Flyer. While exciting product developments are happening daily to improve it, the Flyer still has a way to go before it will completely replace my analog linear edit suite. For the moment I am straddling the fence between the linear and non-linear applications of the Toaster, and have had to take some interesting steps to get the most out of both systems. I believe in using the best tool for the job at hand, and that requires using all the tools that are available. In the case of the Flyer, at present, a tape-based edit system is still the best solution for some tasks.

Flyer Tips

At the time of this writing the version of the software I am working with is 4.04B. Because NewTek is updating the software regularly, some of these tips may no longer be functional. For now, we'll try to deal with more general topics. As theproduct matures, we'll delve deeper. I look forward to your input and questions.

Audio Clips

Generally speaking, a good rule to follow is never place more than two audio clips in a sequence that will run simultaneously at any given time. The Flyer reserves two stereo audio tracks (out of four stereo tracks possible) for A/B roll of video clips that contain audio. Remember that the Flyer assumes your video clip contains audio, even if you record silence (by not feeding any audio to the Flyer's audio input during capture). If you are not planning to use the audio from a given video clip: (a) Use the cutting room to generate a separate clip without audio, or (b) turn off a clip's audio from the controls panel after the clip is placed in an edit sequence. If you find that an audio clip suddenly stops playing during an edit sequence, check the inpoint and outpoint sliders of that clip and any nearby audio or video clips, making certain that any changes you have recently made (such as adding or deleting another clip) haven't created a conflict for the four stereo tracks of audio available. There is also a control panel slider in the cutting room that is normally used to select the image generated for the crouton of a video clip. When making an "audio-only" clip from the cutting room, I have found that moving this slider all the way to the right will sometimes cure playback conflicts that aren't related to overuse of the available stereo tracks.

Creating Clips With Overlay Effects and Key Dissolves

The Toaster has some very interesting and useful overlay effects and a very desirable method of dissolving CG key pages on and off. Unfortunately, at press time, many of the overlay effects and CG keys cannot be used during transitions between Flyer clips, or at all, in some circumstances. The easiest workaround is to "play" the overlay or key at the time you are capturing the video as a Flyer clip. Try this:

- From the Files Project View, locate the appropriate overlay effect or key page that you wish to use and drag it up to the project screen.
- Switch back to the Project Switcher View.
- Select the Switcher input for the video source that will be captured.
- Check the transition time of the overlay effect or Key page and add about 10 seconds to the duration that you will actually need.
- Once the duration is set, prepare to start your source footage, and double-click on the effect crouton or key page (from the project screen).
- Start playback of your video source.
- From your keyboard, press the following keys simultaneously, then release: the right ALT, left ALT and the tilde (~) keys.
- A record clip control panel will appear. From here select MAIN as your video source. Mouse click on the record button. At this point you will be capturing to your hard drive whatever occurs on the Toaster's program output!

For keying some animated effects (especially the 3D variety on A4000 platforms), this method will not work without Atomic Toaster's Flite Gear (see product Quickview in last month's issue). While the keying is nearly identical with or without Flite Gear, this product allows you to use those effects that usually keep you from

continued on page 59

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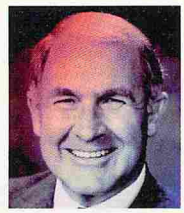
TOASTER POST

With Gun and Camera

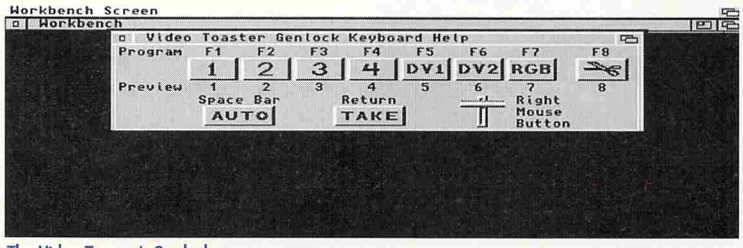
Through the Toaster's Genlock Utility



by Burt Wilson

The amazing Amiga platform became the computer of choice for video professionals because it was built to sync to a television signal from the beginning of its existence. I don't know who was responsible for this decision, but it was a wise one. Without synced video, you'd have to buy a lot of extra electronics—like Mac and PC users need to do—to do video. So let's hear it for the Amiga as we take gun and camera into the darkest reaches of one of the great post-production benefits of that sync capability: the Toaster's Genlock utility.

Before the Toaster came along, I had to use an Amiga 1000, DeluxePaint II and a SuperGen genlock to overlay graphics and titles on video. It's hard to believe now, but I actually produced a few videos and commercials with that setup. And I got paid for them! But after I bought my first Toaster, it took about two seconds to realize that I could sell my genlock and forget about jaggy titling. The Toaster was the complete answer to this guy's post-production prayers.



The Video Toaster's Genlock menu screen

Unless you have been through this transition yourself—which can only be termed "Titles from Hell!"—you have no idea what the introduction of the Toaster meant to us video people. You can't imagine how difficult it was to build supers with drop shadows compared to simply typing and clicking in ToasterCG!

Yet, the advent of the Toaster hasn't caused me to abandon DPaint altogether, as I still use the old standby to make 2D animations. For one client I created a newspaper front page that does a fast-spinning 360-degree rotation as it comes in from a pinpoint, getting increasingly larger until it stops, filling the screen with the headline screaming its message. That's an old B-movie trick and very easy to do in DPaint. In fact, there's even a tutorial in the manual that shows you how to do it!

Once your spinning masterpiece is finished, however, you have to find a way to bring it in over video in the editing process. That's where the Toaster's Genlock utility comes in. The Toaster's Genlock performs two basic functions: It allows you to use the Toaster as a simple switching device for cuts, fades and dissolves, and it allows you to overlay RGB graphics from your Amiga onto video—either through a cut, fade, dissolve, superimposition or, in one of its greatest uses, through keying animations over live video. It is the latter function that we are going to be concerned with in this tutorial because this is how third-party software—like DPaint—is used with the Toaster.

To get into the Toaster's Genlock utility, boot up your computer, enter the Toaster Switcher, and then exit the Toaster. You can exit the Toaster either from the setup screen or by simultaneously pressing the Ctrl, Alt and F10 keys on the Toaster's keyboard. In either case, you will be returned to the Amiga's Workbench screen and the open Toaster window. From there you will enter the Genlock utility. To enter the Genlock utility in Toaster 2.0 (Yes, I know you're still out there!) simply double-click on the icon labeled "Genlock" that appears in the Toaster window. Getting to the Genlock utility in Toaster 3.1 or later is a bit different. Upon exiting the Switcher, you'll find a Toaster window containing an icon labeled "Toaster." Double-click on this Toaster drawer and it will open a window containing two icons and another drawer. One icon is labeled "Video Toaster" and another is called "Auto Hue," but it is the drawer labeled "Utilities" that we're interested in. Double-click on it and yet another window will open, this one containing three more icons. Double-click on the icon labeled "Genlock" and you're in!

Take a moment now to study the Genlock screen. You'll see two rows of keys: an Auto key for dissolves, a Take key for takes, and a T-bar that is used with the mouse to control the speed of a dissolve. You'll find that the T-bar is the only control that works with the mouse. The others are operated strictly from the keyboard. Before using the keyboard to control the Genlock, however, you have to activate the appropriate keys to make them "hot."

First, pull down the Activate Key menu from the top of the screen. Notice the check mark next to the menu item labeled Ctrl. That indicates that you'll have to hold down the Ctrl (Control) key at the same time you press any of the other keys in order to trigger an effect. Do not work it this way. A better alternative is to select the Caps Lock key from the menu and use that as your "hot" key. That way, while pressing the Caps Lock button, the "hot" key will stay engaged and you won't have to use two hands to access the Toaster's Genlock effects.

As discussed previously, the T-bar control is the only

continued on page 26

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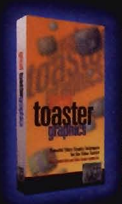

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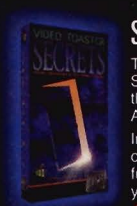

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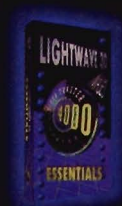

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Genlock function that works with the mouse. It's not even necessary to click the mouse arrow on the T-bar. If you wish to do a slow dissolve, for example, set up your source video in the Preview bus by pressing the (1) key and set up your record deck in the Main bus by pressing the (F2) key. With the mouse pointer anywhere on the screen, hold down the right mouse button and drag the mouse down at whatever speed you want the dissolve to take place. This technique also works with Framestores loaded into the five and six slots on the Preview bus and the F5 and F6 slots on the Main bus. But remember, if you want to use Toaster Framestores, they have to be loaded into the Toaster's Preview and Main busses before exiting the Switcher screen. The images will then be visible on your Preview and Main monitors when you enter the genlock.

Our main concern, however, involves getting third-party software—such as DPaint—to key over live video. Start by using the pulldown menu to activate your Caps Lock key as the hot key, but don't actually press the Caps Lock key yet. If the Caps Lock key is pressed into the "on" mode, indicated by a dot of green light on the key, the Toaster's cursor will freeze—it won't work in DPaint or any other third-party software. With the Caps Lock key activated, but not pressed, enter your DPaint program and load your 2D animation into the computer's memory. (Yes, you can multitask from the Toaster's Genlock. Hit Ctrl, Ctrl, Alt, Alt.) The animation's first frame will appear on the Toaster's RGB monitor. You won't see the Toaster Genlock screen, but it's there just waiting for you to activate it by tapping the Caps Lock key.

Set the edit-in points on both your record deck and your source deck. The source deck will feed the live video over which you're going to genlock your 2D animation. Now press the Caps Lock key to turn the Toaster Genlock on. You still won't see the Genlock screen on the RGB monitor, but all the keys on your keyboard that will control it are now active. Press the F1 key on your keyboard to activate the number one channel on the Main Genlock switcher and also the F8 key. You will now see the first frame of your DPaint animation keyed in the Program bus. When you tap the make-edit button on your edit controller and the decks, after going into pre-roll, come up to the edit points. The first frame of the animation will appear keyed over the source video.

The Toaster's Genlock utility may seem intimidating at first, but if you practice using it, it'll certainly come in handy sooner or later.

I cite the example above only to demonstrate how to key a third-party animation frame over video immediately. You can also load a frame or animation into the Preview buffer by pressing the (8) key instead of F8. You can cut the frame in by tapping the Return key or dissolve it in by tapping the spacebar.

What we want to do here, however, is fade the animation in and out over video when desired. To do this, make sure the animation is in the Preview Monitor (select the 8 Key) and then hit the spacebar. This performs a pre-selected half-second fade-in or fade-out. For longer fades, use the right mouse button, but be careful not to release the button while dragging it or the animation will stop. I usually recommend making the first frame of your animation black and then pressing the F8 key at the point you want it to key.

Now, instead of appearing immediately when the edit hits, the animation won't start until it is activated by tapping the appropriate DPaint trigger key. An instant before doing that, however, you'll have to click the Caps Lock key to deactivate the Genlock keys. Don't worry, your animation will still be genlocked over the source video. By the way, other 2D animation programs besides DPaint also work with the Toaster's Genlock.

There are many interesting variations to this simple demonstration of how to key an animation through the Genlock utility. For example, you can key DPaint over your live video source and paint or draw right on the screen as your live video is being fed. This can make for some nice effects. Be sure to hit the F10 key while in DPaint to first clear both menus from the screen. You can also create a colored arrow in DPaint, give it a drop shadow (not 0 Black), and then cut it out and attach it to the mouse cursor using the right mouse button and DPaint's "Brush Selector" tool. When you genlock the arrow over live video, you'll have a big moveable pointer you can move around the screen simply by moving your mouse. This comes in handy in scenes where you need to graphically point out different areas or words on the fly.

You can also use the cursor arrows, if you don't mind the jerky look that results, to move objects around the screen. If you want to display an animation or a framestore without keying it over live video, use the F7 key, which will output RGB video directly to the Program monitor. Tap the (7) key and your RGB video will be loaded directly into the Preview bus. Once there, you can cut or dissolve it into the Main bus and the record deck. Here's a tip: you can also use LightWave 3D on the Toaster 4000 platform to put together your DPaint animations and then play them back from the Switcher.

Once you understand these basic procedures, you can use the Toaster's Genlock utility for many other interesting effects. You can use it with any third-party Toaster software or just for simple editing. You may find, on the other hand, that you never use it at all. But it's always there, and if you need to use it just once to save yourself the $500 or so you would have otherwise spent on an external genlock device, it's worth it.

The Toaster's Genlock utility may seem intimidating at first, but if you practice using it, it'll certainly come in handy sooner or later.

VTU

Burt Wilson is the author of the new book "Complete Post Production with the Video Toaster."

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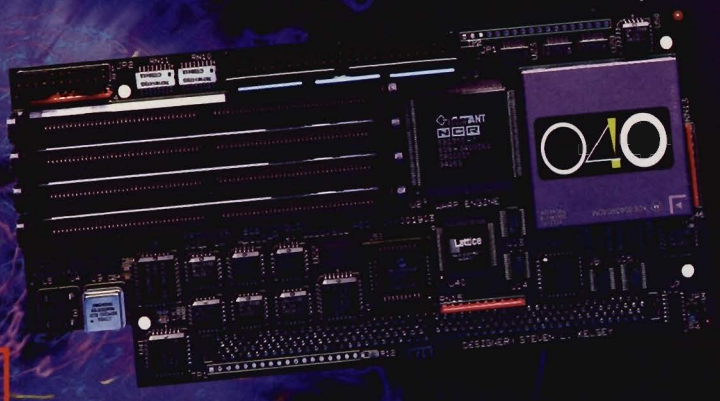

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SLICES

The Secret Handshake

How to Adjust Your Toaster 4000 Card

by James Hebert

In recent issues I've discussed the use of the SMPTE color bar pattern to adjust your monitor for optimum viewing and color correctnes. I've also explained how to check that both the footage you shoot and the equipment you use are properly calibrated so that you can trust the video image you see.

This month I'm going to tackle a controversial topic that will allow you to adjust your Video Toaster 4000 card (the only model that supports this feature) using a "hidden handshake" that was mentioned nearly a year ago. Though we brought up the existence of this feature, we did not elaborate on its uses.

Before I place my foot fully into my mouth, let me say this: If the video work you've been creating with the Video Toaster is making you money, then you have little or no need for this month's column. Turn the page and go on to the next article in this month's issue. The odds are highly in your favor that you're doing the right things, and that you need not worry about "every little ounce" of the video signal. A better understanding of the video signal is not likely to make you more money unless other people are complaining about the *technical* quality of the work you turn out. Is it in phase? Is the chroma level low? Is the luminance too high? If they know enough to complain about such things—e.g., they currently work or have recently worked in the production field—then their words may have a basis in fact and this column will interest you.

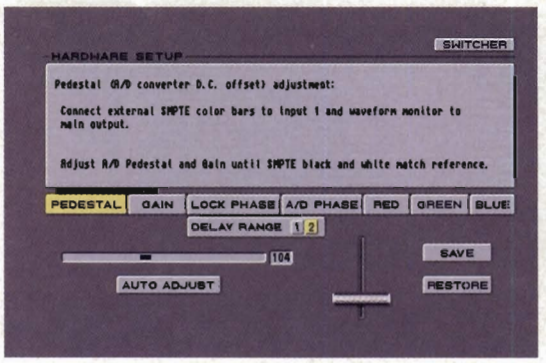

Figure 1

Personally, I favor the anal-retentive side of my family, and I like to tweak the video signal for everything it's worth. I also like to know what's happening to it as it passes through each piece of video equipment. If it's not perfect, I want to know why.

"Knowing why" means that you need to have a couple of pieces of test equipment worth, at the low end, about $1,500. This would be a combination waveform/vectorscope, like Feral's Hamlet Microscope or DPS' Personal Series Waveform/Vectorscope. There are others in this price range, particularly one from Magni that I have seen but not used. The point is, you will need both of these devices: a waveform and a vectorscope. One alone is nice, but not enough. The waveform tells you about your video signal's timing and its luminance while the vectorscope tells you about its hue and saturation. Besides, using the "sort of" hidden Toaster feature requires this equipment.

I spent five years of my life tweaking monitors for live video productions throughout the state of California. I got to the point where I could do it by eye (I had a good eye then—two, in fact). Man, I was *good*. But the fact is that no matter how good your eye is, and no matter how high an opinion you have of your eye, the video signals will never be dead-on-the-mark. I could eyeball them so that most people couldn't tell the difference except maybe an engineer with a waveform/vectorscope. And if that's the level of information you want, get the equipment that will give it to you.

The Video Toaster's AutoHue program calibrates your Toaster by adjusting aspects of the *digital signal*. The digital signal is the one that flows through the Toaster's framebuffers when you're engaging a special effect that requires digital video—anything that changes the size of the screen image or changes its position. (By the way, it's also involved when you capture freeze frames of video.) At that moment, the Toaster is making use of its two internal framebuffers in order to jimmy and jockey the video image around the screen in a transition from one source to another. In the split-second that lies at the beginning of the transition, the Toaster usually switches, invisibly, from the incoming video that you are sending it to the digitized version of the signal, which it can manipulate. It can then zip the digital feed around the screen using the effect you selected.

So the transition is seamless, the moment of transition from the analog to digital signal must be invisible to the eye. (In earlier times, the AutoHue program could mistune your system, resulting in dramatic color shift at the moment any digital effect started. This has since been corrected, but it may bring back a few fond memories to the old-timers out there.) The AutoHue procedure attempts to match the following levels: pedestal (the video black level), gain (the video luminance level) and A/D phase. This data is written to a file within the NewTek directory (called the Toaster directory in earlier versions) called HS (known as "hardsets"). If you happen to venture into the NewTek/Toaster directory, you'll also find HS.default, which is a stock "safety net" file containing built-in start values for the AutoHue program to use in the process of calibrating your Toaster.

Tip: For whatever reason, if your system seems out of whack with regard to its digital setup, delete the HS file

(always leave HS.default alone), exit the Toaster, and then re-run AutoHue by clicking on its icon. As can happen with computer-based products, some things we have no control over can get mixed up, and the best solution is to start from scratch. Sometimes an improper HS. file can even keep your machine from starting the Toaster software successfully.

Tip: Another event that sometimes occurs and may keep your system from starting the Toaster software correctly is related to the last project file you saved. It may, for reasons only low-level computer programmers understand, have become corrupt somehow. The next time you start the Toaster, it tells the system "Hey, load this last project, he may wanna work on it again." The trouble is, CurrentProject (or the project file that it points to) may be corrupt, causing the Toaster to "hang" on startup. You may see the "Please Stand By..." message for a long time, and the Toaster will not start. In such cases, utilizing a directory utility program, enter the NewTek/Toaster directory and rename (or delete, if it's not important) a file called CurrentProject. This file simply remembers the last project file you were working on when you exited the Toaster. Power down and try to start again.

But let's get back to AutoHue. What if AutoHue does not work perfectly for you, and the Toaster's color signal is not close enough for your boss/client/partner/child prodigy? Then you do have a few options.

If you do not have a waveform/vectorscope (I thought you guys had turned the page by now...), you can still make a minor adjustment to the Toaster itself. *But you do so at your own risk!* On the board is an adjustment labeled A/D phase, which adjusts the Toaster's digital phase in relation to that of the incoming signal. With an external color bar signal from a generator or tape feeding into the Toaster, you can set up a standard horizontal split-screen between the incoming test signal of color bars on Main and the digital version of that test signal on Preview.

Remember, in order to set up the digital version of an input, you need to make sure the Freeze button is turned off (not highlighted). Then select the input source you want, followed by choosing either framebuffer. If all is correct, both framebuffers will depress. The result is three buttons selected on either the Main or the Preview row, whichever you used. This is the digital version of the original input you selected.

While viewing this color bar split, you can make adjustments to the A/D Phase control attenuator to "lock in" the phase (hue) of the framebuffers to that of the incoming bars. Simply use a small screwdriver. You really *should* use a vectorscope to ensure that what you've done is correct, but if it looks correct on screen and holds up during digital transitions, it will work in a pinch.

Note that when the Toaster 4000 hardware is installed in an Amiga 4000, the A/D Phase control faces upward. You'll need to remove any other expansion cards in the Amiga while making this adjustment. Or, you can take a small screwdriver and attempt to put a 90-degree bend in the control so that you can carefully insert it between expansion cards and try to adjust the cap with everything in place. Me? I'm for the first option. On the A3000 the Toaster card is the topmost card, so this is not a concern. On the A2000 the Toaster is the rightmost card and again there is not a problem with accessing the A/D Phase control.

OK, so what if all this isn't enough? What if AutoHue sets up your machine so that the luminance values drop significantly when you capture a frame or display a framestore? What if there's some other problem? How can you tweak the buffers to perfection?

Since System 3.0, if you have a Video Toaster 4000 board, you can access a special screen called Hardware Setup. (Note: This works on all systems running System 3.0 provided you have the Toaster 4000 card as well.) This calibration is for professionals only—people who have (or have access to) a waveform and vectorscope. I must stress this point: *you can really foul up your Toaster by fooling around in here.* It's not worth the fear and uncertainty of that "What did I just do to my Toaster?" feeling in the pit of your stomach. It's not worth the bench fee that NewTek Tech Support must charge if you make a crucial error. It's not worth the wait you must endure while your machine goes off to repair and your video business

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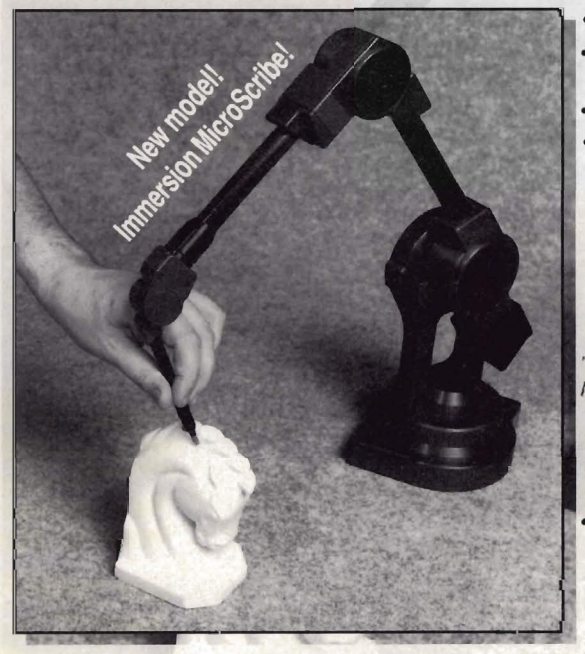

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goes on hold. Be careful. Got it? OK, we're all warned, we're all adults. End of lecture.

You'll need the standard test setup: color bars from a known independent source (i.e., good bars, not that 27-year-old bargain buy you found at a flea market last summer) connected to Toaster input 1, and the Toaster's output going into a waveform and vectorscope. Your Amiga's 23-pin RGB output must also be terminated (either running to a monitor or terminated with an RGB terminator).

From the Switcher, press these three keys together: right Alt + right Shift + F10. You'll see the hardware setup screen appear. The Switcher button at the top right of the screen returns you to the Switcher. (Flyer owners: Use the Esc key to return to the Switcher instead.) A group of seven buttons across the middle of the screen represents the major calibration functions. A large window in the top half of the screen contains instructions that appear for each of these selected functions. (Flyer owners: The instructions will not appear for you. Follow those printed here.) Below these is a slider with a numeric display beside it. The slider controls the adjustments. The T-bar adjusts an on-screen wipe between the input source and the digital source.

Also on this screen you'll find Auto Adjust (which engages AutoHue, the automatic method for determining the best values for the Toaster), Save (which saves the current settings for all seven functions) and Restore (which loads the current settings, in effect restoring the last-saved values and erasing any unsaved changes). Let's look at these adjustments.

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• Select Pedestal to adjust the pedestal level of the Toaster's digital output. The purpose of this option is to match the brightness of the Toaster's digitally sampled output with that of the analog video signal passing through the Toaster. As you adjust the slider, watch the waveform monitor. Make sure that the superimposed analog and digital pedestal levels match at 7.5 IRE.

• Select Gain to adjust the gain level of the Toaster's digital output. The purpose of this step is to match the contrast of the Toaster's digitally sampled output with that of the analog video passing through the Toaster. As you adjust the slider, watch the waveform monitor. Make sure that the superimposed analog and digital luminance levels match, peaking at 100 IRE.

• Select Lock Phase to affect how the Toaster's sync generator locks onto the incoming video. This control works in conjunction with the Toaster's hardware phase lock. As you adjust the slider, watch the vectorscope. Make sure that the superimposed phases match. You may need to select either the A or the B buttons below the Lock Phase button to obtain a closer match. (Note: Lock Phase adjustment must be performed prior to A/D Phase adjustment.)

• Select A/D Phase to adjust the Toaster's digital sampling clock phase in relation to the internal sync generator. The purpose of this process is to match the color phase of the Toaster's digitally sampled output with that of the analog video passing through the Toaster. As you adjust the slider, watch the vectorscope. Make sure that the superimposed analog and digital phases match. (Note: Lock Phase adjustment must be performed prior to A/D Phase adjustment.)

• Next select Red, Green, or Blue to adjust the hue of the Toaster's background matte generator, each in turn. When clicking on a color, it will be displayed on the top half of the main output. The purpose here is to match the colors at the top and bottom of the screen as closely as possible (ignoring brightness and contrast levels). The matte generator creates approximate colors. Set these as closely as possible for your system.

When you've made all these adjustments and your waveform/vectorscope display confirms that everything is accurate, select Save. Click on Switcher and return to the Toaster's main screen (Flyer owners: Press Esc. This will not affect any settings you changed and saved. It's just the only way to exit the screen.) Also note that "dummy" buttons from the Flyer editor screens may appear if you click near the top of any of the function buttons. These are a harmless visual annoyance. Ignore them and click lower down on the buttons.)

If you find these settings are not "perfect" for your system, you may wish to adjust the A/D Phase on the Video Toaster 4000 card. Since you've adjusted the software as closely as it can be, you'll be able to get a solid match on the digital hue.

Finally, you may wish to use a directory utility program and save a backup copy of the HS file that you've "tweaked to perfection." In case of unforeseen problems, it's always a good idea to have a backup.

VTU

EDITORIAL EVALUATION

Circle number on Reader Service Card
I found this article:

Very Useful	Useful	Not Useful
Circle 022	Circle 023	Circle 024

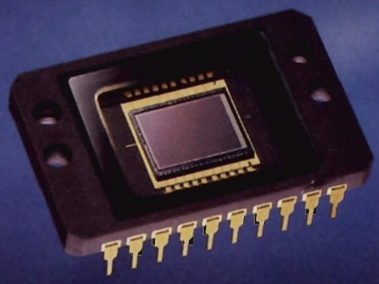

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Image-Processing Utilities

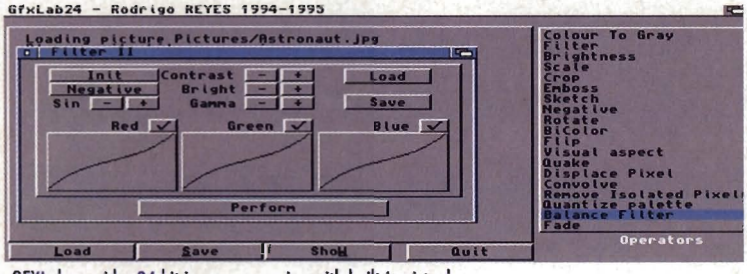
There's Plenty of Help for ADPro and IFX

by Geoffrey Williams

It seems like a good time to delve once again into the arena of image processing. If you deal at all with graphics, image processing is an important part of what you do. Here is what I have been able to find on the Internet and local bulletin board systems that might be of interest.

If you have the commercial program ImageFX 2.0 (and I certainly recommend it), you might want to get a copy of R. Michael Fierro's TextFX, an ARexx script for ImageFX. It uses the text effects described in the ImageFX 2.0 manual along with a few others. From a control panel you can choose the following effects to be applied to text: metal plate, brushed brass, candy, silver, liquid mercury, plastic, soft pillow, leather, hammered gold, and money. This makes it very easy to quickly create very impressive-looking text.

ImageFX users should also check out Gunnar Niclase's PCDIFX, which loads PhotoCD-format images into ImageFX. PCDIFX is faster and more reliable than the cumbersome HPCD2PPM utility, and much easier to use since the conversion process is only one step. And you get to use the ImageFX interface, which makes batch processing much easier. PCDIFX supports all of the standard PhotoCD resolutions, from 192x128 all the way up to 3072x2048 (a resolution that will require the heavy use of virtual memory for most users). As readers of this column know, I am quite fond of PhotoCD as an acquisition format for still graphics, and PCDIFX certainly makes using it much easier. Previously I was using the converter with Asim-CD, which also made loading CD-formatted images a cumbersome two-step process.



GFXLab provides 24-bit image processing with built-in virtual memory.

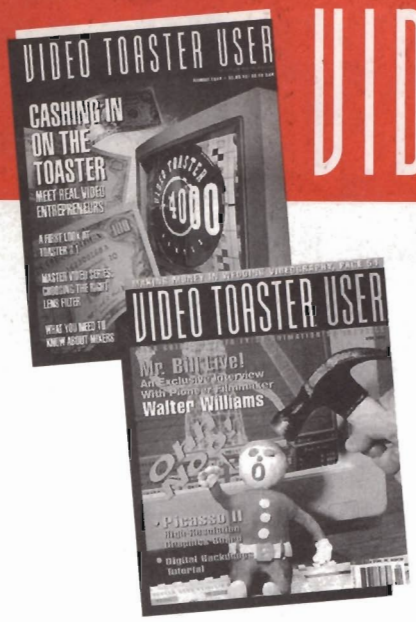
X-Specs users out there know it is possible to generate images in this format to create three-dimensional-looking images when viewed through the X-Specs LCD glasses. If you don't happen to have the LCD glasses, though, Torgier Holmes' Make3D is a collection of scripts that takes images in the X-Specs format and uses ImageFX to convert them into images viewable through red and blue glasses. Make3D handles both monochrome and color images, though the monochrome images will look better. It works on single images or in batch mode for animations.

Another ImageFX utility is HHsFastImageFXLoader by Helmut Hoffman. While primarily a demo that will only load images as grayscale, it does show you how fast this universal loader is. For a low shareware fee you can get the version that loads in color. This shareware version supports the loading of IFF-ILBM PPM (P6 color and P5 grayscale), QRT (also known as dump format, used by the PD raytracer POV-Ray), Targa (several variants for 24-bit, 8-bit, ColorMap; including RLE compression), PCX (several compressed formats for EGA1-4bit; VGA up to 8-bit and 24-bit), BMP (several uncompressed formats for 24-bit RGB and 8-bit or 1-bit Colormap), TIFF (uncompressed formats for 24-bit RGB, Colormap 1-8-bit and 8-bit gray), EGS7.x window iconification file format, DEEP (24-bit and 32-bit; compressed and uncompressed), RGB formats (RGB8 and RGBN compressed; RGB5 uncompressed), YUV (color 1:1:1, 2:1:1, 4:1:1 and grayscale), VLAB raw (color 1:1:1, 2:1:1, 4:1:1 and grayscale), HHsYUVSq sequence format (sequential or random access), and many Picture and Animation DataTypes.

HHsFastImageFXLoader will autodetect all file formats but datatypes. Load times range from two to as much as 15 times faster than the standard ImageFX loaders, depending upon the format you are loading. HHs also supports several formats that ImageFX does not. In addition, the ImageFX PCX loader has problems with loading VGA pictures from CD-ROMs under the OS3.1 CD-file system. This is a bug in the file system itself, but a workaround was written into this loader to eliminate the problem. If you use ImageFX often to load foreign file formats, you might want to check out HHs.

Mix and Threshold Made Easy

ADPro users should look at Carsten Orthbandt's CatPic. Rather than do what you might think from the title, it is actually a handy little utility for making sense out of ADPro's powerful convolve function. Understanding how to combine the Mix and Threshold parameters can be a bit difficult. CatPic creates a catalog of images that allows a specific operator the ability to set any number of steps for Threshold and Mix. It then produces a catalog of the images. After glancing at the resulting catalog, you will have a much better understanding of how the operators and settings work together to process your images.



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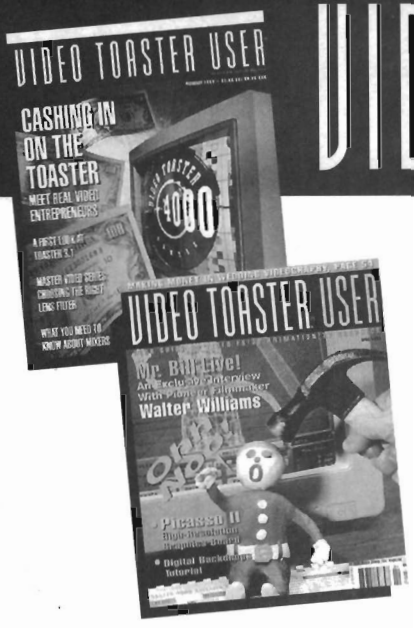

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Rodrigo Reyes' GFXLab is a fairly full-featured image-processing program that requires an AGA (Workbench 3.0) system to run. The documentation in the version I have is entirely in French, but the software is fairly simple to figure out, so this is not a big problem. GFXLab can load a variety of formats, including IFF24, IFF 2 to 8, HAM6, HAM8, JPEG, Targa and any picture format you have a datatype for. It can save in IFF24, IFF 2 to 8 bits, HAM6/8, GIF (specs GIF87a & GIF89a), JPEG, Targa and PCX. You can preview a picture in anything from two-color mode to HAM-8, with or without a fixed palette, and with a selection of 13 halftoning and error diffusion modes. You can also save these previews as separate files. There are five banks (buffers) that images can be loaded into.

Once images are loaded, you can apply a variety of operations to them. These include color to gray, mask filter (adjust the overall red, green and blue levels), brightness, scale (you can resize an image based on a percentage or using the width and height in pixels), crop, emboss, sketch (like line art), negative (on any of the three RGB components), rotate, bicolor (transform the image into a black and white halftone with nine halftone variations), flip (horizontal or vertical), visual aspect (modify the display and pixel ratios), quake (horizontally or vertically to add a jagged back-and-forth effect), displace pixel (setting the radius and the probability, which adds a fuzzy effect to an image), remove isolated pixels, fade (merges two images together with adjustable transparency), and whirl (similar to ADPro's twirl).

Some of the options allow you to save and load settings. Quantize Palette lets you create a reduced, but optimized, palette of a set number of colors, with the ability to load and save these palettes. The convolve operator lets you apply, create, load and save convolution matrices, with a library of 37 already included. With these you can do such things as sharpen, blur, make bumpy, weave, triangle, and many other interesting effects. The balance filter allows you to adjust the brightness, gamma, contrast and sinus of the red, green and blue elements of an image, with 11 saved settings to try. You can create new settings and save them as well.

GFXLab also includes virtual memory, which works even without an MMU in your computer. Overall, it has a lot of features that make it worth playing with.

Rüdiger Hanke's PaletteMerger might come in handy for multimedia applications in which you want to display one 256-color picture after another using full-page transitions. The best way to do this is to get both images to share a similar palette so there is no artifacting during the transition. If you make or convert images using just the first 128 colors, you can use PaletteMerger to merge the palettes of sequential images so they

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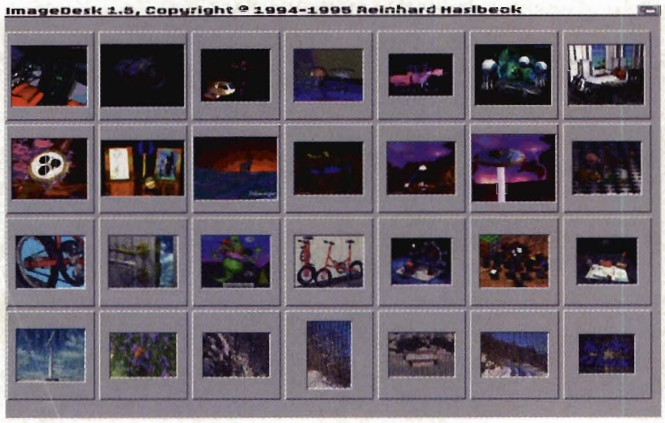
all share a part of the same palette, for seamless transitions. PaletteMerger will work with any size palette up to 256 colors, as long as both images have the same size palette.

Catalog Your Pictures

One useful function of image processing is to make miniature versions for use in cataloging images. If you're looking for everything from an actual cataloging program to scripts using an image processor to create proofsheet type pages, read on.

ImageDesk catalogs picture directories by generating small graphic icon versions of the pictures. This software can automatically load and catalog a wide variety of file formats, including IFF, GIF (87a, 89a), JPEG, PCX (1-bit up to 32-bit), BMP (4-, 8- and 24-bit, OS/2 and Windows formats, unpacked only), PCD (up to BASE size), PNM (P4, P5 and P6) and Targa.



Easily create a visual catalog of your images with ImageDesk.

Point ImageDesk to a specific directory and it will generate a visual catalog of all of the files in that directory. You have the option of displaying the small images as dithered or non-dithered. Though they may look a little better dithered, this is not the best option if you plan to use XPK to compress them later. (XPK is a compression format that we will cover at a later date.)

While it lacks search and sorting capabilities, ImageDesk does have a number of options. When selecting an icon you can either display the original picture within the program or specify a particular external display program for each file type. For example, JPEG images could be set to display on your CyBERgraphics board in full 24-bit, while other 256-color images will be displayed using a standard Amiga display. By the way, it's important to note that ImageDesk does require a minimum of Workbench 3.0 with the ability to display 8-bit screens. The unregistered version is also limited to 15 images per catalog file, although you can still easily create several smaller catalogs for larger directories.

Another useful function is that you

can click on an icon image and then choose to execute an ARexx script. ImageDesk will pass the name and filetype of the image to the script. This means that if your image-processing or paint program is ARexx-compatible (and almost all are), you can have that program running and then load the selected image. You can also mark several selections, so this feature could even be used as a simple way to batch-process just a few select files in a directory by writing a simple ARexx script. The ARexx port is bidirectional, so compatible external programs can also be used to control ImageDesk. There are several ARexx scripts included that show how to automatically catalog an entire CD-ROM of images, repetitively search directories, and even search through LHA archives for images to catalog.

Another cataloger is Visual from Christophe Vallee, and it also requires an AGA machine. Frankly, a catalog of 16-color images is pretty limited, since there is not really enough color space to do a good job unless you only display grayscale thumbnails. Visual uses an external image-processing program (included examples are for ImageFX) to create the thumbnails. You can set a specific viewer for each image, update directories, select certain items in a directory, or process an entire directory. While I generally like ImageDesk better, there is one great advantage to using a cataloger that utilizes an external converter to make thumbnails. When you reduce the size of an image, it will appear to be much darker and a lot of detail will be lost. I like to add an extra process to an image using a brightness filter that bumps it up a little, bringing out more detail in the miniature image. It's a simple matter to add this to an ARexx script.

For an even easier way to catalog, you might take a look at CatMake by Rodja Adolf. It is a script for ADPro that makes screens of images in miniaturized form. You can create a single image with up to 64 rows by 64 columns with individual image sizes ranging from 20 to 9,999 pixels in height and width. You can either scan an entire directory or use multiselect. The thumbnails can be organized alphabetically or by using listviews. The thumbnails can be stored in their proper aspect ratio or made to fit the space. There are also ARexx hooks to give CatMake even more flexibility. This is an exceptionally well-done and flexible script, and one of the best I have seen for doing this specific type of job.

If you do not want to hunt these utilities down, I've put them all on a disk you can have by sending $5 to IP2 Disk Offer, 1833 Verdugo Vista Drive, Glendale, CA 91208. You can reach me through the Internet at gwilliam@netcom.com.

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TAMING THE WAVE

LightWave Life Support

Painting and Image-Processing Products

by David Hopkins

Before we get the ball rolling this month, I want to explain to you my policy for how programs come to be covered in "Taming The Wave." As a columnist here at *VTU*, I receive a lot of software for review. Some of it makes it in "TTW," some doesn't. When I write my column, I usually consider what product or products have been the most useful to my work during the previous month. As a professional animator first, I don't have a lot of time to waste with programs that are not productive. In the same vein, I don't want you to waste your time or money on products that don't live up to their potential. These factors, combined with the fact that space is limited here, mean that my product reviews are either positive, or I don't write about the product.

This month we're going to take a look at a couple of the goodies that have been crossing my doorstep in recent months. As complete as LightWave is, there are always new add-on tools that'll make your work faster, easier and more rewarding. And despite rumors to the contrary, the Amiga software market seems to be alive and kicking, for the most part. Before we begin examining these programs, however, I must take a moment to mourn the passing of one of the great Amiga software developers: Inovatronics.

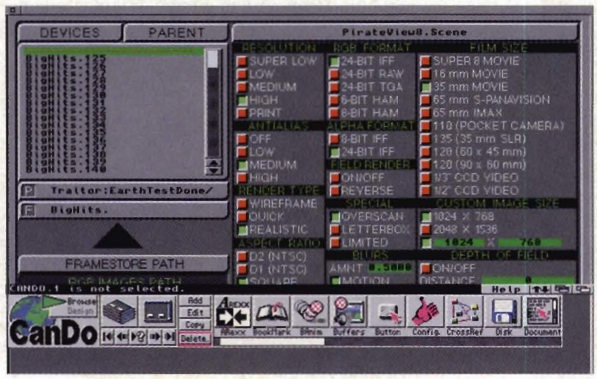

Figure 1

During the Commodore debacle that overwhelmed us recently, I explained to my friends and colleagues that I wasn't terribly concerned. The programs that I have are certainly enough to keep me competitive for some time to come. Programs including the following invaluables: LightWave 3D, Art Department Professional, DeluxePaint and CanDo. All but the last appear on most serious Amiga users' machines. CanDo, however, may be the most valuable of them all.

It is the Amiga's answer to the Macintosh's HyperCard. If you aren't familiar with the functionality of either piece of software, imagine being able to produce professional-level applications in a matter of hours (even minutes), even if you can't make heads or tails of other programming languages. The tools I've written for myself allow me to do everything from instantly renumber an image sequence to a complex LightWave render-farm manager, all with slick, clean interfaces. Figure 1 shows one of the interfaces of a render-farm package I developed entirely in CanDo, with the CanDo interface at the bottom.

I was a beta tester for the latest (and apparently final) release of CanDo, and I have to tell you, if you don't have this package in your library now, you should make every effort to find and purchase it. I'm sorry I couldn't have placed this recommendation prior to Inovatronics' demise, but don't let that leave you out in the cold on this excellent package!

Now that we've paid our tribute for the issue, let's move to some of the products of the Amiga saga survivors. The first one I want to pull out of the bag this time is InnoVision Technology's Alpha Paint. Alpha Paint has been covered extensively in this magazine, so I won't bore you with the details. Essentially, it is a full-palette paint program that allows you to paint directly on the Toaster output buffer—in real time. This side of Alpha Paint has been understated. Painting on the Toaster buffer in real time? Think about it!

Alpha Paint has lots of wonderful tools for embellishing your latest masterpiece. This program features one of the best neon effects I've ever seen (Figure 2). Add to that the very easy-to-use stencil options, the impressive multiple palettes, the magic wand tool (which fills a color or colors within a given range) and the amazing airbrush effects, and you've got yourself a truly impressive video paint package. It can form drop-dead gorgeous curved text from Postscript fonts, automatically generates black-and-white alpha channel images, and offers the ability to perform effects such as embossing, blurring, video-on-video and more—all with preview options and multiple undo/redo to allow for a wide variety of experimentation. If you can't tell, this program really impressed me.

So, what are the drawbacks? Unfortunately, the ones that are there are pretty large. First, Alpha Paint only allows you to work on images at NTSC resolution (752x480). That means this software is not the correct tool for working with film, in which your image size is much larger. For most Toaster users, this won't be a problem. Second, the Toaster Switcher must be shut down in order to run Alpha Paint, unless you have a large amount of fast RAM. This makes using Alpha Paint

continued on page 40

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for LightWave texture maps a bit cumbersome since you effectively can't have both running at once.

The third problem, however, may be the most limiting. If you try to draw a single-pixel horizontal line of a solid

Figure 2

color, you'll usually get a gradient. This, according to InnoVision Tech Support, is due to the fact that Alpha Paint by default anti-aliases everything you draw. Even if you are only drawing a black line for a bump map, you'll probably end up with shades of gray. InnoVision's tech support was unaware of a workaround, though at press time it was discovered that you can disable the program's anti-aliasing by shutting it off within the Modes menu. It was very disappointing to know that even though Alpha Paint could create all of these gorgeous effects, I would probably still have to result to old DeluxePaint to draw my single-pixel lines. If these limitations don't sound like a problem to you, I encourage you to buy Alpha Paint. You'll be glad you did.

And then there is ImageFX 2.1. To tell you the truth, I've been such a big fan of ADPro (thanks to the great ARexx interface) that I hadn't given ImageFX much thought. Well, I laid my hands on it right before press time, and let me tell you, I've changed my mind! For the uninitiated, ImageFX (and ADPro for that matter) is an image-processing package. Unlike ADPro, however, ImageFX allows you to actually do some real painting, limit your work to regions, and offers much more that you might expect from a normal paint program.

The first, and I think most important, new feature of ImageFX is that it is Toasterized. While it doesn't support "real-time" painting on the Toaster buffer, as Alpha Paint does, ImageFX provides prompt feedback by updating the full buffer after it completes an operation. This technique is similar to that used by LightWave. Blink, blink, blink, there's your 24-bit output. Very nice.

If you're currently an ADPro user, don't worry! You'll find that just about everything you're familiar with is here, too: embossing, antique, convolutions, balancing, ad nauseum. ImageFX even lets you see little thumbnails of what your image would look like if various effects were applied. Great feature!

Don't forget the lightning. With tremendous control over the size of the bolt, number of branches, amount of glow and more, you can make truly impressive lightning effects. Just drag out a line to establish the start and end points of the bolt and start changing values. That little preview lets you experiment as much as you like. Figure 3 shows an example of the lightning, as well as a wonderful blur confined to the shape of the woman.

I'm barely scratching the tip of the iceberg since I've been using this software for only a few days. But I've gotta tell you about the thing that will probably make you rush out and buy ImageFX 2.1 right now: point-and-click macros. That's right—press the (!) key and you're asked for a file name for saving the macro. From there, simply perform whatever actions you wish to have performed on a series of images. When you've finished, press the (@) key and your macro is saved. Now you can use the AutoFX program (which runs within ImageFX or externally) to select the images to process, load the

Figure 3

macro(s) you want performed, and the software does the rest. ImageFX will ask you for an output destination and a file extension. Then it will proceed to process untold thousands of frames (or just one or two) while you sneak a nap on the couch in the back of your office. All created by just pointing-and-clicking a single button.

If you're having a hard time determining my feelings on ImageFX, let me clarify. You need this program. Period. And now that ASDG/Elastic Reality is no longer supporting or enhancing ADPro, the fact that Nova Design has announced its intention to support the Amiga well into the future is very reassuring. The work Nova Design is doing is impressive, the company has a friendly demeanor (except when discussing ADPro), and it has direct Toaster support that doesn't limit you to NTSC resolutions. Hard to go wrong, especially for LightWave texture design and special effects.

So, the obvious question is: Do I buy Alpha Paint or ImageFX? As much as I like Alpha Paint's real-time, direct-on-the-output painting, neon, stencils, etc., for use with LightWave, I think I have to go with ImageFX. If I spent a great majority of my time doing titles and backgrounds for video, Alpha Paint would probably win simply because it seems geared toward that sort of thing. Those of you looking for a texture design and special effects program for LightWave will probably be happiest with ImageFX. Of course, if you're serious, you should get both.

By the way, I wrote the first half of this column prior to receiving ImageFX 2.1. You know the part about the most important programs to own? The guys at Nova Design bet me that I would like ImageFX better than ADPro. After more than four years of ADPro, I've switched to ImageFX 2.1. And it only took a few days.

VTU

David Hopkins is the founder of Mach Universe, an Orange county, CA.-based animation house. He and fellow animators David Wainstain & Patrick Perez are currently locked in a tiny room with five Toasters and 16 MIPS render engines cranking out more than 125 film-resolution shots for LightYear Productions' upcoming feature, Space Marines.

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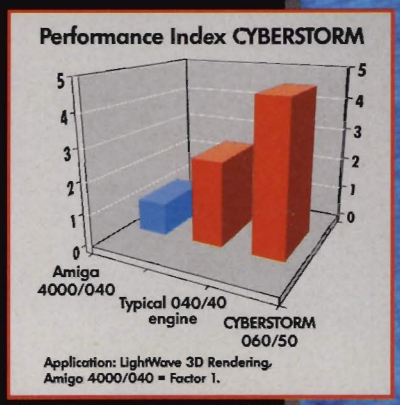

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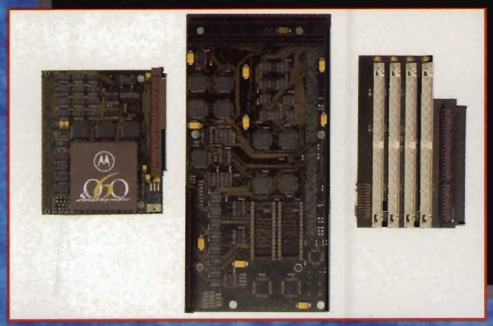

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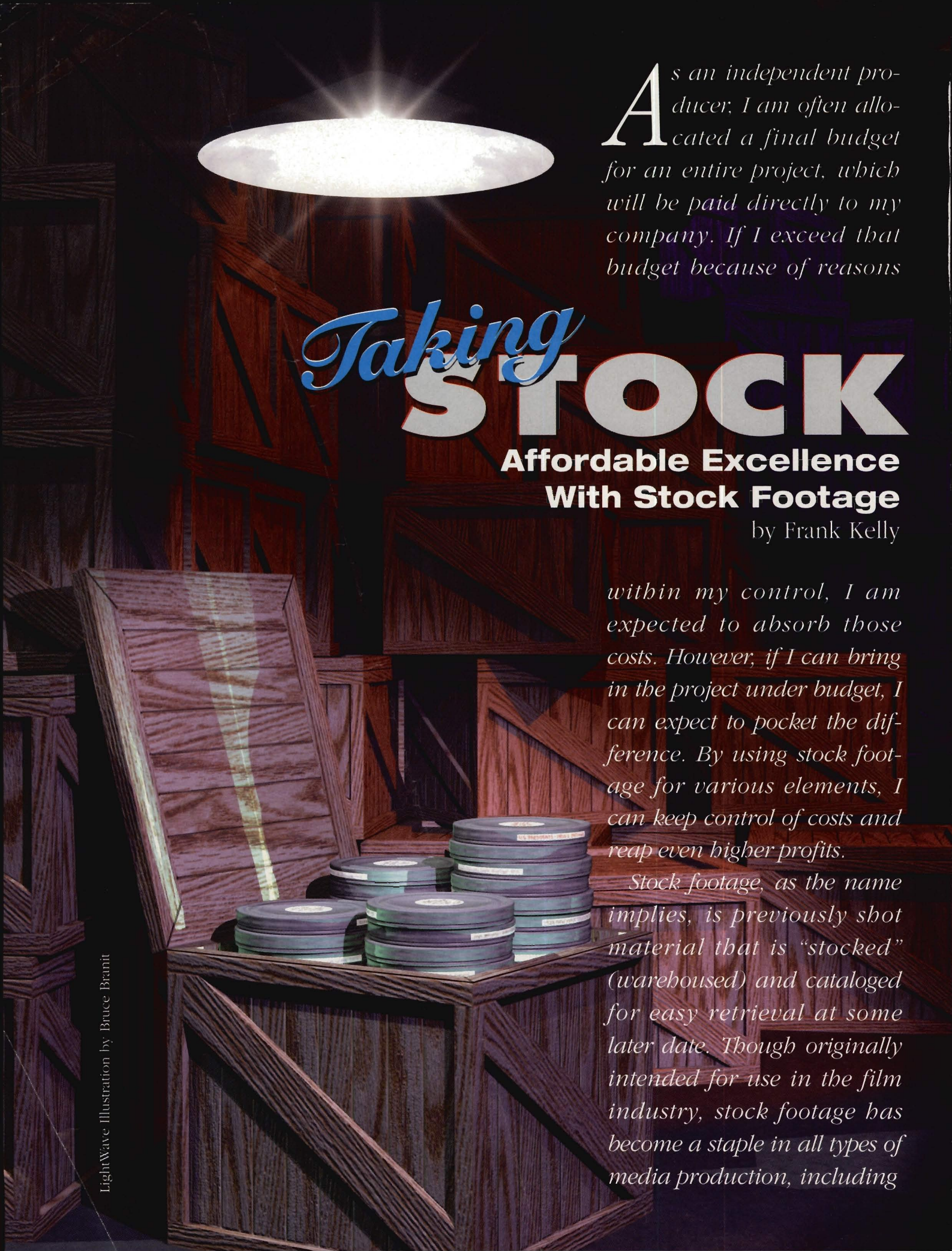
FOR INFORMATION CIRCLE 148

SCRIPTUM Digitale Gestaltung & Realisation GmbH ■ Frankfurt am Main



LightWave Illustration by Bruce Branit

Taking STOCK

Affordable Excellence With Stock Footage

by Frank Kelly

As an independent producer, I am often allocated a final budget for an entire project, which will be paid directly to my company. If I exceed that budget because of reasons within my control, I am expected to absorb those costs. However, if I can bring in the project under budget, I can expect to pocket the difference. By using stock footage for various elements, I can keep control of costs and reap even higher profits.

Stock footage, as the name implies, is previously shot material that is "stocked" (warehoused) and cataloged for easy retrieval at some later date. Though originally intended for use in the film industry, stock footage has become a staple in all types of media production, including

motion pictures, commercials, industrial productions and CD-ROM titles. With the growth of video production over the last 20 years, the availability of footage acquired on video has now become the most rapid growth area in stock libraries. Since the early '70s, archival footage of significant news events has originated on videotape and been carefully preserved. And there is a growing list of other footage categories, such as locations, people (including crowds of all types), nature, architecture and mechanical. Just about any subject you can imagine is covered in a stock library somewhere, on both film and video.

Why is Stock Footage So Desirable?

The answer is simple. In most cases, it costs much less to use existing footage. Since the era of silent movies, stock footage has been used to support sequences in which exotic locations or large crowds of people in period costume are required.

In fact, many motion picture companies made more money selling stock footage to other moviemakers than they did on the films for which these sequences were originally produced. The height of stock footage use was during the early 1950s, when many studios were turning out a new release on the average of one per week. Producers, story editors and scriptwriters were routinely given assignments that specified use of at least 30 percent stock footage in an effort to keep up with demanding release schedules and stay within budget. This probably explains the overabundance of period pictures from that era.

This "on-the-cheap" production style was also prevalent in television production. The low-budget TV series *The Time Tunnel,* for example, would produce several episodes in advance on a tight schedule that rarely allowed preview of the stock footage used in each show. Only a general description of the footage would be seen by the writers. Because there were times when the footage didn't exactly match the sequences or costumes described, last-minute reshoots using doubles for the actors had to be quickly edited in. *The Time Tunnel* is now in syndication and can be seen on some cable systems. If you look carefully you will see sequences in which tennis shoes or wristwatches appear on actors who are supposedly portraying people from before the turn of the century.

Continuity headaches aside, without the use of stock footage, many projects would never see the light of day simply because of cost issues. It doesn't take brilliance to figure out that it's cheaper to use existing footage than it is to shoot the same thing over again. Flying an entire crew

Figues 1 and 2

to Egypt to get an establishing shot of the pyramids that will only be seen for six seconds will likely cost many tens of thousands of dollars. A sequence shot by one of the world's best cinematographers using the highest-quality equipment is available for a small fraction of that amount, with no packing, passports or shots required. The savings can be applied to other components of the production or used for unforeseen contingencies.

Beyond the issue of saving money is the content of the

material itself. With historical footage, there is often no practical way to re-create a real-life event, though with enough money you can come very close. Movies such as *In the Line of Fire* and *Forrest Gump* took existing stock footage of real events and used computer technology to place today's actors into film sequences so convincing that they defy even the sharpest eye's detection (Figures 1 and 2).

Image ©1994 Paramount Pictures

In *Forrest Gump*, classic footage of JFK is composited with Tom Hanks on blue screen to yield the final result.

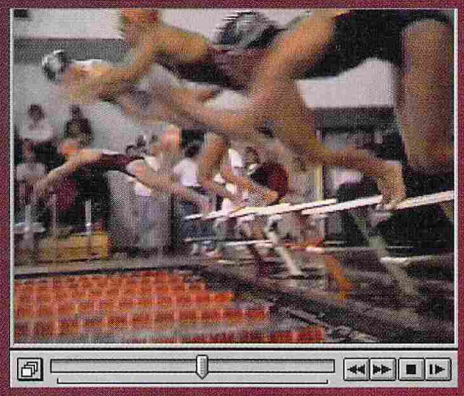
Though in some cases producers take great pains to hide the fact that they are using stock footage, others do just the opposite. In HBO's *Dream On*, sequences of '50s television shows and old training films are intercut as one-liners for comedic effect. No matter what its purpose, there's no doubt that stock footage can be a useful adjunct to many projects.

Where Do I Get It?

There are literally hundreds of sources for stock footage around the world. In the United States, the largest concentration of stock houses is in the Los Angeles area and New York City (see sidebar).

Each stock library has a variety of selected cuts to choose from. Some provide demos. The best libraries have research departments that can provide a listing of several hundred selections on a given subject based on criteria you provide. Much of the more generic footage is actually duplicated in many libraries, and it can pay to shop around for the best price and quality.

For one of my clients I was asked to secure footage of a building demolished using implosion. I contacted four different libraries and was assured by each that the footage it stocked was "exclusive." When the window dubs of the footage arrived for preview it turned out that each library had the same footage. Only one of the dubs showed sufficient fidelity for my use, and as it turned out, its price was also the lowest.



This stock image of divers could be used in a variety of productions.

Let the buyer beware is always a good rule, but with stock footage it's especially true. I'm not trying to imply that any particular stock house would intentionally misrepresent itself. Many act as clearing houses for independent producers who wholesale their stock to the library. It's obvious that there is no possible way for any library to verify that its copy of a particular clip is the only one in existence. My advice is to give your stock house as much latitude as possible when you ask it for a particular kind of clip. This will allow it to provide multiple selections in any given category, increasing your chances of getting the clip you need.

Because there are many different ways in which a given clip might be used (local or national broadcast, video for sale, theatrical release, etc.), many different rates can be charged. In the motion picture industry, the economies of scale make the purchase of a short stock clip for about $10,000 a bargain. On the other hand, a local independent commercial producer may pay only a tenth as much for the same footage.

Stock footage rates are usually based on single use and the total length of the clip. Fees for film transfers, video dubs and broadcast clearances can also add significantly to the final cost. Generally speaking, the stock footage business has sometimes priced itself out of the reach of local producers. However, that is rapidly changing. Much as the cost of licensing background music has been influenced by smaller independent producers entering the marketplace with "buy-out" packages, stock houses are now beginning to feel the pinch from sources outside their traditional competition. Up until just a few years ago, nearly all productions of a given size budget were produced exclusively on film. The affordability and quality of today's high-end video formats have begun to take their toll on the stock business.

Think about it. Since 1985, the number of video production companies with broadcast-quality equipment has grown more than tenfold. Each is a likely customer for stock footage. And each is a possible source for stock footage of a given nature. Where many stock libraries will

continue to succeed because of the variety and quality of their inventory, others will survive only by reducing their fees to become more competitive, and by embracing technologies that make tapping into their inventory more convenient for the end user.

ing before they can be used as a sequence. Though it may seem inconvenient to have to render the sequences before use, the savings are well worth it. The entire volume of clips retails for less than $100 and is a "buy-out," meaning buyers make no further payment for the clips' use.

would like to see a larger selection of high-quality animated backgrounds, plus other "stock" animated production elements, I highly recommend Digital Animation Corporation's various packages. They are currently available on your choice of videotape formats, but may soon

"Whether it's for a local commercial, an interactive CD-ROM title or a training video, you can greatly expand your capabilities and add to the financial bottom line by using stock footage in your productions."

The Changing Landscape

Several converging technologies will forever change the way we all think of video production: non-linear editing, low-cost mass storage, on-line services and electronic subscription. If you own a Flyer, Broadcaster Elite, VLAB Motion or Perception, you might be interested in a CD-ROM called Motion Clips. It contains sequenced frames of JPEG images that can be converted and played back as stock clips in your productions. Even though we have all become accustomed to CD-ROM titles with clip art images, Motion Clips is one of the very first to offer broadcast-quality motion sequences. Each is compressed using JPEG and must be converted to an IFF file before it can be used. The product ships bundled with Pegger, a JPEG decompression utility.

An example of what can be found on the People set of CDs from Four Palms.

Those Toaster users with the ability to do single-frame animation can import the image sequences into LightWave and render them to videotape, PAR or Flyer clips. Other platforms require similar conversion of the JPEG images to IFF and render-

Those who have subscribed to the Club Toaster monthly CD-ROM magazine have been treated to yet another form of stock footage that we tend to overlook: animated backgrounds. These backgrounds are provided in both the Flyer's VTASC file format and PAR animated sequences. Once transferred to your system, they play back without the need for sequencing or further conversion. Because Club Toaster is intended to offer a sampler of various Toaster tidbits, its animated background offerings, though of high quality, are few in number. If you

be offered as VTASC files on CD-ROM.

One of the most impressive offerings of CD-ROM video clips I have seen to date is Four Palms' Royalty-Free Digital Video. These CDs are designed to run on either Windows-equipped PCs or Macintosh computers. Though it's true that most current Flyer owners are Amiga-based, there are many emulation packages allowing full use of multimedia CD titles, and a new type of Flyer customer who will be using the Toaster in conjunction with a PC.

When I viewed the interface for the Four Palms set I was reminded of a well-thought-out home page on the Internet. You can select clips via keywords, category or view thumbnails. There is a complete description that includes all the pertinent information on the clip, and a full-color still. Each clip can be viewed (using the Indeo/Microsoft player provided) in either small-screen aspect or full size by double-clicking on the still image. Currently, there are two sets of five CDs in two categories. One is the People set,

with each disc containing a subset category of clips—Occupations, Professions, Recreation, Relationships or Sports. The other five-disc set is Transportation. Its five CD subsets are Aviation, Bridges, Highways, Marine and Rail. You can purchase each of the CDs individually for $99 or a five-CD set for $399.

The Four Palms collection is somewhat different with respect to the stock library concept in that the files on the CD-ROM are designed to be used in multimedia presentations rather than video productions. There are approximately 80 clips per CD, each approximately five seconds in length. Each can be

Though this type of clip was designed for multimedia applications, it can be a timesaver in numerous projects.

delivered on the tape format of your choice for a fee that varies depending on how many clips you select and the format. The footage from which these clips were taken originated as MII video and is of very high quality. Here again you should remember that the clips are a "buy-out," with no per-use fee, so they represent quite a bargain.

While using the Four Palms CDs I had the feeling that I was looking at the stock footage catalog of the future. Being able to click and view the footage prior to ordering the dub seems to make infinitely more sense than ordering window dubs from a large stock house. Regarding the Four Palms interface's similarity to the Internet home page, I wondered if perhaps the Internet might be the next delivery medium for stock clips. Right now there is an Internet-based service from Circle Productions Internet address: HTTP://WWW.Footage.Net.:2900 that allows users to search by keyword the library listings for more than 150 different stock footage libraries. Though it doesn't offer downloading of the actual footage, it presents a convenient way to search multiple libraries for any clips listed for a given subject. You can then contact particular stock libraries at a later time to arrange fees and distribution via videotape. Perhaps this is the first step in what will eventually be a true digital delivery medium. Using MPEG or VTASC, it would certainly seem to be the next logical step.

I suppose it is inevitable that with all the shared technology between computers and video, it won't be long before I am able to log on the Net, upload my stock footage of a local news event and see it on a network newscast. Or perhaps download a clip from a '50s TV show or training film for my own send-up of *Dream On*.

Final Thoughts

Historically speaking, the stock footage business has been around since practically the beginning of the motion picture industry. Up until just a few years ago it operated very much the same way it did 50 years earlier. Now, change is in the wind, and those of us involved in video production are the force behind that change. If you look at the impact of affordable "buy-out" music libraries on the business of music licensing, it's easy to see why some libraries are getting hurt while others survive. The ones that are successful are changing with the times—making their product more affordable while maintaining high enough quality to justify a higher pricetag. In the realm of stock footage, much the same thing is happening. The libraries with the best products and the resources to offer their customers the most convenient delivery method will weather the storm. There have been and will continue to be other "buy-out" sources that will offer a product that meets the needs of a growing market of producers with entry-level budgets. And this provides new opportunities for Toaster/Flyer owners. Whether it's for a local commercial, an interactive CD-ROM title or a training video, you can greatly expand your capabilities and add to the financial bottom line by using stock footage in your productions.

VTU

Stock Footage Sources

There are many resources for stock footage. Prices and usage fees vary greatly depending on the sources used. Below are a few listings to contact for more information.

Accadia
(716) 881-5215

Budget Films
(213) 660-0187

Cascom
(615) 242-8900

Digital Animation Corporation
(800) 572-0098

Dimension Technologies
(800) 430-7530

Fabulous Footage
(800) 361-3456

Film Bank
(818) 841-9176

Four Palms
(800) 747-2567

Hot Shots & Cool Cuts
(212) 799 9100

International Broadcast Network
(510) 866-1344

Prelinger Archives
(800) 243-2252

Stock Shots
(818) 760-3294

Timescape Image Library
(800) IMAGERY

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2:00 p.m. – 5:00 p.m.

with Toaster Educator David Hibsher

Learn the fundamentals of setting up and animating 3D scenes using:

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- surfacing techniques such as layering procedurals, texture mapping, surface morphing
- basic envelopes and motion graphs

Day Two

LightWave Modeler
9:30 a.m. – 12:30 p.m.

with NewTek Evangelist Bob Anderson

Learn all the tools you will need for a comprehensive understanding of the 3D Universe:

- the basic tools: everything you need to create interesting models in LightWave
- the power tools: advanced modeling tools, Booleans, numeric input lathe, metaform, etc.
- macros
- splines

LightWave Professional Techniques
2:00 p.m. – 5:00 p.m.

with Toaster Educator David Hibsher

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- video image compositing
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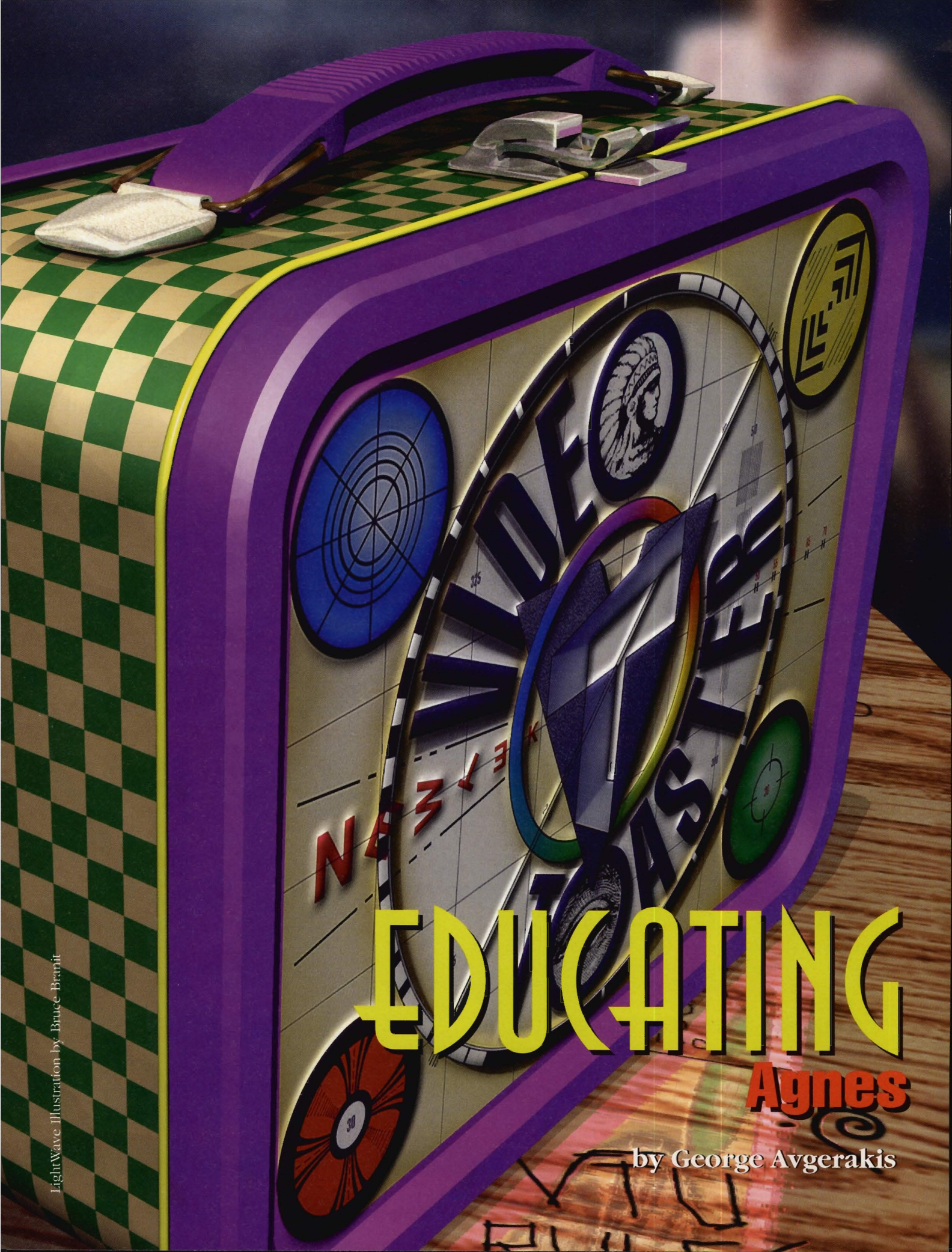


EDUCATING Agnes

by George Avgerakis

LightWave Illustration by Bruce Brandt

Quick. Quick!" he shouts into the microphone dangling in front of his lip like black, plastic drool. "A close-up, Camera Two. Of the jock on the right. No! The other right. Good! Football wipe to the VTR," he mutters to the technical director beside him and punctuates his command with a terse "Now." Are we at ESPN? ABC Sports? No, dude. It's a classroom. USC? NYU? Strike two, Casey. It's not even college. It's a high school in Yonkers, New York!

The director is 16-year-old Richard Weiner, who has "graduated" from the Toaster's special effects banks and is hungering for "real challenges" in non-linear editing. "Yeah, we use the Toaster for titles and stuff," says Weiner casually, not very impressed that an international magazine is interviewing him.

"But I want to get into non-linear editing with the Flyer. It takes too long to make things happen with linear gear, you know?"

We do. It isn't the first time we've heard 16-year-olds dust off technology that only three years ago was thought nothing short of revolutionary, and five years ago, just plain impossible. This is clearly the second wave of the Toaster Revolution, where pure technicality is pushed aside and the focus shifts to pure content. A second wave was made possible by the Toaster's ease of use and cost-effectiveness.

The Chabot College radio station provides music for Toaster-created title screens.

No longer does an operator need to pound a keyboard for 20 minutes in order to execute a DVE move. No longer is it necessary to read tons of documentation to learn to be a proficient special-effects operator. The second wave of the Toaster Revolution says: "Hey, ignore the technical aspects of the Toaster. Make your show!" This message has allowed the Toaster to penetrate into every area of education. Teachers merely point students to the machine and the rest happens with little or no lecture. Instant learning!

In Yonkers, the Toaster was installed and became an instant hit (first wave). Then it became second nature (second wave). Now students like Rich Weiner hunger for more. There's no stopping the energy building toward putting the power of broadcast-quality video production in every person's hands.

Chabot College's TV15 informs the community about educational programs.

University Use

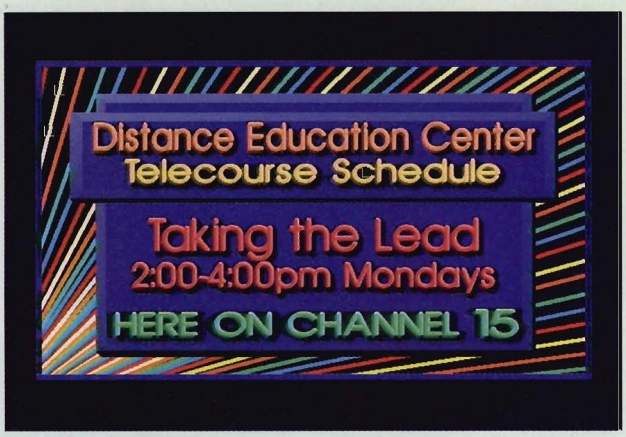
Across the country, in California, it's a college scene. Same scenario. Now it's a young woman learning the Toaster's sophisticated LightWave 3D program, so that she can complete an animation for her anthropology class. When finished, the animation will take viewers deeper into the dig, increasing their sense of wonder for ancient civilizations. Or so she explains to her Toaster instructor, a teaching assistant not much older than herself.

In 1990 the Video Toaster revolutionized the technology of television production by bringing sophisticated television production tools into the realm of an affordable desktop computer peripheral. Today, that revolution has entered a second phase, penetrating the realm of college and high school education.

"Before the Toaster," notes Radio and TV Assistant Shane Rodriguez of the University of La Verne in California, "we couldn't afford to teach real broadcast television skills. The equipment was too expensive." La Verne University is typical of many small institutions that have embraced the low-cost Video Toaster as a foundation for a comprehensive broadcasting curriculum. The small Southern California campus sports three edit rooms, two with Toasters. A few blocks away, the University maintains a third edit room for use on LVTV, a community cable station.

"We've got freshmen through seniors using these edit rooms," says

Rodriquez. "If they want 'on-air' experience, they can walk over to LVTV and produce for a real over-the-air audience. We offer two degrees, one in Broadcasting and one in Communications." Although we start them in the book [Zettle's "Television Production"] for the beginner's course, the students quickly advance to doing two five-minute videos: a biography and a documentary." All with the Video Toaster.



Chabot Colleg broadcasts educational information 24 hours a day on its local TV affiliate.

The frame used by FSU as its show opener.

A recent animation frame from FSU shows the school's new University Center.

After completing the elementary production course, students proceed to the program's second year, where they pair off into teams to do dramas. "The second year gives them a chance to practice their on-camera skills," says Rodriguez. "Many find that they'd prefer to be in front of the lens than behind." Those who remain behind the lens get to move up to a more advanced editing suite equipped with an Amilink edit controller.

In the advanced class, Broadcasting majors get to produce *The La Verne Report*, a regular news program, and at least two five-minute documentaries. Nearly all the students eventually show their work on the local cable TV station.

Cable Opportunities

The proliferation of cable stations in the 1970s and '80s has greatly expanded the opportunities for students to get on-the-air experience. Often, a college will serve as the head end of a cable station, with thousands of homes receiving the signal. Such is the case at Chabot College in Hayward, Calif. The school has its own cable station via TCI CableVision and broadcasts to 100,000 homes in the San Francisco East Bay area. The Toaster is used to educate college students and to supply title screens for the automated TV channel, which provides activity notices and classroom schedules around the clock. The college radio station supplies the music for the channel while the Toasterphiles provide the screens.

Florida State University also uses the Toaster. There, it is employed for athletic events, documentaries and high-end graphics. The university even has a complete production company in-house. Seminole Productions serves the university, Florida government agencies and non-profit institutions. "After taking classes in appreciation, design and production, students are given the opportunity to apply what they've learned in a real, professional setting," says video department head Bob Lavine. "Seminole Productions is a virtual in-house internship. Working with real-life clients and situations, students produce an award-winning weekly sports show that is aired throughout Florida and the Southeastern United States."

FSU provides several award winning sports shows, including a weekly coach's program seen regionally.

Apparently, the output of Seminole Productions is top flight. The Academy of Motion Picture Arts and Sciences (yes, the folks that award the Oscars) gave a national third place "Best Documentary" award to FSU for *The Pat Kennedy Show*, a weekly sports show airing statewide on the Florida Sunshine Network. Another weekly Seminole series, *Seminole Uprising*, garnered the Florida Sportscaster's Association's "Best Sports Program" award. Both shows use the Toaster and LightWave extensively. Because Seminole Productions reaches off campus for assignments, it offers a demanding base of clients to challenge students' skills.

This LightWave animation shows various team logos from FSU's conference as the second hand passes each clock number.

Variety is a vital component to any curriculum that desires to propel its students into a professional environ-

ment upon graduation. Judging from the growth of Seminole's annual contracts, the merger of student horsepower and professional demands seems to work. It also allows the university to give back to the community by assisting non-profit organizations that otherwise could not afford video production. "We know of no other production program in the nation which provides its students with this kind of opportunity for career preparation," adds Lavine.

The United Nations International School's media lab logo was created in LightWave and rendered to a PAR card.

Participation in Seminole Productions activities not only supplies professional experience, but also fulfills a requirement of the university's media production major track curriculum, thereby advancing a student's progress toward a degree in communications.

UNIS student David Miller working on a Toaster project.

Diverse Applications

Many criticize colleges for being slow to follow TV stations in discovering new technology and offering it to their students, but the reverse seems to be the case in upstate New York. Eric Geppner, chief engineer at WTOP-TV 10 in Oswego, N.Y., reports that while his station has been using the Video Toaster since 1993, the communications department at the State University of New York (SUNY) has been using the Toaster since its 1.0 introduction in 1990!

At another education-based facility in Oklahoma City, Susan Kehoe reports, "Here at KOCU Television, we use three Toasters in our setup. One is used in our control room, connected to a Grass Valley 110 switcher, one in our A/B-roll edit bay with an Amilink controller, and one in a student, cuts-only edit bay." By graduating from cuts-only upward through each edit bay, students and interns can learn at their own pace as their skills improve.

When Eric Strauss took over the volunteer position of general manager at Tulane University's Student Television station in New Orleans, La., there was already a Toaster 1.0 in service. Strauss decided to upgrade the station to three Toasters with the 3.1 upgrade. "We're getting 4.0 this year and we're also investigating the Flyer. Money is always a problem here, but the Toaster is way cheap and allows us to save money for better cameras and decks."

To date, Tulane has not recognized broadcasting arts as a viable academic course of study. "We don't have a broadcasting course here," says Strauss. "We're considered an extracurricular activity, but some students put in upward of six hours a day here." The station broadcasts 24 hours a day to 6,000-plus students, and sends three hours of live programming a day to local Cox cable, reaching an additional 90,000 homes.

"I'm majoring in economics," admits Strauss, "but a lot of students are like me and want to diversify. We want a broadcasting course here and we are pressuring the administration to start one."

With six hours a day, real professors and Toasters in every edit room, it's easy to see it wouldn't be long before Strauss and his pals had video doctorates! But colleges and universities aren't the only educational institutions benefiting from the Toaster revolution. Even high schools can afford to introduce professional television production to their classrooms.

Teenage Teaching

The United Nations International School in New York City is another stunning example of the Toaster in the classroom. Here, children of U.N. employees and staff, originating from a vast range of economic and cultural backgrounds, from more than 100 countries, join forces in producing documentaries, sports shows, animation art and dramas. "We have a Toaster 4000, an Amiga 3000 and an Amiga 2000 with a Toaster system," says Scott Lang, UNIS Media Lab Director. "The Toasters are mainly used by students to execute special effects and for character generation, but once in awhile, we get a kid who excels in 3D animation and modeling with LightWave."

High school students also use the Toaster to create impressive graphics.

One student became so good at modeling objects in LightWave that he licensed several complex objects to a national 3D object brokerage company before returning to his native Australia, where he hopes to continue his professional efforts via the Internet and World Wide Web. Another student, David Miller, at the age of 15 landed an internship at a large New York video production company.

"I remember when the Toaster was first installed," recalls Miller. "I was in the eighth grade and no one knew how to operate it. It wasn't like a regular class; you had to pick up the

continued on page 77

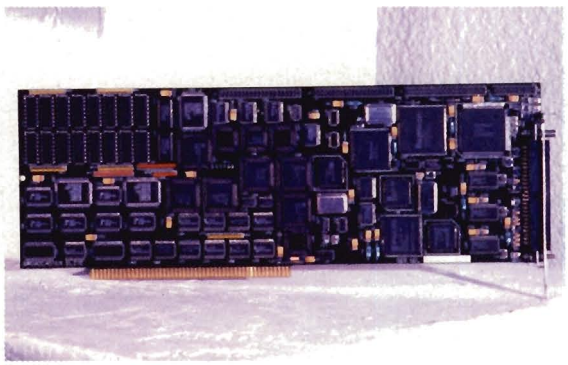
Broadcaster Elite

Video Editing Magic

by R. Shamms Mortier

Many of us remember a former Amiga hardware company called Digital Micronics Inc., which released the Digital Broadcaster 32 card. Though Digital Micronics is now defunct, a new and innovative company called Applied Magic Inc. is still supporting the Broadcaster 32. The newest version of the software is compatible with the old card. Applied Magic also provides an upgrade path to the Broadcaster Elite (BE), its present high-end video editing and effects card. The current 2.0 release of the software is a paid upgrade, costing $299.95 for BE owners who have kept pace with the current revision of the program.

In early June I visited the studios of Advantage Video in Burlington, Vt., to get a firsthand walk through Applied Magic's new BE system and software. Advantage Video uses two Amiga 4000s configured in Toaster Oven towers and video shot in Y/C component format as part of its BE-based editing facilities. The first tower has a Kitchen Sync timebase corrector for the Toaster, a Y/C Plus card, a Video Toaster 4000 with 3.1 software, a Fast Lane Z3 SCSI II Controller Card, a Hydra card ethernet device and a For-A FA300 timebase-corrected Toaster output. The second tower contains a BE, a Fast Lane Z3, three 2GB Seagate Barracuda hard drives, two 1GB Toshiba hard drives, a DAT backup drive, a SunRize Industries AD516 audio card with Studio 16 2.08 and 3.1 software versions, and a Hydra card ethernet device.



Applied Magic's non-linear editor

Advantage has obtained faster HD transfer rates (and faster is better when operating a non-linear editing system) through the combination of the Fast Lane and Seagate Barracuda hard drives. The fastest Barracuda drive is the 2GB model number ST32550N. The transfer rate has been 6.5MB per second on a mostly empty drive. This rate falls off to about 5MB per second as the drive fills up. Advantage Video has also installed a RAID device that increases transfer rates to above 8MB per second by linking two identical 2GB Seagates so they appear as a single 4GB drive.

Increased transfer rates mean higher-quality video. Because the BE operates within the Amiga operating system, the 9GB Barracuda is incompatible and should not be used at this time. Applied Magic recommends that you use the lowest acceptable level of compression when producing video because of the issues involved in transferring massive amounts of data across the SCSI bus. Lower-quality levels use less data, and therefore transfer more smoothly. Within a particular level of quality, there can be variations in the amount of compression in each scene, depending on how "busy" the scene is. This is a consequence of the Motion JPEG compression scheme that the Elite uses. The combination of the Fast Lane controller and Barracuda drives avoids stuttering or looping in all but the most difficult scenes.

Power Producer

The BE software package is called Producer. It contains multiple modules, including a logging mode digital control panel that allows you to set multiple inpoints and outpoints for use in your EDL (Edit Decision List). A timeline module provides a graphical representation of the video and audio segments, and you can apply "tags" (edit points) to the various segments for editing identification using the tag selector module. A Record module provides an interface that controls video input, time code setup, video setup, audio setup and recorder control. With the 2.0 release, the Record module is used to record video segments normally, with audio, in stop-motion or in time-lapse.

To guide you in the process, Applied Magic includes a useful but sparse manual, with the promise that a more detailed guide will accompany the release of the next version of the software. The Producer software appears to integrate well with the Amiga OS, and the video can be batch-processed by using Art Department Professional and/or ImageFX 2.0.

Comparison With the NewTek Flyer

I asked Steve Beattie, the creative director of Advantage Video, how the BE card compared to the Flyer (which he had seen in operation only twice). He said he had not been very impressed by the video quality of the Flyer when compared to the BE. My own reaction to the

continued on page 54

Totally Toaster-IZED

ImageFX 2.0

"When Your Image Is On The Line"

ImageFX is the only image processing software package you will ever need for your Amiga...Period. This phenomenal program comes with a complete array of professional 24-bit paint tools and unsurpassed special effects. When you're up against a deadline, you don't have time to second guess. ImageFX gives you total control of the creative process with the fastest and easiest to use interface on the market.

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ImageFX 2.0 sets a new standard of quality for graphics manipulation on the Amiga. When your image is on the line, don't settle for less. Step up to the best. Step up to ImageFX 2.0.

For a complete list of features in ImageFX 2.0 call the Nova Design support line at (804) 282-6528.

NOVA DESIGN, INC.

1910 Byrd Avenue, Suite 214 • Richmond, VA 23060
Customer Support: (804) 282-6528 • Business Line: (804) 282-5868 • Fax: (804) 282-3768

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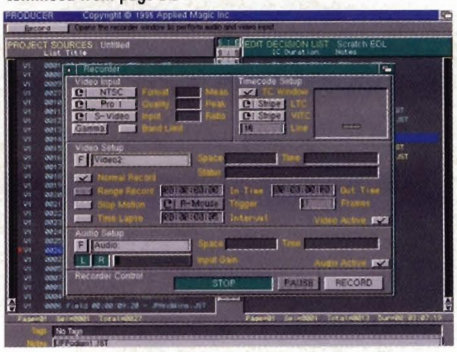

Figure 1: The Broadcaster Elite's software, "Producer," offers many options with an intuitive interface.

BE's rendered results bordered on astonishment. It was impossible to distinguish, even at high compression rates, between the original footage and the rendered frames being spun from the hard drive. The BE processes the video in Betacam component, no matter what the original feed configuration is (Steve uses mostly S-VHS as his play decks), while the Flyer processes digital composite video. In Steve's opinion, the Flyer software was also not as mature as the Producer software.

Other exclusive features the BE boasts include component In/Out, S-VHS In/Out, D1 quality, timeline-based EDLs, standard JPEG compression, the highest data transfer rates (with an optimum configuration, they can reach 8MB per second, compared to the Flyer's advertised 3.7 MB), SMPTE timecode, PAL and NTSC, and a 32-bit Zorro III bus.

Figure 2: This Producer interface shows the EDL Timeline Editor and the Wipes Menu panel.

Audio

The BE currently relies on SunRize's AD516 card to provide audio throughput. There are some constraints placed on the system since the AD516 is a Zorro II card (16-bit). The BE is a 32-bit card and processes information more efficiently. The 16-bit audio card hogs the bus and bogs down the video transfers, and can cause looping if multiple stereo tracks are used when playing back the video. Advantage Video's workaround for this problem involves mixing down the audio to one stereo track for playback with video, something Studio 16 excels at anyway. You can mix as many tracks of audio as you desire with the Studio 16 software, as long as you are only playing one stereo track with video in the Producer module. Applied Magic is planning to release its own 32-bit audio card, which will eliminate the audio problems associated with the Zorro II limitations altogether. It should be shipping by the time you read this review.

The BE is a "Motion JPEG" card. MPEG compresses motion differences from frame to frame. Motion JPEG compresses the entire frame and changes its compression level based on the complexity of the frame.

A Step-by-Step How-To Guide

The BE interface has a very intuitive feel. In general, here's how one walks the BE through the video process from start to finish. After the video is acquired to the hard drive, it is logged and moved to the EDL module. Using the timeline, adjustments are made to the video on the EDL to create desired transitions and to determine the final video and audio sequencing. Transitions are rendered and audio is adjusted (Studio 16 is a great tool for this). After rendering your transitions, adjust your audio in Studio 16 by exporting the audio sequence from Producer and creating a CUE list in Shell that can be loaded into Studio 16. Then return the mixed-down audio to Producer. The result is played back from the hard drive in full NTSC broadcast resolution. The learning curve is very gentle as long as you have some experience with how video and audio are edited. The BE card processes all video in Betacam component, and maintains the highest-quality throughout. The Gamma Tables module allows you to adjust the video's characteristics to create special color and image effects, either in recording or playback, as well as color correction.

The PAR Card vs. the BE

In my experience, the PAR card has problems with data transfer rates because it uses an IDE hard drive interface. This can sometimes interfere with image quality. The main advantage of the PAR card is the direct processing of animation frames into playback files. It takes one additional step to process single frames to "JST" files for playback on the Broadcaster. ADPro can be used for batch image processing, and many ADPro scripts are included with the Producer software for processing external transitions, creating picture in picture, and translating JST files to 24-bit IFF files. All the processing that can be done through ADPro or ImageFX within the BE environment is possible because the Producer integrates with the Amiga OS. As a note of comparison, the Flyer does not work with Amiga OS at this time, so processing files created for the Flyer

Figure 3: In the Broadcaster Elite, a complete overview of the edits for video, audio and effects appears ready for manipulation before the final writeout.

currently takes special third-party software. The slow motion, reverse and fit-to-length are effects processed in a custom tool module called JSTool provided with the Broadcaster software. The JSTool has an intuitive interface that provides rapid processing of JST files. I witnessed how this tool works at Advantage Video. A zoom-in was changed to a zoom-out with the reverse feature, and the output was flawless!

JSTREAM is the convention that Applied Magic has used to describe a segment containing motion JPEG images. It is usually abbreviated as "JST." JST Integration is accomplished with ADPro or ImageFX. ImageFX provides a JSTREAM loader/saver file in its most recent upgrade. The Applied Magic folks have also written

original ARexx scripts that use ADPro to process transitions and effects.

Conclusions

The BE is compatible with both the A4000 and the A3000. The A4000 version needs a Revision 11 Super-Buster Chip, 12MB of RAM (minimum), the BE card, and requisite fast hard drives, controllers, monitors and the AD516 audio card. The A3000 version needs Workbench 3.1, a BE card, 12MB of RAM (minimum), the AD516, fast hard drives and RGB/video monitors. A Producer demo disk is readily available.

Applied Magic has a Tech Support BBS that is not open to the general public, but provides fast technical support information and a means for downloading current revisions of the software, which is upgraded almost weekly. Major upgrades have, in the past, been paid upgrades, but incremental upgrades have also been available on the BBS. The full release version of Producer 2.0 will include many new features, such as full ARexx support in the record module and an enhanced CG module for titling.

Though the Toaster is not required as part of the BE setup, I was impressed at how seamlessly the BE integrated with the Toaster to form a professional editing environment. In the future, the Producer software will include character generation capabilities, soft edge wipes, and the ability to stall a transition. It will also include better audio integration with the new 32-bit audio card and increased rendering speeds for all transitions and CG overlays. Right now, even with Applied Magic's "Home 2" (lowest) quality level, the compression artifacting is nearly transparent, and the quality is nearly indistinguishable from the original. Another temporary workaround to handle the audio issue is to take advantage of the full time-code read-and-write capabilities of the BE and output the video to Betacam with time code striping. Then insert the audio using your SunRize card as the playback tool. This avoids the problems related to running both the Broadcaster and the AD516 on the same bus.

All in all, my introduction to the extremely high-end quality of the Broadcaster Elite system left me impressed and eager for yet another exquisite and professional video tool. VTU

Companies mentioned:

Applied Magic Inc.
(Broadcaster Elite—system starts at $5,995)
1240 Activity Drive, Suite D
Vista, CA 92083
(800) 619-ELITE
Fax (619) 598-3805
World Wide Web page:
FTP://ftp.cts.com/pub/dan/index.html
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Advantage Video
P.O. Box 5298
Burlington, VA 05402
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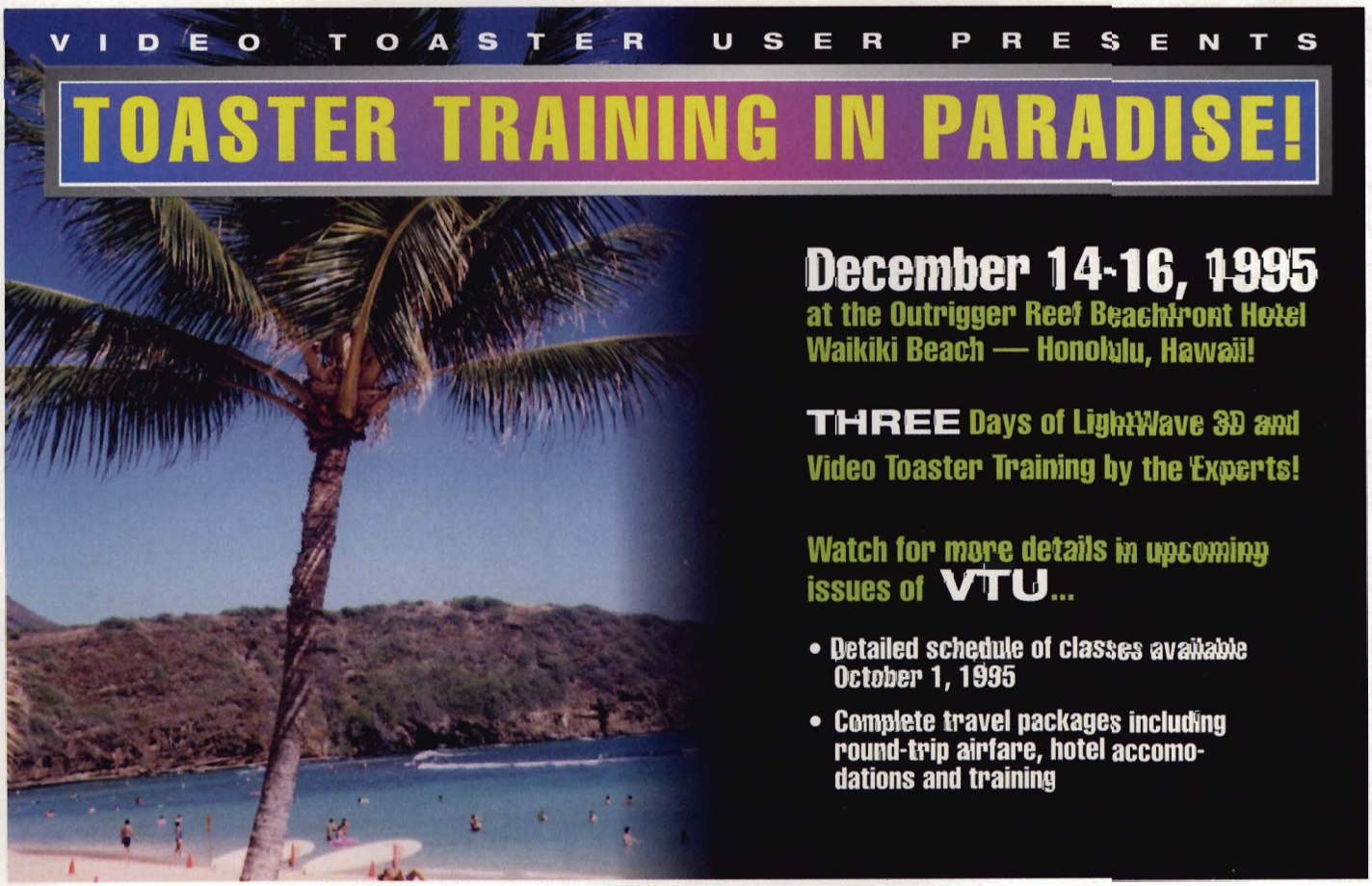
Circle 037	Circle 038	Circle 039



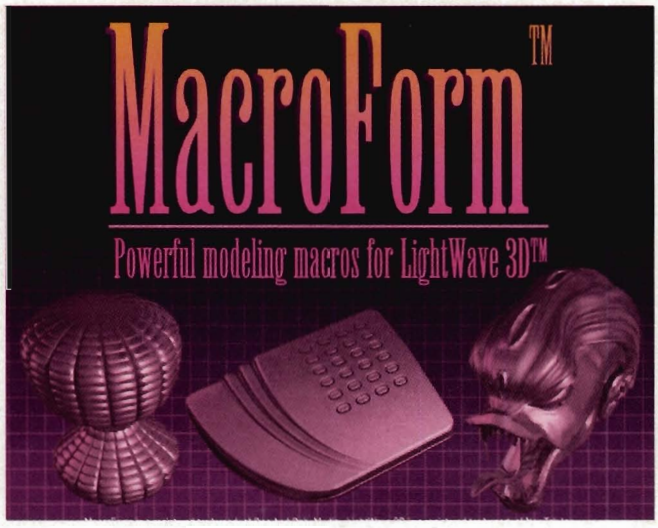
MacroForm

Powerful New Modeling Tools Make LightWave Fly

by Dan Ablan

I guess I've tried just about every piece of software ever released for the Video Toaster and LightWave in the past four years. In that time, I've seen quite a few excellent programs and some not so excellent. When I received the beta copy of One and Only Media's MacroForm, it was obvious that this third-party LightWave add-on was far from ordinary.

Before I tell you about what the program can do, I have to comment on the manual. The full-size binder with 8x10 sheets inside was a welcome change from the standard paperback-style manuals supplied with most software. But more so, the information in the manual is concise and at a user's level. Though it may sound harsh, just because people can write software does not mean they can write a manual. And, as many of you know, that's been the case for several products you've seen come and go over the last few years.



Installation was a bit tricky, as my copy of the program was a beta release missing certain libraries. Lyle Milton, president of OAO Media, was great in assisting me through the process. At first glance, I thought this software simply added new macros to LightWave. It actually is much, much more than that—it's an entirely new way of modeling. The product was developed through some highly demanding modeling projects at AT&T Bell Laboratories. This company was creating models with curvatures on top of curves, and unlike models required for television shows, these had many compound elements. The result is MacroForm for LightWave.

MacroForm streamlines the modeling process. It's easy to think that this program is just a set of macros for LightWave. It is not. Using the macros, you can create amazing models of virtually anything you are trying to build. For example, using the RailToolz portion of MacroForm, AutoCAD files are easily converted to real 3D objects. It's always been difficult to convert CAD files to decent LightWave objects, due to polygon limitations, file type problems, etc. With MacroForm, working from even a blueprint image, you can generate an accurate model. By making a spline curve around the areas of the image and running MacroForm, you can extend the walls to the proper elevation. In a matter of minutes, based on a few simple curves, you can build a superhighway for an aerial landscape view. The RailToolz environment is a collection of 12 tools that allow you to model with the smooth flowing nature of LightWave's Modeler curves. These features provide LightWave users with unprecedented modeling power. Although they are programmed in ARexx, the RailToolz are fully featured and highly flexible. They are actually called tools rather than macros because they allow you to use curves as bending, extruding, deforming, measuring, molding, polygon-creating, curve-rebuilding, routing, scaling, slicing, stretching and twisting tools.

Generally, any axis selections are made based on view and axis settings on the RailToolz requester. Using this setup allows you to think more naturally about your axis choice. Currently, Modeler does not provide total axis control. This may not always produce the desired effect because, in some functions, each axis has two possible perpendicular axes it can affect. With RailToolz, you must first choose your view and then choose horizontal or vertical. This form of axis selection is not only more accurate, it's more natural. Pretty cool stuff.

The tools included with the first release of MacroForm are well-thought-out, and cover just about any type of spline curve modeling. The RailBend tool bends your object along a 2D or 3D curve. In Normal mode RailBend is control-curve-compatible. In Clone mode, RailBend automatically detects multiple curves in the background layer, and copies and bends your data to each curve. The RailForm tool deforms your data with a closed curve and is control-curve-compatible—perfect for making organic modification to your models. RailLength returns the length of your curve and allows you to change that length based on absolute values. This feature is great for maintaining the length of your object for RailBend and other operations.

RailMold contours or molds your data based on curve profiles, and is control-curve-compatible. It's an excellent

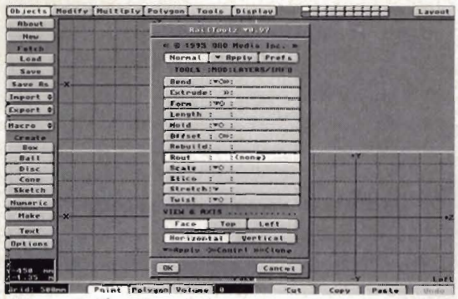


Figure 1: The MacroForm requester integrates into LightWave's Modeler.

tool for reshaping hard-to-model areas. In many cases you can use RailMold instead of spline patches to build organic models. I experimented with this tool to build an organic-looking space alien, a task traditionally done using spline patches. Though there wasn't enough time to finish the creature, so far, it looks great and I can see that this is a fantastic way of modeling.

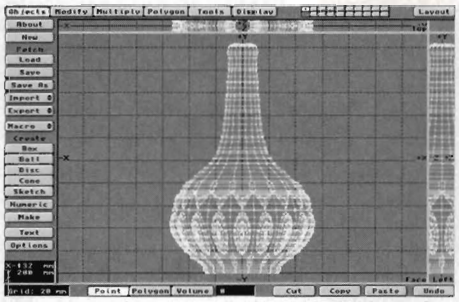


Figure 2: An object created in just a few minutes with a MacroForm tutorial.

RailOffset creates polygons from curves—a very nice feature. All you need to do is specify a desired width and end type (such as Round) and a polygon will form along the length of your curve! RailOffset automatically detects multiple curves and creates a polygon for each curve. This tool uses a control curve to vary the width of your polygon along the length of your form curve(s). If you specify a depth, it will also create a solid shape from your polygon(s). RailOffset is perfect for creating floor plans or 3D objects from AutoCAD files.

RailRout routs your polygon based on the curve profile in the chosen view. You can use this tool instead of repeatedly using the bevel tool; just sketch your curve and RailRout will do the sequential beveling for you. RailRout also allows you to Snapshot, Save and Load the curve profiles as router files for easy retrieval and use. In most cases, you can utilize this tool in place of lathing. RailScale squeezes and expands your data based on curve profiles and is control-curve-compatible. It can act as a powerful and controllable tapering tool. RailSlice squeezes and expands your data based on curve profiles, and is control-curve-compatible. You can use this tool as a precursor to any deforming operation, and it also allows you to use Boolean operations. RailStretch extends your data with a curve, making it perfect for fitting data to the hard-to-reach areas of your models. RailTwist twists your data based on curve profiles and is control-curve-compatible. Now you can twist your models with maximum control!

RebuildRail re-creates your curve with the desired number of points. This tool can be used as a precursor to rail tool operations to ensure proper curve construction. SmartRail automatically aligns and extrudes your polygon(s) along the curve in the background layer. It detects multiple curves and copies, aligns and extrudes your data to each curve. When there is no data in the foreground, SmartRail allows you to create a disk or load a polygon to do the extrusion(s).

One of MacroForm's nicest features is the way it integrates into the LightWave environment. Most third-party products create their own interface, and the user is left to toggle between the two screens. MacroForm

An example of the MacroForm's RailMold, RailScale and RailRout usage.

installs itself to LightWave Modeler's function keys. So, when using one of the many MacroForm tools, all you need to do is hit one of the function keys to see the requester (Figure 1). In Figure 2, you can see a rendering I did with one of the supplied tutorials. This project took approximately 10 minutes to complete. Figure 3 is an object I made in less than two minutes using the RailToolz Rout feature. The first step was to build a box. In a clean layer, I drew out a curve on the

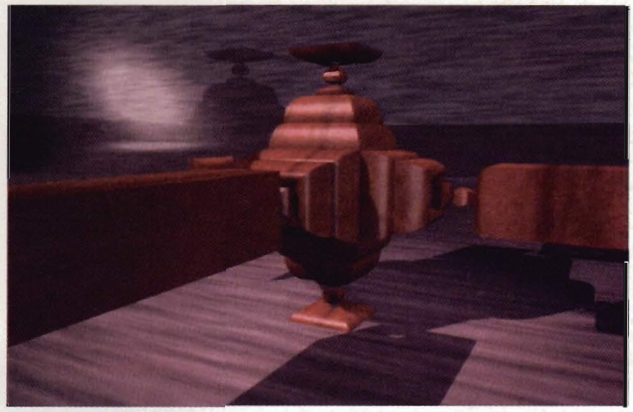


Figure 3: It took less than two minutes to build this object from a single box and one spline curve.

Y axis. With the curve in the background layer, I ran the Rout tool, and got an interesting-looking vase, or better, a connection piece for an intricate, early-American-looking banister. Or how about using this feature to create a fancy bed post? Remember, the rendered image took less than two minutes to build using MacroForm, and a different curve will create an entirely different object.

MacroForm's interactive design, the productivity it generates, and the power it gives the LightWave animator are head and shoulders above the rest. I would strongly suggest that anyone interested in organic, complex modeling purchase a copy of this product. Once people start using it, I think they'll begin to wonder how they got along without it.

VTU

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One and Only Media
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QUICK VIEW

Photogenics

by Harv Laser

There's never been any lack of paint or image-processing programs for Amiga/Toaster owners, but with its economically priced Photogenics, Almathera has taken quite a different and interesting approach to this crowded software field.

Unlike its competition, Photogenics visually opens each loaded image (as many images as you have the RAM to handle) in its own resizeable window on a common screen. These image windows can be arranged, stacked, tiled or hidden in any way, size or combination desired. Each loaded image is also stored as a little draggable icon in a small screen at the bottom of the interface. Manipulate an icon to make the image the current one or to create a secondary image, or to establish an alpha channel.

Because Photogenics respects the Amiga's "display database," you can run it on a screen in any display mode or size your monitor supports. You can also change the interface font and color-depth. Almathera recommends an AGA Amiga (1200 or 4000) as the base machine for Photogenics, and though the software will run in 16-color ECS mode, it sure wouldn't be as enjoyable as Photogenics' 256-color AGA mode, which is terrific: clean, fast, functional and lovely to look at.

For those without a hard drive, Photogenics can run from a single floppy disk. But be warned: because most of its operations call up external modules, this can result in a number of (relatively short) pauses for disk access. A hard drive is really the best home for Photogenics, and the standard Installer program will transfer its three disks worth of data to yours, using approximately 1.5MB of space. Enter your package's serial number before operating the program for the first time, as this is its only form of copy protection.

Painting on or processing an image with Photogenics introduces another

fresh concept. Imagine a pane of invisible glass over each image. When applying a paintbrush or one of Photogenics' many effects to an image, you're actually painting on this virtual pane of glass, not the image itself. The left mouse button applies the paint or effect, and the right mouse button selectively (and progressively) undoes it. For those of you who were brought up on paint programs in which you apply paint and press an undo button to remove the last action, this setup may take some getting used to. But Photogenics' methodology, once it becomes habitual, is really quite a wonderful way of doing things.

The added paint or effect does not actually become melded with the image until the "Fix" button is clicked. Until then, it's as though this painted layer is wet, and it can be wiped off or completely removed without affecting the underlying image. Even when the image is "fixed," the fix—with all its paint and image attributes—can be both undone and redone, making experimentation easy.

Photogenics' included image format loaders and savers run the gamut, including all IFF-ILBMs, Framestores, JPEG, GIF, BMP, TXT and so on, as one should expect in any current package. There are no extra-cost add-on modules. In addition, Photogenics comes with some custom loaders that instantly create images of color plasma, ripples, patterns and more. These effects are useful for making backgrounds and other special effects.

New to version 1.25 is a "warper" tool for simple image distortion, CyBERgraphics 24-bit card support, transparency gradients, cropping, printing, and much better composition and full-screen preview options than earlier versions. The list of Photogenics' features goes on forever, and I won't even attempt to list them all in this short space.

Since Photogenics is a modular program, user-developers can write their own modules for it, known as ".GIO" files. Almathera includes an archive with sample source code and documentation and provides additional development support by phone, fax and e-mail to those who wish to expand Photogenics' capabilities with their own modules. A number of these user-written enhancements are already available on-line—free for anyone with a modem.

After playing with Photogenics 1.25 for about a week, I kept discovering more and more enchanting features and ways to use the program. Its alpha channel and secondary image features in particular are extremely easy to use, and the manual provides many good tutorials to get you going.

On the downside, Photogenics has no ARexx port, and thus no batch-processing features. Further, at times it goes into a "Hey, I'm busy, so wait" mode that can be annoying when you don't know why it's doing it. And some of its features and modes are located in places I wouldn't expect them to be.

On the upside, Photogenics introduces many fantastic effects and features that are easy to learn and satisfying to use. It wraps them all up in a powerful package with an interface that you can customize to your liking.

Photogenics is definitely worth adding to your arsenal of paint and image-processing tools.

VTU

Photogenics

Price: $179
Product type: Paint Program
Minimum system: Amiga with 2MB Chip RAM, Kickstart 3.0 or higher
Recommended system: A1200 or A4000 with 4MB RAM and hard disk
Company: Almathera
Boundary Business Court
92-94 Church Road
Mitcham, Surrey, CR 3TD
England
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activating the Flyer record panel (or anything else that is displayed on the Switcher interface).

DPS TBC-IV Software and Flyer Conflicts

With Toaster 2.0/3.1, the DPS TBC control software is easily accessed directly from the Toaster's Switcher screen. The usual procedure is to run the TBC software prior to running the Toaster. The DPS icon then appears on the Toaster's Switcher screen and you can access the DPS software. Currently, with the release of the Flyer, a conflict prevents reliable use of the DPS software from the Flyer version of the Toaster's Switcher. The most notable problem is NewTek's use of the right Amiga key to change the default display of icons in the Files View menu (to display those files by name instead of by picture). DPS also uses the right Amiga key as a hot switch. Thus, running the DPS software before the Flyer and then pressing the right Amiga key can cause lockups.

The DPS icon also wishes to occupy an area of the switcher screen that is not available after switching screen views. Currently, to use the DPS software, run the Flyer software, select the input from the switcher screen where your TBC IV output is connected, and use the (Amiga + M) key combination to get to the Workbench screen. You can then run the DPS software and make any signal adjustments required, and monitor the changes on your preview or program monitor. Because you will need to exit the DPS software prior to returning to the Flyer's switcher screen (Amiga + M), this workaround won't help if you are attempting a "freeze frame" from the TBC IV software. A freeze frame can be accomplished in one of two ways:

(1) Once the video is captured, place the resulting clip into the project window. From the clip control panel, locate the frame/field that you wish to use as a freeze frame and note its location. You can also "copy" the field location number by setting it as an "inpoint" or "outpoint" for the clip, and then placing your cursor in its number field and pressing the letter c (for copy). The field/frame location will need to be entered into a requester in TPaint's process screen. You can either type in this information manually or, if you used the copy method mentioned above, simply place your cursor in the field and press the letter v to "paste" the information directly into the field. Once the information is entered in the requester, use TPaint's "import field" option to grab the frame from the clip. You can then render it to one of the framebuffers for immediate use or save it as a framestore.

(2) Another option is to use DPS's external remote control unit, the DPS RC-2000. This device can be quite useful, except that one software control item that I find practically indispensable is not available on the hardware remote—DPS's vertical chroma shift. The only way I have found to get all the functionality I require from my TBC IV when using the Flyer is to run the unit via software from another PC or Amiga. Note that because the TBC IV is a serial-controlled device, the board itself does not have to reside in the computer that controls it.

Sometimes you may have Flyer start-up problems when the TBC IV is used on Toaster input one. If you find that your Flyer software sometimes fails to boot properly or gives you the dreaded "Toaster not responding" message, there may be a video timing conflict. If your TBC IV is installed in the same computer as the Toaster/Flyer and it is the only source feeding sync to your system (on the Toaster card's input one), the TBC's video timing may be offset too far from the Toaster's genlock timing to properly "lock up" when the software first initializes. You can eliminate this problem by setting the TBC IV to external sync from its preferences screen and supplying a stable sync source such as black burst or a direct camera feed. If an external sync source is not available, disconnect the TBC IV's output to the Toaster's input one and run the Flyer software. This procedure will reset the Amiga's internal video timing. Quit the Flyer software, reconnect the TBC IV output to the Toaster's input one, and restart the Flyer software. This time, the TBC IV's video sync will match the Amiga's (and the Toaster's), and allow initializing the Flyer software without incident.

Sometimes the Flyer software seems to "lock up" on the "Please Stand By" message. This is a common problem with an easy fix. When it appears that the Flyer software is "stuck" during start-up, simply press (Amiga + M). Voilà! Your switcher screen will suddenly appear.

That wraps up this month's tips and hints. Next time I hope to be working with a later version of Flyer software, and will share a technique for changing audio levels for "voice over music" with Flyer sound clips.

Product Watch

There are several tower-type products coming on the market for external mass storage and a few that offer the ability to transplant your computer motherboard and add or access extra slots. Prices range from $400-$1,500, with the higher-priced units offering transplant capability, beefier power supplies, extra fans and more slots.

Iomega will be shipping its Jaz SCSI II removable-cartridge drives in a few months. Using 1GB cartridges that can attain sustained data transfer rates of up to 6GB per second, they will likely be a perfect candidate for storage or backup of Flyer clips. The drives, says Iomega, will retail for under $600, and cartridges for $125 each. Hopefully, the Flyer will offer direct access to these drives for A/V use.

Quantum's Atlas series II 9GB A/V drive should be available by mid-August. If specs are consistent with the 2GB and 4GB models in this series, expect this unit to become a price/performance standout for NLE systems.

If you have questions or suggestions regarding topics for future columns, write or fax me care of *VTU* or e-mail me on CompuServe at 76527,723. VTU

Companies mentioned:

Digital Processing Systems
11 Spiral Dr.
Florence, KY 41042
(606) 371-5533
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1821 West Iomega Way
Roy, UT 84067
(800) 697-8833
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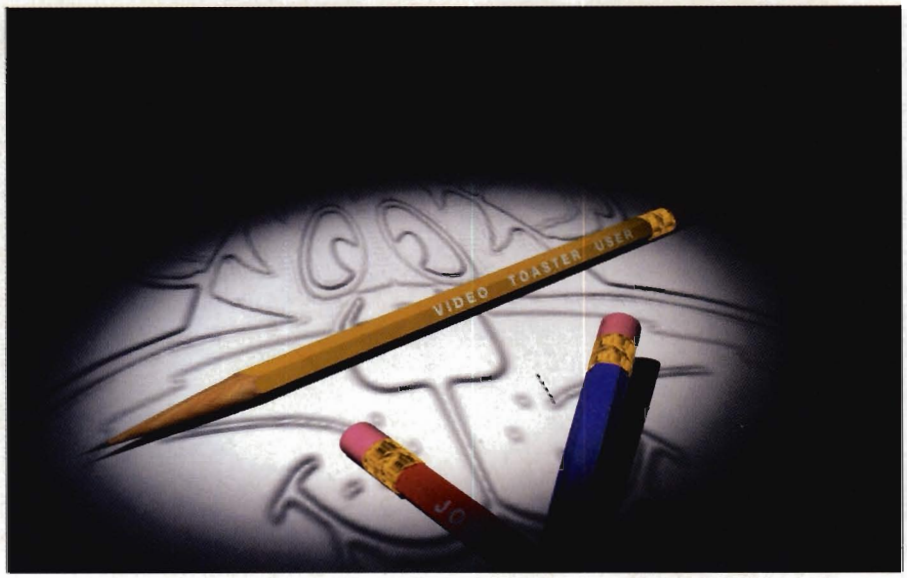
Pushing Pencils

Build a Realistic Writing Tool

by Kyle A. Thatch

The last time we worked together you made a toothpaste tube. In that tutorial you worked with several different tools and concepts to complete the object. This month I have chosen something that you can find almost anywhere. That's write, a pencil. Building a pencil involves several challenges you may not have thought about. Hopefully, this exercise will help broaden the way you approach object construction.

Before you start, set your Units measurement in the Display Options Menu to (Metric). Then go to the Objects Options Menu and set the Polygons section to (One-Sided and Automatic). Before you hit OK, adjust the Curve Division to (Course). [Note: Whenever I put a letter inside parentheses I'm identifying it as a Hot Key.]



Six-Sided Wonder

Let's begin by making the shaft of the pencil. Go to Objects and select Box, then (n) for numeric. Enter the following:

Low	High	Segments
X = -0.2	X = 0.2	1
Y = -6.25	Y = 6.25	1
Z = 0.0	Z = 0.0	1
	Units = cm	

Don't forget to hit OK to complete your entries, then (Enter) to Make the panel.

Next, we need to Clone this panel so that we have six in a row. Go to the Multiply Menu and hit the Clone button. Enter (5) for number of clones. Enter (4) for X under offset. Make sure your Units are set to (mm), then hit OK (Enter). If all is well you should have six panels in a row (Figure 1).

For this next part you may find it easier to work if you drag out the Face View of the Tri-View to fill the entire screen. Do this by placing the cursor in the middle of the tri-view, holding down the (left mouse button), dragging up and to the right until the Face View fills the entire screen, and then releasing the mouse button. Here comes the fun part. Go back to the Objects Menu and hit the Sketch button. Now draw a curve that would represent the end of a sharpened pencil. Don't forget to hit (Enter) to make the curve once you are satisfied with its shape (Figure 2).

Now lasso the bottommost points with your mouse. Press (c) to copy, then (2) to go to layer 2. Finally, press (v) to paste the points down in layer 2 (Figure 3). Make sure you are in Layer 2. Press (Alt 1) to place Layer 1 in the background layer while still keeping Layer 2 in the foreground or working layer. Move each point individually so that the points intersect with the curve that we drew in layer 1 (Figure 4). *Note: Points are selected for clarity only.*

Now hit (') to flip your layer selection, so that layer 1 is the foreground layer and layer 2 is the background layer. Next, you need to delete (z) any points that are close to those you just made in layer 2. After you have deleted all points, go back to layer 2 and copy those points to layer 1 (Figure 5). Things start to get a little crazy now. Hit the (k) key to kill all of the polygons on layer 1. You need to rebuild each polygon one at a time. Trust me, it only sounds bad. Starting with the top leftmost point and going in a clockwise direction, select the points in the first panel. Do not select the bottommost points yet. Once you have selected the points, hit (p) to make a polygon (Figures 6A and 6B).

Starting with the first to last point at the bottom, select the points in a clockwise direction once more to construct the lower polygon of the panel (Figure 7). Continue to make polygons in this manner until you get to the end. Now you need to name the surfaces of the polygons. Press the (space-

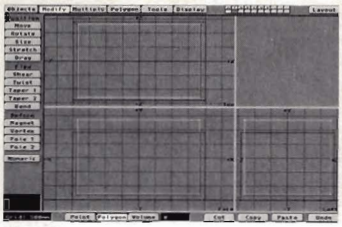


Figure 1

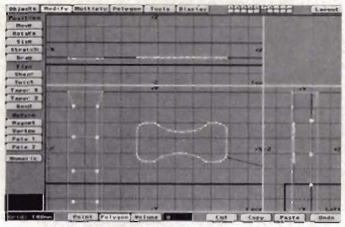


Figure 2

bar) once to go to Polygon Mode, then select all of the upper halves of the panels (Figure 8). Hit (q) to bring up the Surfaces menu, name surfaces "Shaft-Flat," and hit OK (Enter). Now hit (Shift + ") to flip your selection to the lower halves of the panels. Name them "Shaft-Wood."

Now is a good time to save. Go to the Objects Menu and hit (save as) when the requester pops up. Select a directory where you wish to save your work. Type in "Shaft-Development," then hit OK (Enter).

Everybody Rotate Left

Once you have Made, Named and Saved the panels, it's time to shape them into the form of a pencil. Select all the panels except for the leftmost one. Hit (y) to rotate, then (n) for numeric. Enter (Y) for the axis, (60) for the angle and (X = 0.2, Y = 0.0, Z = 0.0) for the center. Make sure that your units are set to (cm), then press OK (Enter) to rotate the five panels to the left (Figure 9). Guess what? You now need to do this rotation thing four more times, so go to it! Remember to pick one less panel each new time—e.g., 8, then 6, and so on to the end. Use the following entries for your axis center, remembering to use 60 degrees each time you rotate.

Axis		Degrees
Y		60
X = 0.4	Y = 0.0	Z = 0.3464
X = 0.2	Y = 0.0	Z = 0.6928
X = -0.2	Y = 0.0	Z = 0.6928
X = -0.4	Y = 0.0	Z = 0.3464

If everything went OK your pencil shaft should look like the one in Figure 10. Assuming it does, hit (F1) to center the shaft in the middle of the Tri-View Axis. Now you need to add a bottom polygon to the shaft, but first you must delete any unwanted points. Using the Face View *only* select the first to last point on the pencil at the bottom right. Go to the Top View and deselect (Left Mouse Click) on the upper-right point. You should have what appears to be one point select-

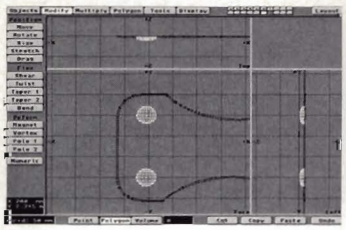


Figure 3

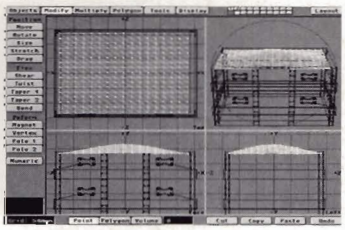


Figure 4

ed, though the Points window says two (Figure 11). Now go to the Tools Points Menu and select weld. A notice will appear telling you that the two points have been welded. This simply means that Modeler has deleted one point because the two points shared the same space with others, though it doesn't delete any of the polygons. Using the Top View, select the corner points that make up the bottom of the shaft in a clockwise direction. Make sure that only the bottom points are selected. You can check your points by dragging out the other views and hitting the (a) key (Figure 12). After you have correctly selected the points, hit (p) to make a polygon. You don't have to worry about naming this polygon, as it is only temporary.

Eraserhead

Making the eraser is a snap if you know how to use the Lathe Tool. Go to the Polygons Menu and select Points and (n) for numeric, and enter the following:

X	Y	Z
0.0	8.01	0.0
0.3414	8.01	0.0
0.355	8.0083	0.0
0.3676	8.0033	0.0
0.3785	7.9954	0.0
0.3869	7.985	0.0
0.3921	7.9729	0.0
0.3939	7.96	0.0
0.3939	7.22	0.0
0.0	7.22	0.0

Units = cm

After entering each group of coordinates, hit OK (Enter), then (Enter) once more to make the point. Once all points have been created, select them in a clockwise direction and type (p) to make a polygon. Now go to the Multiply Menu and select Lathe (n) Numeric. Set the axis to (Y), sides to (32). Leave everything else at default. Press OK (Enter), then (Enter) once more to Lathe the eraser. Select the top and bottom polygons and hit (z) to delete them (Figure 13). Next, select the topmost inner points in a clockwise direction and hit (p) to make a polygon. Click the spacebar until Polygon Mode is selected. Name (q) this surface "Eraser-Flat." Hit (Shift + ") and name (q) these surfaces "Eraser-Smooth." Finish the eraser by saving it as "Eraser" in the same directory you saved the shaft in.

Shiny Band of Gold

Next we are going to make the band that holds the eraser. We'll approach this object in a different way. Instead of entering points and Lathing, we will use the Bevel Tool. Go to layer 2 (2) and select Disk from the Objects Menu, then type (n) for numeric. Enter the following:

Sides = 32	Axis = Y
Segments = 0	Center = X, Y, Z = 0.0
Bottom = 6.23	Radii = X, Y, Z = 0.4
Top = 6.23	Units = cm

Hit OK (Enter), then (Enter) again to make the disk. Press (b) to bring up the Bevel requester and enter (0) for inset, (-1) for shift. Make sure units are set to (mm). Hit OK (Enter).

To make the crimps we need to enter several entries. This may seem time-consuming, but is a lot easier for objects of this nature then placing points. Before you start, select the top polygon only, clicking (f) to flip it (Figure 14). Use the following entries to finish the band:

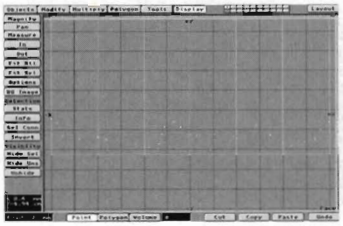


Figure 5

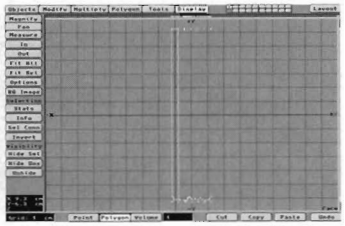


Figure 6A

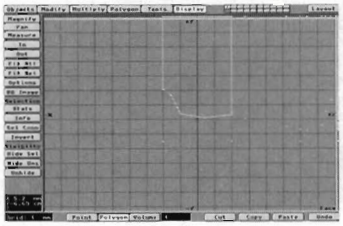


Figure 6B

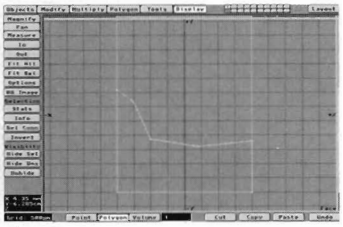


Figure 7

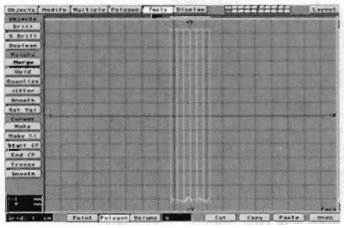


Figure 8

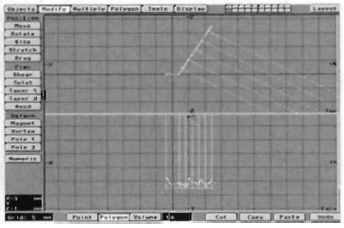


Figure 9

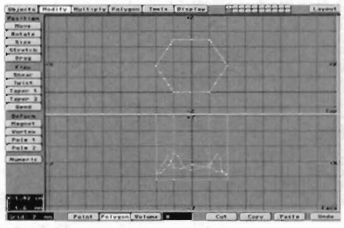


Figure 10

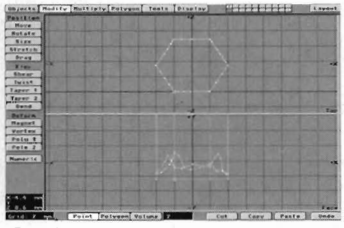


Figure 11

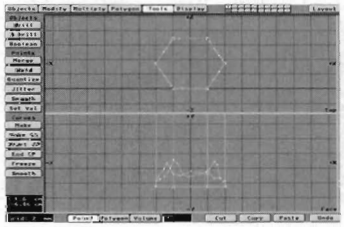


Figure 12

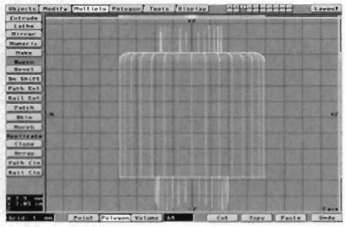


Figure 13

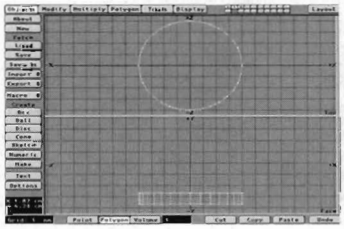


Figure 14

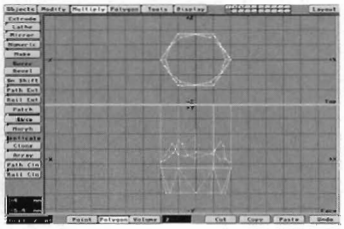


Figure 15

INSET	SHIFT
250	250
-250	250
250	250
-250	250
250	250
-250	250
250	250
-250	250
250	250
-250	250
Units = um	
INSET	SHIFT
0	3
Units = mm	
INSET	SHIFT
250	250
-250	250
250	250
-250	250
250	250
-250	250
250	250
-250	250
250	250
-250	250
Units = um	
INSET	SHIFT
0	1
Units = mm	

Name (q) the top polygon, which should still be selected, "Band-Flat." Now hit (Shift + ") and name the rest of the polygons "Band-Smooth." Before you continue, save this object as "Band."

To Put a Point on It

All you need to do to complete your pencil is make the lead. First go to layer 4. Now select Disc from the Objects Menu, type (n) and enter the following:

Sides = 12	Axis = Y
Segments = 0	Center X, Y, Z = 0.0
Bottom = -6.592	Radii X, Y, Z = 0.34
Top= -6.592	Units = cm

Remember to hit (Enter) to make the disc. Press (x) to cut, then (1) to go to layer 1. Hit (v) to paste the polygon into layer 1. Select the polygon you just pasted and the bottom polygon of the shaft. Choose Skin from the Multiply Menu (Figure 15). Let's go back to layer 4 so you can make the tip and lead. Once again, go to the Objects Menu, select Cone and enter the following:

Sides = 32	Axis = Y
Segments = 1	Center X, Y, Z = 0.0
Bottom = -6.82	Radii = 0.325
Top = -9.85	Units = cm

As always, remember to hit (Enter) to make the cone. Now that you have built the cone, you need to add the lead. Go to layer 5 (5) and make a disc with the following:

Sides = 32	Axis = Y
Segments = 0	Center X, Y, Z = 0.0
Bottom = -8.95	Radii = 0.25
Top = -8.95	Units = cm

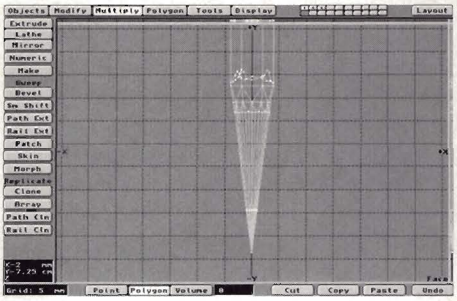


Figure 16

Click (Enter) to make the disc. Now hit (4) to go to layer 4, then (Alt 5) to put layer 5 in the background layer. Select (S Drill) from the Tools Menu. Select stencil and OK (Enter). You've just made your pencil lead. Press (4), select the lead part of the tip and name (q) the surfaces "Lead-Smooth." Hit (Shift + ") and name (q) the rest of the tip "Tip-Wood." Now just cut (x) the tip of the pencil to layer 1 and paste (v) it into place. Select the top polygon of the tip and the bottom polygon of the shaft. Using the Skin Tool, join the two together (Figure 16). Before you save the pencil, select the polygons that we used to skin the tip together and delete (z) them. Now simply cut (x) and paste (v) the band and eraser to layer 1. Finally, save the pencil as "Pencil."

Summing Up

There are a few things you should know about loading the pencil into Layout. I used the basic "Gold Surface" that comes with LightWave for the band. The eraser color is Red = 200, Green = 100, Blue = 100. The color for the pencil shaft is Red = 200, Green = 140, Blue = 0, Specularity = 75%, and Shininess = low. I also used the Lightwood Image included with LightWave. Using a planar mapping process, I simply mapped it along the (Y) axis, then auto-sized.

I hope this lesson has given you insight into new approaches to everyday objects. If you would like to see the construction of a certain object, or are having problems that can be published, write to:

Synthetic Design Images Inc.
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EDITORIAL EVALUATION

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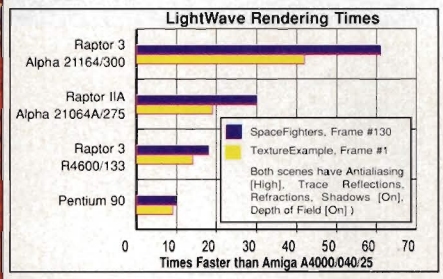

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Flyer Live

Tackling On-the-Spot Editing

by Chris Fenwick

In the early days of the Toaster/TV marriage the most difficult thing about using a Toaster was integration. Today there are things that can be done to help integrate a Toaster into a larger production system. For example, PreVue Technologies makes two products that are priceless. The Toast Timer allows you to genlock a Toaster into a larger switcher without the need for a frame synchronizer, which would potentially degrade the signal. A Bread Board, also from Prevue, allows you to pull an external key signal off the Toaster card for use with a downstream keyer. This is a great way for you to send keyable elements into another switcher. Believe me, when you can display a working knowledge of key signals to a technical director or an editor, it goes a long way toward demonstrating that you are not just another yahoo with a computer graphics system.

Even with these solutions, I have found that most of the time the easiest way around the integration problem is to abolish the traditional TV equipment all together and start doing entire shows with the Toaster. In the past three years I have switched many live and live-to-tape shows through my "portable" Toaster system. (I always say that the best upgrade I ever put on my A2000 was casters, so I could wheel the thing around.) With a mobile Toaster system and an assortment of DAs, routers and other television support gear, there are tons of services you can offer. For my company, these have included corporate teleconferences, multi-camera live-to-tape "new product announcements," or just a standard IMAG show (Image Magnification—the visual equivalent of a public address system), where you need to project camera images and support graphics to large screens in yet another hotel ballroom.

Framegrabs from the Flyer clips that were used moments later in the final presentation

Award-Winning Coverage

For the past two years my company has been providing technical services for the Emmy Awards ceremony held in the San Francisco Bay Area. These are not to be confused with the National or Daytime Emmys. There are actually 17 local chapters across the U.S. with their own award ceremonies. For the most recent San Francisco Emmy awards we decided to add something a little different.

This show was to be very straightforward. We would use three BetaSP machines: one with a nominee reel (the people who might win), one with the recipient reel (they don't like to say "winner"—"all the nominees are winners") and a third machine for extra elements. This year a big closing number was planned that included many local producers playing a rock 'n' roll number. Since the projection screen was already there, the decision was made to create a "Happy Faces" show that would play during the closing number. Happy Faces is exactly that: a bunch of people having a good time—on tape. (Eventually, the big rock number was canceled, but we salvaged the "Faces" show and used the music from the opening number as our soundtrack.)

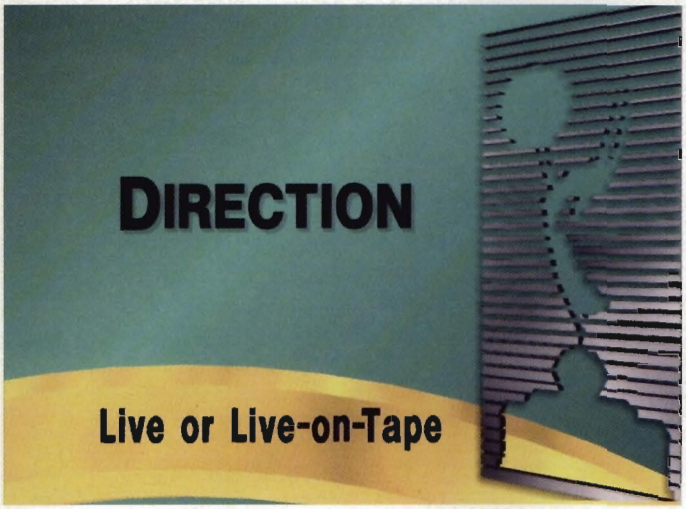
The evening began with a cocktail hour that started about 5 p.m., in the lobby of San Francisco's Fashion Center. What we intended to do was shoot as much footage as we could and show a completely edited music video at the end of the night. In order to turn this production around in the minimal time available to us, we had to choose our weapons carefully.

We asked MAC Productions Video, a local facility, to provide the handheld camera package and the deck for digitizing. We decided to go with a Sony DXC-537 for its color purity in available-light situations. The tough decision was tape format. After much debate we decided that Hi8 would deliver the best cost/performance ratio. MAC Productions was able to provide a Hi8 back for the camera and an EVO-9850 for digitizing the footage. The 9850 has digital noise reduction and a drop-out compensator that really helps with the Hi8 format. Because of the nature of the event, the store sent Mike Currior along to oversee all the technical operations for the Happy Faces module. Phil

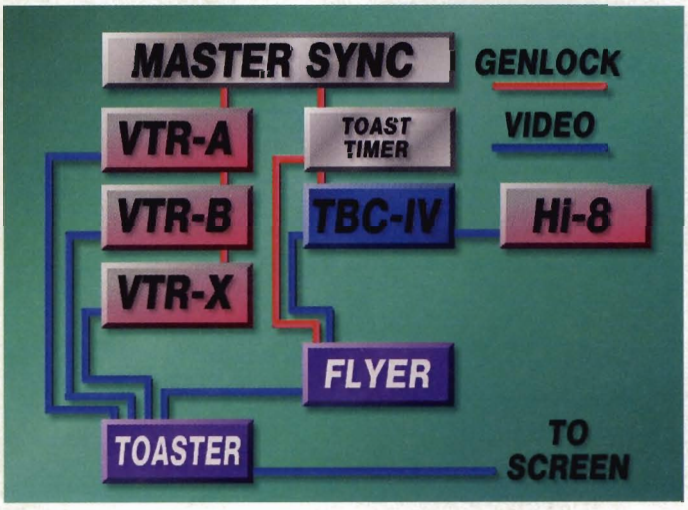
Azzopardi, a freelance camera operator, was chosen for his uncanny ability to make great footage jump in front of his lens.

A Word Processor for Full-Motion Video

The nature of Happy Face videos is such that you never have all your footage until it's too late. If you wait until all the good footage can be shot and reviewed (don't even think about logging and off-line), the event is over and the audience



One of the 50 Framestores used as a bumper in between the presentation of different awards.



This flow chart illustrates the complete technical set up.

is home in bed. If you start editing too early, all you have is preliminary "getting started" footage. Standard practice for a Faces show is to lay down a volatile bed of images with the early shots, and then, as better stuff comes along, cover it with video-only insert edits. The ideal scenario would be to have all the footage in a form that readily accepts last-second, whimsical changes. Here's where the Flyer comes into the picture. With the Flyer, all you have to do is digitize the clips as they come in and then shuffle them around in the Project window until you're happy. This allows for last-second changes right up until the viewing by the live audience.

And They're Off

As Phil was mingling with the partygoers, Doug Johnson, the editor, was standing by in his makeshift edit suite, which was set up a cablelength away from "VideoLand" (our makeshift control room du jour). The idea was simple. Phil would begin shooting the party and ceremonies, and periodically run tapes to Doug, who would be digitizing and editing his tail off while we were putting on an awards show down the hall. (As the technical director for the show, I felt that I needed to keep up with how the edit was going.) To facilitate this process, an extra monitor was set up at the control area and a second channel of intercom was set up for communicating with the editor without interrupting what the director was saying.

Now, remember, the Toaster has four inputs. In order to give Doug as much time as possible to edit, the decision was made very early in the pre-production stages to use a Toast Timer to time the Flyer's Program output into the last remaining input on the main "Switcher" (our older '040-based A2000 system). This would allow us to "hot roll" the finished sequence of clips right out of the edit suite and not have to go to tape with it. Since we determined that we needed about four minutes of Happy Faces, dubbing it down would take an additional four minutes, plus rewind time. We figured Doug could use that additional time to trim a few more edits.

(This concept of hot rolling was used last year, during the week of the now-famous white Bronco chase. *Dateline NBC* was still editing the second half of the story while the first half was airing. The only way to get the second half to air on time was to roll it right out of the edit suite before the CMX keys even had a chance to cool. *Dateline NBC* we are not, but we were determined to put on the best show possible.)

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Memory Options - (Minimum of 8MB Fast Memory needed)

1x32 Simms 60ns 4MB	149+
2x32 Simms 60ns 8MB (must have warp engine or extra ramboard)	299+
4x32 Simms 60ns 16MB (must have warp engine or extra ramboard)	499+
8x32 Simms 60ns 32MB (must have warp engine or extra ramboard)	999+

Newtek Video Toaster 4.0	1995
Newtek Video Flyer	3995
- 2.1 GB Quantum Atlas Video Drive	999
- 4.3 GB Quantum Atlas Video Drive	1599
- 9.0 GB Seagate Elite Video Drive	2295

Amiga 2000 Accelerators

GVP 68040 @ 33mhz w/MMU, FPU, SCSI Controller with Extra Serial, Parallel Ports & 4 MB Ram 60ns Expandable to 64MB ram using 16MB simms (799 each)

Only 1395.00

CSA 68040 @ 33mhz w/MMU, FPU & SCSI II controller card w/0MB. Uses 72 pin 60ns industry standard simms and is expandable to 64 mb using 16mb simm moduals.

Only 1395.00

GVP 68030 @ 40mhz w/FPU & SCSI Controller & 4MB ram at 60ns expandable to 16MB ram total.

Only 999.00

REMOVABLE MEDIA SCSI DEVICE CLOSE OUT

Richo 50 MB Removable HD 99.00

USRobotics Modems

Internal Sportster 14.4kbps v.32 bis data v.42, v.42bis, quicklink II s/w, fax $109
Internal Sportster 28.8kbps v.34 data, 14.4kbps class 1 & 2 fax v.42/v.42bis quicklink II s/w $259

AMIGA Lightwave 4.0 stand alone Version 775.00

AMIGA RAM BOARDS

Paravision MBX1200Z w/20Mhz&1MB		159
Paravision MBX1200Z w/20Mhz&2MB		199
Paravision MBX1200Z w/20Mhz&4MB		299
Paravision MBX1200Z w/20Mhz&8MB		429
Paravision 8-Up! w/0MB	(2000)	99
Paravision 8-Up! w/2MB	(2000)	149
Paravision 8-Up! w/4MB	(2000)	229
Paravision 8-Up! w/6MB	(2000)	309
Paravision 8-Up! w/8MB	(2000)	389
DKB 2632 w/4MB	(Requires2630)	399
DKB 1202 FPU & 1MB Ram	(1200)	159
DKB 3128 w/4MB	(3000/4000)	395
Exp. Sys. Dataflyer Int. w/2MB Exp to 8MB		199
Supra External w/2MB (500)	(500)	199
CBM 2052 w/2MB	(2000)	99
CBM 2058 w/2MB Exp to 8MB	(2000)	175
CBM 501c Clone w/512K	(500)	49
Exp. Systems 601c w/1MB	(600)	69
DKB Megachip 2000/500 w/2MB Agnus -accesses & adds 1MB of chip ram. The -must have for graphics & audio users		249

CSA 12 Gauge Accelerators

33Mhz w/MMU & SCSI Board w/4MB 80-70NS Ram	399 / 549
33Mhz w/MMU & FPU & SCSI w/4MB 80-70NS Ram	499 / 649
50Mhz w/MMU & SCSI Board w/4MB 60NS Ram	499 / 675
50Mhz w/MMU & FPU & SCSI w/4MB 60NS Ram	599 / 775

Micro R&D

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

ICD

AdIDE 40MB HD System w/2.5" Drive (500/2000)	269
AdIDE 130MB HD System w/2.5" Drive (500/2000)	399
Flicker Free Video II	249
ADRAM540 w/4MB (A500)	275

DKB

Megachip 249

Allows your A500 & A2000 series computers to have two megabytes of chip ram. A must have for people who use video, graphics and audio applications. Included is the Megachip daughterboard with 2MB Agnus chips with an extra one megabyte of ram. (Requires A500 to have A501 ram expander +49.95)

A1202 board (A1200 Only) 99.95

A multi-function board for the A1200 Computer that provides the maximum fast ram expansion plus a battery backed up clock-calendar. Includes two simm sockets for combinations of 1, 2, 4, 5, or 8MB of fast ram using industry standard 32 bit simms with 72 pins. Optional plcc math co processor can speed upmath functions as much as 1000% or more.

A3128 Ram board (A3000/4000 Only) 249

Allows 32 bit ram expansion to 146 megabytes of ram using 72pin industry standard simms. Four simm slots accept either 4, 8, 16, or 32 megabyte simms.

A2632 Ram board (A2630) 399 w/4mb

Allows 32 Bit ram expansion onboard of 112mb of ram using industry stanard 72pin simms. Has four sockets allowing use of 4, 8, 16, or 32 mb simms. Allows full burst mode support.

Kwikstart II (A1000) 54.95

A1000 owners can now add kickstart roms to their machines with this device! Supports two different revision roms & allows access to more system ram

Multistart II 6a (A500, 600, 2000) 29.95

You can use more than one kickstart rom chip with this device! Switchable by resetting the machine for a few seconds.

Cobra 28 mhz & 40ec mhz 159/249

Accelerator for the A1200 computer system that allows you to speed your machine up to 600% faster. Includes capibility to add 128MB of fast ram using industry standard 72 pin simms & battery backed clock-calendar. Optional FPU can be added. Optional SCSI I & II Controller can be added +89.00

Mongoose (A1200) 275.00

Accelerator for A1200 computer with 68030@50mhz Expandable to 128MB of fast ram using industry standard 72 pin simms. Increase in speed up to 800% & has battery backed clock-calendar. Optional FPU or SCSI I & II Controller can be added +89.00

Phil arrived on site at about 2 p.m. and rehearsals began about 3 p.m. We decided to shoot a little of the "backstage/rehearsal thing" and let Doug get started with some of that footage. The process was entirely painless. Phil would shoot, Doug would edit. Phil would shoot, Doug would edit. There is no question why NewTek decided on the name Flyer. By 7:45 p.m., 15 minutes before the actual awards ceremony was to start, Doug had a completed production that, quite frankly, we could have opened the show with. He truly was "Flying" through the job. However, at that point we had no shots of the people receiving awards, and we really wanted to add those. As it turned out, we had tons of time on our hands, because the event went way over schedule—approximately 90 minutes longer then planned.

As the event was drawing to a close the first real hitch came up. Over my private intercom channel with the edit room, Doug informed me that he could not accurately predict the preroll time for playing back the project. Although preroll was usually five seconds, there was still about a one-in-six chance that it would be a full 60 seconds, even if he played the whole project all the way through once. Well, now the pressure was on. We had about five minutes before we were to play our footage for an audience of 500 broadcasters and exec types. There was no time to dump the project to tape, even if we had made provisions for that (and we hadn't). My attitude was this: If you don't stick your neck out once in a while, you'll never see around the corner. We were gonna go for it—we had to.

As the host of the evening went up to say good night and introduce the "Highlights Reel" to the audience, I was informing the audio engineer that the audio started in black for effect and that he should have us turned up as soon as we "rolled" the project. I relayed the call for the project to roll from the director, and then it seemed like time stood still. Doug was staring at the "Z" cursor waiting for the computer monitor to go black, signaling that the project was playing. What seemed like an eternity was actually only five seconds, and then, over the intercom, the word came from Doug: "Here it goes." I clicked my right mouse button and pulled back to dissolve to the Flyer on input 4, and sat back to enjoy the show.

Digital video was "Flying" off the Seagate 9GB hard drive right to the audience—live! It had all worked great and I was very proud of what Doug and Phil had put together. It was all there: rehearsal, people arriving, people mingling, people accepting awards. And it was all being played back from a hard drive. And nobody knew. I used to say that digital video was neither digital nor video, but I must say that the Flyer has made me eat my words.

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NEW! Panasonic

AG-456 2-HOUR S-VHS CAMCORDER

- Now includes manual zoom control.
- Laminated amorphous heads assure exceptional picture quality, high resolution, and superb color reproduction.
- 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 for frame accurate editing
- Audio/Video fade-in /fade-Out for smooth transitions
- Automatic iris and manual control for fine adjustment
- **Digital Mix** – soft fade-over between memorized images
- **Digital Tracer** – to add an after-image effect to moving subjects
- **Digital Still** – freeze a scene for as long as you like, without interrupting sound recording
- **Digital Gain-Up** – delivers clear, distinct images in low-light
- **Digital Strobe & Digital Wipe** – add professional effects to your shooting.

AG-DP800 SUPERCAM

S-VHS 3-CCD Digital Signal Processing Camcorder

- Three high-density 380,000 pixel CCDs with half-pitch pixel offset achieves over 700 lines of horizontal resolution, a S/N ratio of 60dB and remarkable sensitivity of f8 at 2000 lux. Additionally the Frame Interline Transfer (FIT) CCDs minimize vertical smear, so you maintain impressive picture quality even in very bright illumination.
- Digital Signal Processing circuitry provides four valuable benefits
  1) Consistently reliable up-to-spec performance.
  2) Fine adjustment of a wide range of parameters.
  3) Memory storage and instant recall of specific settings.
  4) More flexible and higher quality image processing, as well as easier maintenance.
- Some of the DSP circuits and their functions:
  - CHROMA DETAIL - This function compensates for poor resolution in the high chroma areas of the picture.
  - DARK DETAIL - Determines optimum degree of contour enhancement in dark areas to deliver crisp, natural-looking images
  - HIGHLIGHT COMPRESSION - Expands the dynamic range of the highlighted areas and prevents halation. The highlight compression circuit allows a wide dynamic range producing detailed images even against bright backlight or daylight.
  - FLARE CORRECTION CIRCUIT - Compensates for unsteady black caused by light or by a subject's movements.
- Six Scene File modes. There are two user modes for custom digital parameter settings including Horizontal Detail, Vertical Detail, Chroma and Dark Detail, and Color Correction. The four preset modes are normal, fluorescent, special and sparkling.
- In addition to regular AGC (Automatic Gain Control), Supercam has a Super High Gain mode. At F1.4 this enables shooting under illumination as low as 2 lux while retaining detail and color balance.
- Synchro Scan function allows flicker-free shooting of computer monitors. Electronic shutter increments can be set variably from 1/61 seconds to 1/253 of a second.
- Built-in internal time code generator lets you record with SMPTE LTC/VITC (Longitudinal/Vertical Interval) time code
- Two hi-fi stereo audio channels with a dynamic range of 80 dB, as well as two linear audio channels with Dolby NR. Normal/Hi-Fi recording is selectable. Uses XLR connectors to further ensure high-quality sound.
- Phantom power can be supplied to an optional microphone. Power can be switched off to prevent battery drain when not in use.

NEW! WV-F565

Digital Signal Processing 3-CCD Dockable Camera

The WV-F565 is a revolutionary camera that sets new price/performance standards for a CCD camera - either 1/2" or 2/3". Equipped with three 1/2" HS-FIT (High Sensitivity - Frame Interline Transfer) CCDs, the WV-F565 delivers an unbelievable 850 lines of horizontal resolution and an unprecedented 65dB signal-to-noise ratio. It also provides a minimum illumination of just 1 lux and 600% highlight compression. It docks directly to S-VHS and MII and with adapter can dock to Betacam SP. The camera can be used in a studio configuration and there are four remote control options.

REVOLUTIONARY PERFORMANCE LEVELS

The WV-F565 achieves new levels of performance. It provides 850 lines of Horizontal Resolution, 65dB Signal-to-Noise, and 1 Lux Minimum Illumination- specifications unheard of in today's professional CCD Cameras.

.NEW HS-FIT CCD

A key element to the new levels of performance achieved by the WV-F565 is Panasonic's new High-Sensitivity FIT CCD. As with other Frame-Interline Transfer (FIT) chips, the HS-FIT virtually eliminates the vertical smear associated with CCD's. In fact, the F565's smear reduction is measured at -125dB — better than even the most expensive cameras.

CLEAN-DNR DIGITAL NOISE REDUCTION

Utilizes a new algorithm to reduce noise without any of the image blur or deteriorating image resolution that is conventionally associated with DNR technology. This clean-DNR feature is what allows the WV-F565 to achieve a 65dB SNR.

"NIGHT-EYE" MODE WITH DUAL PIXEL READOUT

In challenging lighting conditions, the WV-F565's Night-Eye Mode is unique. In this mode, the camera uses a dual pixel readout to simulate 36dB gain. The camera's high signal-to-noise ratio helps to create a very usable picture at this gain level. This allows the WV-F565 to virtually see in the dark.

ADAPTIVE SCENE FILES

As with all Panasonic DSP cameras, the WV-F565 has Scene Files that allow you to optimize the camera's performance for shooting conditions. The WV-F565's Adaptive Scene Files let you make quick adjustments that can compensate for lighting conditions, flesh tones, contrast and detail. There are no less than 5 different scene files.

I-VECTOR NOISE SUPPRESSION

The I-vector on a vectorscope runs through the red and yellow areas, the colors associated with flesh tones. By reducing noise and detail along the I-vector, the WV-F565 can give flesh tones a softer look – without effecting other areas of the picture.

.DIGITAL HIGHLIGHT CHROMA

When shooting in bright lighting, it's easy for color to get washed out in high glare areas. With High-Light Chroma, the WV-F565 can add color gain only in the washed out areas, restoring color and detail without affecting other areas of the picture.

PRECISION DETAIL

Detail enhancement sometimes adds unwanted artifacts to the picture. In the WV-F565, Precision Detail makes the detail enhancement look less "harsh", thus allowing you to increase detail without the artifacts.

SWITCH SENSOR

With Panasonic's Switch Sensor function, you simply touch the switch and you get an indication in the viewfinder that tells you exactly which switch your finger is on.

ADVANCED REMOTE CONTROL CAPABILITIES

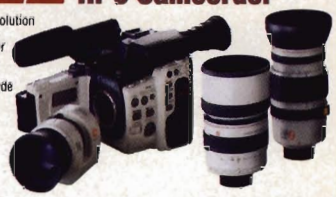
The WV-F565 has four (4) different types of remote systems. The WV-RC700A is a full function studio remote that offers either 26-pin multicore or multiplex control. Multiplex control lets you control most of the camera's functions via a single coaxial cable. With the WV-RC550, you can operate the camera in the multicore mode only, but it is much more cost effective. With the WV-CB700, all of the camera's control functions are now in a hand held remote control box. Finally, the WJ-PC500 allows for control via RS-232C or RS-422 computer control.

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.
- 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. • 2 exterior pockets and clip board pocket.
- Lid closes with Velcro for quick-opening or secure with full-length zippers.
- Dual purpose rear pouch is an expandable battery chamber or all-purpose pocket.

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 – 4 slow shutter speeds allow recording in light 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.
- PCM digital stereo and single channel AFM Hi-Fi recording. XLR balanced audio connectors.
- Quick start 1.5" viewfinder with 550 lines of resolution plus Zebra pattern video level indicator and color bar generator. Also, quick-start recording – takes only 0.5 seconds to go from REC PAUSE to REC MODE for immediate recording in the field
- Built-in 8mm Time Code generator records absolute addresses. (Either non-drop frame or drop frame mode may be selected.) Furthermore the EVW-300 incorporates a variety of time code features such as Time Code PRESET/RESET, REC RUN/FREE RUN and User Bits.
- A variety of automatic adjustment functions for different lighting conditions are incorporated into the EVW-300:
  - ATW (Auto Trace White Balance) – when ATW is turned on optimum white balance is always ensured during recording, even for changes in color temperature. Conventional white balance adjustment is still provided with the Auto White Balance.
  - AGC (Automatic Gain Control) – in addition to manual Gain Up AGC provides linear gain up in the range of 0 dB to 18 dB.
  - Intelligent Auto Iris – for situations where the lighting between subject and background is different (subject is underexposed) the Intelligent Auto Iris automatically examines the scene and adjusts the lens iris for proper exposure.
- Selectable Gain-up from 1 dB to 18 dB in 1 dB steps for Mid and High positions.
- Clear Scan function – provides a variety of selection of shutter speeds ranging from 60-200 Hz allowing recording of almost any computer display without flicker.
- 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 $6495.00

JVC

NEW! GY-X2B 3-CCD S-VHS Camcorder

- Newly designed three 1/2" CCD image sensors deliver 750 lines of horizontal resolution and superb signal-to-noise ratio of 62dB
- New micro-lens technology provides exceptional sensitivity of F8.0 at 2000 lux and LOLUX mode lets you shoot with almost no light! Shoot superb footage with excellent color balance at a mere 1.5 lux
- 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 allow synchronization with other cameras.
- Dual output system allows camera output to be connected directly to an external recorder

TOSHIBA

TSC-100G 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
- Quick-start 1.5" viewfinder needs no warm up time. Zebra pattern in the viewfinder alerts operator to excessive video levels.
- Genlock capability allows synchronization with other cameras. Full calibration functions are built-in as well as color bar generator.
- Variable high speed shutter from 1/60 to 1/2000 second
- Built-in 8mm time code generator records an absolute address to every frame.
- High-performance back electret condenser mic records to all three audio tracks. Low cut filter eliminates wind noise.
- Very low power consumption. Draws only 16 watts per hour allowing 100 minutes of recording time with 1 NP-1B battery.
- Body made of magnesium alloy previously found only on broadcast cameras. Still only 13 lbs. in standard configuration.

TSC-100G with Canon 13:1 Servo Zoom Lens & Case $4995.00

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SANYO

GVR-S950 S-VHS Single Frame Recording VCR

- Built-in single-Frame Animation Controller eliminates the need for separate or computer plug-in animation controllers. Industry-standard protocols, make it compatible with most popular graphic and animation software packages.
- 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.

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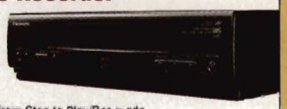
Panasonic

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 Amilink, FutureVideo, VideoMedia, TAO, and Matrox.
- Auto Repeat function continuously replays a tape which can be cued for tape's end or when recorded material ends. Allows the AG-5700 to be used in showrooms, lobbies, or any in-store video display.
- Separate Hi-Fi (Ch.1/Ch.2) audio recording level controls with display. There is also a headphone output with volume control.
- For unattended recording there is a Sensor Recording function. When a video signal is detected the power is automatically switched on and the AG-5700 begins recording.
- 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 (-¼, -½, -⅓, -½, +⅓, +½, +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 frequency response from the amorphous heads enhances picture quality by minimizing color blurring.
- Built-in LTC/VITC (Longitudinal/Vertical Interval) time code reader/generators for absolute frame accurate editing.
- Equipped with component outputs allowing easy connection to other component video equipment. This allows high quality transfer of S-VHS source material to Betacam or MII.
- IQ (Intelligent Quest) mechanism delivers precise, high-speed operation. The dual-loading system achieves high-speed response while protecting tapes and heads. The tape transport mechanism uses five direct drive motors, including two reel drive motors.
- Capstan Control System with large capstan spindle allows high-speed search at 32x normal speed (with color picture).
- 4 channel audio – 2 hi-fi stereo channels with dynamic range of 90dB as well as 2 linear channels with Dolby NR. Each audio channel has its own input (AG-DS850 only) and output with individual channel-level setting capability and uses XLR connectors.
- Provide 16:9 wide aspect compatibility, so they are fully equipped for the next generation of televisions.
- 3 rack units high, they are unbelievably compact for easy space saving installation. 19" rack-mountable with optional AG-M730.

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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NEW!

SONY

SVO-2000 S-VHS Hi-Fi Editing VCR

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

Superb Video and Audio Performance

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

Editing Features:

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

Convenient Functions

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

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

SVP-5600 and SVO-5800 features:

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

ADVANCED EDITING FUNCTIONS

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

FOUR CHANNEL AUDIO SYSTEM

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

MULTIPLE INPUTS AND OUTPUTS

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

USER FRIENDLY OPERATION

- They have a built-in character generator which superimposes characters on the "video monitor output" signal. This allows time code data, control track, menu setup and VCR function status to be shown on a monitor.
- For more efficient operation they have an on-screen setup menu which allows a variety of customized VCR mode operations. Programmed in the form of a layer structure, you simply go through the menu and initialize VCR operation.
- All parameters of the TBC, such as luminance level, chroma level, setup, fine, Y/C delay, sync phase and SC phase are easily controlled from the front panel, and can be remotely controlled from the optional BVR-80 TBC Remote Control.
- Quick and smooth picture search can be performed by either using an RS-422 equipped edit controller or the optional SVRM-100 Remote Control Unit. Recognizable color pictures are provided at up to10x normal speed in forward or reverse.

FXE-100 ALL-IN-ONE VIDEO EDITING SYSTEM

The new FXE-100 is an A/B roll editing system designed for quicker, easier video editing, and is well-suited for today's professional audio/visual communications. It is at once an edit controller which controls basic VCR functions, a special effects generator which cuts, mixes, wipes and composites the video sources with stunning effects, and an audio mixer with various fading and switching abilities. There is no longer a need to configure multiple devices for video editing. With either Hi-8 or S-VHS VCRs and the FXE-100, an ideal professional editing system can be easily configured.

- Switchable machine control of three RS-422 equipped VCRs or three RS-232 equipped VCRs. Basic VCR functions, such as play, stop, still, fast forward, rewind and record are controlled through these interfaces. Variable speed control is also possible for VCRs equipped with Dynamic Tracking.
- Accepts time code, control track (CTL), and 8mm time code as editing references. These can be set separately for each VCR.
- Performs assemble and insert editing (Video, Audio 1, Audio 2). The first EDIT mode, which allows you to record sufficient timecode for synchronization to a new tape is also featured.
- Features a split audio edit function which allows setting of audio and video in-points separately. This permits you to bring in the audio source before a visual transition.
- Store up to 99 scenes, including effects settings, in memory.
- Edit list data can be saved and downloaded to an IBM-compatible PC, allowing you to review or modify edit data at any time.
- The FXE-100 has two program busses, the A- and B-bus. Each bus provides Player 1, Player 2, Aux inputs and Background Color. Both composite and S-Video signals can be input.
- With the freeze function, two machine editing with effect transitions is realized by freezing the recorder OUT point picture.

SWITCHER AND SPECIAL EFFECTS GENERATOR

- Multiple wipe patterns, including picture scroll and slides, are programmed in. Soft edges or a choice of 15 color borders can be added to most wipes and effects.
- Variety of mix effects, such as mosaic mix, black and white mix, posterization mix and picture-in-picture (PIP).
- Special effects can be set separately to video sources of each bus, allowing wipes or dissolves of the sources with the digital effects to be executed. Can also combine multiple effects.
- Digital effects, such as mosaic, paint, pixel trail, multi-picture, monochrome, and zoom. Picture freeze function is also featured in frame or field mode.
- **Adjustable Transitions** - transitions are done using the fade lever, or they can be automatically set.
- **Chroma Keyer** - The FXE-100 features chroma and luminance keyers to superimpose characters, figures, or video sources onto a background.
- **Wipe Control** - By moving the location stick, you can move closed wipe patterns around the screen.

AUDIO MIXING

Audio-follow-video editing can be performed with the FXE-100. Two channels are assigned to each player VCR's input and one channel for the recorder VCR's input. Two channels of AUX inputs and a MIC input are available for mixing background music with voice-over. All audio input levels can be adjusted separately. Two Program output channels and one monitor channel are provided. A switch for -7.5dB and +4.0 dB is provided for flexibility in choosing input levels for VCRs with either RCA or XLR connectors.

USER FRIENDLY OPERATION

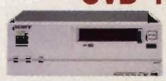
- All keys and buttons are logically grouped by function, and are color coded for quick identification and economy of keystrokes.
- Permits one monitor operation. No need for multiple monitors. Various editing data, such as edit mode and time code address of each VCR, can be monitored on the same screen.

VERSATILE SYSTEM INTEGRATION

- No need to configure multiple devices. By simply connecting three VCRs, a professional video editing system is formed.
- Two frame synchronizers allow perfectly synchronized wipes and dissolves without time base correctors.
- Equipped with two GPIs for control of external devices, such as character generators and audio mixers. Also has a GPI input, allowing it to be controlled from an external edit controller.
- Has four black burst outputs to distribute internally generated sync signal, synchronizing connected devices. There is no need for an external sync generator.

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-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. 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.
- 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-9720 Hi8 Dual Desktop Editing Machine

BUILT-IN EDITING CAPABILITIES

- The EVO-9720 provides two ways for assemble editing when using the supplied RM-E 9720:
  - Quick-Edit - By simply pressing the EDIT button at the desired point on the source tape, pressing END at the outpoint and repeating the process, a program is easily assembled, segment-by-segment on the master tape.
  - Program Edit - assemble video segments that are not adjacent to one another on the original source tape. The EVO-9720 can memorize up to 99 program events and realizes automatic sequential editing of pre-assigned scenes. To change an 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 smooth transitions from scene to scene, the EVO-9720 has a video fader. Black or white fading can be selected as well as a duration time of 0.5 or 2 seconds.
- There is a GPI (General Purpose Interface) output with timing adjustment for controlling external devices. External devices like the Video Toaster or Character Generators can be controlled. GPI timing of between 00 and 60 frames is selectable.

EVO-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.
- With built-in 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-980, the EVO-9850 can be installed into a 19-inch EIA standard rack.
- External sync input to lock onto external reference video signals. This allows for synchronization with other video equipment.
- For customized operation there is a Dial Menu. You can set VCR operation modes like time code preset, time code superimpose, self-diagnostics display, with the search dial.

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- Pressure Sensitive Drawing Tablet supported.
- Compatible with Video Toaster 2.0, 3.0, 3.1 and Toaster 4000.

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

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

- V-Station 3300 for Toaster is an integrated software and hardware solution for precise A/B Roll editing on your Amiga/Toaster system. The advanced multi-tasking, 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)

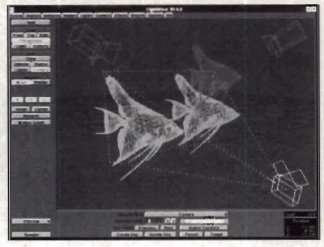
AP41-SF

- 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
The Ultimate 3D Rendering and Animation System for Broadcast Graphics



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

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

VIDEO TOASTER FLYER
VIDEO TOASTER TAPELESS EDITOR

The next big leap forward in video production technology, a non-linear editing system for everyone. Not only is the Flyer the easiest-to-use non-linear editor, but it also has the same capabilities and quality you expect from a production suite with $50,000 video tape decks. Not JPEG. Not MPEG. The Flyer utilizes a breakthrough technology called VTASC, which was designed from the ground up to put broadcast quality video onto a hard drive. The Flyer is a powerful tapeless editing system. Record video and audio segments as clips, which you arrange using a simple drag and drop interface. Using the Video Toaster System 4.0 software add real-time video effects, graphics or text. Press the play button and your video plays back, real-time in broadcast quality. You can even use the Flyer as an animation recorder with LightWave 3D.

Of course great video requires great audio. A powerful DSP chip provides up to eight tracks of 16-bit, CD quality audio for music, sound effects and voice overs. Editing with the Video Toaster Flyer gives you the power to experiment. Initial cuts come together quicker and changes happen in the blink of an eye. Now, the power to create unbelievable video is yours.

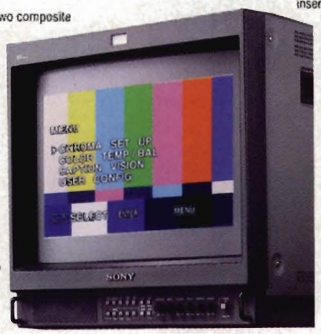
Your Flyer card is the heart of the new Toaster. With your Flyer installed in the Video Toaster Bay, it becomes the new Video Toaster system. Now you have a portable field recorder. Plug your camera into the Toaster and record direct to hard drive.

Your new Toaster system also has built-in time base correction with proc amp controls, three digital still stores, a four input production switcher, video processor, luminance keyer, SMPTE time code reader/generator and a single frame animation recorder. The Flyer installed in the Toaster Bay gives you the added flexibility of running it with your Amiga/Toaster system or any PC running Windows 95 or Windows NT giving you the freedom to use your Flyer anywhere.

SONY
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 multi-system 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.

MICROPOLIS
AV SERIES DISK DRIVES

- Specifically designed for enhanced digital video and audio performance in applications such as multimedia, digital video editing and video servers.
- Using Advanced Thermal Calibration (ATC) technology, the AV series provides a continuous data stream. You get none of the data stream gaps that occur when ordinary drives are engaged in internal housekeeping tasks.
- They provide minimum sustained data rate of 3.0 MBs and a maximum uninterrupted data rate of 2.9 MBs, ensuring smooth and continuous data flow for A/V reproduction.
- Worst case data access of 30 ms makes sure there are no more frozen frames or audio drop outs.
- Multi-segmented, Read-Ahead Caching (internal memory) improves read performance by eliminating extra seeks.
- They provide the super capacity required for serious audio/video applications.

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

DIGITAL
PROCESSING SYSTEMS

DC-2350
Personal Component Adapter

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

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

DC-2350 ..... **$299.95**

VT-2600 Personal TBC IV

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

DR-2150
Personal Animation Recorder

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

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

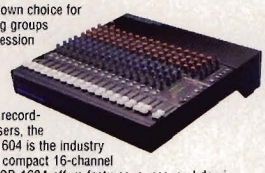
Micro Series 1202

12-Channel Ultra-Compact Mic/Line Mixer

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

CR-1604

16-Channel Mic-LineMixer



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

SONY

TCD-D7

DAT Walkman Player/Recorder

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

NRG

POWER BELT SERIES

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

880 Power-Pro +

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

970 Power-MAX

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

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

VARA-LITE PRO

Professional DC On-Camera Light

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

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

POWER STATION-2 SERIES

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

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

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maxell

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

BQ Certified Hi-8 Metal Cassettes

P6-60 HM BQ ..... **5.89** P6-120 HM BQ **7.89**

P/I PLUS Expitaxial VHS

T-30 Plus ..... **1.69** T-60 Plus **1.99**
T-90 Plus ..... **2.09** T-120 Plus **2.19**

HGX-PLUS Expitaxial VHS (Box)

HGXT-60 Plus ..... **2.69** HGXT-120 Plus **2.99**

BQ Broadcast Quality Expitaxial VHS (Box)

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T-120 BQ **5.89**

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ST-31 BQ ..... **6.09** ST-62 BQ **6.69**
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SONY

Hi-8 Professional Metal Video Cassettes

P6-30 HMPX ..... **4.95** P6-30 HMEX **7.99**
P6-60 HMPX ..... **6.95** P6-60 HMEX **11.49**
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PR Series Professional Grade VHS

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PM Series Premier Grade Professional VHS

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

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KCA-10 BRS ..... **8.19** KCA-20 BRS **8.69**
KCA-30 BRS ..... **9.69** KCA-60 BRS **13.49**

XBR 3/4" U-matic Broadcast Master (In Box)

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

KSP 31/4" U-matic SP Broadcast (In Box)

KSP-S10 (mini) ..... **9.59** KSP-S20 (mini) **11.09**
KSP-10 ..... **10.09** KSP-20 ..... **11.59**
KSP-30 ..... **12.99** KSP-60 ..... **16.99**

BCT Metal Betacam SP Broadcast Master (Box)

BCT-5M (small) ..... **16.39** BCT-10M (small) **17.39**
BCT-20M (small) ..... **21.29** BCT-30M (small) **23.29**
BCT-60ML ..... **33.19** BCT-90ML **51.99**

FARGO

PRIMERA PRO

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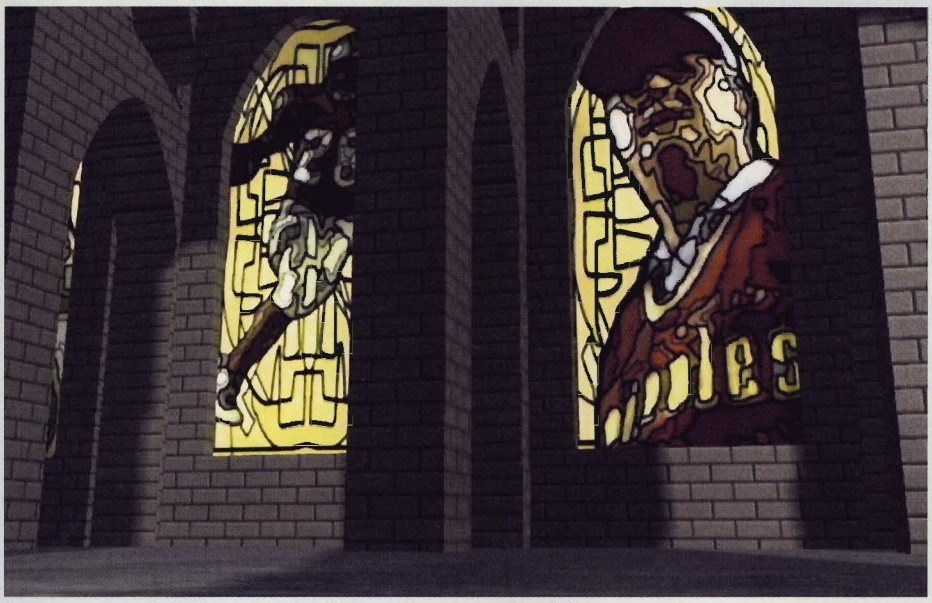
manuals and learn it for yourself. I think this taught a lot of kids how to learn something on their own."

Miller's experience was quite similar to instruction in the professional world, where production companies often require staffers to learn new software without tutorial help. Miller's first intern job took advantage of his classroom skills. He was given a copy of a video magazine and asked to build his employer an on-line stock shot library catalog. "I definitely



Schools can use the Video Toaster and LightWave to achieve some high-end effects.

couldn't have gotten or held that internship without the experience that learning the Toaster gave me," says Miller, now 16 years old and an admired "professional" among his friends and teachers.

"The Toaster experience," says Lang, "can turn a kid around. Teachers from other classes often remark about students who develop a greater interest in academics after doing a project on the Video Toaster."

An English teacher at the UN school assigns a non-verbal City Life project every year. Students used to turn in mostly poster art. But once the kids discovered the Video Toaster, they started producing videos for the project. Lang believes the Toaster quickly empowers students by producing immediate results. "A lot of students get interested in the Toaster first. It gives them the feeling that they're working in a real broadcast TV studio. There's no guessing as to results; they see immediately what they've done. Suddenly, they are forced to deal with content, because the technology part has become so easy."

Dealing with content, says Lang, is the academic side of broadcasting. By focusing the students' efforts on content, the Toaster has triggered their desire to participate actively in the learning process.

Does the impact of the Toaster learning experience continue into professional life? Miller, at least, has turned away from broadcasting and decided on a career in medicine. "And yet," he adds a bit wistfully, "I think I'll be using the Toaster, or something like it, for the rest of my life."

Miller wants to go into emergency room medicine and imagines that he might like to design some kind of 3D virtual reality system that helps surgeons practice procedures on a simulator. When told that David Hon of Ixion, in Seattle, Wash., had already created such a device, Miller was convinced.

"My experience with the Toaster got me my internship. The internship gave me a way to elevate my skills and make my work superior. I never thought I could do work like what I saw on TV." Apparently, a career in medicine is no longer an intimidating consideration.

At the University of La Verne, Rodriguez agrees. "We've had lots of students discover their best skills here. Robert Fukuzaki, a native of Hawaii, left our Class of 1988, returned to Hawaii and got a job in broadcasting. Then he came to Los Angeles and got a job as weekend anchorperson on KABC, a network affiliate." Fukuzaki regrets that he graduated from college before the Toaster was introduced to the curriculum, but credits the broadcasting course at La Verne with giving him his start. "Right from the freshman year, we could do anything we wanted in broadcast journalism, and we did. I broadcast football and baseball games. I did a DJ music show. Basically, my four years of college was really four years of hands-on work experience."

Toaster Smart

Professional experience at the student level seems to be the key to success upon graduation to the real world. Be it the career of a 16-year-old high schooler seeking to land his first internship, or a seasoned college graduate out to get his first real production work in a competitive job market, nothing beats the kind of experience you can get on a Toaster in a classroom setting.

Since graduating, Fukuzaki has worked with the Toaster. He concludes: "With a Toaster, you can learn the technical side without limitations. Knowing the technical side of production, even if you're an on-camera talent, is important, because most graduates won't start off in a major market where tasks are strictly defined. In small-market stations, even if you're an on-camera personality, you do all the jobs. Camerawork, sound, you name it. So it's important to know things like how to go from a live shot to a scoreboard graphic and how to design the graphic as well. A Toaster can teach you that. I wish they had installed them when I was in college!"

VTU

George Avgerakis is co-founder of Avekta Productions Inc., a full-service production company in New York City. His commercials for Investor's Business Daily *newspaper, featuring Toaster graphics, appear daily on CNN and CNBC. "Agnes" is the name of a chip in the Amiga computer.*

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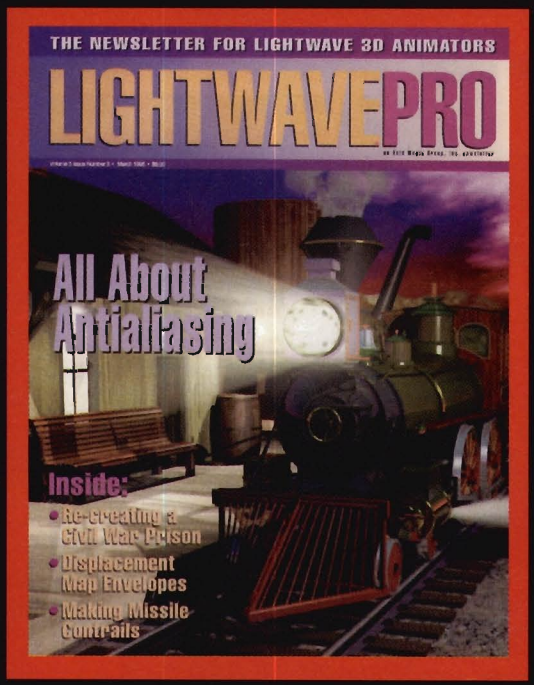

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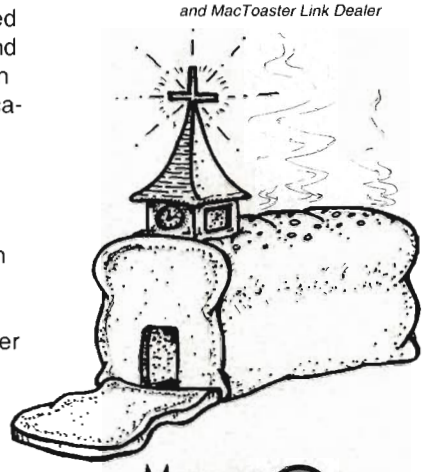

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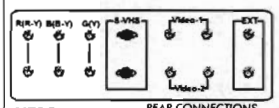

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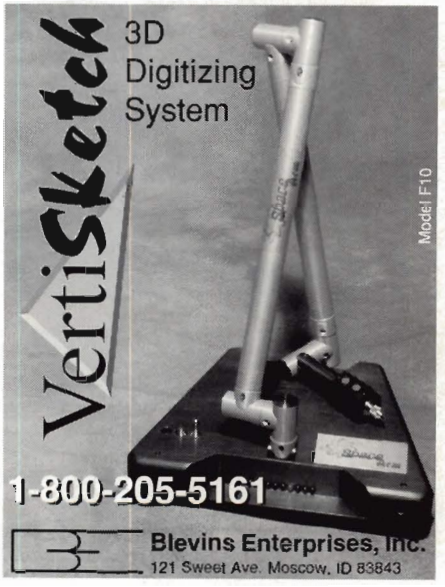

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16K Instruction
2MB(17ns) Data
128-bit wide write-back cache

MEMORY CAPACITY:
16MB to 1GB of 72-pin SIMMS 60-80ns RAM
2 Speed-independent RAM banks,
128-bit RAM Architecture
267 MB/s DMA CPU write bandwidth

PCI BUS:
3 PCI connectors, version 2.0 compliant.
Maximum 132MB/sec. I/O throughput, 33MHZ.

ISA BUS:
3 fully ISA-compliant connectors.

BUILT IN PORTS TO REDUCE HARDWARE INCOMPATIBILITY:

SCSI INTERFACE:
FAST SCSI-2 DMA
Max 10 MB/sec. synchronous data transfer rate

SERIAL INTERFACE:
Two high-speed RS-232 serial connectors (NS16C552-compatible UARTs)

PARALLEL INTERFACE:
One high-speed, bidirectional parallel port.

FLOPPY DISK INTERFACE
Supports two drives, maximum 2.88MB per drive.

REMOTE DIAGNOSTICS:
Additional serial port for remote diagnostics and maintenance(via modem).

OPERATING SYSTEMS:
Microsoft Windows NT

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

DPS PERCEPTION (PCI-Bus) $1895
DPS Capture Card $ 845
4MB UpGrade Stealth 64 $ 95
MONITOR UPGRADE:
14" to 17" High Resolution $ 595
17" to 21" High Resolution $1195

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Hurry! Get Escom's New Amiga4000T/25MHz-040/6MB/500HD for $3495 !

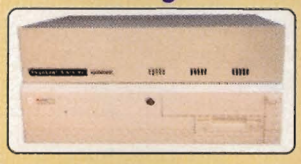
Reserve Yours Today And Receive Free Labor & a Software bundle worth Over $500 Free!

Call today they will Definetly be in short supply!

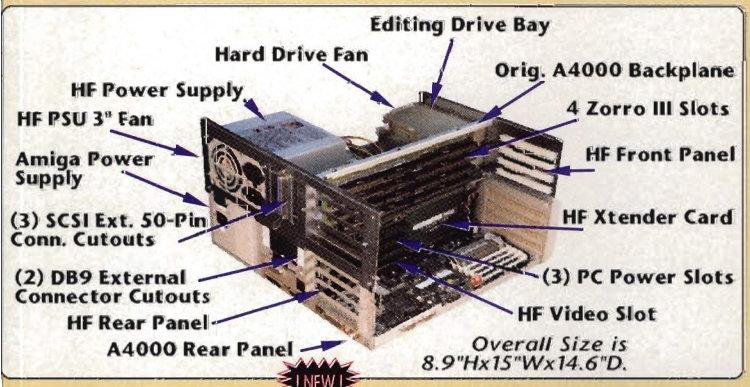
HIGHFLYER EXPANSION SYSTEMS

Integrated Expansion Chassis for the Amiga 4000

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



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



HighFlyer	$ 395
HighFlyer PS*	$ 495
Cable Kit	$ 85
Fan Kit	$ 45

*(w/Pwr Supply)

! NEW !

NOW AVAILABLE SPECIAL
IDE A4000
270Mb SyQuest
$ Call

SCSI CONTROLLERS

DataFlyer 4000SX	$ 90
DataFlyer 4000SX-25	$ 95
DataFlyer SCSI+ 4000*	$ 95

*Does not use Zorro Slot

FLYer Factory!

In Celebration of Escom's purchase of the Amiga Technology

NEW LOW SYSTEM PRICES

FLYer SYSTEMS

High FLYer System $14,995 — AS LOW AS $365 A MONTH

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

TO-060 GT Tower System1 $18,495 — AS LOW AS $450 A MONTH

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

TO-060 GT Tower System2 $23,495 — AS LOW AS $570 A MONTH

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

*Babco Lease Box is average credit lease for 60 months

FLYer DRIVES

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

ANTI GRAVITY HANGER™

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

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

The Sonnet Doubler 4000 ACCELERATOR $545

50 MHz 68040 Speed

FOR INFORMATION CIRCLE 164

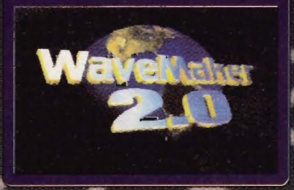
Visual Inspirations

Surface Pro, Road Signs, & Batch Factory 2.0 $125 — SUPER BUNDLES — Visual FX & Decision Maker $435

WaveMaker 2.0 $185

is a flying-logo animation scene builder for LightWave.

You don't have to be a Lightwave expert to create eye-catching, professional-quality flying logo animations.
New Features:
Image Factory, PAR Convert, 72 New Elements,...More!



CHEAP STORAGE THE NEW STANDARD

Zippy IOMEGA

100MB REMOVABLE ZIP DRIVE
ZIP DRIVE $195
100MB CARTRIDGE $25
BOX OF 5 ZIP CARTRIDGES $100

NEW - 060 Now Anti Gravity has them!

CYBERSTORM 060

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

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

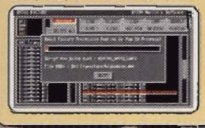
CYBERSTORM 68060 50 Mhz	$Call
SCSI II MODULE	$245
IO MODULE	$345

CYBERVISION 64

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

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

BATCH FACTORY $45



ROAD SIGNS $45

SURFACE PRO

DIGITAL SOUND TRACK $65

New Flyer & V-Lab Motion NEW

EDL generator and VTR controller

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

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

VISUAL FX $125

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

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

ALPHA PAINT $365

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 ! !!

INNOVISION TECHNOLOGY

"The Little Magic Box" $635

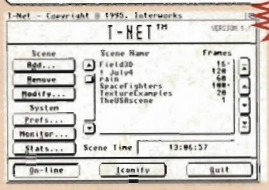
Adapts toaster to S-VHS, M II and Betacam component operation.

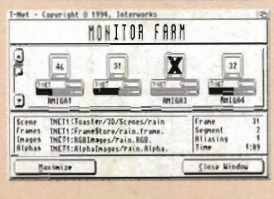
Interworks NETWORKING SOLUTIONS

Optimize Your Production Environment!

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

NOW SHIPPING





TOASTER-NET $295

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

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

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

And combined with an ENLAN-DFS network:

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

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

Stretch your Toaster Productivity!

Toaster-Net Features and Functions:

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

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

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

ENLAN-DFS $265

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

INTERWORKS NETWORK SOLUTION

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

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

MAXDOS v2.5

AMIGA to MAC File Transfer File System

$65

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

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

Features:

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

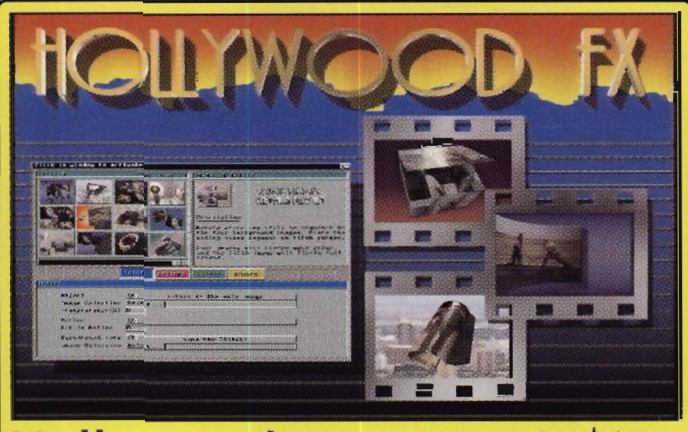
media4 productions Presents: $Call PhotoPro Toolkit

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

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

Features:

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



Hollywood FX ver 1.29 $175

CREATES AMAZING EFFECTS FOR VIDEO and interactive productions, using Lightwave for the highest quality rendering.

Using Hollywood FX is simple. Use captured or generated images from any source. If you have a Personal Animation Recorder and TBC IV, you can grab live or recorded video quickly and easily for full motion video effect.

FEATURES INCLUDE . . .

- Dozens of effects including multiple full motion video windows, 3D morphing transitions, particle effects and more.
- PAR users get the added benefit of being able to map video or animated sequences directly onto objects in their Light wave scenes without exporting first to a large hard drive. Hollywood FX exports an unlimited number of sequences from the PAR as needed.
- Post processing with the Art Department Professional provides users with unique rotoscoped effects (e.g., processing video through the oil paint or fresco operators). *Add a Rendersaurus and . . need we say more?*

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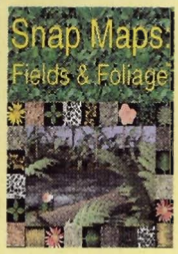
Federal Express Delivery Available!

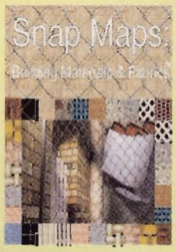
FEDERAL EXPRESS



SNAP MAPS: *Fields & Foliage* *Building Materials & Fabrics*

Whereas other texture libuaries help you enhance objects you created——Snap Maps help you create objects!

SNAP MAPs is the first texture library to support the advanced mapping techniques today's renderers are capable of employing. In addition to adding photorealistic textures, Snap Maps can cut your 3D objects into new shapes, saving a great deal of time in modeling complex objects.



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

Model Monger $135

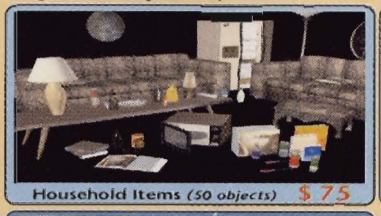
FotoReal-Interiors 1
Over 250 Photo-Realistic Models

DEDICATED DIGITAL IMAGERY

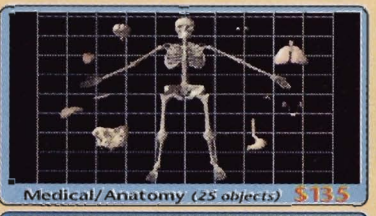
SUPER BUNDLE ALL 5 SETS $455

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

Citybuilder $120



Household Items *(50 objects)* $ 75



Medical/Anatomy *(25 objects)* $135

Space Essentials *(50 objects)* $ 95

Autos/Vehicles *(65 objects)* $ 95

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

Apex

Essence Textures are algorithms used to color the surface of an object, and take very little RAM (about 1–15K each), and have no pixel artifacts. An "algorithmic texture" is a surface that can be characterized with a mathe matical algorithm as opposed to just "painting on" with a brushmap.

Essence VOLUME I

Amiga	$Call
Windows	$Call
Windows NT	$Call

Essence I is sixty-six algorithmic textures compatible with the Forge texture design program, ranging from Hex, a simple tiling of hexagons, to a complex surface called Fractal Noise; turbulent, detail-rich for objects like clouds, fire,...

Essence VOLUME II

Amiga	$Call
Windows	$Call
Windows NT	$Call

Essence 2 hasover forty other textures. Organic surfaces: Natural skins and colorings—turtle shells to crusty alien hides.· Space textures: Hull plates, gas giants and planetary rings. Animated plasmas.· Altitude textures: Burnished metal, crumpled paper, chipped ice, obsidian, cauliflower and fungus.

FORGE

FORGE Included with Essence

Load/display any Essence texture or attributes, preview in real-time. Interactive edit and preview in color. In Forge the design process is reduced to simply sliding a gadget and watching the change take place!

HUMANOID
human animation designer

Formats:
Lightwave:Amiga/Windows
3D Studio
Imagine:Amiga/PC

$175

Hierarchical Models with Morphing Features

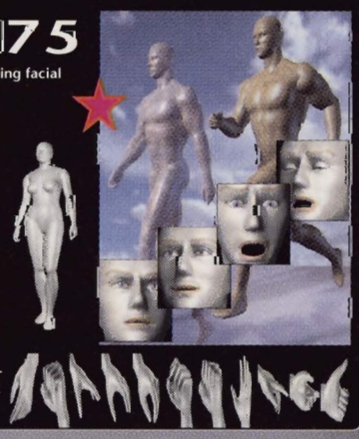
Each set includes a man, woman, child & strongman, walk & run motions, morphing facial expressions & hands, and extensive manual all for one affordable price.

Here Are Some Reviewers' Impressions:

"The objects rendered perfectly . . . an excellent source for accurate human form and motion . . . Crestline Software has produced a superior package . . ." J. Parenteau, Amblin Imaging, FX producers for seaQuest, LIGHTWAVEPRO 4/94

"This product is definitely the most mature and well-developed . . . excels in supporting motion . . . and it has the best hand and facial morph targets." S. Elliott, author of Inside 3D Studio, CADENCE 8/94

"If your project calls for people, the Humanoid objects are the best." DV MAGAZINE 10/94

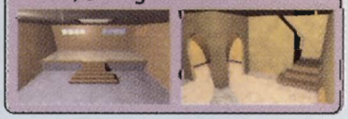


Replica Technology

-Super Bundle-
All 5 sets ONLY
$295

Interior Construction: $95

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



Homes: $95

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

Interior Design 1: $45

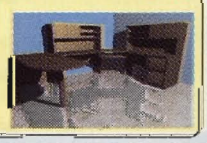
Over 50 Real-World Scaled Furniture Objects: beds, tables, chairs, cabinets, and more. Doors and drawers can be animated!

Interior Design 2: $45

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

Interior Design 3: $45

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



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3D ANIMATION MODELS & TEXTURES

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Imagemaster R/t

PINNACLE MICRO

Recordable CD-Rom Drive

ASIM Mastering Software $Call

$1895

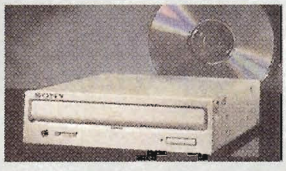
CROSS MAC

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

CrossMac $85

ANTI GRAVITY DRIVES
HyperSpace for your System

CD-ROM



Multi Media Features:
- *Double & Quad Speed High Quality CD-ROM Drives*
- *Kodak Multi-session CD Compliant* ◆ *MPC Level II*

CD-Rom DRIVE	SPEED	INT	EXT
CHINON	2X	$185	$275
SANYO	4X	$295	$395
CD-ROM RECORDABLE			
PINNACLE	2X	N/A	$1895
YAMAHA	4X	$2865	$2995
Drive Media			
READ/WRITE CD'S	each	$25	Qnt-5 $100

SyQuest

3.5" SyQuest- 105MB & 270MB
Has an average seek time of 14.5ms; Comes in SCSI & IDE formats; And the 270MB drive reads & writes the 105MB cartridges.

5.25" SyQuest- 88MB & 200MB
Has an average seek time of 20ms; Comes only in SCSI format; And the 200MB drive reads & writes the 44MB & 88MB cartridges.

SyQuest Drives:	88C	105	200	270
IDE Bare Drive	$ N/A	$ 265	$ N/A	$ 390
SCSI Bare Drive	$ 225	$ 265	$ 415	$ 380
External w/Cart.	$ 395	$ 465	$ 555	$ 535
Cartridges:	**88MB**	**105MB**	**200MB**	**270MB**
1 each for	$70	$65	$90	$ 70
5 each for	$65	$60	$87	$ 68

TAPE DRIVES

SIZE	DRIVE			
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2-4GB	C4324RP	SCSI2 4mm	$795	$935
4-8GB	C4326RP	SCSI2 4mm	$875	$995
Sony DAT (600MB/Hr)				
2GB	Sony2000	SCSI2 4mm	$745	$875
4GB	Sony4000	SCSI2 4mm	$845	$975
5-8GB	Sony5000	SCSI2 4mm	$895	$1035
EXABYTE 8mm Tape Drives (1.6GB/HR)				
5-10GB	EXB8505	SCSI2 8mm	$1945	$2095
7-14GB	EXB8505XL	SCSI2 8mm	$2095	$2195
50-140GB	EXB-10E	SCSI2 8mm		$Call
55-154GB	EXB-210	SCSI2 8mm		$Call
Fast Tape Drives				
5-10GB	WangTek9500DC	(2GB/Hr)	$1195	$1295
10-20GB	DLT-2000	(5GB/Hr)	$3395	$3545
20-40GB	DLT-4000	(5GB/Hr)	$6695	$6845

Tapes	*Qnt-1*	*Qnt-5*	*Qnt-10*
4mm 90M	$20	$18	$15
4mm 120M	$25	$22	$20
8mm 112M	$20	$18	$15
8mm 160M	$30	$26	$23
9500DC	$85	$80	$75
DLT	$95	$90	$85
Cleaning Cartridges			
4mm	$25	$22	$20
8mm	$30	$28	$25

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SCSI-2 HardDisks

FMT	DRIVE	SPEED	INTERNAL
Micropolis			
2.1GB	MC4221	8.9ms	$1000
2.1GB	MC4221AV	8.9ms	$1050
4.2GB	MC3243	8.5ms	$1450
4.2GB	MC3243AV	8.5ms	$1495
9.1GB	MC1991	12ms	$2350
9.1GB	MC1991AV	12ms	$2695
Conner			
1.0GB	CFP1080S	12ms	$475
2.1GB	CFP2105S	8.5ms	$885
2.1GB	CFP2107S	8.5ms	$965
4.2GB	CFP4207S	9ms	$1395
SEAGATE			
1.0GB	ST31230N	9ms	$535
2.1GB	ST32430N	9ms	$995
2.1GB	ST32550N	8ms	$1095
4.2GB	ST15230N	8ms	$1195
4.2GB	ST15150N	8ms	$1395
9.0GB	ST410800N	11ms	$2995
Quantum			
541MB	LT540S	11ms	4500rpm $250
545MB	FB540S	12ms	5400rpm $260
731MB	LT730S	11ms	4500rpm $275
850MB	TB850S	14ms	4500rpm $280
1.0GB	FB1080S	12ms	5400rpm $520
2.1GB	XP32210	8ms	7200rpm $925
2.2GB	VP34301	8.5ms	5400rpm $1355
4.3GB	XP34300	8ms	7200rpm $1595

IDE HardDisks

FMT	DRIVE	SPEED	INTERNAL
Maxtor			
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540MB	7540AV	12ms 32K	$195
850MB	7850AV	12ms 64K	$275
1260MB	71260A	12ms 256K	$395
131MB	131P	PCMCIA Type III	$295
Conner			
350MB	CFL350a	12ms 32K 2.5"	$295
422MB	CFL420A	15ms 32K 2.5"	$345
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850MB	CFS850A	15ms 64K 3.5"	$295
1275MB	CFS1275A	15ms 64K 3.5"	$375
SEAGATE			
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260MB	ST9300AG	16ms 120K 2.5"	$225
340MB	ST9385AG	16ms 120K 2.5"	$265
524MB	ST9655AG	16ms 120K 2.5"	$395
Quantum			
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545MB	FB540A	12ms 5400rpm	$245
731MB	LT730A	11ms 4500rpm	$265
850MB	TB850A	14ms 4500rpm	$295
1050MB	FB1080A	12ms 5400rpm	$545

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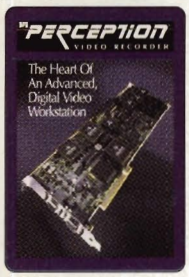

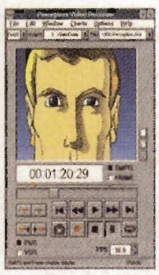

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		2MB	430
9FX Vision330 #9 DRAM	VLB/PCI	1MB	335
		2MB	850
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		4MB	460
Graphics Xpression ATI	VLB/PCI/ISA	1MB	150
		2MB	200
GXE64 Pro #9	VLB/PCI	2MB	340
		4MB	550
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Imagine 128 #9 4MB PCI	1280X1024		860
	1600X1280		1135
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✕ DOS ✱ WINDOWS ● WINDOWS NT ✔ AMIGA ⚠ MAC OS ⚠ SGI

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LAST WORD

Fiberoptic Death

How to Destroy the Networks in One Easy Lesson

by Mojo

The idea first hit me about six years ago, when the very first spark of what would become known as the information superhighway was struck. I read an article explaining how the phone companies were laying fiberoptic cable to improve phone service. One of the by-products of the improved throughput rates was that high-resolution video and audio could finally be transmitted over phone lines. No more tyrannical cable companies! It would mean *anyone* could provide TV programming.

One of the first applications of this development will be movies-on-demand. You dial a number and get any movie on a company's list piped into your house whenever you like—not on an inconvenient pay-per-view schedule. It will probably cost the same as a rental and, thankfully, your film of choice will never be out of stock. The TV and the phone will be one and the same (and hardwired to the computer, no doubt). But this is all old news! What does the future have in store? Let us now gaze into Mojo's crystal ball and find out...

To begin with, the major player in this possible future is going to be the company with all the hard drives. After all, the only way to provide this plethora of entertainment to anyone at any time is through digital, non-linear means, like a Flyer. We'll call this place Network 23. They have a million Flyers, loaded with all the movies ever made. They are the Provider. They charge you four bucks a movie: part of it goes to the studio, part of it to the phone company, and the rest they keep. Before long, however, Network 23 realizes that the real money is in making movies, not showing them. So they make a direct-to-video flick real, real cheap. Why so cheap? They don't have to mass manufacture, distribute and advertise! They simply add their movie to the list you see on your screen. Maybe they even make their font a different color so it stands out and put their trailer before the other movies so you know what the film's about. Best of all, they keep the entire viewing fee! Soon after, other independent filmmakers get in on the action and have their films added to the list by paying a fee to have their data stored on the drives and their movies advertised on the system. They make their money through a cut of the viewing price and manage to avoid dealing with the major studios altogether. This kind of scenario may bring us to the end of the line for TV networks.

Let's imagine that one day, say in 2002, the producers of *The Simpsons* get fed up with FOX. They grow tired of encroaching commercial time, suffocating censors and relentless network meddling. So they let their contract expire and announce that they will continue to produce the show for Network 23, where anybody can dial it up and watch it for 25 cents a week. With roughly 20 million viewers, even if the producers only get to keep half the viewing fee, they will still wind up with 2.5 million dollars per episode—much more than their current take. Better still, there are no commercials on Network 23, since viewers, not advertisers, pay for the programs! This allows the show to expand from 20 minutes to a full half-hour. And with no network worried about pressure from non-existent sponsors, nobody controls the content anymore. Bart could use real swear words! Most shows would follow suit and free themselves from the network shackles that have bound the industry for so long.

This lucrative business would also ensure that our favorite series need never be cancelled. Some of television's finest hours have been mercilessly axed simply because the numbers didn't add up. Considering the fact that even the lowest-rated show has over a million viewers, if they all paid a dollar a week, we'd still have shows like *Max Headroom* and *My So-Called Life*.

Six years ago, the news of fiberoptic cable led me on a chain of thought that ended with death for the modern television network. True, a company like Network 23 could become a monster, but I don't foresee it. So much money would be generated from viewing fees that they would have little need to charge exorbitant amounts for advertising. More importantly, they would have no concern over program content or quality because they wouldn't pay for the production: it'd be up to the producers to make a show that people wanted to watch. If nobody watched it, then Network 23 would simply clear it off the hard drive to make room for a new show. Maybe your show. Without a network calling the shots, there is no middle man between the producer and viewer. Network 23 will give anyone who wants it the means to reach the entire television audience—regardless of what you have to offer. The "small fish" will no longer be stuck with public access. The playing field will finally be level.

Will this happen? Who knows? It certainly *could*. Before long, the technology to do it will be in place. In many places it is already. Right now, big corporations and power-players are all hustling to cast the dice and put themselves into the center of our entertainment future. I wish I could be the one to determine it. However, there are a lot of people out there with a lot of different ideas about what that future should be. People with a lot more money than I have.

Maybe one of them will read this and realize how good the future could be for all of us.

Hey—call me.

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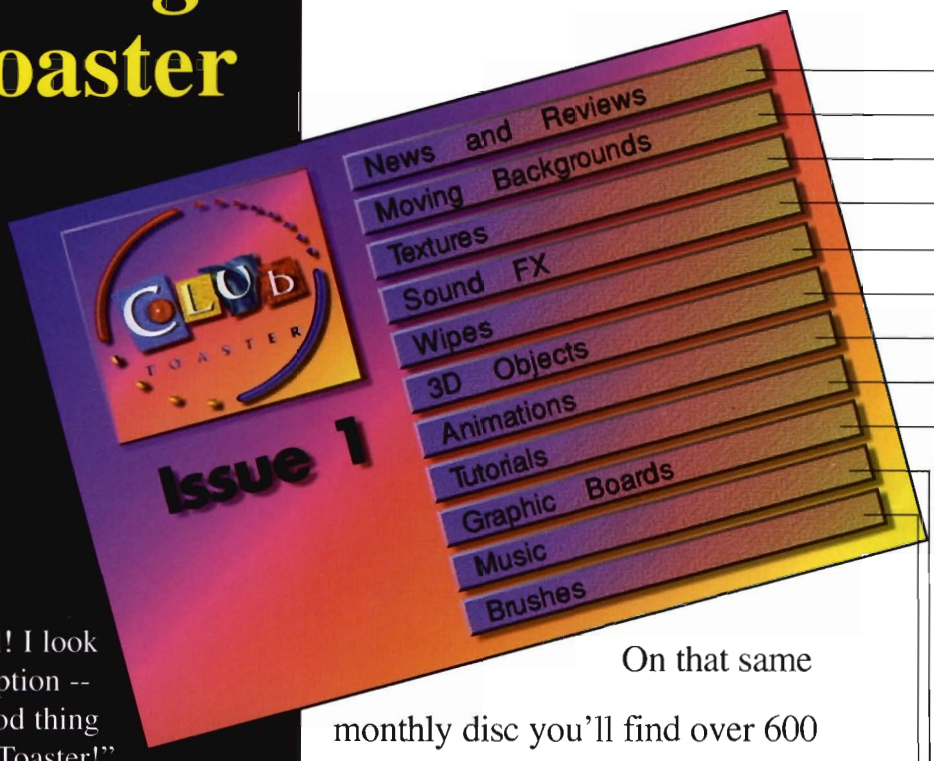

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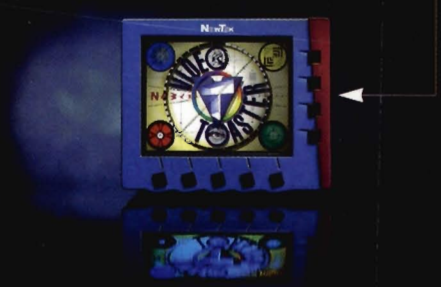

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